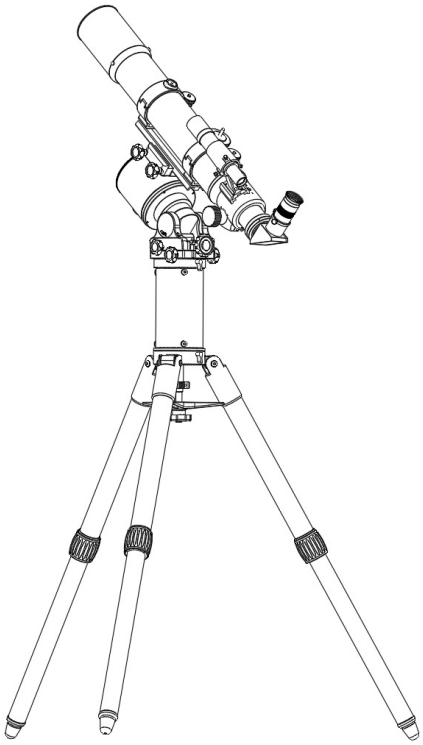
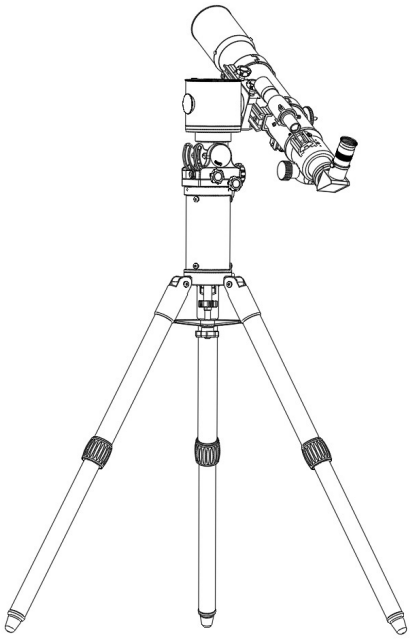
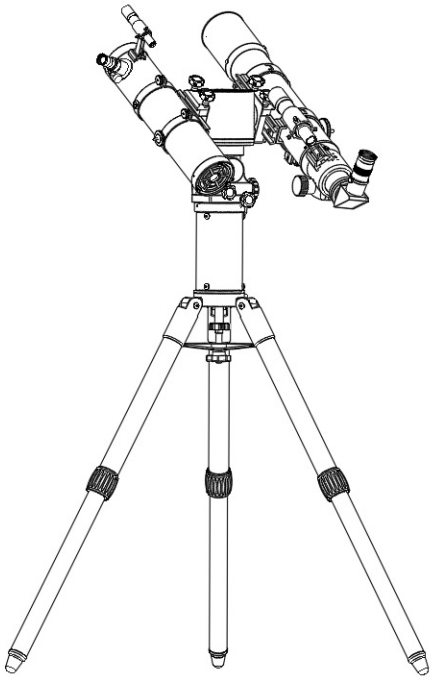
INSTRUCTION MANUAL

WAVE100i Mount





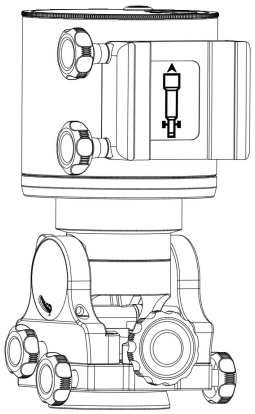


CONTENT

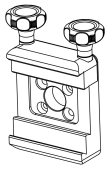
WAVE100i Mount Packing List

Mount Package Includes:

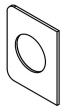
WAVE100i Mount x 1



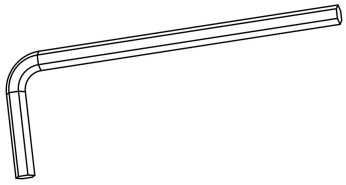
Saddle x 1



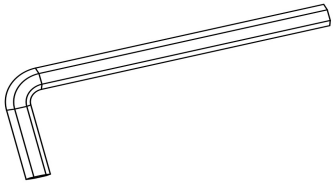
Saddle Cover x 1



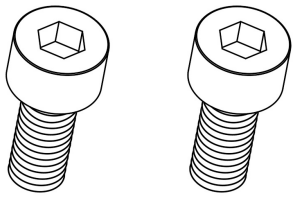
3 mm Hex Key x 1



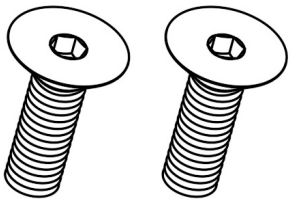
4mm Hex Key x 1



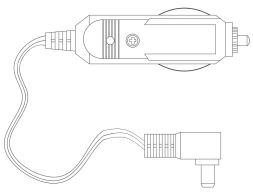
Screws M6 x 2



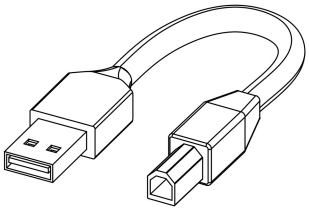
Screws M5 x 2



Power Cable x 1



USB Cable x 1



PART I: Installation

1.1 Setup Tripod and Wave 100i

The WAVE 100i mount can be installed on multiple tripods and extension stands, please refer to the instruction manual in your tripod kits for details.

If the mount is going to be setup in the equatorial mode, make sure one of the tripod legs oriented to the polar direction (**N**). While attaching the mount to the tripod, please align the R.A. axis to the the north orienting tripod leg.

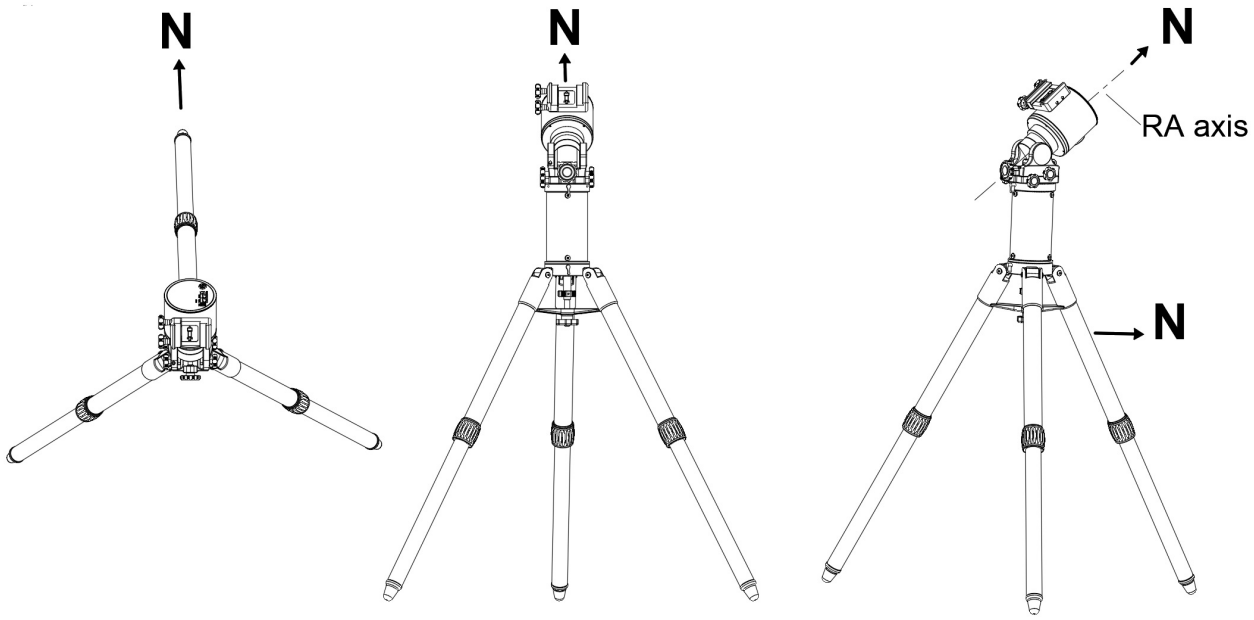


Fig. 1

1.2 Adjusting Declination Axis Tilt

1. For use in equatorial (**EQ**) mode, loosen slightly the two Latitude locking knobs and turn the Latitude adjustment knob until the arrow on the latitude scale of the mount matches the latitude of your observing site. Lock the two Latitude locking knobs. See Fig.2.

2. For use in Alt-Azimuth (**AZ**) mode, rotate the Altitude adjustment knob until it stops turning and then lock the Latitude locking knobs. Leave the mount in upright position as shown in Fig.3

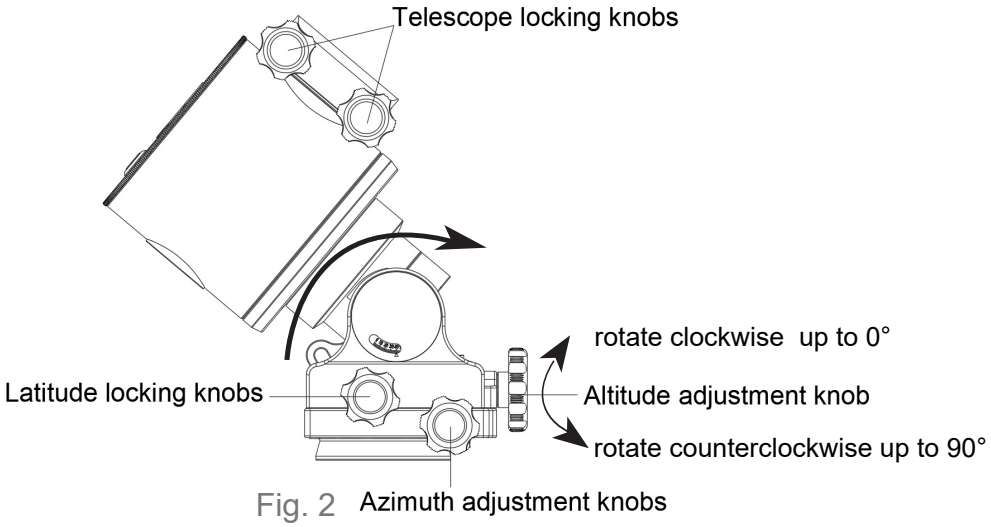


Fig. 2

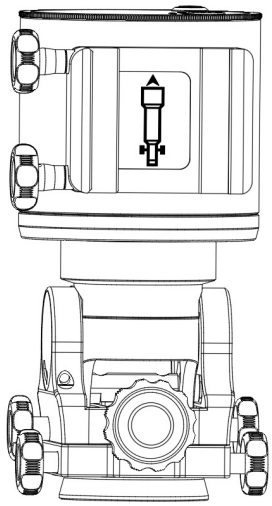


Fig. 3

1.3 Installing the Telescope for EQ Mode

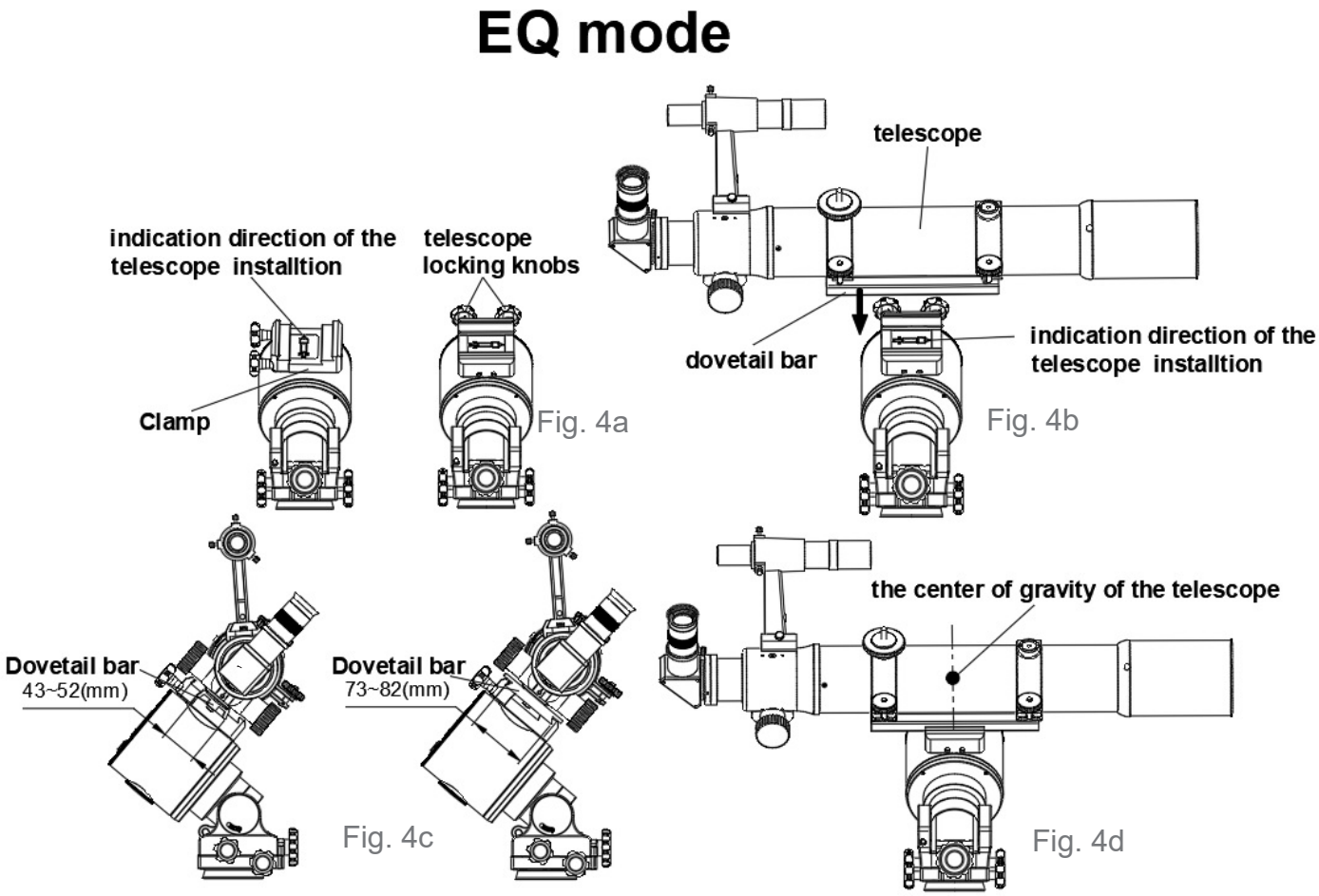


Fig. 4

1. Turn on the power and connect the mount with SynScan Pro app or hand controller.
2. Press the down arrow key until the Saddle is leveled with the locking knobs on the upper side. (Fig4a)
3. Loosen the two telescope locking knobs on the saddle alternately until the width of groove is slightly wider than the width of the dovetail bar on the telescope.
4. While holding the telescope horizontally, seat or slide the dovetail bar of the telescope into the groove of the saddle. The telescope should point towards the direction shown in Fig4b.
5. Tighten the two telescope locking knobs alternately to secure the dovetail bar in the groove. (Fig4c)
6. The center of gravity of the telescope should be located at the DEC axis as much as possible. (Fig.4b)

Warning: Keep supporting the telescope until you are sure that it has been firmly attached to the saddle.

1.4 Installing the Telescope for Alt-AZ Mode(Fig. 5)

1.Turn on the power and connect the mount with SyScan Pro app or hand controller.
2.Press the down arrow key until the saddle is leveled with the locking knobs on the upper side. (Fig.5a,Fig.5b)
3.Loosen the two telescope locking knobs on the saddle alternately until the width of groove is slightly wider than the width of the dovetail bar on the telescope. (Fig.5b)
4.While holding the telescope horizontally, seat or slide the dovetail bar of the telescope into the groove of the saddle. The telescope should point towards the direction shown in the Fig5c and Fig.5d.
5.Tighten the two telescope locking knobs alternately to secure the dovetail bar in the groove.
6.The center of gravity of the telescope should be located at the DEC axis as much as possible. (Fig.5d)

Warning: Keep supporting the telescope until you are sure that it has been firmly attached to the clamp.

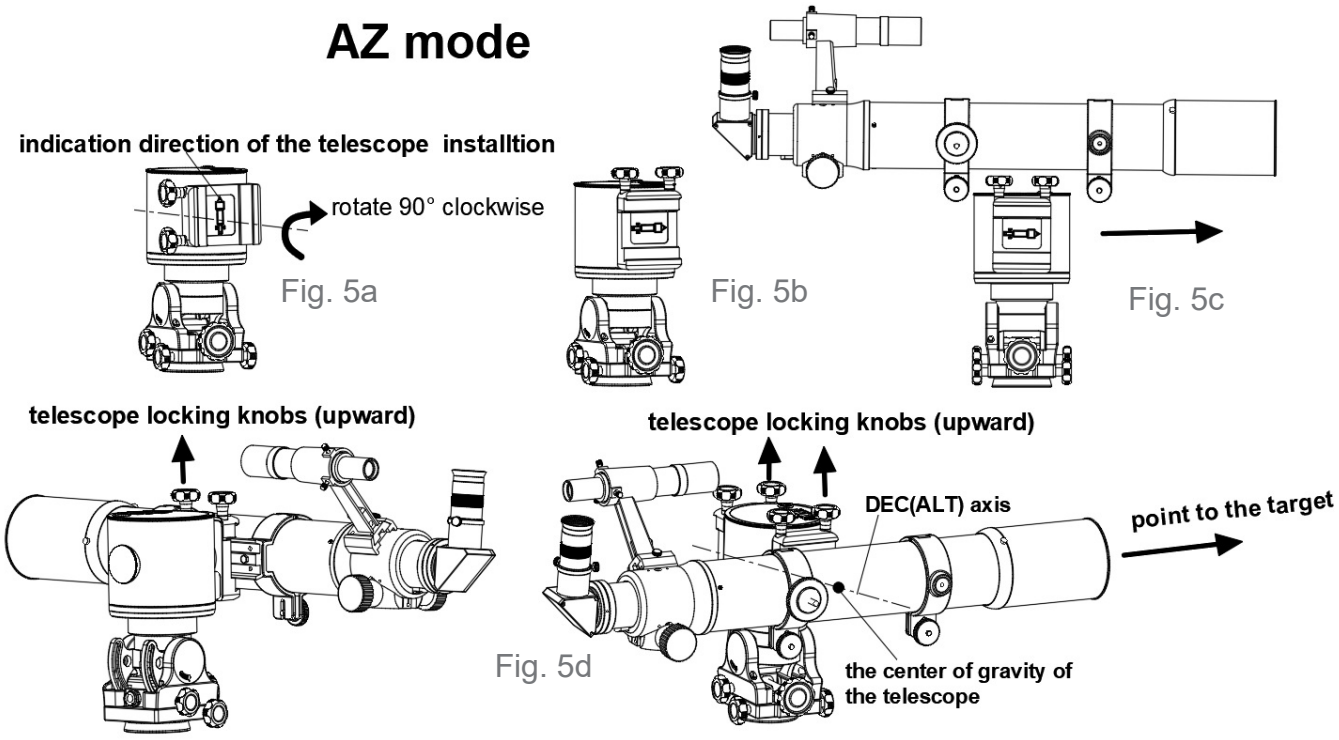
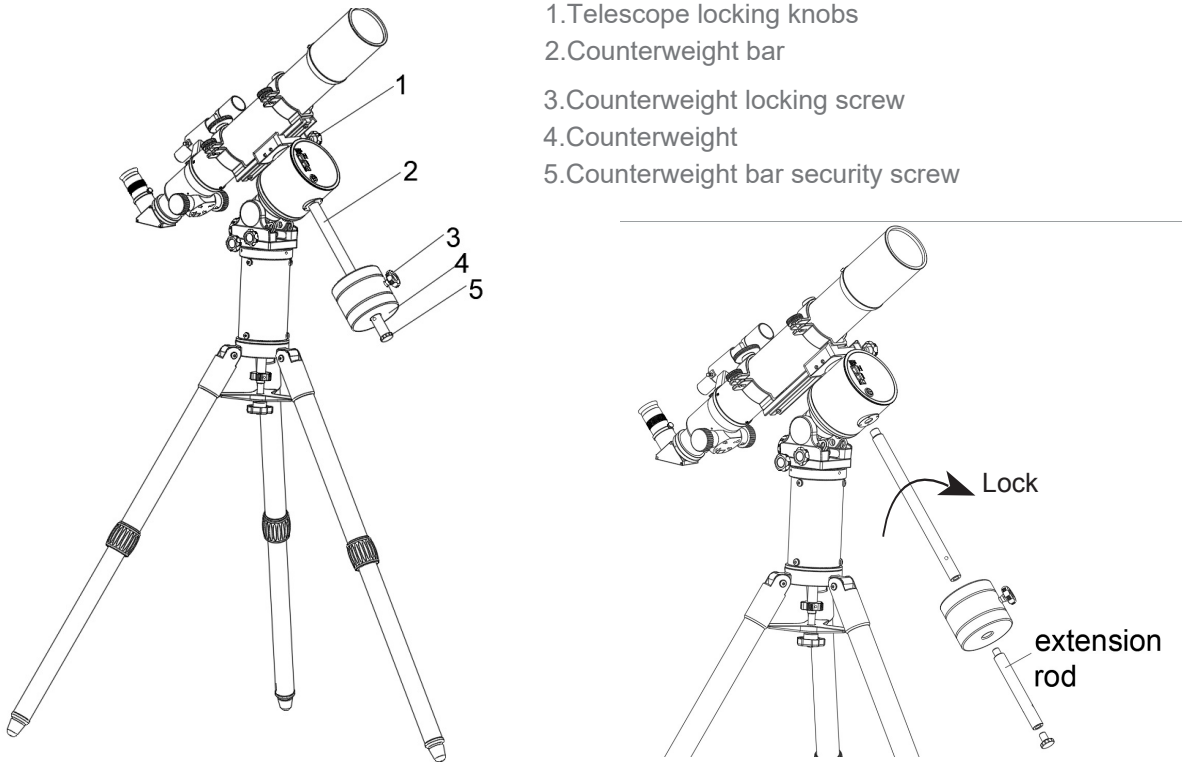


Fig.5

1.5 Balancing the Payload

1. Screw the Counterweight bar (2) clockwise into the hole and tighten it.
2. Slide the counterweight (4) on the counterweight bar (2) and lock it with the locking screw (3).
3. Screw the counterweight bar security screw (5) in place and tighten it .
4. Add Counterweight Extension rod if needed.
5. When using a large telescope, make sure its weight does not exceed 33lbs/15kg and the distance between the center of the telescope and the RA axis of the mount should not exceed 7 3/4"/20cm. Make sure the telescope is properly balanced around the RA and the DEC axis .

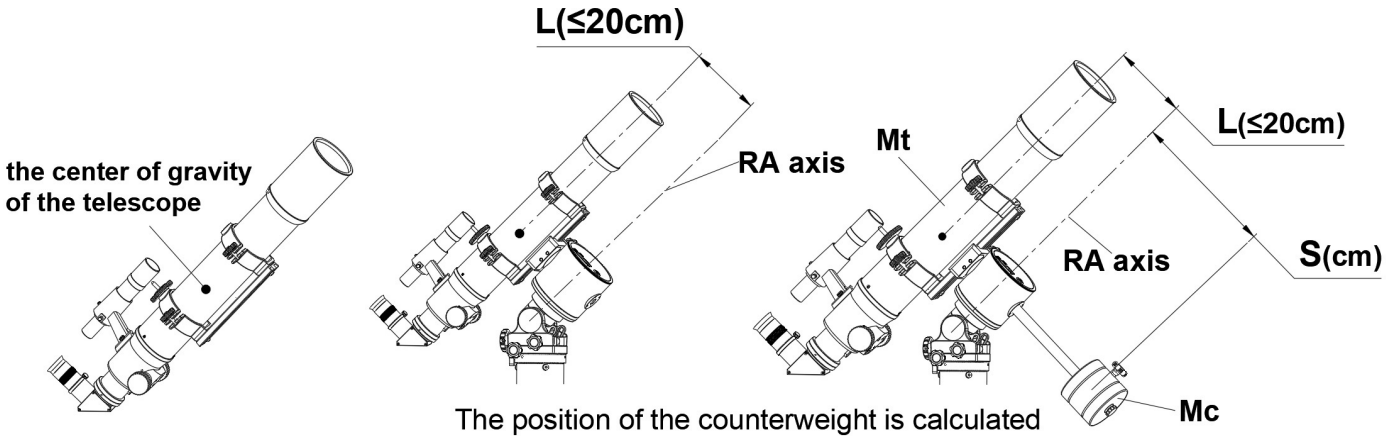


1.Telescope locking knobs
2.Counterweight bar
3.Counterweight locking screw
4.Counterweight
5.Counterweight bar security screw

Fig. 6

In Equatorial (EQ) Mode (Fig.7):

1 . The RA axis needs balancing with heavy telescopes only. Telescopes with a weight below 22lbs/10kg do not need RA balancing.
2. The DEC axis needs balancing with heavy telescopes only. Adjust the position of the telescope (by shifting the dovetail in the saddle or by shifting the telescope in the tube rings) to maintain balance of the telescope around the DEC axis



The position of the counterweight is calculated according to the following formula:

Mt x **L=Mc** x **S**

Mt:weight of the telescope

Mc: weight of the counterweight

Fig. 7

In Alt-Azimuth (AZ) Mode (Fig.8):

3. The AZ axis (same as RA axis, here for horizontal movement) doesn't need balancing for all telescopes up to the maximum load of the mount 33lbs/15kg for primary clamp and the second clamp can be loaded 13lbs/6kg.
4. The ALT axis (same as DEC axis, here for vertical movement) needs balancing with heavy telescopes only. Put the telescope in a horizontal position and adjust the position of the telescope (by shifting the dovetail in the saddle or by shifting the telescope in the tube rings) to maintain balance of the telescope around the DEC axis.

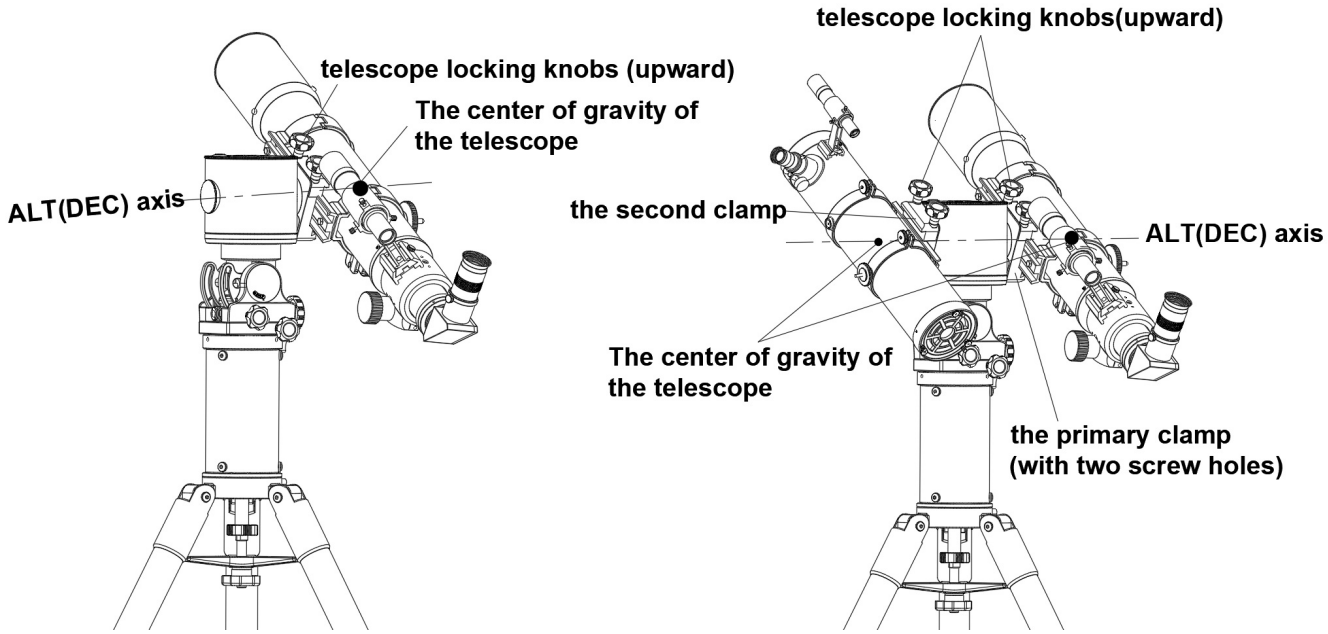


Fig. 8

1.6 Installation of the Second Saddle (Alt-AZ Mode)

1 .Install the second saddle on the mount, and use a hex key to lock the saddle onto the mount with two countersunk allen screws M5 and two cylindrical allen head screws M6.

2. Install the cover plate on the saddle.

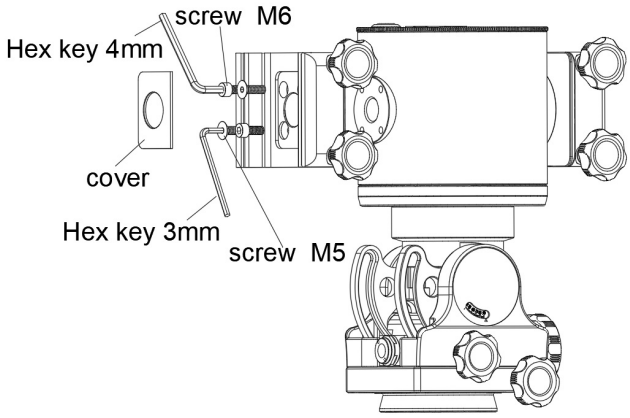


Fig. 9

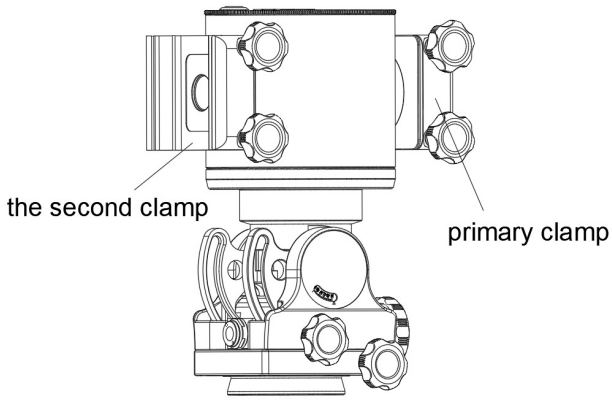


Fig. 10

Dual Saddle Adjustment

1. Use a 3mm hex key to adjust and lock the two screws on the side of the primary saddle, ensuring that the two telescopes are aligned in the same direction. Fig.11

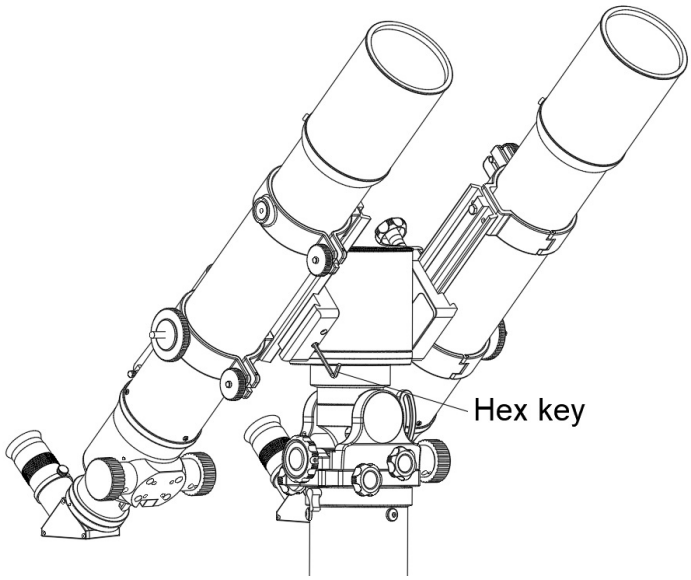


Fig. 11

Part II: Polar Alignment of the WAVE100i Mount

2.1 General Process

1. Slightly loosen the two Latitude Locking knobs.
2. Turn the Latitude Adjustment Knob to let the latitude scale read the local latitude.
3. Point the RA axis to the pole.
4. Use one of the techniques below to perform a polar alignment.
5. Tighten the the Latitude adjustment knob and the Azimuth adjustment knobs at the end of the polar alignment.

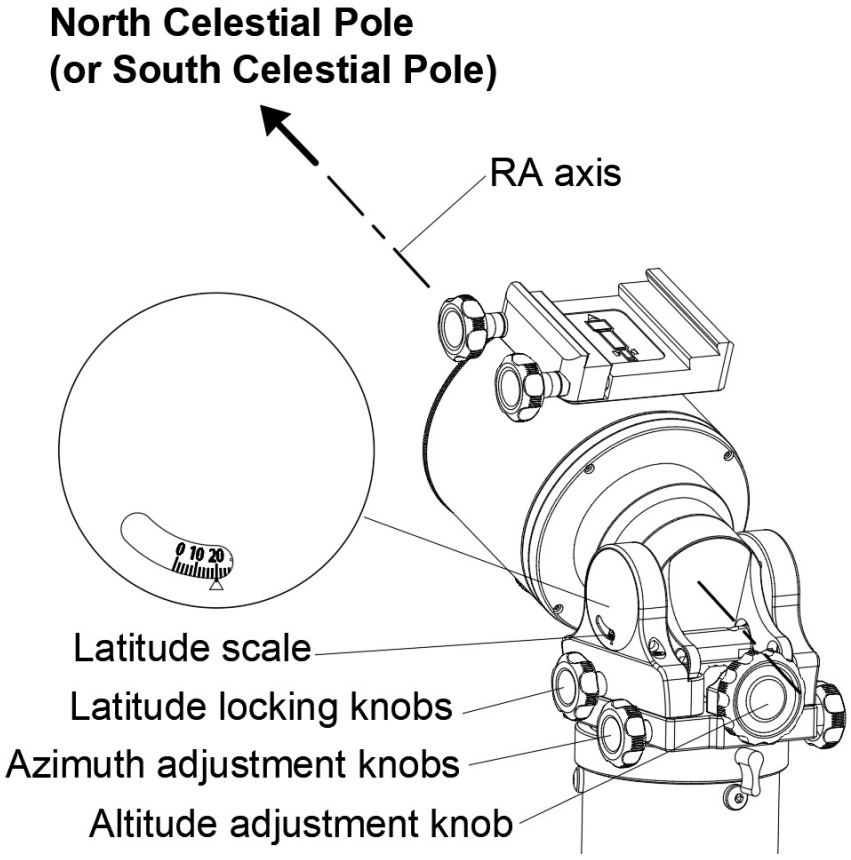


Fig.12

2.2 Polar Align Based on Star Alignment

1. Run a 2-Star alignment with the SynScan Pro app or the SynScan hand contoller.
2. Start and finish the polar alignment process in the SynScan Pro app or the SynScan hand controller. Refer to the instruction manual of the SynScan Pro App or the SynScan hand controller for details.
3. Repeat the above steps two or 3 times.

2.3 Polar Alignment Based on Imaging

Many applications like SharpCap Pro and PHD2 provide highly accurate imaging based polar alignment. Please refer to the instruction manual of those applications for details.

Part III: Electronic Control Interface

3.1 Control Panel

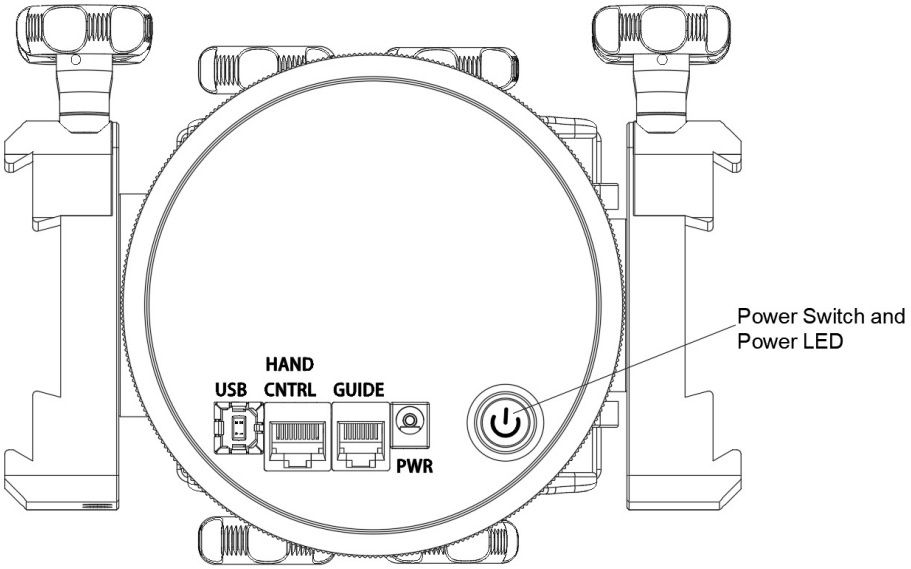


Fig. 13

PWR: Power supply Input

USB: Communication port for connecting to a computer or an Android device

HAND CNTRL: Communication port for connecting to a SynScan controller or other devices

GUIDE: For connecting to an Autoguider with a ST-4 interface

Power Switch: Turn power On/Off, with LED:

1. Single flashing with short On time: Wireless module is ready for connection.
2. Double flashing: Wireless connection established.
3. Steady On: Wireless module is turned off due to long idle.
4. Single slow flashing with equal On/Off time: Power voltage is low.
5. Single quick flashing: Power voltage is extremely low, stop using the mount immediately.
6. Triple flashing: Firmware update not finished.

3.2 Pinout of the Interfaces:

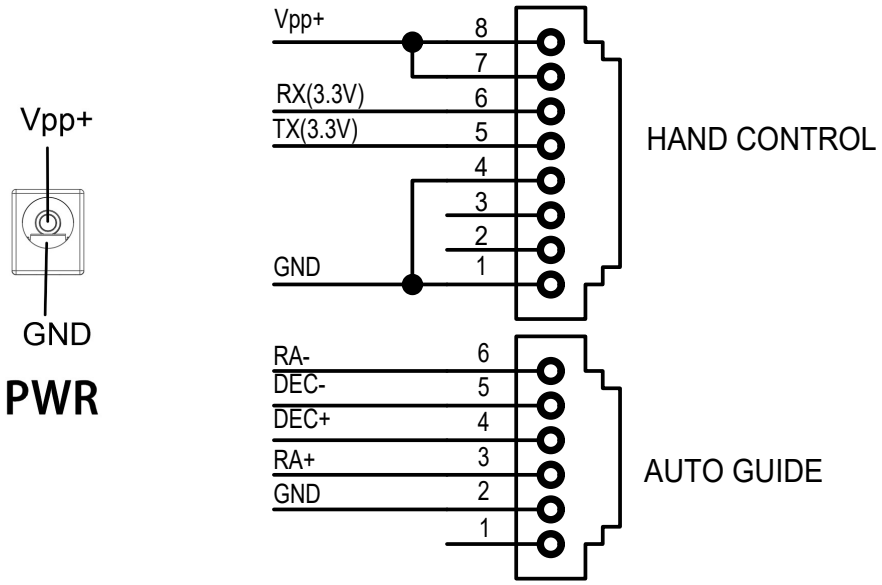


Fig. 14

3.3 Power Supply Requirements

1. Output Voltage: DC 12 to 16 V, higher voltage is recommended
2. Power Rating: >55W
3. Barrel Plug: 2.0mm I.D, 5.5mm O.D., central positive
4. Do not us an unregulated AC-to-DC adapter.

Part IV: The WAVE100i Mount Features

4.1 SynScan Pro App

The SynScan Pro app is the recommended controller for the Wave 100i mount.
Windows and Mac version: Download from www.skywatcher.com. Supports USB, Wi-Fi, Bluetooth connections.
Android version: Download from Google Play or www.skywatcher.com. Supports USB, Wi-Fi and Bluetooth connection. While using an USB connection with an Android device, a USB On The Go dongle is required.

iOS version: Download from App Store. Supports Wi-Fi and Bluetooth connections.
The SynScan Pro app can also work with a tablet on all platforms. Please refer to the SynScan Pro app's online help or instruction manual for details.

4.2 SynScan Hand Controller

The SynScan hand controller is an optional controller for the Wave 100i mount. Please refer to the SynScan hand controller manual for detail instructions.

4.3 Auto-Home

The SynScan Pro app can return the mount to the same home position. Start the Auto-Home operation in SynScan Pro app's menu "Utility\Advanced\Auto Home"

* For equatorial mode: Fill the Dec Offset with 0, the mount will return to the polar-home position.

* For alt-az mode: Fill the Dec offset with -90, the mount will return to the north-level position.

NOTICE: Avoid starting Auto-Home in the following position:Dec/Alt=-90°/270°.

4.4 Illumination

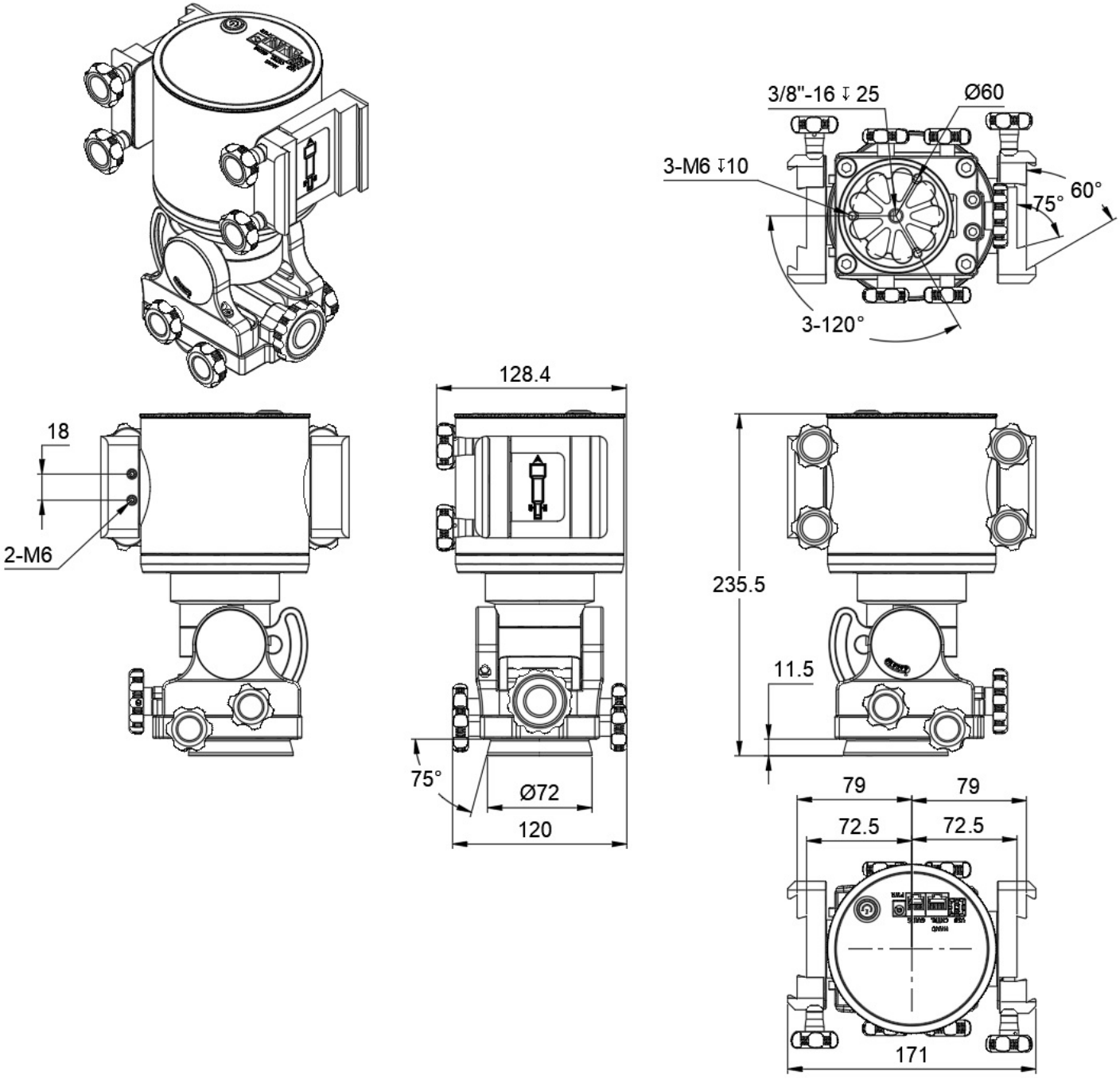
The WAVE 100i has illuminated latitude scale and level bubble. The brightness can be adjusted using the Polar Scope Illuminator settings in the SynScan Pro app or the SynScan hand controller.

4.5 Firmware Update

Please visit **www.skywatcher.com** to check for the latest firmware for the Wave 100i mount. The firmware can downloaded with the Motor Controller Firmware Loader application. Detail instuction is included in the application package.

APPENDIX: SPECIFICATIONS

Dimensions (mm)



APPENDIX: SPECIFICATIONS

Specifications:

Product Name	WAVE100i mount
Mount Type	Equatorial /Alt-Az Dual Mode
Max Payload	10kg (without counterweight) and 15kg (with 5kg counterweight)
Polar Alignment Range	90 Degrees in Latitude, 20 Degrees in Azimuth
Weight	4.2 kg
Counterweight (optional)	1x 5kg
Counterweight Rod (optional)	0.7kg+0.4kg
Extension tube (optional)	1kg
Motor Drive	Stepper Motor (1.8°/step), 256 Microsteps per step
Gear Ratio	81x4
Power Supply	DC12V to 16V,＞55W
Maximum Slewing Speed	7.5 degrees/second
Auto-guiding Speed	0.125X, 0.25X, 0.5X, 0.75X, 1X
GOTO Controller	SynScan Pro app or SynScan Hand Controller (Optional)
Operational Temperature	-10°C ~ 50°C
Celestial Object Catalog	Messier, NGC, IC, Caldwell, Double Star, Variable Star, Named Star, Planets
Telescope Mounting Bar	43mm~73mm dovetail bar

Note: The above specifications may be changed without advance notice.

WARRANTY & CUSTOMER SUPPORT

Warranty information differs from region to region. Contact your local dealer for the warranty in your region. Warranty shall be void and of no force of effect in the event a covered product has been modified in design or function, or subjected to abuse, misuse, mishandling or unauthorized repair. Further, product malfunction or deterioration due to normal wear is not covered by this warranty. Sky-Watcher is not responsible for any user modifications to any products.

Sky-Watcher reserves the right to modify or discontinue, without prior notice to you, any model or style telescope. For technical and customer support, you will need to contact your regional support team. Please refer to the Sky-Watcher website and check under

“Global Distributer” for your specific region.

http://www.skywatcher.com/where-to-buy/

WAVE100i Mount

NEVER USE YOUR TELESCOPE TO LOOK DIRECTLY AT THE SUN. PERMANENT EYE DAMAGE WILL RESULT. USE A PROPER SOLAR FILTER FIRMLY MOUNTED ON THE FRONT OF THE TELESCOPE FOR VIEWING THE SUN. WHEN OBSERVING THE SUN, PLACE A DUST CAP OVER YOUR FINDERSCOPE OR REMOVE IT TO PROTECT YOU FROM ACCIDENTAL EXPOSURE. NEVER USE AN EYEPIECE-TYPE SOLAR FILTER AND NEVER USE YOUR TELESCOPE TO PROJECT SUNLIGHT ONTO ANOTHER SURFACE, THE INTERNAL HEAT BUILD-UP WILL DAMAGE THE TELESCOPE OPTICAL ELEMENTS.