AZ100 Alt-Azimuth Mount.

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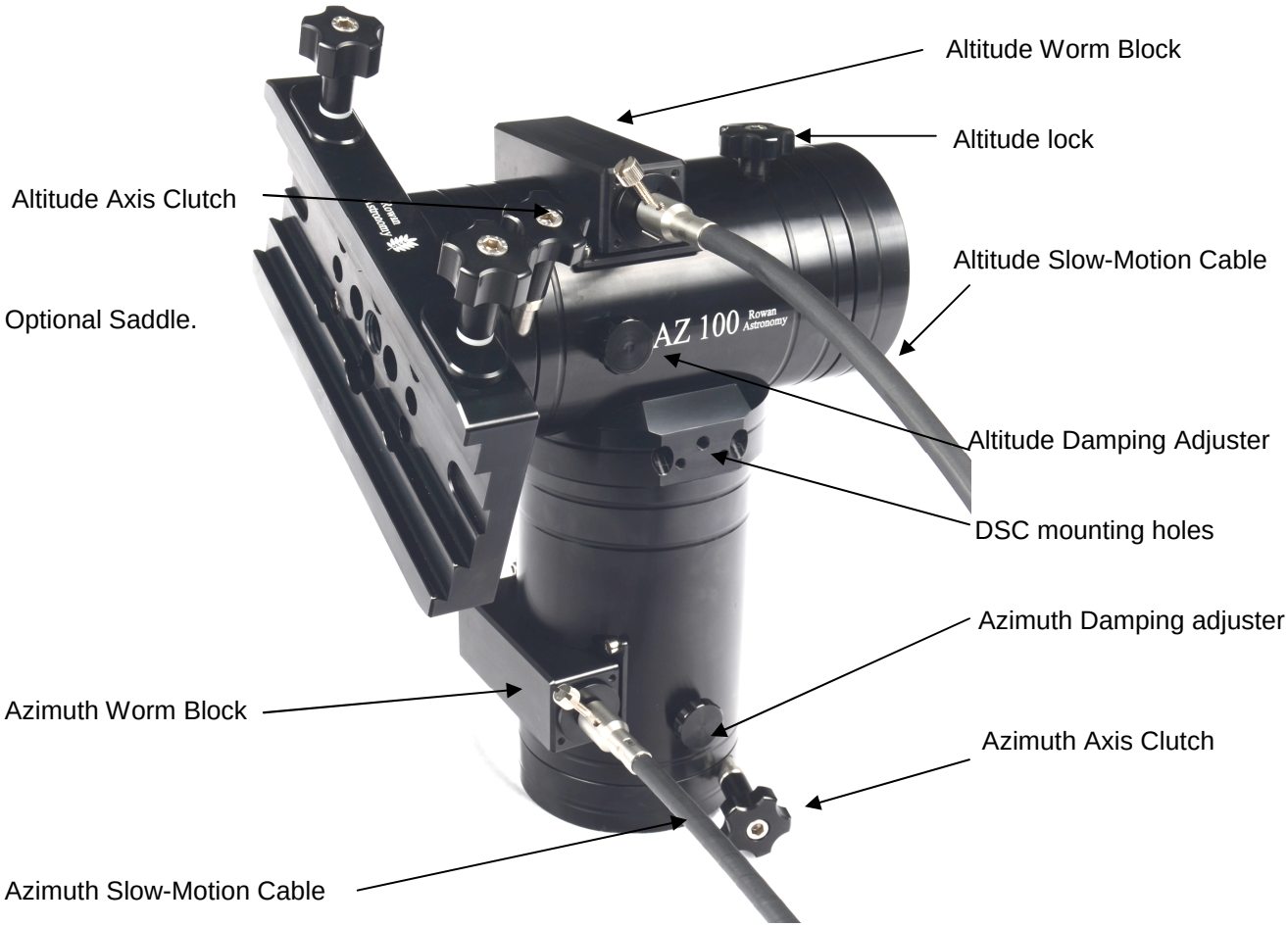
AZ100 Alt-Azimuth Mount.

Please read all instructions before attempting to set up your AZ100 mount.
The AZ100 is very rugged; however, like any precision instrument, it can be damaged by improper handling.
Please refer to the diagram below for an illustration of the mount.



Mounting capacity.
The AZ100 has a capacity of 15-20kg per side depending on the lengths of the telescopes in use.
Generally it is recommended to mount the heavier of the 2 scopes on the left side of the mount in the saddle shown. And if using one telescope attach this also on the left side of the mount as the left side is designed to have a slightly higher capacity than the right.
If using a counterweight shaft attach this on the right side of the mount in the central M16 hole of the saddle or using the counterweight mounting flange.

Azimuth and Altitude Clutches.
The clutches are fully adjustable and can be set over a wide range to give the required amount of friction to the axis**.** (**NOTE**: these are removed for shipping, refit before using the mount)

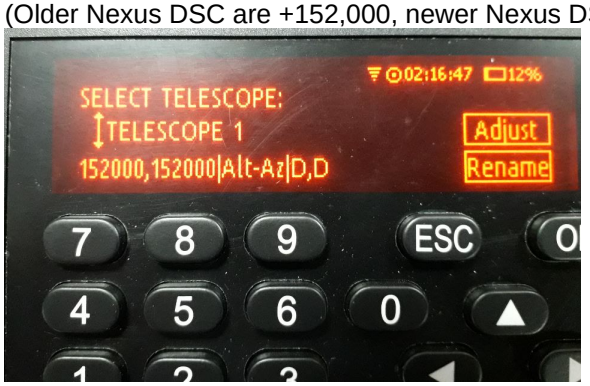
Altitude Lock
Gently tighten to hold the telescope in position while there is an imbalance when changing eyepieces. It must be fully released for push-to movements and slow-motion tracking.

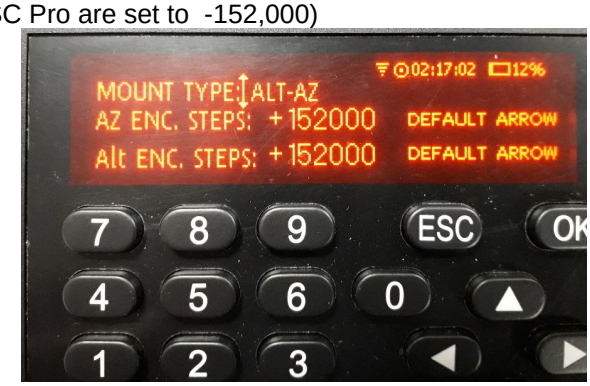
Azimuth and Altitude Damping Adjusters.
Each axis has a pair of damping adjusters. These allow additional friction to the slow-motion controls only to aid a smoother movement with large or long telescopes. Set them with approximately the same tension.

Slow Motion Flexible Shafts.
Fit the longer flexible shaft to the Altitude axis and the shorter to the Azimuth axis. This will position the 2 hand control knobs adjacent to each other.
Gently tighten the thumb screw so it makes contact on the flat area of the worm shaft.
The flexible shafts are formed with a torsional stiffening process and they can not be cut or shortened.
Please contact us if you require customised slow motion shafts.
The handles can be removed from the shafts and fitted directly on to the worm blocks (main photo).

Nexus DSC
When purchasing a Nexus DSC with the AZ100 mount, the Nexus will be pre-configured to use Telescope 1 with the AZ100 encoders.

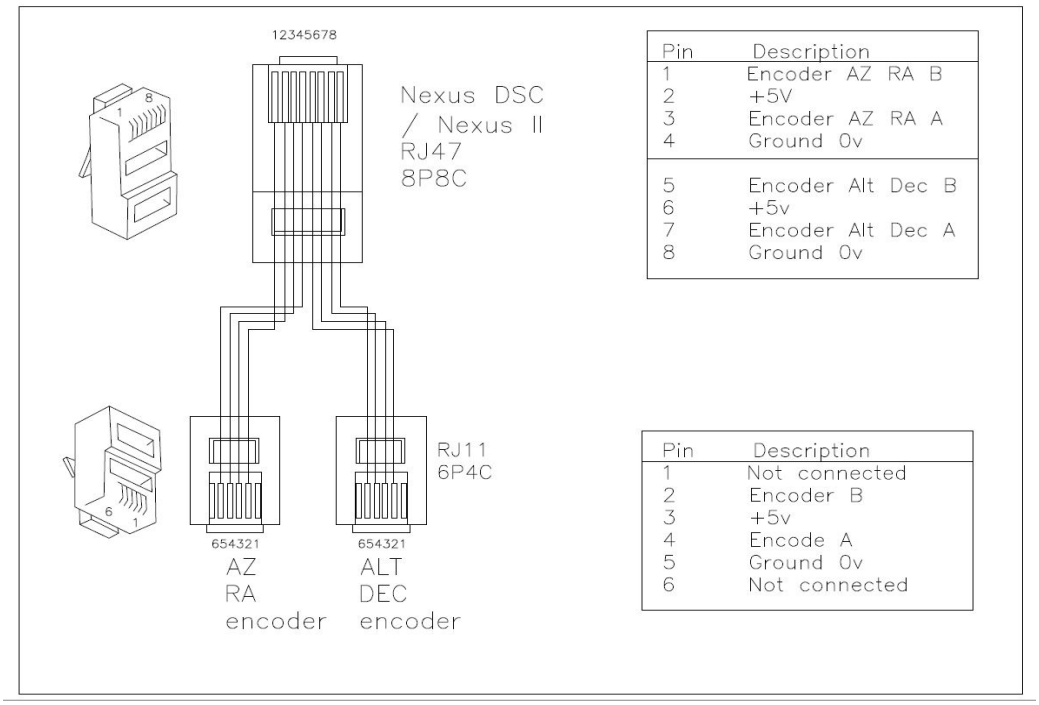
If you are using an existing Nexus DSC, go to the Settings > Telescope > Adjust screen and enter the settings as shown below.
(Older Nexus DSC are +152,000, newer Nexus DSC Pro are set to -152,000)





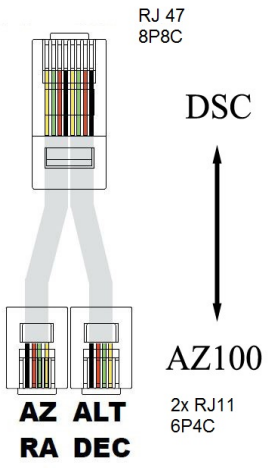
Encoder Specification.
152,000 ticks per rev. on each axis.+5v, GND, Channel A & Channel B
Ensure encoder cable pin-out is correct
Incorrect wiring may damage the encoder module and/or DSC.
We recommend only using an original AZ100 Astro Devices or Rowan Astronomy cable.

If performing maintenance to the mount at any time, do not allow any magnetic or magnetised objects to come in proximity to the internal magnetic encoder rings.



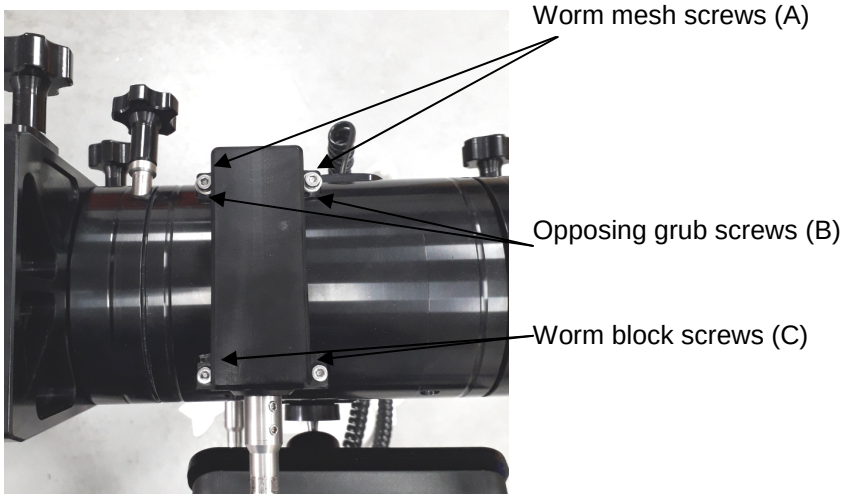
Pin	Description
1	Encoder AZ RA B
2	+5V
3	Encoder AZ RA A
4	Ground 0v
5	Encoder Alt Dec B
6	+5v
7	Encoder Alt Dec A
8	Ground 0v

Pin	Description
1	Not connected
2	Encoder B
3	+5v
4	Encode A
5	Ground 0v
6	Not connected



See Web site for colour photo.

Worm Adjustments.
Worm mesh adjustment may be necessary from time to time. The adjustment is straightforward and the user should not be hesitant to attempt this and in doing so will achieve the best performance from the AZ100 mount.



Before adjusting the worm mesh check the balance of the telescope is as close to balanced as possible with the eyepiece and finders fitted.

The worm mesh can be set by adjusting the worm mesh screws (A) and opposing grub screws (B) at the opposite end to the slow-motion control shaft.
The worm block screws (C) should remain tightened. (Approx. 2Nm torque setting)

Start with the worm mesh screws (A) and opposing grub screws (B) loosened off. The slow motion shaft should turn freely with virtually no resistance. You may also feel a small amount of free backlash in the axis.
Make very small inward adjustments equally to both worm mesh screws (A) and at the same slowly rotate the slow-motion control to feel when the resistance changes.
Once a very small amount of additional resistance can be felt on the slow motion control, this is the point where the worm is just coming in to contact with the wheel gear and the mesh is now initially set. Gently tighten the opposing grub screws (B) in to contact to lock the worm block in position.
Further small adjustments to the mesh can be made depending on the user's preference and telescope configuration.

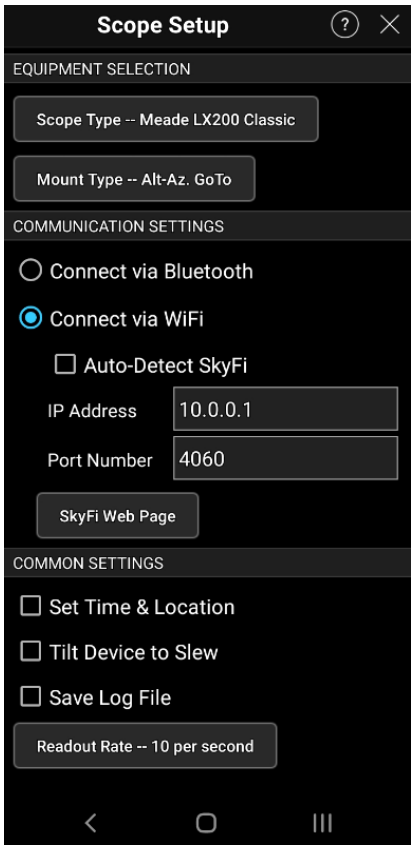
Cleaning
When required wipe over with a clean cloth preferably microfiber. Don't use strong chemical cleaning solutions.

Maintenance.
It is advisable to re-grease the worm wheel gearing every 12-24 months depending on use and environmental conditions. Also the threads on the damping knobs.
We recommend Aeroshell 33 or compatible grease.
Remove any telescopes from the mount. Warning - If the worm block is removed whilst a telescope is mounted the axis will be free to turn uncontrollably !
Remove the 4 x M4 cap screws holding the worm block and lift away from the axis body.
Clean the old grease from both the worm and wheel gear. A tooth brush is ideal for this.
Once clean, re-grease the wheel with Aeroshell33 or similar with sufficient grease to fill the gap in each of teeth on the wheel gear. Apply a thin coating to the central section of the worm too. Don't over-grease.
Replace the worm block taking care to engage the worm in to the wheel teeth and then replace the 4 x M4x12 cap screws in to the worm block. Do not tighten these until you are sure the worm is properly meshed into the wheel gear.
Re-set the worm mesh as per the procedure above.

Connecting Nexus DSC with SkySafari with Wi-fi

Seup the AZ100 with the Nexus DSC and turn on the Nexus DSC.
On your smart device go the the Wi-fi settings and in the list of available Wi-fi connections, select the Nexus DSC Wi-fi.
Ignore the warning indicating limited or no internet connection and connect to the Nexus.

Open the SkySafari application on your smart device.
Click the Settings Icon at the bottom of the screen and scroll down the settings page to Telescope Setup.
Open the Telescope settings page and enter the settings as shown in the table below.

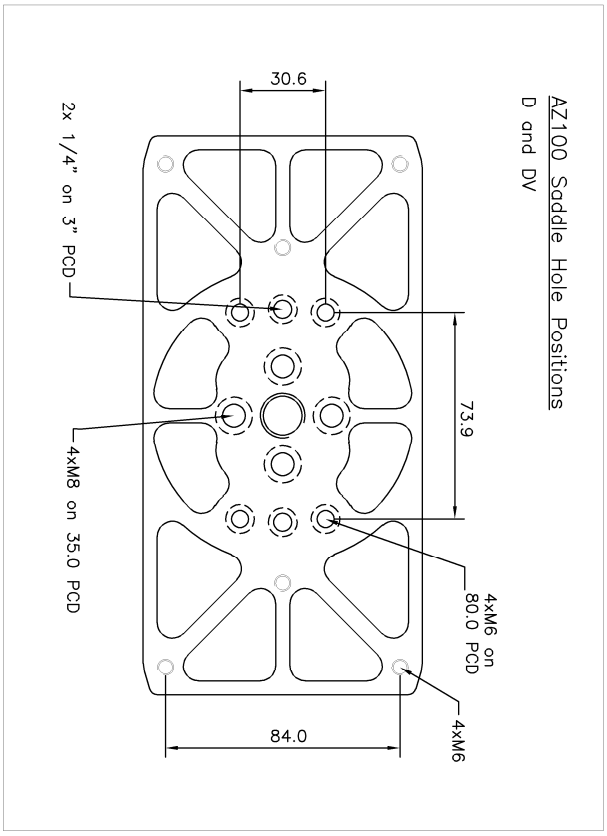


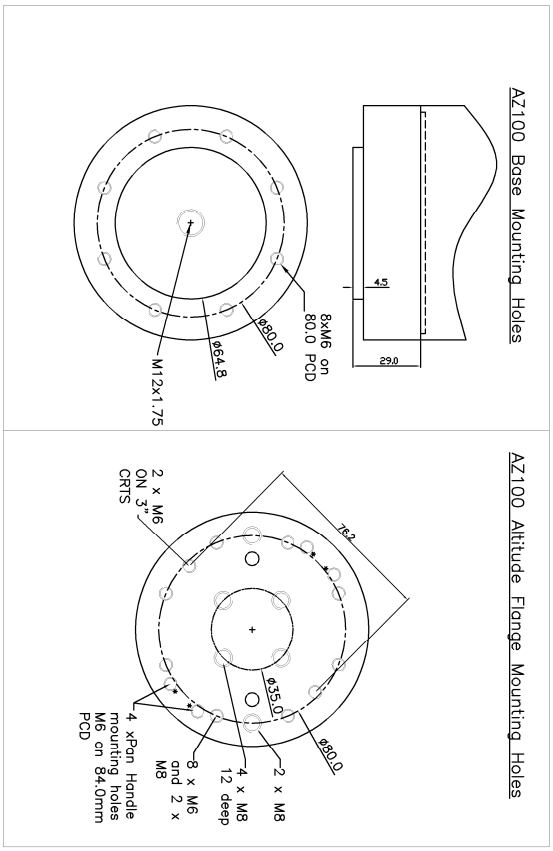
You may need to close and re-start SkySafari when changing the setting above.

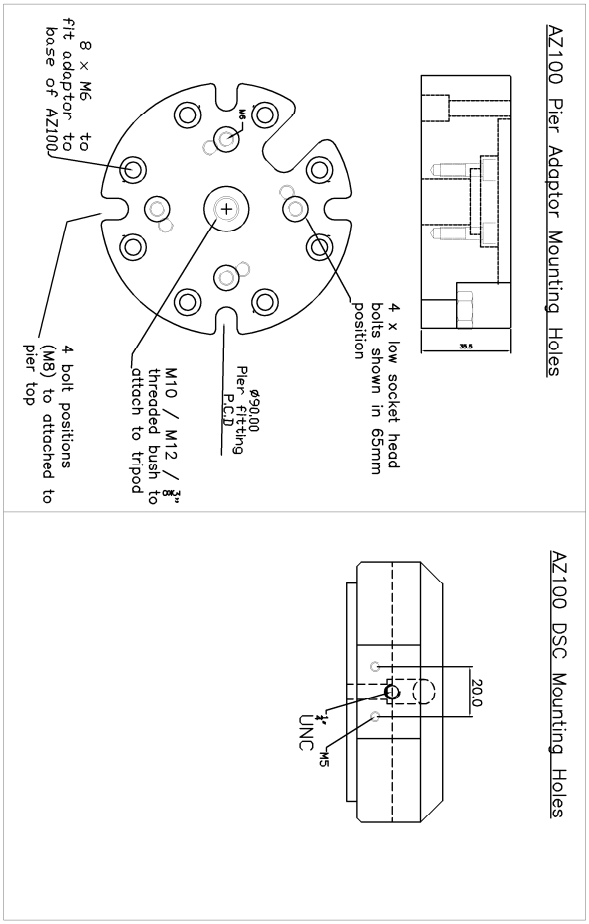
When SkySafari is started it now connects to the Nexus DSC and the cross hair should sync with the telescope pointing position. When the telescope is moved the cross hair will follow the telescopes position
You can then scroll around the planetarium and select objects. Clicking Goto at the bottom of the SkySafari screen will send the new object co-ordinates to the Nexus DSC. The Nexus DSC will then indicate the direction and angle to move the telescope to acquire the new object.

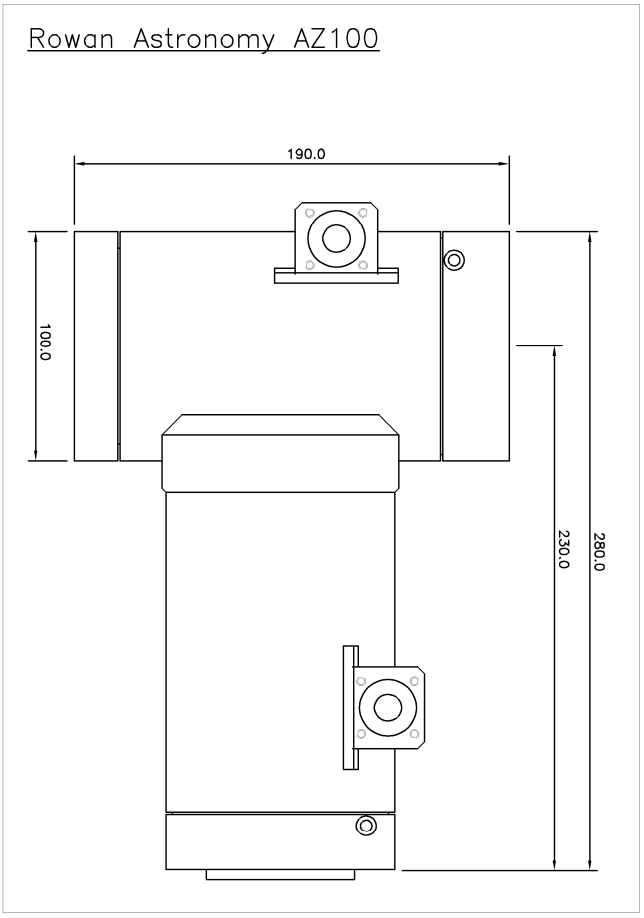
For further information or advice about using or adjusting the AZ100 please e-mail Rowan Astronomy at sales@rowanastronomy.com or contact us on our office number +44 (0) 1295 251188

A .pdf version of this instruction sheet with higher resolution photos is available in the support section of www.rowanastronomy.com









Technical Specification

CNC machined aluminium and black anodised finished and fitted with stainless steel hardware.
Mount weight : 8kg
Mount weight with 2 x DV saddles 9.8kg
Payload Capacity: 20Kg per side.
Slow motion worm drives on each axis 160 teeth Alt and AZ axis.
Slow motion controls stay aligned to the user at all times.
Slow motion shafts included. 340mm & 440mm long each.
Operating temperature range 40C to -20C

Renishaw high resolution encoders (152,000 counts / rev) to interface with DSC's (option).

Range of optional accessories available.