

# GUAN SHENG OPTICAL (GSO) 16" TRUSS DOBSONIAN ALTITUDE ENCODER INSTALLATION

1) In order for you to install an encoder on the altitude axis of your telescope, one of the brushed aluminium trunnions on your mount will require modification. If you are a new or existing Argo Navis owner, Wildcard Innovations will perform this modification for you as a courtesy service when you purchase this installation kit from them. Alternatively, you may have purchased a telescope from a Wildcard Innovation's dealer with the modification already made. If you require the modification, email [sales@wildcard-innovations.com.au](mailto:sales@wildcard-innovations.com.au) and we will supply you with a reference number and details on how and where to ship the trunnion. Both trunnions on the mount are identical, however it is recommended that the trunnion with the modification be fitted on the side of the mount you plan on using the Argo Navis on. Typically this will be the same side of the mount that has the eyepiece holder. To remove the trunnion, unfasten the two screws as shown in Fig 1a. Retain the screws by re-inserting them into the square nuts that are captive on the mount as shown in Fig. 2b. Do not ship the screws to Wildcard. The modified trunnion will retain all of its original functionality, including acting as a tensioning device.



Fig. 1a



Fig. 1b

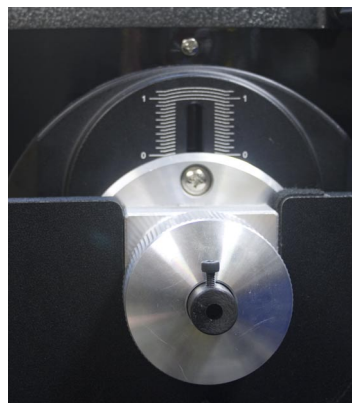


Fig. 2

2) Install the modified trunnion onto the optical tube so that the black socket head cap screw on the encoder coupler is facing up, as seen in Fig 2. If need be, adjust the trunnions on both sides to achieve the correct balance for the scope when the top end secondary cage is installed and an eyepiece is in place. It is very important that both trunnions be positioned at identical heights, otherwise the pointing performance of the system can be affected since the optical tube will otherwise point slightly to one side. Use the graduated scales on the optical tube altitude axis to set the identical height for both trunnions.



Fig. 3

3) Loosen the encoder coupler cap head screw and with the encoder tangent arm bracket facing upwards, insert the encoder shaft all the way into the coupler as shown in Fig 3. Rotate the tangent arm around to approx. the 4 o'clock position as shown in Fig 4. Make a mark on the side of the rocker at a point midway along the slot in the tangent arm. Remove the tangent arm and encoder and lift the optical tube out of the rocker box. At the marked point, carefully drill a 9mm (23/64") diameter hole approximately 14mm deep (do not be concerned if hole goes all the way through side of rocker box) to accommodate the supplied brass threaded insert. Carefully thread the self-tapping brass insert into the hole using a wide flat bladed screw driver, ensuring that the insert feeds in at a perfect right-angle with respect to the side of the rocker. Thread the insert in so that it is flush with the surface of the wood. Place the optical tube back onto rocker box and re-attach encoder into coupler. Fasten the encoder shaft into the coupler by tightening the M4 socket head cap screw on the side of the coupler, using either fingers or the supplied M3 hex key. Locate tangent arm slot above brass insert. Thread supplied 5/16" socket head shoulder screw through slot and into insert. Fasten shoulder screw with fingers or with supplied 5/32" hex key. Tangent arm should be free to 'float' and slide on silver colored shoulder of shoulder screw. Fasten two of the supplied self-adhesive cable clips near the end of the tangent arm to act as strain reliefs for the encoder cable as seen in Fig 4. The clip closest to the end of the tangent arm should have its opening facing upwards and the clip to its left oriented with its opening facing downwards.

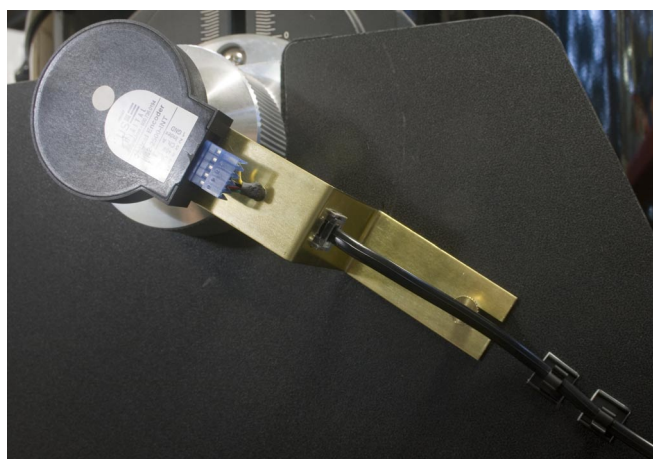


Fig. 4

## PARTS LIST -

1. Modified altitude trunnion with encoder coupler
2. Altitude encoder and tangent arm bracket
3. M3 hex key for M4 coupler socket head cap screw
4. Threaded brass insert with 1/4" inner thread
5. 5/16" socket head shoulder screw
6. 5/32" hex key for socket head shoulder screw
7. 2 x cable clips