



## Components

- 1 Sky Commander Digital Setting Circle Computer
- 1 Sky Commander Digital Setting Circle Manual

## Hardware

- 1 Azimuth Encoder Tangent Arm
- 1 Azimuth Tension Knob
- 1 Azimuth Thrust Bearing - needle roller
  
- 1 Altitude Encoder Mount w/thumbscrew
- 1 Altitude Tangent Arm retaining screw #8 x 3/4"
- 1 Tension Knob - predrilled by Astrosystems
  
- 3 Cable Retainers - adhesive
- 1 DSC Post Mount Tube
- 1 Tube thread insert (in mount tube)
- 1 Mount Plate Screw 1/4 x 1"
- 1 Bottom Tube Mount Screw #8 x 3/4"
- 1 Middle Tube Mount Guide - Grommet

- 2 Encoders – 10,000 step
- 1 Cable set

- 1 Az. Tangent Arm retaining screw #8 x 3/8"
- 2 Azimuth thrust washers 3/8"
- 1 Azimuth Pivot "T"nut 3/8"
  
- 1 Altitude Encoder Tangent Arm
- 1 Altitude encoder retaining screw collar 1/4"
- 3 Wire ties
  
- 1 Pivot Bolt hex key 5/64"
- 1 Bottom Tube Mount
- 1 DSC Mount Plate
- 1 Fender Washer 1/4"
- 1 Computer mount Velcro

## Tools/Supplies

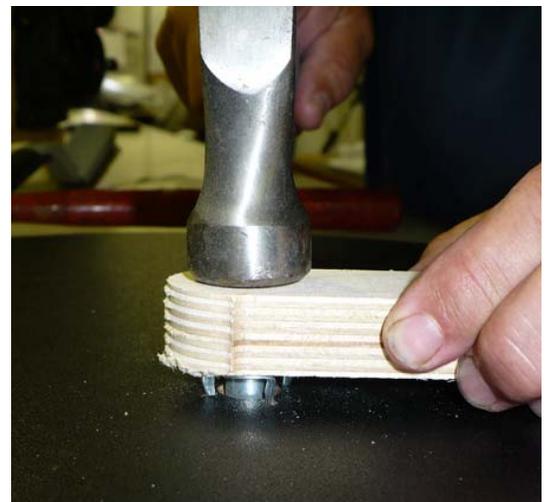
- |                |                         |                                     |
|----------------|-------------------------|-------------------------------------|
| Drill          | Phillips Screwdriver #2 | Silicone Glue (adhesive, not caulk) |
| Drill Bit 1/8" | Wrench 1/2" or pliers   |                                     |

## **Installation**

### **Azimuth Encoder**

Remove the telescope tube from the rocker box. Remove the azimuth knob in the bottom of the rocker box and lift the rocker box off the groundboard. Remove the round metal plates with the azimuth bearings sandwiched between and the short 1/2" metal tube. Turn the groundboard over and use a 8mm or 5/16" hex key to remove the threaded insert in the groundboard.

Install the 3/8" T nut into the groundboard from the bottom (foot side) using a scrap piece of wood while tapping in with a hammer so the T nut is not deformed.

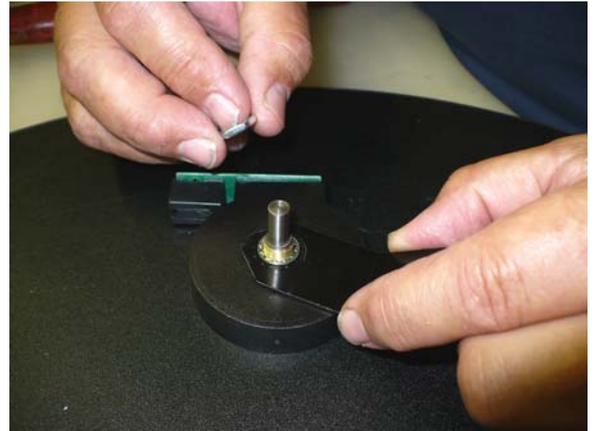


Turn the groundboard over, replace bearings/metal bearing plates on the top of the groundboard, center over the pivot hole and replace the metal sleeve. Replace the rocker box, centering it over the metal sleeve. Place a 3/8" washer on the Tension knob followed by the thrust bearing and then another 3/8" washer. Thread the Tension Knob through the rocker box bottom and into the Tnut in the groundboard, finger tight.



### **Azimuth Encoder**

Remove the nut and one washer from the azimuth encoder and place the short aluminum azimuth arm on the encoder with the bend angle toward the encoder shaft. Place the small star washer and nut over the encoder shaft and tighten with a 1/2" wrench, crescent wrench or square nose pliers.



Press the encoder shaft into the Tension Knob and tighten the pivot bolt setscrew with the supplied 5/64" hex key.

Mark the end hole of the arm on the rocker box bottom and drill 1/2" deep with a 1/8" bit. Install the #8 x 3/8" retaining screw to fasten the azimuth tangent arm.



## Altitude Encoder

Remove the tube assembly from the mount and then remove the entire tension assembly (focuser side) from the tube.

Remove the tension knob by loosening the retaining screw and turning off. This is the tension knob that was modified by Astrosystems.

Remove the thumbscrew from the altitude encoder mount and check the fit of the mount by inserting it in the backside of the housing. It should seat with the base of the mount just below the surface of the bearing assembly.

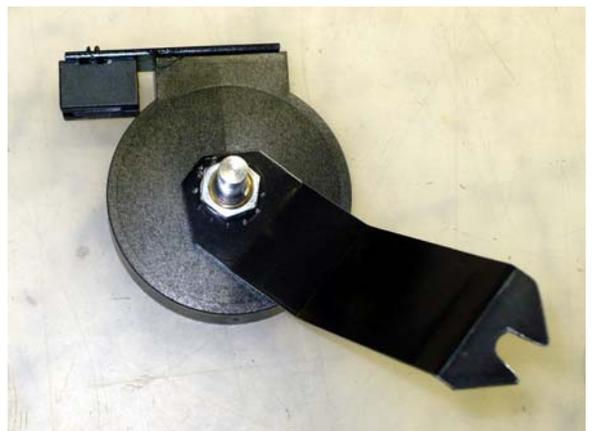


Install the encoder mount by applying a small amount of silicone glue to the top of the base and slide in the bearing assembly. Orient the threaded hole for the thumbscrew to the right. This is looking from the outside while holding the bearing assembly with its curved end down. Allow the silicone to cure for 12-24 hours.



Reassemble the altitude bearing assembly and attach to the telescope tube. Set the telescope into the rocker box.

Remove the nut and one star washer from the altitude encoder and place the tangent arm on the encoder. Replace the outer star washer, thread the nut on the



encoder. Orient the tangent arm as in the photo and tighten the nut.

Slide the encoder in the encoder mount and mark the side of the rocker box for the retaining screw position. Drill a 1/8" hole 5/8" deep, slide the 1/4" OD x 1/8" tall plastic collar over the screw and install. This photo shows the retaining screw installed just below the friction knob. The tangent arm notch slides over this screw, allowing the tube to be removed easily by removing the encoder.



### **Post Mount**

Use the supplied 1/4" x 1" screw to attach the Mount plate to the end of the tube with the thread insert. Place the 1/4" fender washer between the tube and plate and tighten. Install the grommet in the far right hole of the eyepiece rack.



Slide the Computer mount post through the grommet in the eyepiece rack and align vertical by checking from the front and side. Mark around the outside of the truss and remove. Find the center of this circle and using a 1/8" drill bit drill 5/8" deep. Install a #8 x 3/4" screw through the tube retainer and install in the



rocker box. The photo shows the tube retainer with screw next to it's mount hole. Slide the mount post through the grommet and onto the tube retainer.

Replace the Altitude Encoder by positioning the slot onto the pin and push the encoder shaft into the encoder mount and tighten the thumbscrew.

### **Wiring and mounting the computer**

Determine the position of the computer on the post shelf and apply the Velcro to the back of the computer and shelf, avoid covering the battery access and then fasten to the shelf. Install the 8 pin plug into computer and run the shorter wire to the altitude encoder. Run the longer wire down the inside of the rocker box and across to the azimuth encoder. Check the movement of the telescope and position the wires so the telescope moves freely. Fasten the wires to the rocker box using the adhesive wire retainers and wire tie to complete the installation. The photo shows two wire retainers but you could use a third in the center of the cable.



### **Set-Up**

Install the tube in the rocker box, install the mount post and attach the Computer to the post. Install the altitude encoder and plug the cable into the computer and into the encoder. Install an eyepiece and adjust altitude balance with the friction knob and azimuth movement with the azimuth tension knob.



The initial computer pre-sets are: Select set-up [1], Scope Mount DOB, Hemisphere NORTH, RA Direction NORM, Dec. Direction REV, RA Encoder Res. 10,000, Dec Encoder Res. 10,000. Leave the rest of the presets on their defaults.

Collimate the telescope then turn the computer on and do the 2 star alignment. Push the up arrow, input the catalog you would like to use. Input an object number, press enter and move the scope to zero the display, your object will be centered or close. Refer to the manual for detailed operation.

**\*NOTE\*** if you adjust the azimuth tension after setting up the computer it will be necessary to redo the 2 star alignment.

***Astrosystems, Inc.***  
124 N. Second Street  
LaSalle, CO 80645  
970-284-9471

Web: [www.astrosystems.biz](http://www.astrosystems.biz)

E-mail: [info@astrosystems.biz](mailto:info@astrosystems.biz)