

# Installation Instructions

## *Baader Planetarium NexStar Bracket* (NexStar 60/80 & 114)

### **Tools Required:**

1. ½" Socket Wrench
2. Metric (4mm) Hex Key Wrench or Flat Bladed Screwdriver
3. Thin Pry Tool (ie, butter knife, putty knife)
4. Medium Phillips Screwdriver

### **NexStar Bracket Parts:**

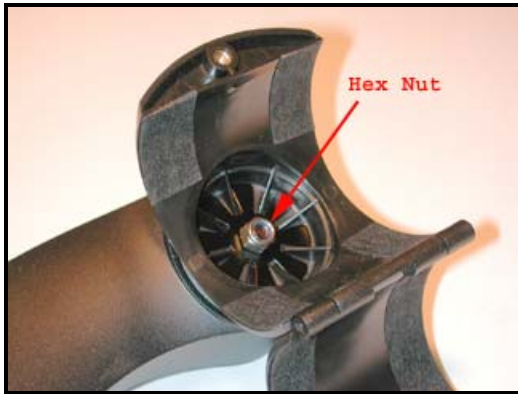
1. Clamp Base
2. Dovetail Clamp, w/ (2) M6 flathead screws (4mm socket head or slotted head)
3. Spacer Ring (NexStar 114 only, will normally come pre-attached to Clamp Base)
4. 4.7" Dovetail Bar



**Preparation:** The easiest way to install the Baader Planetarium NexStar Bracket is to leave the NexStar mounting attached to its tripod (provides a nice way to support the mount during assy). Prior to installation, disassemble the Dovetail Clamp from the Clamp Base, using the supplied 4mm Socket Key or a flat bladed screwdriver (either screw type may be present).

## Step 1

Loosen and remove the tube ring clamp screw and remove the telescope from the tube ring. Swing the tube ring fully open, and notice the exposed hex nut. Using a ½” socket wrench, loosen and remove the nut and its split locking washer. The tube ring, and steel nut backing plate can now be removed.



## Step 2

Affixed to the backside of the tube ring is a thin red spacer disk, which also acts as a slip-clutch friction liner to enable manual telescope motion. This disk must be removed from the tube ring, and transferred to the NexStar Bracket Clamp Base. Using a thin pry tool (ie, butter knife, or putty knife), gently pry up on the disk a little at a time, working your way around the perimeter of the disk (the disk is tough, but you do not want to damage it). The disk should come off cleanly, with the adhesive still remaining on the disk. Center the disk over the flat back surface of the Clamp Base, and press it into place.



### Step 3

Position the Clamp Base over the exposed altitude axis stud, and align the flat on the stud shaft with the corresponding flat edge of the D shaped hole in the Clamp Base. Press the Clamp Base onto the stud. The Clamp Base is designed to mate closely to the stud shaft, and you may find some force is required to seat the Clamp Base fully onto the stud. If the fit is too tight, refrain from using excessive force. You should at least be able to align and partially press the Clamp Base into place, then use the original hex nut (and split lock washer) to fully seat the Clamp Base. Tighten the nut down completely, using the ½” socket wrench.

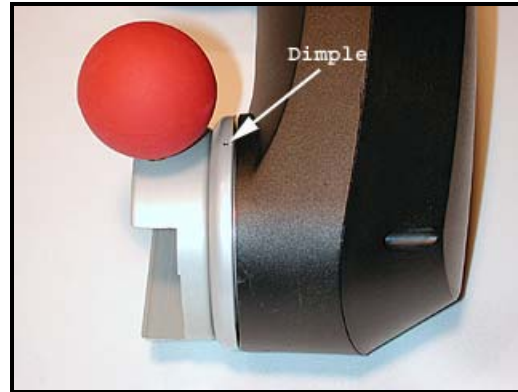


**NexStar 114:** Follow the same procedure as detailed above, but note that a large diameter black spacer ring has been supplied already bonded to the Clamp Base.



## Step 4

The Dovetail Clamp can now be attached to the Clamp Base, using the two M6 Flathead Screws. The recommended orientation is to have the clamp knob on the same side as the small registration dimple stamped into the edge of the clamp base. Fully tighten the two screws. Though the bracket is now fully assembled, I highly recommend performing the altitude axis adjustment procedure outlined below.



## Dovetail Bar Mounting

For many telescopes, the simplest way to attach to the dovetail bar is through use of the center  $\frac{1}{4}$ -20 tapped hole (see below image, of the NexStar 80 tube clamp mounted to the dovetail bar with a single  $\frac{1}{4}$ -20 screw). If your scope has two mounting rings, often they are each provided with a central  $\frac{1}{4}$ -20 threaded hole, which allows them to easily be attached through the two slots provided in the dovetail bar. Telescope mounting rings that are only provided with spaced pairs of mounting holes may be attached simply by hand drilling matching clearance holes in the dovetail bar flanges. Reference grooves are provided in the dovetail flanges at several common spacings (45mm, 48mm, and 60mm), to serve as a useful guide.

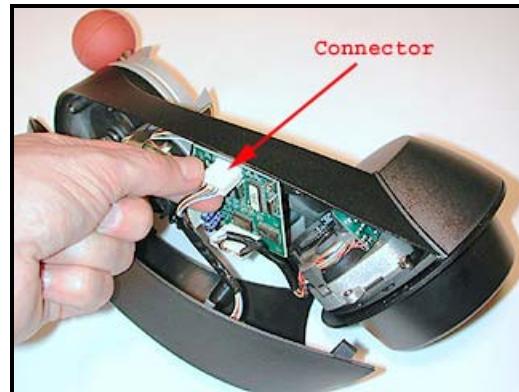


## Altitude Axis Adjustment

Due to manufacturing variations, the altitude friction clutch will usually require some adjustment to get the best performance and life out of your mount. Often, the axis is set too tight from the factory which causes high bearing forces that can result in long goto slewing times or worse, in overloading the drive motor. To determine if your mount needs adjustment, grasp the dovetail clamp and rotate the altitude axis. The axis should move moderately easy – you only need the axis to be adjusted tight enough to overcome any out of balance in your telescope, and not move when bumped or during focusing. If you have to really force the axis to slip, you should consider adjusting the tension as detailed below.

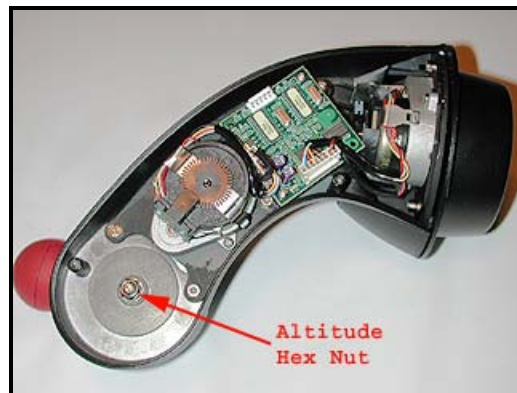
### Step 1

Unplug all external cables, and remove the two phillips head screws that attach the plastic fork arm cover assembly. As you remove the cover, note that the cover is also attached internally by a cable harness – carefully unplug the harness (be sure to grasp the white connector body while unplugging, not the individual wires). Set the cover assembly aside.



## Step 2

Note the hex nut that fastens the altitude axis (see photo). This nut holds the altitude axis together, and supplies the clamp force that seats the altitude drive gear and friction slip clutch. A small cupped spring washer underneath the hex nut controls the amount of clamp force applied. Using the ½” socket wrench adjust the nut until the axis can be moved moderately easy as described above. As noted above, a too-tight adjustment can result in high loads on the drive motor (long slew times, and potential wear). On the other hand, a too-loose adjustment will allow the altitude axis gear to become loose and result in side to side wobble. With a little care, you should be able to get the axis adjusted just right.



## Step 3

Re-install the fork arm cover, making sure to first carefully plug the wiring harness back in to the connector. Note that the connector is keyed and will only plug properly in one orientation. Also ensure that the cable is dressed so that it does not lay across the top of the altitude motor, but tucks neatly into the space above the circuit board.

**Note:** A similar process can be followed to adjust the azimuth axis tension. This axis is sometimes set too tight at the factory (no slip clutch action at all). To adjust this axis, remove the bottom mount bar using a phillips head screwdriver. This will enable access to the underlying hex nut. Adjust the nut in the same manner as described above for the altitude axis, then re-attach the mount bar.

