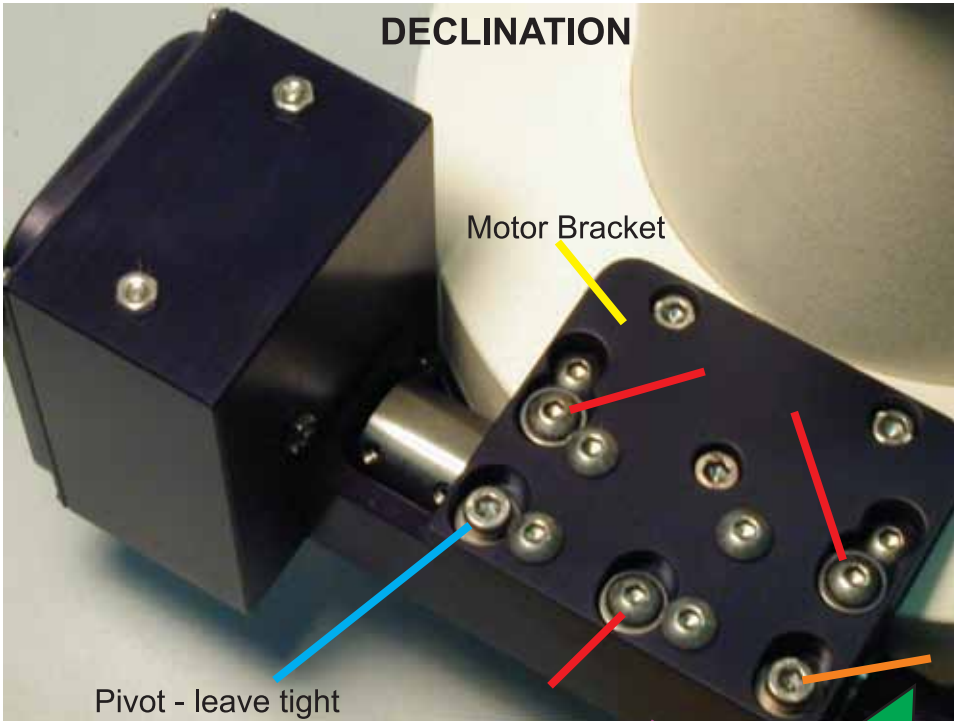


1200QMD Backlash Removal Instructions for Both Axes

ONLY loosen screws with washers!! Do not touch any other screws!



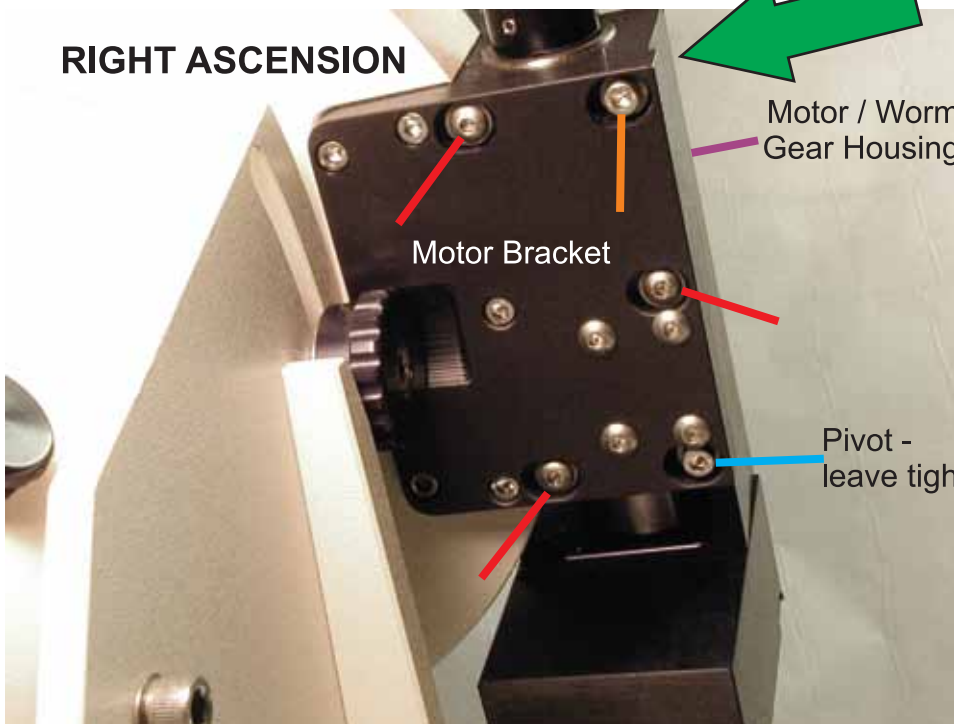
DECLINATION

Motor Bracket

Pivot - leave tight

Motor / Worm Gear Housing

- ⇨ Loosen, but do not remove the 3 button head screws shown with the red arrows.
- ⇨ Barely loosen the socket head screw shown with the orange arrow
- ⇨ Leave the socket head screw shown with the blue arrow tight. It will act as a pivot.
- ⇨ Using a block of wood and a hammer, lightly tap the worm gear housing - NOT THE MOTOR BRACKET - in the direction shown by the green arrow. Tap the housing as far from the pivot screw as possible, but DO NOT tap on the drive test knob.
- ⇨ Tighten all screws and test for backlash. Test through an entire worm cycle every 60 degrees of rotation or so. You want a gear mesh that minimizes backlash while still allowing the worm to turn through any minute high spot that it may have.
- ⇨ Multiple tries may be required to "tweak it just right."
- ⇨ DO NOT over-tighten the gear mesh or your motor will not be able to turn the worm.
- ⇨ DO NOT turn the drive test knob manually! It's purpose is to provide visual verification that the worm is turning. *Turning this knob by hand can destroy your stepper motor.*
- ⇨ If you need to loosen the gear mesh, tap lightly on the motor side of the Motor / Worm Gear Housing. You may wish to further loosen the orange arrowed socket head screw before trying to tap the mesh looser. Then snug it back before trying to re-tighten the mesh.
- ⇨ Hammer notwithstanding - this is precision work. The difference between too tight and having backlash is a matter of one or two thousandths of an inch.



RIGHT ASCENSION

Motor / Worm Gear Housing

Motor Bracket

Pivot - leave tight