

GEAR MESH PROCEDURE FOR 1600GTO, 1100GTO, 1100GTO-AE, 1100GTO-AEL OR MACH1GTO (SERIAL # M10670 AND LATER) MOUNT

Worm / Worm Wheel Mesh

The 1600GTO, 1100GTO, 1100GTO-AE, 1100GTO-AEL and later *Mach1GTO* mounts represent a new era in the ease of worm gear mesh adjustment. Our new design simplifies the process and improves the accuracy of the adjustment. It has become as close to automatic as possible while maintaining a robust and rigid structure. All mounts will eventually require a gear mesh adjustment. Whereas a mount permanently housed in an observatory requires less maintenance, there are still circumstances which require attention. Factors contributing to gear mesh requirements from greater to lesser:

- **Transporting mounts.** Carrying or shipping mounts to local and distant observing sites causes mounts to experience vibration and jostling which can put pressure on the gear boxes and change meshing.
- **Seasonal temperature changes.** Mounts located in geographical areas that experience extreme temperature differences between seasons will change gear mesh. A properly gear meshed mount in the summer may show a loose meshing in the winter and vice-versa.
- **Time and wear.** Over time, gear wear will cause a small change in the gear mesh.

Adjusting Gear Mesh in R.A. and Dec.

1. **Power up and initialize the mount.** Loosen the clutches and put the scope in a Park 1 position (using a level or your eye) and then tighten the clutches. [Park 1 is when the scope is on the west side pointing to the north horizon and the counterweight shaft is on the east side pointing to the horizon.] Next, power up the mount; select your location number and press GOTO; and then tell it to 4=Resume Ref-Park 1.
2. **Send the mount to Park 3.** Using the Keypad from the Main Menu, press 2=Setup / 4=Park / 3=Mount Park. [Park 3 is the position when the counterweight shaft is pointing down and the telescope is pointing towards the pole.] It is important that the scope / mount be in a balanced position (Park 3) for even gear pressure while meshing.
3. **Unpark the mount.** Press the Menu button three times to return to the main menu screen and the mount will resume tracking.
4. **Set the Button Rate to 64x.** Press 6 as many times as necessary to change the Button Move speed to 64x (6=B:64).
5. **Loosen the gearbox lock-down screws appropriate to the axis.** Loosen the R.A. gearbox lock-down screws (5/32" hex key). Tap the gearbox firmly a few times with your fingers to ensure that it properly seats itself via the internal springs. (See photos at right.)
6. **Press the "W" button.** While pressing and holding down the "W" button, unplug the Keypad cable from the GTOCP3 control box. This will allow the R.A. motor to run continuously until you plug the Keypad back into the GTOCP3.
7. **Re-tighten the lock-down screws.** Snug the lock-down screws. Once all are snug, return to the first screw and finish tightening them.
8. **Plug in the Keypad.** Plug in the Keypad and it will power up and stop the mount's tracking.
9. **Repeat for the Dec. motor.** Repeat the above steps 5 to 8, except this time, select either the "N" or "S" button for the Dec. motor adjustment.

Note: The mount will be moving, so you will want to be efficient with your time. Try to perform the above adjustment while the mount is as close to Park 3 as possible.



1600GTO Gearbox



1100GTO Gearbox



Mach1GTO Gearbox