

K1DM3 Technical Note 872-LTN2002

Mirror Installation Set-up & Assembly Plan

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1 Mirror Assembly

- 1.1 Remove come-along eye to allow access to attachment and adjustment hardware
- 1.2 Check Groove Plate nominal position
 - 1.2.1 Was set to nominal 4 mm at pre-ship; no reason to reason to change at this point
 - 1.2.2 Note lateral position to pre-ship parameters as per drawing 872-LM4700 – make sure all HW is hand tight, see Figures 1 and 2
 - 1.2.2.1 M4 HW on Swing-Arm tab features
 - 1.2.2.2 ¼-28 HW on Groove-Lock component parts
 - 1.2.3 Attach Groove Plate lanyards
 - 1.2.3.1 There are two lanyard lengths – longer lanyards go at kinematic that is on the mirror major axis
 - 1.2.3.1.1 Short length – quantity 4
 - 1.2.3.1.2 Long length – quantity 2

2 Attach Mirror Assembly

- 2.1 Remove come-along eye to allow access to attachment and adjustment hardware
- 2.2 K1DM3 on Handling Cart
- 2.3 Swing-arm in face up position
- 2.4 Set Swing-arm to horizontal position to accept mirror
- 2.5 Set mirror (with Grabber) onto kinematics watching lanyards, keep them clear of the kinematics. The mirror assembly will not pinch the lanyards. There is a set gap distance between the Mirror Assembly and the Groove Plate.
- 2.6 Tighten HW as per assembly drawing 872-LM4700 – see Figures 3 and 4
- 2.7 Safety wire the attachment hardware – ¼-20 drilled head hex bolts that secure the Mirror Assembly to The Groove Plate
- 2.8 Attach Mirror Assembly lanyards – note that the longer lanyard goes at the kinematic that is on the mirror major axis

3 After final mirror alignment and adjustments

- 3.1 Final alignments may require:
 - 3.1.1 Adjustments in the Groove Lock hardware, Figures 1 and 2
 - 3.1.2 Adjustments in the tip, tilt, and piston of the mirror assembly which will require adjustments in the Leveling Pad using the Spanner Tool and lock down bolts. See Figures 5 and 6.

- 3.1.3 Indicators may be used to make all these adjustments. Mounts have been made to set these indicators to keep in place until adjustments are complete. Figures 7 and 8 show the mounts at their respective positions at the side and on-axis kinematics.
- 3.1.4 After final alignment tighten all hardware in accordance to instructions in Reference 1.
- 3.2 Loctite or safety wire all Groove Lock hardware
- 3.3 Secure Leveling Pad Assemblies
 - 3.3.1 Loctite or safety wire the lock nuts on the Groove Plate leveling pads
 - 3.3.2 The threaded rod extensions on the rear of the Leveling Pad have sufficient length for an additional M6 nut (see Figures 5 & 6). Apply a second nut with Loctite at these three locations.
- 3.4 Safety wire the ¼-20 drilled head hex bolts securing Groove Plate to Swing-Arm
- 3.5 Re-attach the come-along eye, which attaches with M12 fine thread (1.25mm) SHCS hardware.

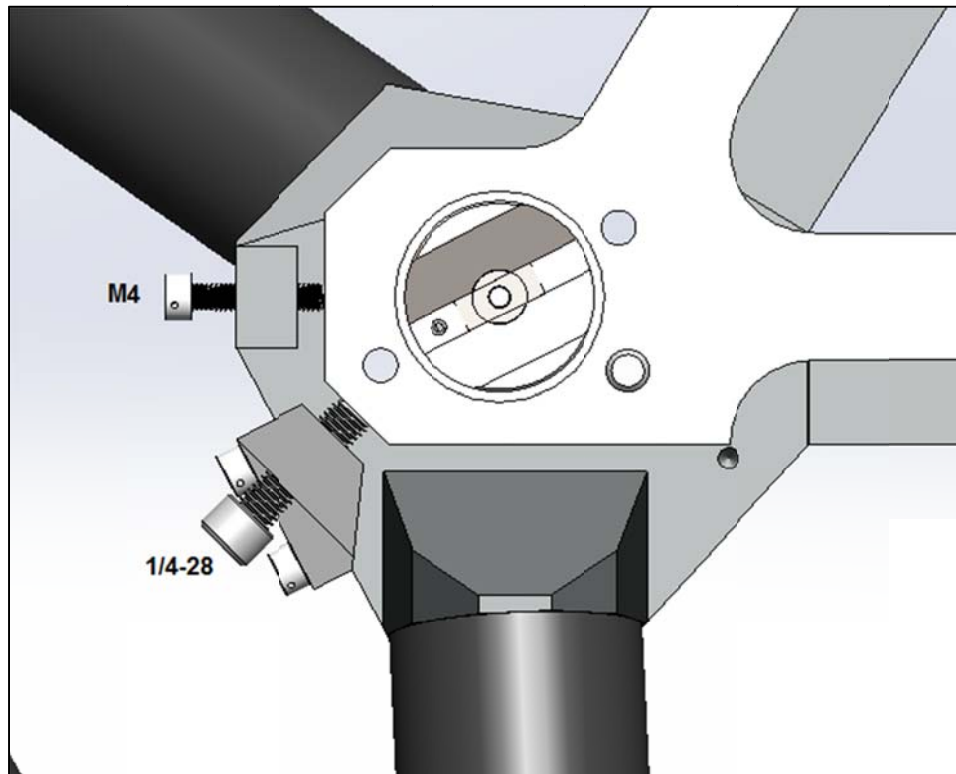


Figure 1 - Groove Lock off axis position components and hardware. Note that Swing-Arm HW is M4 and the Groove Lock component is 1/4-28. Hardware is drilled head for safety wire after final alignment.

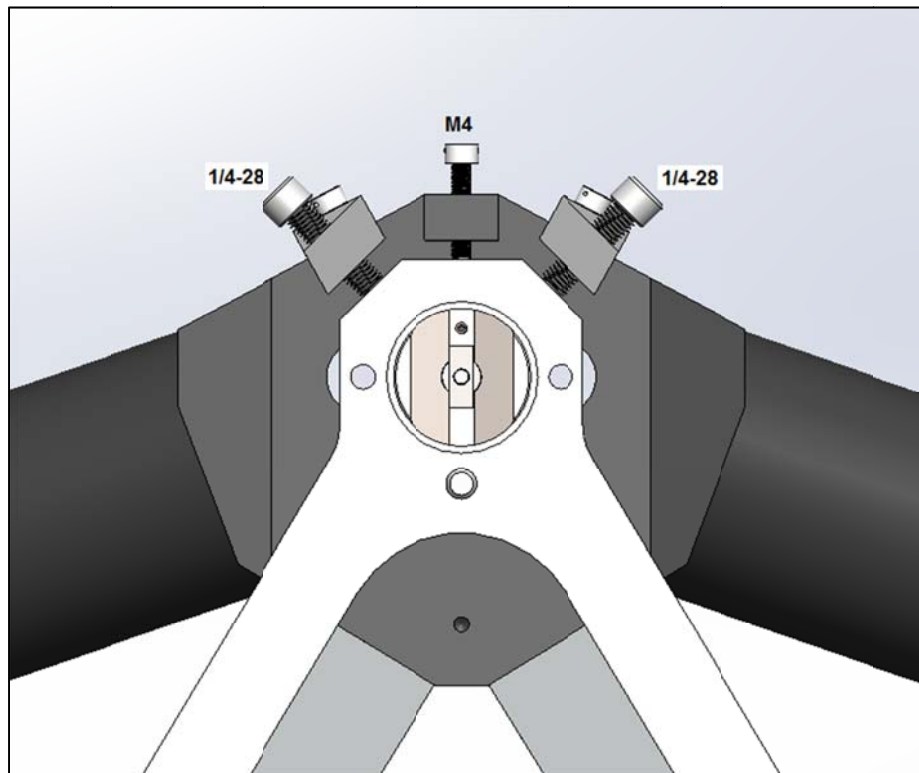


Figure 2 - Groove Lock on axis position components. Note that Swing-Arm is M4 and Groove Lock components are 1/4-28. Hardware is drilled head for safety wire after final alignment.

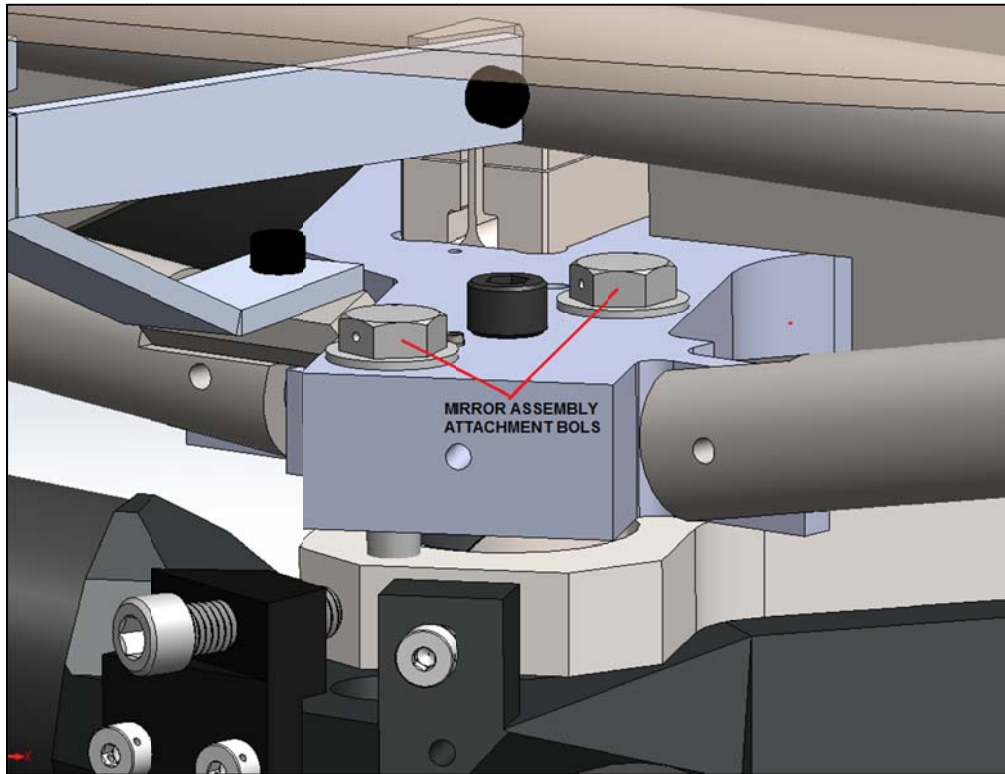


Figure 3 - Off axis Mirror Assembly attachment HW. Bolts are drilled head for safety wire after final alignment.

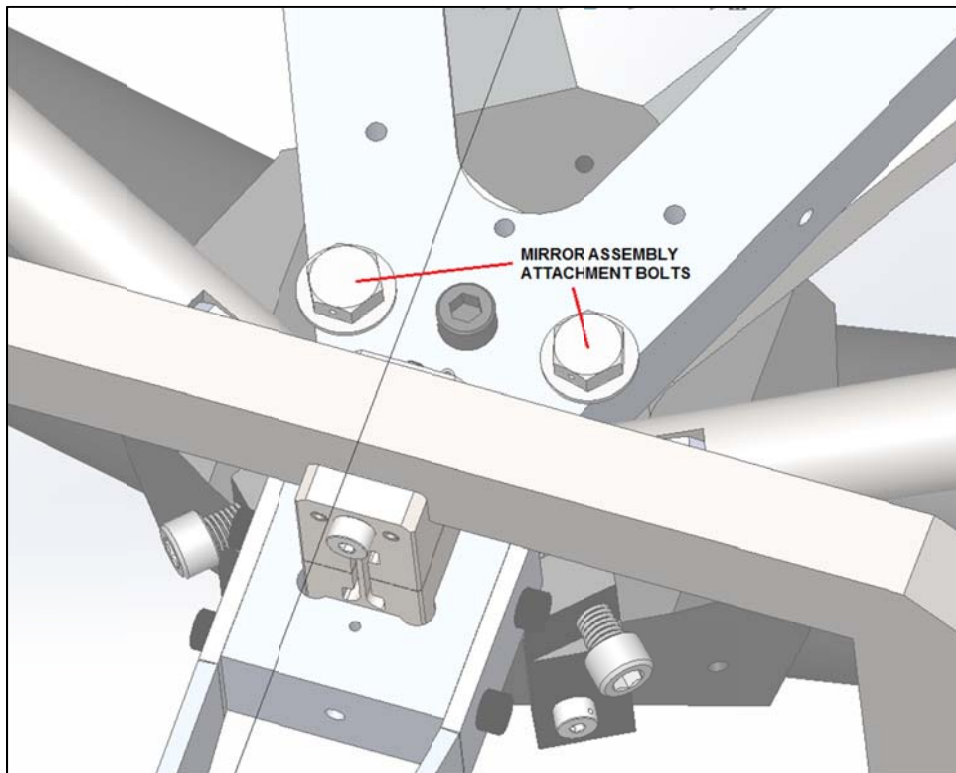


Figure 4 - On axis Mirror Assembly attachment HW. Bolts are drilled head for safety wire after final alignment.

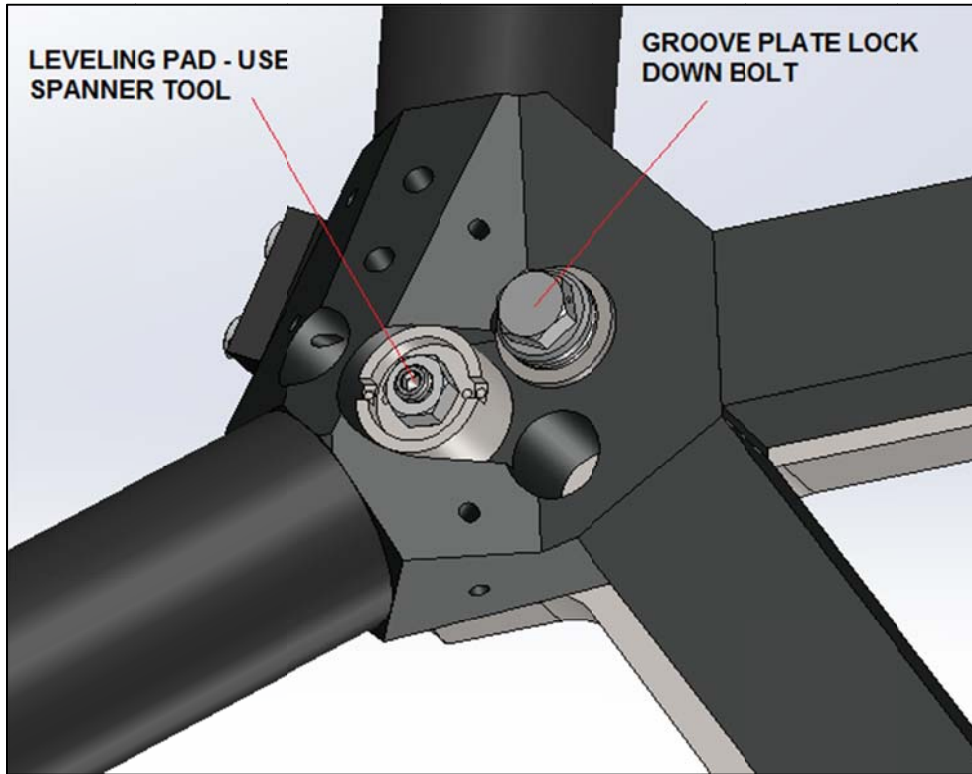


Figure 5 - Off axis tip/tilt/piston adjustments and hardware. Lock nut on leveling pad is drilled and lock down bolt is drilled head for safety wire after final alignment.

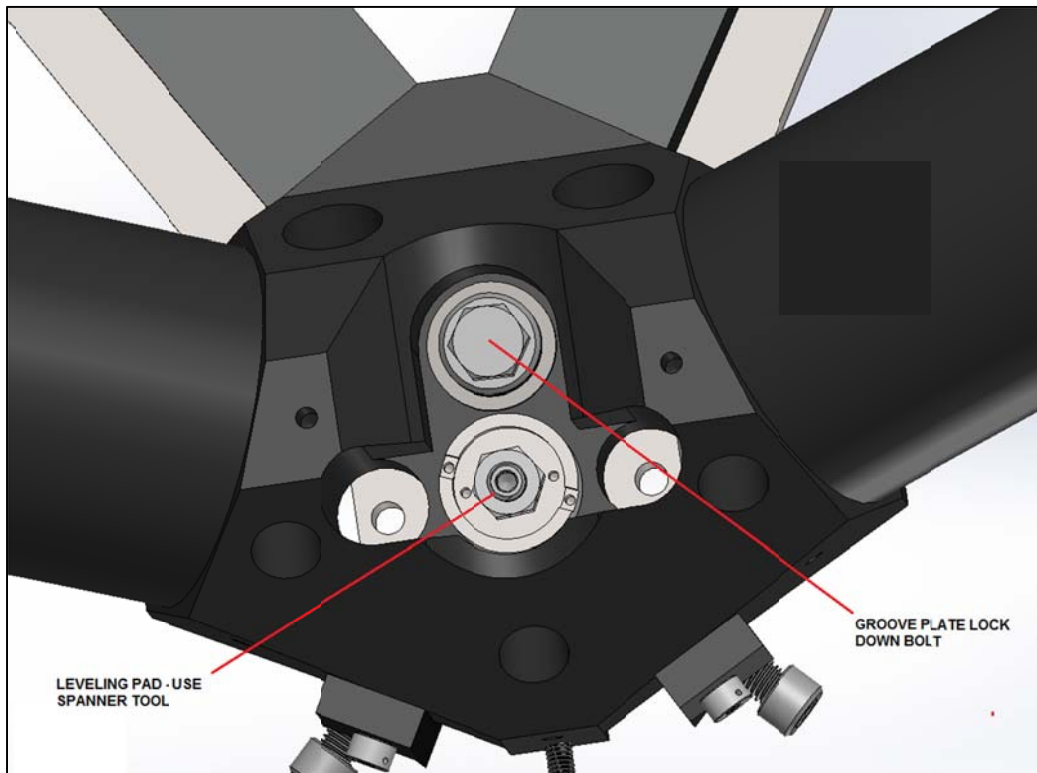


Figure 6 - On axis tip/tilt/piston adjustments and hardware. Image shows the come-along eye removed for access to all hardware. Lock nut on leveling pad is drilled and lock down bolt is drilled head for safety wire after final alignment.

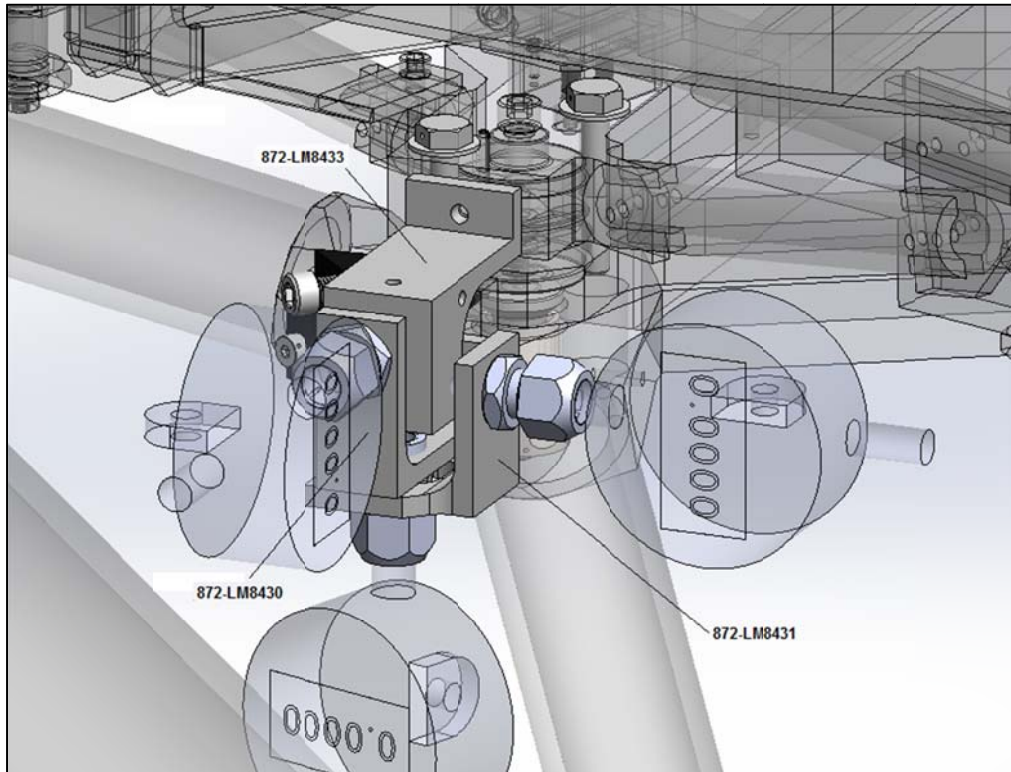


Figure 7 – Indicator mounts for the adjustments at the off-axis kinematic locations. Orientation at the opposite location will most probably be symmetric.

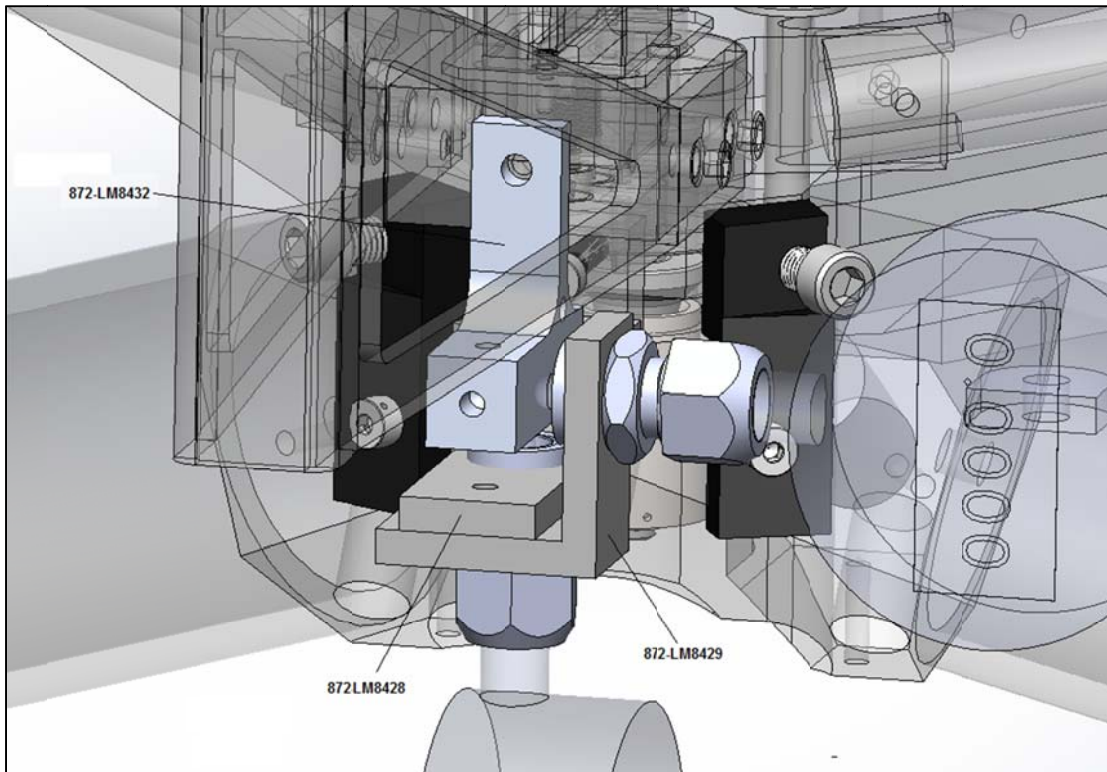


Figure 8 - Indicator mounts for the adjustments at the on-axis kinematic location.

References

1. Mirror & Swing-Arm Assembly, 872-LM4700

Revisions

| Rev | Date | Description |
|------------|-------------|-----------------------|
| A | 4Jun18 | Initial draft |
| B | 9Jul18 | Section 3.3 updated |
| C | 25Jul18 | Section 3.1.4 added |
| D | 27Jul18 | Section 3.1.4 revised |