

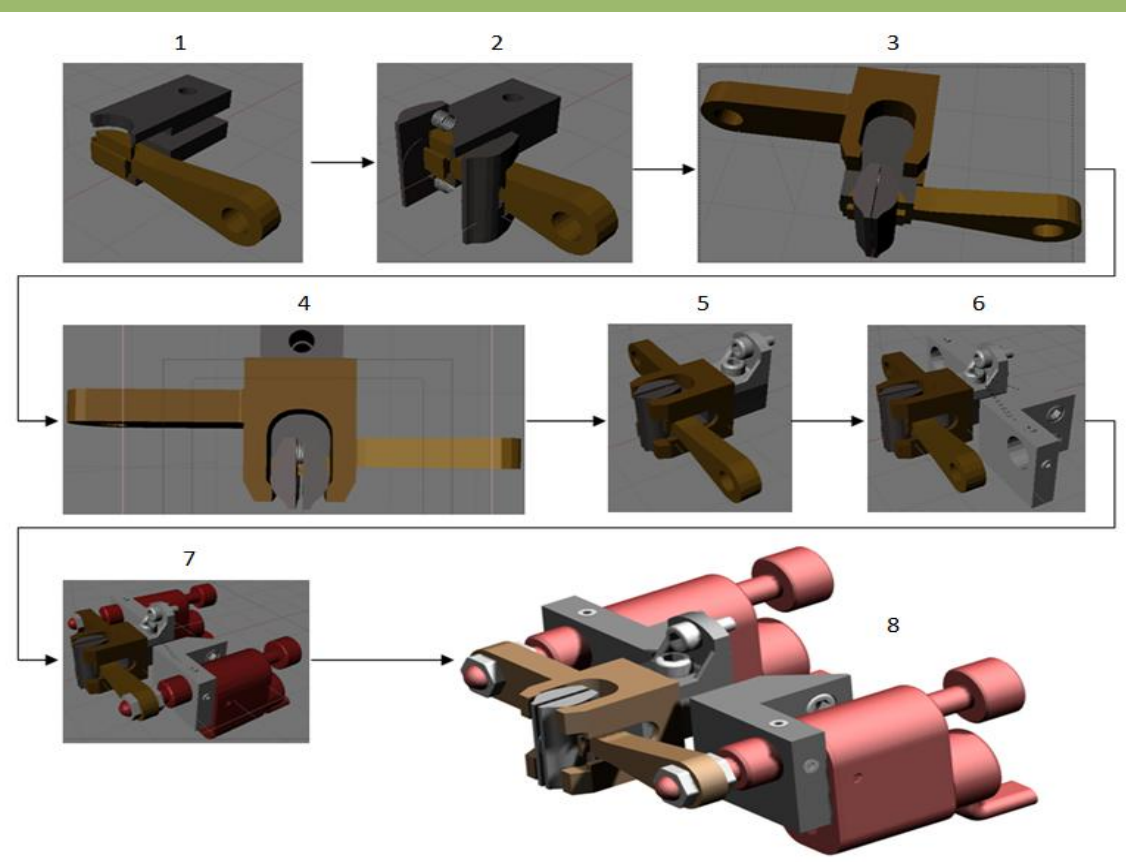
International X-Ray Observatory Flight Mirror Segment Proof Testing Fixture

Problem Statement:

Calculations show that the probability of mirror segments surviving launch is low. Therefore a system is needed to proof test mirror segments. Segments that pass may be integrated into the Flight Mirror Assembly.

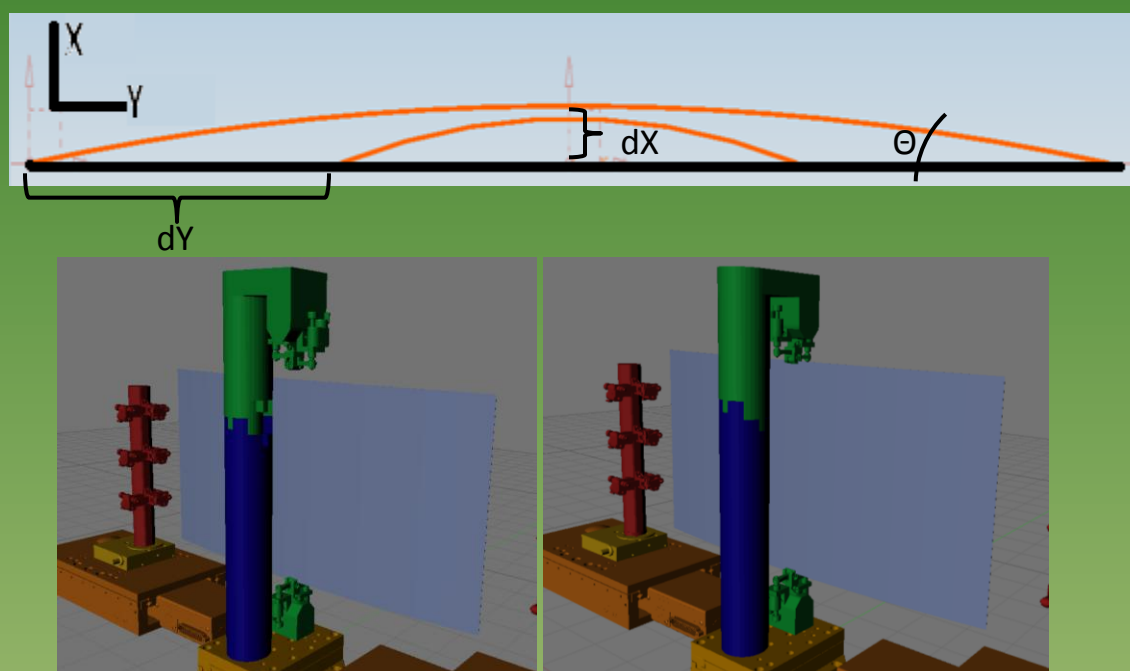
Gripper:

- Simulates bond locations
- Induces stress
- Eight per proof testing system



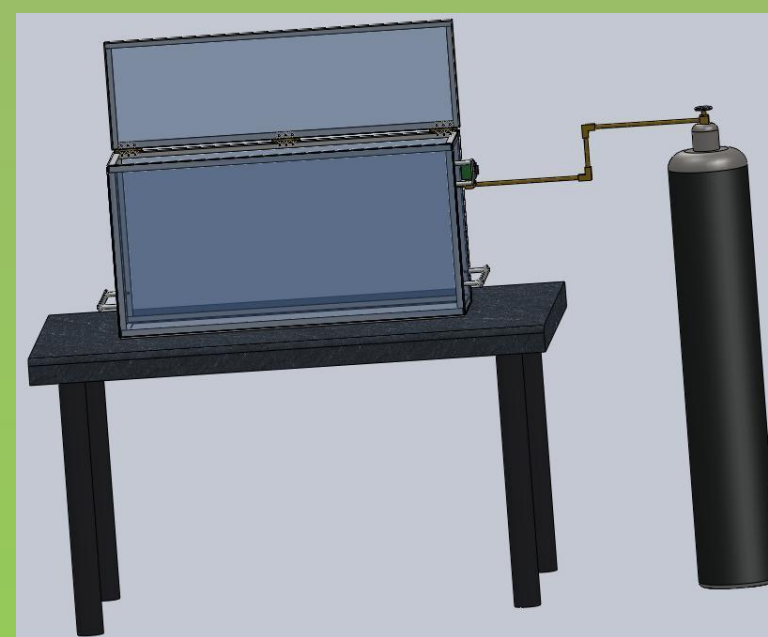
Positioning System:

- Adjusts to mirror dimensions

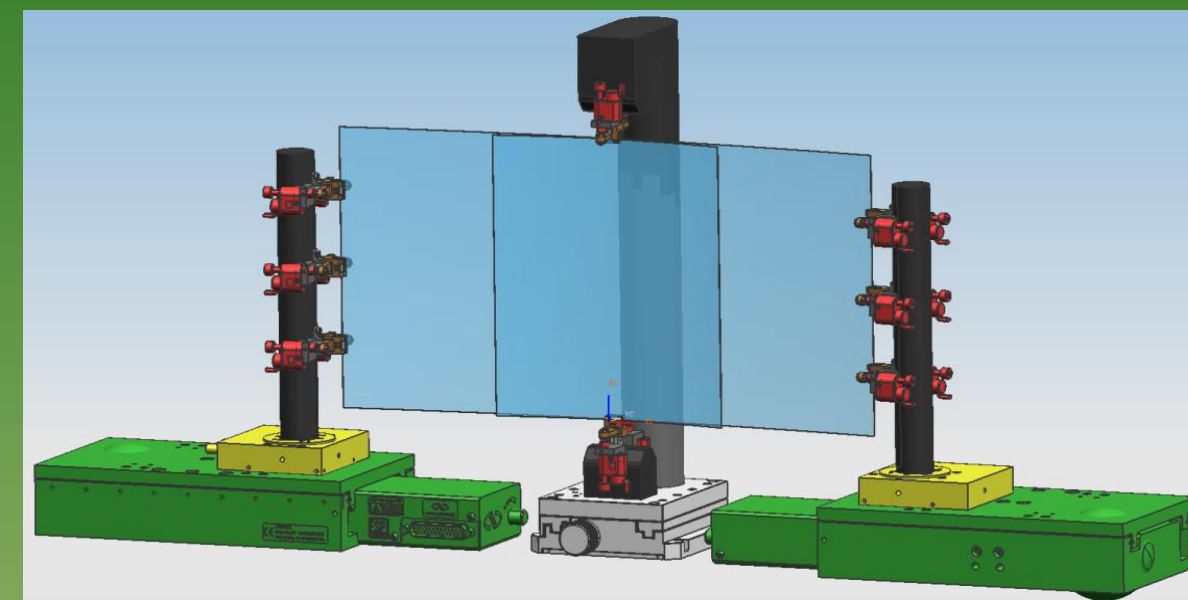


Nitrogen Tank:

- Cell in which proof testing occurs
- Purge environment with nitrogen gas



Completed System



Conclusions:

- Accommodates 722 mirror sizes
- Emulates launch conditions
- Purges moisture from testing environment
- Capable of automatic control
- High precision and accuracy

