

ALL about JACKS

Listed below are selected highlights on Jacks from NASA-STD-8719.9 Standard for Lifting Devices and Equipment; 500-PG-8715.1.2A AETD Safety Manual; and ASME B30.1 Jacks, Industrial Rollers, Air Casters, and Hydraulic Gantries. All of these documents apply at GSFC in their entirety. This is not a complete listing of Jack requirements.

1. A Jack is defined as a mechanism with a base and load point designed for controlled linear movement – usually vertical.
2. Jacks used at GSFC are generally mechanical (screw and ratchet style) but may be hydraulic (single or double-acting). Requirements on testing and use are basically the same.
3. High quality off-the-shelf OEM type equipment is acceptable if it is designed, maintained, and operated according to these standards
4. Jack construction shall incorporate a positive stop or a method to prevent over travel.
5. A recognized safety hazard analysis such as fault tree analysis, FMEA, O&SHA shall be performed on all jacks used for lifts where failure/loss of control could result in loss of or damage to flight hardware.
6. Three types of tests are required for jacks: proof load tests, periodic load tests, and operational tests.
 - Before first use, all new, extensively repaired, or altered jacks shall undergo a proof load test at 120% of the rated load and operated to its full length of travel. For new jacks, manufacturer documentation of performed proof load tests will be acceptable as meeting this requirement.
 - For jacks used where failure/loss of control could result in loss of or damage to flight hardware, a periodic load and operational test shall be performed at least once every year with a load equal to the rated load.
7. Safety inspections are spelled out in the standards and shall be performed on all jacks.
 - Daily inspections shall be performed each day the jack is used.
 - Periodic inspections shall be performed at least once per year.
8. Only qualified and designated personnel shall be authorized to perform inspection and/or maintenance operations on jacks.
9. Operators shall be instructed in the proper use of jacks.
10. The jack shall be legibly and permanently marked in a prominent location with its rated load capacity.
11. The operator shall inspect the jack before use and ensure that the capacity is sufficient to raise and sustain the load.
12. Once the load is raised, personnel shall crib, block, or otherwise secure the load. Follow the load with cribbing where practical.