Advanced Thumbscrew Hold-Down

CarlisleIT’s Advanced Thumbscrew Hold-Downs are the lightweight, high-performance option for when a more advanced hold-down solution is needed. Developed to meet the extreme performance standards of ABS1699, ASNA2168, and RTCA/DO-160, these hold-downs retain equipment even when not fully tightened and provide superior installation force compared to standard military-style hold-downs.

**FEATURES & BENEFITS**

**Safety:**
- Resists vibration and shock even when not fully engaged

**Function:**
- Secure racheting locking mechanism
- Easy engagement and dis-engagement

**CONSTRUCTION**

**Materials:**
- Aluminum components with anodized finish
- Acetal/Delrin
- RoHS compliant

**Fasteners:**
- Installation via #6-32 (.138-32) UNC screws using standard tooling

**SPECIFICATIONS**

**Conforms to:**
- ASNA2168
- ABS1699
- RTCA/DO-160

**Designed for use with:**
- ARINC 404A
- ARINC 600
- ARINC 628
- ARINC 704A
- ARINC 738A-1

**Weight:**
- 32 g max

**Patent No.:**
- US 8,870,149
Advanced Thumbscrew Hold-Down

TESTED TO MEET THE FOLLOWING REQUIREMENTS

Temperature
» Cat D3 per section 4.0 of RTCA/DO-160G

Maximum Working Load
» 465 lbf (207 daN)

Operational Shock
» 6g 11ms ½ sine shock pulse (3 shocks in all 6 directions)

Crash Safety Impulse
» 15g 11ms ½ sine shock pulse (1 shock in all 6 directions)
» 20Gs per section 7.3.1 of RTCA/DO-160G
(1 shock in all 6 directions)

Crash Safety Sustained
» 12g (1min all 6 directions)
» 20Gs per section 7.3.3 of RTCA/DO-160G
(3 seconds in all 6 directions)

Robust Vibration
» Sinusoidal (3 hours for each direction up to 2.5G)
» Random Cat R, Curve B & B1 per section 8.7.2 of RTCA/DO-160G
» BPS-C-157 section 3.6.4

Unbalance (Tire Burst)
» 36 seconds up to 10G in each direction

Max Flight Acceleration
» 6.5G up, 4.5G down, 3G other directions for 3min

Windmilling
» Sweep (9-30Hz) for 160 minutes between 4 & 5.6G, 1 sweep 9-2Hz at 3G

Mechanical Endurance
» 1,000 cycles

Flammability
» F3 Horizontal per Title 14 CFR 25.853(a), Appendix F, Part I (a)(1)(iv)

Optical Smoke Density
» Title 14 CFR 25.853(d), Appendix F, Part V
» BSS 7238
» AITM 2.0007 per ABD0031 (6.3) (7.3 & 7.31 & 7.3.2 Table 1)

Generation of Toxic Gasses
» BSS 7239
» AITM 3.0005 per ABD0031 (7.4)