

Torque Motor Latch Valve (TMLV)

The qualified high pressure latch valve is a single line, bi-stable, titanium torque motor latch valve, with integral open and closed microswitch position indication, inlet filter and back EMF suppression diodes. This valve is designed for a man rated mission and is based on the successful heritage of the Moog titanium torque motor family with more than 200 valves delivered over 15 years. The valve is an all welded construction utilizing wetted materials that are compatible with hydrazine.

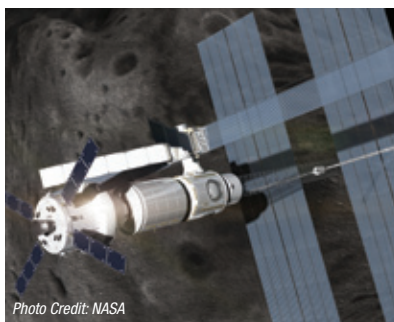


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Characteristics	
Parameter	Performance
Materials of Construction	Titanium alloy
Media Compatibility	Hydrazine, Xenon, Argon, Helium, Nitrogen, DI water, IPA
MEOP / Proof / Burst Pressure	276 / 414 / 689 bar (4000 / 6000 / 10000 psia)
Pressure Drop	<0.69 bar (<10 psid) at 17mg/s (3.75E-5 lbm/s) GHe, 21.7 bar (315 psia) inlet pressure, -40°C (-40°F) gas temperature
Actuation Voltage	120 Vdc, 1 amp max
Response Time	< 50 millisecond open or close
Internal Leakage	< 1 x 10 ⁻³ scc/sec GHe at MEOP
External Leakage	< 1.0 x 10 ⁻⁶ scc/sec GHe at MEOP
Inlet Filtration	10 micron absolute
Cycle Life	> 1,000
Mass	1.13 kg (2.5 lbm) max
Random Vibration	25.9 grms qualification
Thermal	-29 to 68°C (-20 to 155°F) operating -40 to 79°C (-40 to 175°F) qualification
Other	Back EMF diodes integral with design, -51.5 Vdc max
Heritage	Orion Exploration Flight Test 1 Based on 52E252C Space Heritage Torque Motor Valve (200+ delivered).

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