

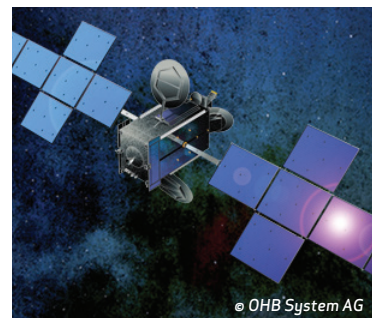
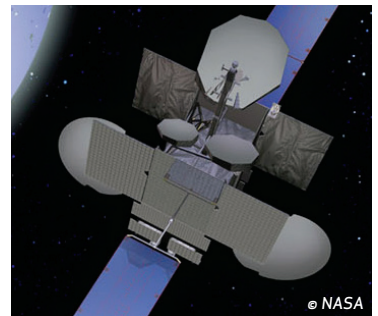
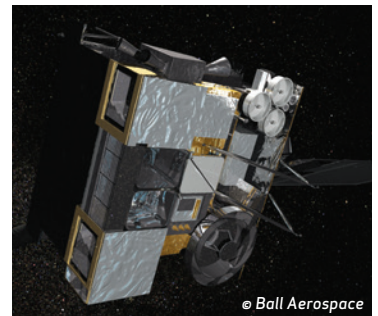
MECHANICAL REGULATORS – SINGLE AND REDUNDANT SEAT AND ELECTRIC PROPULSION



The PMA and XIPS regulators were developed based on experience from the Pluto Fast Fly-By Mission and ROSAT programs. These regulators have been qualified and flown, and use an absolute sensing bellows element. The two stage regulator is a forward cascading design.

KEY ADVANTAGES

- All welded design to prevent external leakage
- Titanium construction
- Transition joints available if CRES tubes are needed



MECHANICAL REGULATORS

PERFORMANCE CHARACTERISTICS

Single Stage



Two Stage



Characteristic

Inlet Operating Pressure [psia(bar)]	88 to 2,700 (6.07 to 186)	100 to 2,000 (6.9 to 138)
Proof Pressure [psia(bar)]	4,050 (279) Inlet 150 (10.3) Outlet	3,000 (206.9) Inlet 3,000 (206.9) Interstage 80 (5.52) Outlet
Burst Pressure [psia(bar)]	8,100 (558) Inlet 300 (20.7) Outlet	4,000 (275.9) Inlet, Interstage, and Outlet at the same time
Regulated Outlet Pressure [psia(bar)]	35.55 to 38.45 (2.45 to 2.65)	20.15 to 23.25 (1.390 to 1.603) First Stage 20.15 to 22.70 (1.390 to 1.566) Second Stage 20.15 to 20.95 (1.390 to 1.445) Both Stages
Max Lock-up Pressure [psia(bar)]	50 (3.45)	25.25 (1.741) First Stage 23.30 (1.607) Second Stage 22.55 (1.555) Both Stages
Flow	4 mg/s Xe nominal, 60 mg/s Xe max	4.5 mg/s Xe max
Leakage per Seat, Internal [scc/hr GHe]	3	3
Leakage, External [scc/s Ghe]	1E-6	1E-6
Operating Cycles	12,000	40,000
Weight [lbm (g)]	0.99 (450)	2.19 (994)
Operating Temperature Range [°F (°C)]	61 to 140 (16 to 60)	60-131 (15.5 to 55)
Representative Model Numbers	-050-857 (PMA)	-050-823 (XIPS)

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Form 500-945 1019