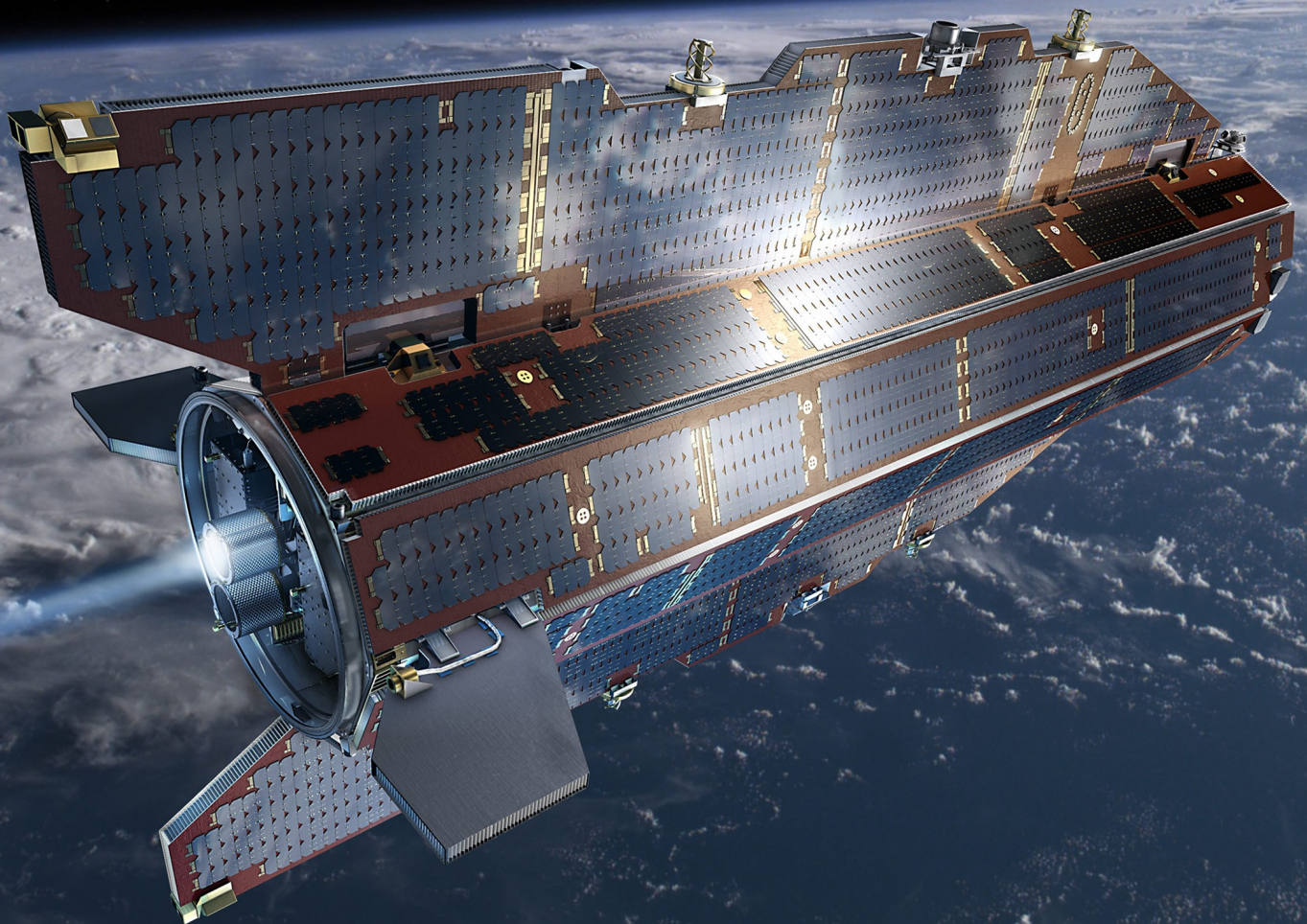


MFV

MULTI-FUNCTION

Magnetostrictive / Control Valve



 **MAROTTA®**

We're in Control

MFV / MAGNETOSTRICTIVE CONTROL VALVE

Normally Closed Isolation

Multi-Function Control Valve

Performs several functions in one component.

Marotta's Multi-Function Valve (MFV) offers many of the high performance features demanded by Ion and Hall thruster satellite and spacecraft propulsion systems, and has been tested with commonly used electric propulsion thrusters, both Hall effect and Ion engine types, with remarkable results.



Features:

- Normally Closed Isolation demonstrated to internal leakage rates less than 1×10^{-5} sccs GHe at pressure of 3.4 bar to 150 bar (50 to 2,175 psia) and temperatures from -54° to 93°C (-65° to 200°F)
- Precise, modulating closed loop pressure / flow regulation (pressure, flow or anode current feedback) from 0° to 70°C (32° to 158°F)
- Electronically adjustable set-point demonstrated to mass flow turndowns greater than 25 to 1, and pressure reductions of 6,000 to 1.
- The Multi-Function Valve can also operate as an open/closed 2-way valve
- Sensor feedback
- Magnetostrictive material

Magnetostrictive Multi-Function Control Valve Benefits

- *Reduces the number of Xenon feed system components*
- *Reduced weight*
- *Provides both propellant isolation and precise mass flow delivery*

Model	MFV
Operating and Test Fluids	Inert gas, including Xenon, Krypton, Helium and Nitrogen
Operating Pressure	50 to 2,175 psia
Internal Leakage	$<1 \times 10^{-5}$ sccs GHe
External Leakage	$<1 \times 10^{-6}$ sccs GHe
Flow Rate	0.02 to $>25\text{mg/sec}$ xenon
Power	<5 watts typical
Operating Temperature Range	0° to 70°C (32° to 158°F)
Internal Leakage Temperature Range	-54° to 93°C (-65° to 200°F)
Operating Life Cycle	$>50,000$
Weight	<318 grams (0.7 lbm)
Random Vibration	23.6 grms

Note: The listed performance data represents specific program requirements and not the design limitations of the device.



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WHEN IT COMES TO
SPECIALTY FLUID CONTROLS
WE'RE IN CONTROL

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