

MONOPROPELLANT ROCKET ENGINES

Enabling Exploration to Every Planet
 in the Solar System

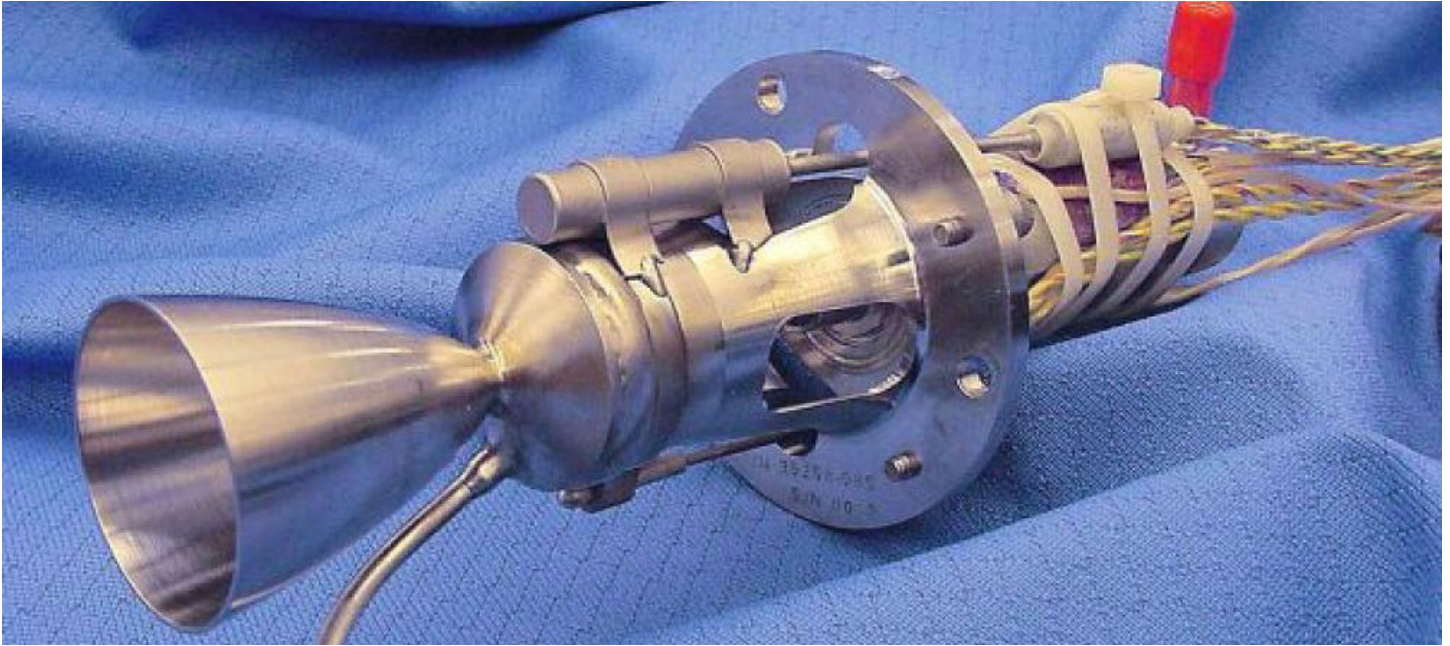
ENGINE	THRUST RANGE	SPECIFIC IMPULSE RANGE	TOTAL IMPULSE	TOTAL STARTS/PULSES	MINIMUM PULSE BIT	MASS
MR-401	0.07-0.09 N	180-184 sec (lbf-sec/lbm)	199,693 N-sec	5,960	4.0 N-sec	0.60 kg
MR-103G	1.13-0.19 N	224-202 sec (lbf-sec/lbm)	97,078 N-sec	835,017	0.0133 N-sec	0.33 kg
MR-103J	1.13-0.19 N	224-202 sec (lbf-sec/lbm)	183,000 N-sec	1,002,345	0.0133 N-sec	0.37 kg
MR-111G	4.9-1.8 N	229-219 sec (lbf-sec/lbm)	262,000 N-sec	420,000	0.076 N-sec	0.37 kg
MR-106L	4-10 N	235-228 sec (lbf-sec/lbm)	561,228 N-sec	120,511	0.015 N-sec	0.59 kg
MR-107T	125-54 N	222-225 sec (lbf-sec/lbm)	162,360 N-sec	36,500	0.015 N-sec	1.01 kg
MR-107S	360-85 N	225-236 sec (lbf-sec/lbm)	337,620 N-sec	30,300	0.015 N-sec	1.01 kg
MR-107U	307-182 N	229-223 sec (lbf-sec/lbm)	102,691 N-sec	4,412	0.015 N-sec	1.38 kg
MR-107V	220-67 N	229-223 sec (lbf-sec/lbm)	362,303 N-sec	10,161	0.015 N-sec	1.01 kg
MR-104H	554.2-201 N	237-22 sec (lbf-sec/lbm)	854,000 N-sec	6,520	8.23 N-sec	2.40 kg
MR-104J	614-440 N	223-215 sec (lbf-sec/lbm)	912,000 N-sec	6,600	-	6.44 kg
MR-80B	3630-31 N	225-200 sec (lbf-sec/lbm)	-	-	-	168 kg



KEY FEATURES

On satellites, monopropellant engines are used for various applications including orbital insertion, orbit raising, station keeping, spin control, attitude control and satellite decommissioning. On launch vehicles, they are used for upper stage roll, pitch and yaw control, as well as settling burns.

Aerjet Rocketdyne has delivered more than 17,000 hydrazine-fueled monopropellant rocket engines over the past 50 years, providing critical in-space and launch vehicle propulsion for commercial and government missions. These thrusters provide thrust levels ranging from 0.09N (0.02 lbf) to 3,100N (700 lbf).



Monopropellant engines generate thrust by liquid hydrazine flowing through an open propellant valve into a catalytic decomposition chamber where the propellant goes through a highly energetic decomposition process and the hot decomposition gases are then accelerated through a converging-diverging nozzle.

Monopropellant Rocket Engines

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