L3HARRIS®
FAST. FORWARD.

MONOPROPELLANT ROCKET ENGINES

Reliable in-space propulsion to help defend our nation and explore the solar system

ENGINE	THRUST RANGE lbf(N)	SPECIFIC IMPULSE sec	TOTAL IMPULSE lbf-s(N-s)	TOTAL PULSES	TOTAL STARTS	MINUMUM PULSE BIT lbf-s(N-s)	MASS lbm (kg)
MR-401 LTR, .02 lbf	0.016-0.020 (0.07-0.09)	174-184	44,893 (199,693)	5,960	5,960	0.00090 (0.004)	1.1 (0.50)
MR-103J 0.2 lbf	0.043-0.27 (0.19-1.19)	202-224	41,140 (183,000)	1,002,345	1,665	0.0030 (0.0133)	0.82 (0.37)
MR-111G 1 lbf	0.2-1.3 (0.9-5.7)	219-230	58,977 (262,300)	420,145	1,777	0.014 (0.061)	0.82 (0.37)
MR-106L 5 lbf	2.2-7.6 (10-34)	228-236	126,205 (561,388)	120,511	1,483	0.022 (0.100)	1.3 (0.60)
MR-106M 7 lbf	4.9-9.0 (22-40)	234-238	37,023 (164,686)	120,511	1,483	0.133 (0.592)	1.3 (0.60)
MR-107T 25 lbf	12-29 (53-128)	222-225	36,500 (162,360)	36,500	44	0.360 (1.6)	2.2 (1.01)
MR-107V 55 lbf	20-57 (90-255)	233-237	81,449 (362,303)	10,161	139	0.719 (3.2)	2.2 (1.01)
MR-107U 65 lbf, HighPf	41-70 (182-310)	231-234	23,086 (102,691)	4,412	111	1.08 (4.8)	3.0 (1.38)
MR-107S 65 lbf	22-81 (100-360)	232-237	164,467 (731,585)	8,764	87	1.08 (4.8)	2.2 (1.01)
MR-104J 110 lbf	100-130 (460-590)	222-227	234,062 (1,041,160)	9,648	71	-	12 (5.5)
MR-104G 160 lbf	100-180 (470-780)	222-228	209,820 (933,325)	6,961	21	-	12 (5.5)
MR-80B MLE, 800 lbf	7-810 (31-3600)	200-230	146,125 (650,000)	10	10	-	19 (8.6)

Monopropellant thrusters are used to propel spacecraft for a wide variety of missions, including geosynchronous-orbiting satellites, International Space Station servicing vehicles and interplanetary exploration. These thrusters aid in orbit insertion, Delta-V adjustments and reaction control.

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OVERVIEW

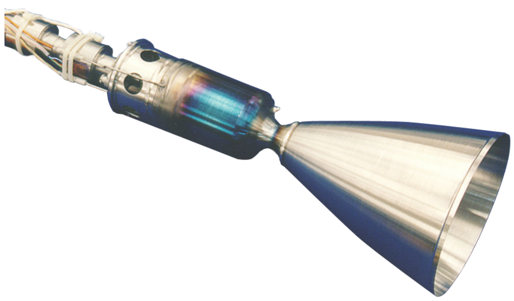
Since the Apollo missions to the Moon, L3Harris has delivered more than 19,000 monopropellant thrusters used to propel launch vehicles and spacecraft. Our range of monopropellant thrusters offers thrust levels from 0.016 lbf to 800 lbf. Thrust is produced by opening propellant valves to allow liquid fuel (typically hydrazine) to pass through a catalyst, where it decomposes and is ignited in the chamber. The resulting hot gas exits through the nozzle, generating thrust.

HYDRAZINE MONOPROPELLANT THRUSTERS FOR EXPLORATION

Hydrazine monopropellant thrusters are ideal for planetary exploration missions as decomposition does not produce carbon that could contaminate other celestial bodies or collected samples. Hydrazine has been the propellant best suited for use in the propulsion systems that supported all recent U.S. landings on Mars.

HYDRAZINE MONOPROPELLANT THRUSTERS FOR DYNAMIC SPACE OPERATIONS

In-space architectures are evolving to include more spacecraft capabilities and mission operations. These capabilities include rendezvous, docking and refueling operations, as well as more traditional satellite station keeping and attitude control system desaturation operations. Hydrazine thrusters are ideal for these precise maneuvers due to their small minimum impulse bit and long life.



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