



ROCKET MOTOR CASES

High-performance lightweight composite motor cases



General Dynamics Ordnance and Tactical Systems has a long history and remains an industry leader in designing, analyzing, developing and producing customer-loaded solid propellant rocket motor cases. The solid rocket propulsion industry is one of the pioneer users of composite materials. Today, advances in carbon fiber technology and our use of high temperature resin offer even greater advantages in performance and cost effectiveness.

Since 1963 General Dynamics has delivered over 36,000 rocket motor cases to every solid propellant rocket motor contractor in the United States.

We work closely with our customers in the design, development and production of rocket motor cases, including the following components: rubber insulators, port fittings, integral attachment skirts and pressure chambers used for strategic, tactical and interceptor missile systems.

FAST FACTS

Applications: Missile defense, tactical, orbital insertion, ballistic and interceptor missiles

Produced at our facility in Lincoln, Nebraska

Design, analysis and production processes:

- Filament winding
- Fin lug bonding
- Hydrostatic proof testing
- Complete tool design
- Precision-machining
- Manufacture to performance specifications



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Motor Case Heritage	Dimensions (in.) Diameter x Length	Structural Material	Application
AAWS-M Flight Demo	6 x 5.5	Graphite	Interceptor
Altair III	19.6 x 40	Glass	Orbital Insertion
AMRAAM	7 x 50	Kevlar*	Tactical
ASAS	28 x 185	Graphite	Interceptor
ASAT	19.6 x 40	Glass	Interceptor
ERINT	10 x 100	Graphite	Tactical
FW-5	27.4 x 24.5	Glass	Orbital Insertion
HS-393	52 x 70	Glass	Orbital Insertion
HVR	2.75 x 47	Graphite	Tactical
Improved SPRINT	29 x 58	Kevlar*/Graphite	Interceptor
INTELSAT VI	92 X 72	Kevlar*	Orbital Insertion
JAGM / JCM	7 x 26	Graphite	Tactical
KEW Upper Stage	14 x 14	Graphite	Interceptor
KEW Lower Stage	16.5 x 41	Graphite	Interceptor
Minuteman III, Stage III	52 x 70	Glass	Ballistic
MX, ADP, 2nd Stage, Full Scale	66 x 93	Kevlar*	Ballistic
MX, 2nd Stage, Half Scale	33 x 46	Kevlar*	Ballistic
NLOS	7 x 20	Graphite	Tactical
ORBUS-6	63 x 48	Kevlar*	Orbital Insertion
ORBUS-21	92 x 72	Kevlar*	Orbital Insertion
ORBUS-21D	92 x 72	Kevlar*	Orbital Insertion
PAC-3	10 x 100	Graphite	Interceptor
Peacekeeper, Stage II	93 x 158	Kevlar*	Ballistic
Polaris A-3, 2nd Stage	54 x 76	Glass	Ballistic
Scout/Delta, 4th Stage	19.6 x 40	Glass	Orbital Insertion
Sea Lance	16.5 x 88	Graphite	Ballistic
Second Source	3 x 19	Graphite/Glass	Tactical
Sentry	35 x 114	Kevlar*/Graphite	Interceptor
SICBM- Stage I	46 x 183	Graphite	Ballistic
SICBM- Stage III	46 x 41	Graphite	Ballistic
SMAW-CS	3 x 18	Graphite	Tactical
SPBD	20-28 x 70 (tapered)	Graphite	Interceptor
SPIKE	2 x 32	Kevlar*/Graphite	Tactical
SPRINT, 1st Stage	47 x 88	Glass	Interceptor
SPRINT, 2nd Stage	29 x 58	Glass	Interceptor
SVM, 5,6,7 - Apogee Kick Motor	30 x 25	Glass	Orbital Insertion
SVM 4A, INTELSAT IV	37 x 32	Glass	Orbital Insertion
THAADs Demo	Tapered	Graphite	Tactical
Trident C-4, 1st Stage	74 x 179	Kevlar*	Ballistic
Trident C-4, 2nd Stage	74 x 84	Kevlar*	Ballistic
Trident C-4, 3rd Stage	30 x 100	Kevlar*	Ballistic
Trident II, D-5 Stage III	31 x 103	Graphite	Ballistic
Viper	2.75 x 10	Glass	Tactical
VT-1	6.5 x 48	Graphite	Tactical



GENERAL DYNAMICS
Ordnance and Tactical Systems

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