



TANK TYPE	MOUNT	LOCATION	PMD DEVICE
PMD	Trunion	Prop hemi	

The propellant tank is a family of 27" diameter x various lengths long pressure vessel constructed of 6AL-4V titanium. A Propellant Management Device (PMD) provides gas-free expulsion of propellant. Mounting is provided via a trunion located on the lower center section cylinder and with struts on the upper and lower boss.

**ATK Part Number 80506-7**

**SIZE: 27.25" ID x 56.14" Length**  
**SIZE: 692 mm ID x 1,426 mm**

See below for shorter length Tanks

**ISO 9001 & AS 9100 REGISTERED**

**APPLICABLE DOCUMENTS**

Qualification Test Report	56-000241
Acceptance Test Procedure	50-000686
Qualification Test Procedure	50-000687
Cleaning	CPP 4007

**TANK CHARACTERISTICS**

Operating Pressure, psig	256	Total Volume, in <sup>3</sup>	36,300
Proof Pressure, psig	338	Prop Volume, in <sup>3</sup>	35,574
Cryo Proof, psig	N/A	Prop Volume, lbs	1,601
Burst Pressure, psig	410	Max Design Wt, lbs	57.81
Actual Burst, psig	510	Minimum Wall, inch	0.021
Normalized Burst, psig	428		

**QUALIFICATION TESTS**

Preliminary Examination of Product  
 Pre-Proof Volumetric Capacity Test,  
 Proof Pressure Test  
 Post-Proof Volumetric Capacity Test  
 Proof Pressure Cycling Test  
 MEOP Pressure Cycling Test  
 Propellant Outflow Test  
 Bubble Point Test  
 Radiograph Inspection of Welds  
 External Leak Test  
 Vibration Test  
 Bubble Point Test \*  
 External Leak Test \*  
 Collapse Pressure test  
 External Leak Test  
 Radiograph and Penetrant Inspection  
 Final Examination of Product  
 Burst Test  
 Data Review

**Notes:**

**TANK CHARACTERISTICS (Metrics)**

Operating Pressure, bar	17.65	Total Volume, l	595
Proof Pressure, bar	23.30	Prop Volume, l	583
Cryo Proof, bar	N/A	Prop Volume, kg N <sub>2</sub> H <sub>4</sub>	595.20
Burst Pressure, bar	28.269	Max Design Wt, kg	26.22
Actual Burst, bar	29.510	Minimum Wall, MM	0.533

**HEMISPHERE FORGINGS**

HEMI P/N	QTY	SUPPLIER	Die No
80-506061-1	2	ARCTURUS	3936

**RING FORGINGS (Roughed Machined) (inches)**

80-506063-1, Center Section Forging	28.92 OD x 26.43 ID x 17.75 Lg
80-506063-7, Center Section Forging	27.43 OD x 26.43 ID x 35.25 Lg

**RING FORGINGS (Roughed Machined) (mm)**

80-506063-1, Center Section Forging	734.57 OD x 671.32 ID x 450.85 Lg
80-506063-7, Center Section Forging	696.72 OD x 671.32 ID x 895.35 Lg

**TUBE TYPE AND SIZE(inches)**

Titanium		SIZE
80-506202-1	Pressurant	.250 OD x 0.020 Wall
80-506002-1	Outlet	.3750 OD x 0.020 Wall

**TUBE TYPE AND SIZE (mm)**

Titanium		SIZE
80-506202-1	Pressurant	6.350 mm x 0.508 Wall
80-506002-1	Outlet	9.525 mm x 0.508 Wall

**ACCEPTANCE TESTS**

Preliminary Examination of Product  
 Weight  
 Pre-Proof Volumetric Capacity Test  
 Proof Pressure Test  
 Post-Proof Volumetric Capacity Test  
 Flow, Differential Pressure Test  
 External Leak Test  
 Radiograph Inspection of Welds  
 Final Examination of Product  
 Cleanliness Verification



ATK P/N	CAPACITY	MASS PROP. (Max.)
80506-1	277.26L (16,920 in <sup>3</sup> )	36.10 lbs.
80506-2	333.31L (20,340 in <sup>3</sup> )	41.60 lbs.
80506-3	389.35L (23,760 in <sup>3</sup> )	46.10 lbs.
80506-4	445.40L (27,180 in <sup>3</sup> )	49.45 lbs.
80506-5	501.44L (30,600 in <sup>3</sup> )	53.35 lbs.
80506-6	548.14L (33,450 in <sup>3</sup> )	56.40 lbs.
80506-7	594.85L (36,300 in <sup>3</sup> )	59.45 lbs.

NOTE: DASH -7 SHOWN

