



TANK TYPE	MOUNT	LOCATION	PMD DEVICE
PMD	SKIRT	GIRTH	VANE & SPONGE

The tank is a 45.7"Ø x 94.80" long. Carbon overwrapped titanium tank with a polar mounted propellant management device. The liner is constructed of solution treated and aged, 6Al-4V titanium machined elliptical forgings, welded to 0.032" thick 6Al-4V titanium, rolled and welded sheet stock cylinders. Mounting is provided by a 28 point tab ring. The tank contains an internal propellant management device (PMD) assembly, constructed from titanium sheet, titanium woven screen, and titanium tubing. The PMD serves to maintain separation of liquid propellant and gaseous pressurant, and to provide predictable gas-free liquid propellant expulsion from the tank under low or zero gravity conditions. The propellant and pressurant ports are 3/8" and 1/4" titanium tubes, respectively.

ATK Part Number 80570-1

SIZE: 94.80" x 45.70" OD

SIZE: 2407.9 mm x 1160.78 mm

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS <table border="1"> <tr><td>Acceptance Test Procedure</td><td>50-000835</td></tr> <tr><td>Qual Test Procedure</td><td>50-000836</td></tr> <tr><td>Qualification Test Report</td><td>56-000319</td></tr> <tr><td>Bubble Point Test Procedure</td><td>50-000847</td></tr> <tr><td>Stress & Fracture Analysis</td><td>54-000432</td></tr> <tr><td>Fracture Analysis Plan</td><td>54-000422</td></tr> <tr><td>Materials List</td><td>60-000816</td></tr> <tr><td>Processes List</td><td>60-000815</td></tr> <tr><td>Cleaning</td><td>CPP-4046</td></tr> </table>	Acceptance Test Procedure	50-000835	Qual Test Procedure	50-000836	Qualification Test Report	56-000319	Bubble Point Test Procedure	50-000847	Stress & Fracture Analysis	54-000432	Fracture Analysis Plan	54-000422	Materials List	60-000816	Processes List	60-000815	Cleaning	CPP-4046	TANK CHARACTERISTICS (Imperial) <table border="1"> <tr><td>Operating Pressure, psig</td><td>300</td><td>Total Volume, in³</td><td>133,872</td></tr> <tr><td>Proof Pressure, psig</td><td>375</td><td>Prop Volume, in³</td><td>127,178</td></tr> <tr><td>Cryo Proof, psig</td><td>N/A</td><td>Prop Volume, lbs</td><td></td></tr> <tr><td>Burst Pressure, psig</td><td>487</td><td>Max Design Wt, lbs</td><td>173.3</td></tr> <tr><td>Actual Burst, psig</td><td>570</td><td>Minimum Wall, inch</td><td>0.035</td></tr> </table> TANK CHARACTERISTICS (Metric) <table border="1"> <tr><td>Operating Pressure, bar</td><td>20.68</td><td>Total Volume, l</td><td>2,194</td></tr> <tr><td>Proof Pressure, bar</td><td>25.85</td><td>Prop Volume, l</td><td>2,084</td></tr> <tr><td>Cryo Proof, bar</td><td>N/A</td><td>Prop Volume, kg</td><td></td></tr> <tr><td>Burst Pressure, bar</td><td>33.58</td><td>Max Design Wt, kg</td><td>78.6</td></tr> <tr><td>Actual Burst, bar</td><td>39.30</td><td>Minimum Wall, MM</td><td>0.889</td></tr> </table> HEMISPHERE FORGINGS <table border="1"> <thead> <tr><th>HEMI P/N</th><th>QTY</th><th>SUPPLIER</th><th>Die No</th></tr> </thead> <tbody> <tr><td>80-507061-1</td><td>2</td><td></td><td></td></tr> </tbody> </table> <table border="1"> <thead> <tr><th>RING P/N</th><th>QTY</th><th>RING SIZE</th></tr> </thead> <tbody> <tr><td>80-507065-1</td><td>1</td><td>46.8 OD : 44.9 ID X 4.2 Long</td></tr> </tbody> </table> TUBE TYPE AND SIZE (in.) <table border="1"> <thead> <tr><th>Ti</th><th>SIZE</th></tr> </thead> <tbody> <tr><td>80-570007-5</td><td>Propellant Tube 0.375 OD x 0.025 Wall x 2.25 Long</td></tr> <tr><td>80-570007-7</td><td>Pressurant Tube 0.250 OD x 0.016 Wall x 5 Long</td></tr> </tbody> </table>	Operating Pressure, psig	300	Total Volume, in ³	133,872	Proof Pressure, psig	375	Prop Volume, in ³	127,178	Cryo Proof, psig	N/A	Prop Volume, lbs		Burst Pressure, psig	487	Max Design Wt, lbs	173.3	Actual Burst, psig	570	Minimum Wall, inch	0.035	Operating Pressure, bar	20.68	Total Volume, l	2,194	Proof Pressure, bar	25.85	Prop Volume, l	2,084	Cryo Proof, bar	N/A	Prop Volume, kg		Burst Pressure, bar	33.58	Max Design Wt, kg	78.6	Actual Burst, bar	39.30	Minimum Wall, MM	0.889	HEMI P/N	QTY	SUPPLIER	Die No	80-507061-1	2			RING P/N	QTY	RING SIZE	80-507065-1	1	46.8 OD : 44.9 ID X 4.2 Long	Ti	SIZE	80-570007-5	Propellant Tube 0.375 OD x 0.025 Wall x 2.25 Long	80-570007-7	Pressurant Tube 0.250 OD x 0.016 Wall x 5 Long	ACCEPTANCE TESTS <ul style="list-style-type: none"> Examination of Product Volumetric Capacity and Proof Pressure Test Pressure Drop Test Tank Assembly Bubble Point Test External Leak Test Weld Quality Inspection Examination of Product Cleanliness Operation QUALIFICATION TESTS <ul style="list-style-type: none"> Examination of Product Volumetric Capacity and Proof Pressure Test Proof Pressure & MEOP Cycle Test Pressure Drop Test Tank Assembly Bubble Point Test External Leak Test Weld Quality Inspection Cleanliness Operation Sine Vibration Test Acoustic Test External Leak Test Tank Assembly Bubble Point Test Examination of Product & Data Review Burst Test
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- Notes:**
1. Tank Assy.
 2. Parts / Subassemblies
 3. Fracture Critical

TUBE SIZE (mm)

80-570007-5	9.525 OD x 0.635 Wall x 57.15 Long
80-570007-7	6.350 OD x 0.4064 Wall x 127 Long

ATK P/N	CAPACITY		Length	Mass Tank. (Max.)
	Min Vol @ Ambient			
80570-1	133,872 in ³	2194.00L	94.80"	173.28 lbs.
80570-2	111,596 in ³	1828.73L	80.97"	149.69 lbs.
80570-3	92,409 in ³	1514.31L	69.06"	129.63 lbs.
80570-4	66,882 in ³	1095.99L	53.22"	103.18 lbs.
80570-5	41,163 in ³	674.54L	37.25"	74.96 lbs.

- 78.6 kg
- 67.9 kg
- 58.8 kg
- 46.8 kg
- 34.0 kg

