

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.

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

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)

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

ACCEPTANCE TESTS

- 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

TANK CHARACTERISTICS (Metric)

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

QUALIFICATION TESTS

- 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

- Notes:**
1. Tank Assy.
 2. Parts / Subassemblies
 3. Fracture Critical

HEMISPHERE FORGINGS

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
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TUBE TYPE AND SIZE (in.)

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

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

P/N	CAPACITY		Length	Mass Tank. (Max.)
	Min Vol @ Ambient			
80570-1	133,872 in3	2194.00L	94.80"	173.28 lbs.
80570-2	111,596 in3	1828.73L	80.97"	149.69 lbs.
80570-3	92,409 in3	1514.31L	69.06"	129.63 lbs.
80570-4	66,882 in3	1095.99L	53.22"	103.18 lbs.
80570-5	41,163 in3	674.54L	37.25"	74.96 lbs.

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

