



<b>TANK</b> <b>PMD</b>	<b>MOUNT</b> Tabs	<b>LOCATION</b> Girth Weld	<b>PMD DEVICE</b> Complex
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The Tank Assembly is a hemispherical pressure vessel with a cylindrical section of all welded construction. It is mounted by 32 circumferential tabs with nut plates located on one of the hemispheres near the girth weld joint. The tank contains an internally-mounted propellant management device (PMD), with perforated sheet and woven screen, fabricated 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 PMD has been designed to allow horizontal handling with low fill fractions. The PMD has also been modified by the addition of a slosh control device to allow multiple erection and de-erection cycles.

**ATK Part Number 80517-1**

**SIZE: 48.9" ID x 72.285" Long**  
**SIZE: 1242.06-mm x 1836.04-mm**

## ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS	TANK CHARACTERISTICS	QUALIFICATION TESTS
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Qualification Test Procedure	50-000703
Acceptance Test Procedure	50-000702
Bubble Point Test Procedure	
Materials List	
Processes List	
Cleaning	CPP 3849

Operating Pressure, psig	250	Total Volume, ci	104,344
Proof Pressure, psig	312.5	Prop Volume, ci	
Cryo Proof, psig	NA	Max Design Wt, lbs	130.0
Burst Pressure, psig	375	Minimum Wall, inch	0.031
Actual Burst Pressure			

Preliminary Inspection of Product
Mass Measurement
Pre-Proof Volumetric Capacity
Ambient Proof Pressure
Visual Inspection
Post Proof Volumetric Capacity
Pressure Cycle & Visual Inspection
External Leakage Test
Bubble Point Test
Cleanliness Check and Visual Inspection
Sine & Random Vibration Tests and Visual Inspection
Expulsion & Pressure Drop Test
Bubble Point Test
External Leakage Test
Radiographic Inspection
Dye Penetrant Inspection
Cleanliness Check and Visual Inspection
Burst Test & Visual Inspection Data Review

**Notes:**

- 1: Tooling owned by ATK
- 2: Tank shell is similar to P/N 80442-1
- 3: PMD design is by PMD Technology
- 4: Tube protectors are SK 1353 & SK 1354
- 5: Vibration Fixture: T-4646.

**TANK CHARACTERISTICS (Metrics)**

Operating Pressure, Bar	17.24	Total Volume, l	1,709.91
Proof Pressure, Bar	21.55	Prop Volume, l	0.00
Cryo Proof, Bar	NA	Max Design Wt, Kg	58.97
Burst Pressure, Bar	25.85	Minimum Wall, MM	0.787
Actual Burst Pressure	0.00		

**FORGINGS**

FORGINGS P/N		SUPPLIER	Die
80-363061-1	Hemi Forge	Ladish	TR038
80-363063-9	Center Section	Carlton	
80-363065-1	Tab Ring	Forged Metals	

**TUBE TYPE AND SIZE**

TRANSITION	SIZE
80-380002-1 (2)	.375 OD X .020 Wall (9.525 x .508 mm)



**ACCEPTANCE TESTS**

Preliminary Inspection of Product
Mass Measurement
Pre-Proof Volumetric Capacity
Ambient Proof Pressure
Visual Inspection
Post Proof Volumetric Capacity
External Leakage Test
Bubble Point Test
Sine Vibration Test and Visual Inspection
Pressure Drop Test
Bubble Point Test
External Leakage Test
Radiographic Inspection
Dye Penetrant Inspection
Cleanliness Check and Visual Inspection
Data Review