

<b>TANK TYPE</b> Simple Pmd MMH or NTO	<b>MOUNT</b> Tabs	<b>LOCATION</b> Girth	<b>PMD DEVICE</b> Vane, Trap & Sponge
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The tank assembly is a hemispherical pressure vessel 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 & woven screen, fabricated to maintain separation of liquid propellant (MMH or NTO) & gaseous pressurant, & to provide predictable gas-free liquid propellant expulsion from the tank under low or zero gravity conditions.

**Part Number 80380-1**

**SIZE: 48.9-inch ID Sphere**  
**SIZE: 1242-mm**

**ISO 9001 & AS 9100 REGISTERED**

APPLICABLE DOCUMENTS		TANK CHARACTERISTICS			
Bubble Point Test Procedure	50-000447	Operating Pressure, psig	250	Total Volume, ci	61.025
Acceptance Test Procedure	50-000450	Proof Pressure, psig	312.5	Prop Volume, ci	65-95%
Delta Qualification Test Procedure	50-000451	Cryo Proof, psig	430	Max Design Wt, lbs	70.0
Delta Qualification Test Report	56-000161	Burst Pressure, psig	375	Minimum Wall, inch	0.030
Stress Fracture	94-013				
Cleaning	CPP 3736				

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

**Notes:**

- 1: Tooling owned by Northrop Grumman
- 2: Tank shell is similar to P/N 80366-1
- 3: PMD design is by PMD Technology
- 4: Cryogenic Fixture: T-4647
- 5: Tube protectors are SK 1353 & SK 1354
- 6: Vibration Fixture: T-4646.
- 7: Fracture Critical
- 8: Only the axial axis & one lateral axis to be tested.
- 9: Test is ran with 2,094 lbs of water

TANK CHARACTERISTICS (Metrics)			
Operating Pressure, Bar	17.24	Total Volume, l	1,000
Proof Pressure, Bar	21.55	Prop Volume, l	65-95%
Cryo Proof, Bar	29.65	Max Design Wt, Kg	31.8
Burst Pressure, Bar	25.85	Minimum Wall, MM	0.762

FORGINGS		
FORGINGS P/N	SUPPLIER	Die
80-363061-1, (2)		
RING FORGING	RING SIZE, (Rough Machined)	
80-363065-1	49.75 +/- .06 OD x 48.31 +/- .06 ID x 3.19 +/- .09 L	
80-380063-1	12.75+ .13, -.00 OD x 6.18+ .00, -.13 ID x 1.38+ .13, -.00 L	
80-380067-1	13.42+ .13, -.00 OD x 6.62+ .00, -.13 ID x .93+ .13, -.00 L	
80-380065-1	13.42+ .13, -.00 OD x 6.62+ .00, -.13 ID x 1.25+ .13, -.00 L	

TUBE TYPE AND SIZE	
TRANSITION	SIZE
80-380002-1 (2)	.375 OD x .020 Wall

TUBE TYPE AND SIZE (Metric)	
TRANSITION	SIZE
80-380002-1 (2)	9.52 OD x .5 Wall

QUALIFICATION TESTS
Preliminary Inspection of Product
Mass Measurement
Pre-Proof Volumetric Capacity
Ambient Proof Pressure Test
Post Proof Volumetric Capacity
Bubble Point Test
Dry Sine
Wet Sine
Random Vibration Tests
Bubble Point Test
Expulsion and Pressure Drop Test
Bubble Point Test
Final Inspection of Product
Data Review

