



TANK	MOUNT	LOCATION	PMD DEVICE
PMD	Tabs	Girth Weld	Complex

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 80442-1

SIZE: 48.9" ID x 63.335" Long

SIZE: 1242.06-mm x 1608.71-mm

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS	TANK CHARACTERISTICS	ACCEPTANCE TESTS
Protoflight 50-000581	Operating Pressure, psig 250 Total Volume, ci 87,575	Preliminary Inspection of Product
Acceptance Test Procedure 50-000580	Proof Pressure, psig 312.5 Prop Volume, ci	Mass Measurement
Bubble Point Test Procedure 50-000584	Cryo Proof, psig NA Max Design Wt, lbs 100.5	Pre-Proof Volumetric Capacity
Materials List 54-000160	Burst Pressure, psig 375 Minimum Wall, inch 0.031	Ambient Proof Pressure
Processes List 54-000161		Visual Inspection
Cleaning CPP 3849		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

- Notes:**
- 1: Tooling owned by ATK
 - 2: Tank shell is similar to P/N 80366-1 & 80403
 - 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	1,435.11
Proof Pressure, Bar	21.55	Prop Volume, l	0.00
Cryo Proof, Bar	NA	Max Design Wt, Kg	45.59
Burst Pressure, Bar	25.85	Minimum Wall, MM	0.787

FORGINGS

FORGINGS P/N	SUPPLIER	Die
80-363061-1	Hemi Forge Ladish	TR038
80-363063-3	Center Section Carlton	
80-363065-1	Tab Ring Forged Metals	

TUBE TYPE AND SIZE

TITANIUM	SIZE
80-380002-1	.375 OD X .020 Wall
80-380002-1	.375 OD X .020 Wall

