



TANK TYPE	MOUNT	LOCATION	PMD DEVICE
Complex PMD	Tabs	Girth	Channel, Trap & Screen

This tank assembly is a pressure vessel with hemispherical ends & 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 cylindrical section weld joint. The tank contains an internally mounted propellant management device (PMD), with perforated sheet & woven screen, fabricated to maintain separation of liquid propellant & gaseous pressurant, & to provide predictable gas-free liquid propellant expulsion from the tank under low or zero gravity conditions.

ATK Part Number 80367-1

SIZE: 48.9" ID x 59.66" Long
 SIZE: 1242 x 1515 mm

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000396
Qualification Test Procedure	50-000397
Bubble Point Test procedure	50-000400
Protoflight Test Procedure	50-000400
Bubble Point Test Procedure	50-000417
Materials List	54-000122
Processes List	54-000123
Qualification Test Report	56-000155
Cleaning, PMD	CPP 3546
Cleaning, Tank	CPP 3722

TANK CHARACTERISTICS

Operating Pressure, psig	250	Total Volume, ci	77,800
Proof Pressure, psig	313	Prop Volume, ci	77,800
Cryo Proof, psig	430	Max Design Wt, lbs	93.5
Burst Pressure, psig	375	Minimum Wall, inch	0.031

ACCEPTANCE TESTS

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

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	17.24	Total Volume, l	1,274.93
Proof Pressure, bar	21.58	Prop Volume, l	1,274.93
Cryo Proof, bar	29.65	Max Design Wt, Kg	42.41
Burst Pressure, bar	25.85	Minimum Wall, MM	0.787

FORGINGS

FORGINGS P/N	SUPPLIER	Die
80-363061-1 (2)		
RING FGG		RING SIZE, (Rough Machined)
80-363063-3, Cyl	49.57 +/- .09 OD x 48.4 +/- .09 ID x 9.37 +/- .06 Lg	
80-363065-1, Tab	49.75 +/- .09 OD x 48.31 +/- .09 ID x 3.19 +/- .06 Lg	

Notes:

- 1: Tooling owned by ATK.
- 2: This tank is similar to P/N 80363-1
- 3: Center body, channel, & trap vent screens are SS.
- 4: PMD is proprietary to Loral
- 5: Brunswick Wintec Proprietary*
- 6: Weld Qual Ring = SK1285
- 7: Tube protectors are SK 1314 & SK 1315
- 8: Stress Analysis, Tank (Foster), 92-014A
- 9: Fracture Mechanics Analysis(Foster), 92-015A
- 10: Stress Analysis, PMD, 92-016A
- 11: Fracture Critical

TUBE TYPE AND SIZE

TRANSITION	SIZE
80-363001-1 (2)	.500 OD x .028 Wall 12.7 x .711 mm

QUALIFICATION TESTS

Preliminary Inspection of Product
Mass Measurement
Pre-Proof Volumetric Capacity
Ambient Proof Pressure
Post-Proof Volumetric Capacity
Cryogenic Proof Pressure
Visual Inspection
Post-Proof Volumetric Capacity
External Leakage Test
Tank Assembly Bubble Point Test
Tank Cleanliness
Sine & Random Vibration Test
Tank Assembly Bubble Point Test
Acceleration Test & Visual Inspection
Pressure Cycling Test & Visual Inspection
Expulsion Test
Tank Assembly Bubble Point Test
External Leakage Test
Radiographic Inspection
Dye Penetrant Inspection
Cleanliness Check
Burst Test

