



TANK & FUEL TYPE	MOUNT	LOCATION	PMD DEVICE
Simple Pmd MMH & NTO	Tabs	Girth	Vane, Trap & Sponge

This tank assembly is a hemispherical pressure vessel with a cylindrical section & is 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, 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.

ATK Part Number 80403-1

SIZE: 48.9-inch ID Sphere X 57.8 Long
SIZE: 1242 X 1468-mm

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS	
Bubble Point Test Procedure	50-000447
Acceptance Test Procedure	50-000515
Protoflight Test Procedure	50-000516
Materials List	54-000160
Processes List	54-000161
Cleaning	CPP 3849

TANK CHARACTERISTICS			
Operating Pressure, psig	250	Total Volume, ci	77.805
Proof Pressure, psig	313	Prop Volume, ci	77.805
Cryo Proof, psig	430	Max Design Wt, lbs	87.6
Burst Pressure, psig	375	Minimum Wall, inch	0.031

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
Tank Assembly Bubble Point Test
Sine Vibration Test and
Visual Inspection
Pressure Drop Test
Tank Assembly 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
 - 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
- Only the axial axis & one lateral axis to be tested.

TANK CHARACTERISTICS (Metrics)			
Operating Pressure, Bar	17.24	Total Volume, l	1,275
Proof Pressure, Bar	21.58	Prop Volume, l	1,275
Cryo Proof, Bar	29.65	Max Design Wt, Kg	39.74
Burst Pressure, Bar	25.85	Minimum Wall, MM	0.787

FORGINGS		
FORGINGS P/N	SUPPLIER	Die
80-363061-1, (2)		
RING FORGING		
RING SIZE, (Rough Machined)		
80-363065-1, Tab	49.75 +/- .06 OD x 48.31 +/- .06 ID x 3.19 +/- .09 Long	
80-380063-1, Trap Base	2.75+ .13, -.00 OD x 6.18+ .00, -.13 ID x 1.38+ .13, -.00 Long	
80-380067-1, Support Plate	4.42+ .13, -.00 OD x 6.62+ .00, -.13 ID x .93+ .13, -.00 Long	
80-380065-1, Platform	13.42+ .13, -.00 OD x 6.62+ .00, -.13 ID x 1.25+ .13, -.00 Long	
80-363063-3, Center Section	49.57 +/- .09, OD x 48.4 +/- .09, ID x 9.37 +/- .06, Long	

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

QUALIFICATION TESTS
Qual by similarity on 80366-1.

TUBE TYPE AND SIZE (Metrics)	
TRANSITION	SIZE
80-380002-1 (2)	9.525 OD x .5 MM

