



TANK TYPE	MOUNT	LOCATION	PMD DEVICE
SIMPLE PMD, Hydrazine	POLAR	APEX	VANes, 8 ea

This tank assembly is a 22-inch inside diameter by 29.5-inch long pressure vessel constructed of 6Al-4V titanium. The tank has two heads which are welded to a cylindrical center section. The tank contains an internally mounted propellant management device whose function is to maintain separation of liquid propellant (Hydrazine) & gaseous pressurant & to provide gas free liquid propellant at the tank outlet. Mounting is by the two polar bosses.

ATK Part Number 80387-1

SIZE: 22.2-inch ID x 29.5-inch Long
SIZE: 563.8 x 749.3-mm

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000472
Qualification Test Procedure	50-000473
Qualification Test, PMD	50-000481
PMD Development Test Plan	50-000495
Fracture Analysis Plan	54-000147
Forging Qualification Report	55-000090
PMD Development Test Report	56-000164
Qualification Test Report	56-000167
Cleaning	CPP 3822

TANK CHARACTERISTICS

Operating Pressure, psig	400	Total Volume, ci	7,700
Proof Pressure, psig, Note 5	600	Prop Volume, lb	220
Cryo Proof, psig	NA	Max Design Wt, lbs	20
Burst Pressure, psig, Note 7	800	Minimum Wall, inch	
Actual Burst, psig	1113		

ACCEPTANCE TESTS

Forging Acceptance Tests
 Pre-ATP Inspection/Tests, Including:
 - In Process Vibration Test of Expulsion Assembly, and
 - Preliminary Examination of Product
 Pre-Proof Volume Determination
 Proof Pressure Test
 Post-Proof Volume Determination
 Pressure Drop Test
 Negative Pressure Test
 External Leakage Test
 Penetrant Inspection
 Radiographic Inspection
 Examination of Product (Final)
 Cleanliness

TANK CHARACTERISTICS (Metrics)

Operating Pressure, Bar	27.58	Total Volume, l	126.18
Proof Pressure, Bar, Note 5	41.37	Prop Volume, Kg	99.79
Cryo Proof, Bar	NA	Max Design Wt, Kg	9.07
Burst Pressure, Bar, Note 7	55.16	Minimum Wall, MM	
Actual Burst, psig	76.74		

FORGINGS

FORGINGS P/N	SUPPLIER	Die No
80-313061-1		
RING FORGING		RING SIZE, (Rough Machined)
80-387063-1, Cyl		22.43+.12, -.00 ODx21.52+.00, -.12 IDx5.50+.12, -.00 L

TUBE TYPE AND SIZE

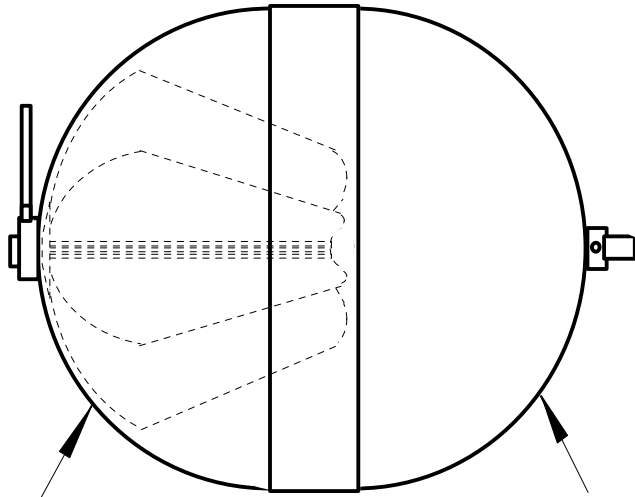
TRANSITION	SIZE
80-387001-1	250" OD x .028" Wall x 5.36" Long

QUALIFICATION TESTS

Preliminary Inspection of Product
 Pre-Proof Volume Determination
 Proof Pressure Test
 Post Proof Volume Determination
 Pressure Drop Test
 Negative Pressure Test
 External Leakage Test
 Penetrant Inspection
 Radiographic Inspection
 Pressure Cycle
 Negative Pressure Test
 External Leakage Test
 Centrifuge
 External Leakage Test
 Penetrant Inspection
 Radiographic Inspection
 Final Examination of Product
 Burst

Notes:

- 1: Tooling belongs to Customer
 - 2: Tube Protectors are SK 1406 & SK 1407
 - 3: Expulsion Assembly only to verify integrity of PMD
 - 4: Lateral & Longitudinal growth recorded.
 - 5: Fracture Critical
- Proof pressure is corrected for temperature



PROPELLANT
HEMISPHERE

PRESSURANT
HEMISPHERE

