



TANK TYPE	MOUNT	LOCATION
Dipahragm	Pedestal	Apex

This is a 15" spherical pressure vessel constructed of 6Al-4V titanium. Positive fuel expulsion is provided by a reversible ethylene-propylene terpolymer (AF-E-332) rubber diaphragm retained (welded in) at the sphere mid-plane. Mounting is accomplished on a pedestal mount located on the apex of the propellant hemisphere.

**ATK Part Number 80389-1**

**SIZE: 15.38-inch ID Sphere**  
**SIZE: 390.6-mm**

**ISO 9001 & AS 9100 REGISTERED**

APPLICABLE DOCUMENTS	
Qual Test Procedure	see Note 5
Acceptance Test Procedure	50-000476
Fracture Analysis plan	54-000150
Qualification Test Report	see Note 5
Cleaning	CPP 3814

TANK CHARACTERISTICS			
Operating Pressure, psig	320	Total Volume, ci	1.865
Proof Pressure, psig	510	Prop Volume, ci	1.375
Cryo Proof, psig	NA	Max Design Wt, lbs	8.20
Burst Pressure, psig		Minimum Wall, inch	0.019

ACCEPTANCE TESTS
Preliminary Examination of Product
Pre-Proof Volume Determination
Proof Pressure Tes
Post-Proof Volume Determination
Internal Diaphragm Leakage Test
External Leakage Test
Penetrant Inspection
Radiographic Inspection
Weight Determination
Final Examination of Product
Cleanliness Verification

DIAPHRAGM INFORMATION	
Diaphragm P/N	80-225017-1
Diaphragm Mold Tool No	T-1647
Diaphragm Gross Wt	1.19 (.539 Kg)
Diaphragm Material Type	AF-E-332
Diaphragm Material Note 2	90-000075
Diaphragm Processing Note 2	90-000087
N-Ray Inspection Procedure	1002

TANK CHARACTERISTICS (Metrics)			
Operating Pressure, Bar	22.06	Total Volume, l	30.56
Proof Pressure, Bar	35.16	Prop Volume, l	22.53
Cryo Proof, Bar	NA	Max Design Wt, Kg	3.72
Burst Pressure, Bar		Minimum Wall, MM	0.483

FORGINGS		
FORGINGS P/N	SUPPLIER	Die No
80-225061-1, (2)		
RING FORGING		RING SIZE, (Rough Machined)
80-225063-1, Retainer	15.63 +.12 OD x 14.37 -.12 ID x 1.28 +.12 Lg	
80-225065-1, Base	9.5 +.09 OD x 7.12 -.09 ID x 2.2 +.09 Lg	

QUALIFICATION TESTS
Qual by similarity on 80225-1.

**Notes:**

- 1: Tooling owned by ATK
- 2: Proprietary Document
- 3: This tank is a redesign 80225-1
- 4: Tube protectors are SK 1388 & SK 1389
- 5: QTP & QTR are for P/N 80225-1
- 6: Fracture Critical

TUBE TYPE AND SIZE	
TRANSITION	SIZE
80-389017-1	Outlet Tube, overall length is 6.87 (174.49 mm) 1st tube (-7) is 2.2" Long (55.88 mm) 2nd tube (-5) is formed 3rd tube is transition 1.6Long x .028Wall x .250OD (40.64 x .71 x 6.35 mm) (The -3 tube is made from a 80-285001-1)

