



TANK TYPE	MOUNT	LOCATION
Diaphragm	Bosses	Polar

This is a 28-inch 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 polar bosses.

**ATK Part Number 80228-1**

**SIZE: 28-inch ID Sphere**  
**SIZE: 711-mm**

**ISO 9001 & AS 9100 REGISTERED**

**APPLICABLE DOCUMENTS**

Acceptance Test Procedure	50-000194
Qualification Test Procedure	50-000195
Forging Qualification Procedure	55-000054
Weld Qualification Procedure	55-000056
Forging Qualification Report	55-000057
Qualification Test Report	56-000070
Cleaning	CPP 9005

**TANK CHARACTERISTICS**

Operating Pressure, psig	355	Total Volume, ci	11,350
Proof Pressure, psig	970	Prop Volume, ci	8,060
Cryo Proof, psig	NA	Max Design Wt, lbs	44.0
Design Burst Pressure, psig	1,070	Minimum Wall, inch	0.047
Actual Burst Pressure, psig	1,321		

**ACCEPTANCE TESTS**

Examination of Product, Preliminary  
 Pre-Proof Volume  
 Proof Pressure  
 Post-Proof Pressure  
 Pressure Drop/Expulsion Efficiency  
 External Leakage  
 Diaphragm Leakage  
 Examination of Product, Final  
 Cleanliness Verification

**DIAPHRAGM INFORMATION**

Diaphragm P/N	80-228007-1
Diaphragm Mold P/N	T-1669
Diaphragm Gross Wt	4.16
Diaphragm Matl Type	AF-E-332
Diaphragm, Material, Note 2	90-000075
Diaphragm Processing, Note 2	90-000087
N-Ray Procedure	

**TANK CHARACTERISTICS (metrics)**

Operating Pressure, Bar	24.48	Total Volume, l	186.00
Proof Pressure, Bar	66.88	Prop Volume, l	132.08
Cryo Proof, Bar	NA	Max Design Wt, Kg	20.0
Design Burst Pressure, Bar	73.77	Minimum Wall, MM	1.194
Actual Burst Pressure, Bar	91.15		

**QUALIFICATION TESTS**

Examination of Product, Preliminary  
 Pre-Proof Pressure  
 Proof Pressure  
 Post Proof Volume  
 Pressure Drop/Expulsion Efficiency  
 External Leakage  
 Diaphragm Leakage  
 Examination of Product, Final  
 Cleanliness Verification

**FORGINGS**

FORGINGS P/N	SUPPLIER	Die
# 80-228061-1, (2)		
RING FORGING	RING SIZE, (Rough Machined)	
80-228063-1, Retainer	28.35 +.25 OD x 26.81 -.25 ID x 1.59 +.09 Lg	

**Notes:**

- 1: Tooling owned by ATK (Purchased from RI)
- 2: Proprietary Documents
- 3: The vibration fixture used during qualification testing no longer exist. It was lost by the test vendor.
- 4: Fracture Critical

