

<b>TANK TYPE</b> Diaphragm	<b>MOUNT</b> Lugs, 3	<b>LOCATION</b> Girth
-------------------------------	-------------------------	--------------------------

This is a 22-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 by three (3) lugs parallel with and adjacent to the sphere mid-plane.

**Part Number 80298-1**

**SIZE: 22.14-inch ID Sphere**  
**SIZE: 562-mm**

**ISO 9001 & AS 9100 REGISTERED**

**APPLICABLE DOCUMENTS**

Acceptance Test Procedure	50-000255
Qualification Test Procedure	50-000259
Qualification Test Plan	50-000296
Fracture Control plan	54-000049
Qualification Test report	56-000099
Qualification Re-Test Report	56-000106
Cleaning	CPP 3593

**TANK CHARACTERISTICS**

Operating Pressure, psig	475	Total Volume, ci	5,555
Proof Pressure, psig	795	Prop Volume, ci	4,754
Cryo Proof, psig	NA	Max Design Wt, lbs	30.0
Burst Pressure, psig	950	Minimum Wall, inch	0.033

**ACCEPTANCE TESTS**

Examination of Product
Pre-Proof Volume Determination
Proof Pressure Test
Post-Proof Volume Determination
Water Expulsion Test
Internal (Diaphragm) Leakage
External Leakage Test
Final Examination of Product
Weight Determination
Cleanliness Verification
Post Test Inspection

**TANK CHARACTERISTICS (Metrics)**

Operating Pressure, Bar	32.75	Total Volume, l	91.03
Proof Pressure, Bar	54.81	Prop Volume, l	77.91
Cryo Proof, Bar	NA	Max Design Wt, Kg	13.61
Burst Pressure, Bar	65.50	Minimum Wall, MM	0.838

**DIAPHRAGM INFORMATION**

Diaphragm P/N	80-259007-1
Diaphragm Mold P/N	T-1261
Diaphragm Gross Wt	2.47 (1.12 Kg)
Diaphragm Matl Type	AF-E-332
Diaphragm, Material	Note 2 90-000075
Diaphragm Processing	Note 2 90-000087
N-Ray Procedure	1002

**FORGINGS**

FORGINGS P/N	SUPPLIER	Die No
80-203061-1 (2)		
<b>RING FORGING</b>		
<b>RING SIZE, (Rough Machined)</b>		
80-203009-11, Retainer	24.4 +.06 OD x 21.0 -.06 ID x 1.28 +.06 Lg	
80-298063-1, Lug	25.81 +.09 OD x 22.38 -.09 ID x .71 +.06 Lg	

**QUALIFICATION TESTS**

Acceptance Test
Acceleration Test
Internal Leakage Test
External Leakage Test
Vibration Test
Internal Leakage Test
External Leakage Test
Diaphragm Integrity Test
Internal Leakage Test
Pressure Life Cycle Test
External Leakage Test
Water Expulsion Test
Internal Leakage Test
External Leakage Test
Burst Pressure Test
Post-Test Disassembly & Examination Test

**Notes:**

- Majority of tooling belongs to Northrop Grumman
- Proprietary Document
- Ea lug ring makes 16 pcs of -7 or 8 pcs of -5
- Ea tank has one -7 and two -5 lugs
- Centaur, Titan Centaur
- Lockheed Martin Astronautics Space Systems  
(Formerly General Dynamics Space Systems)
- Fracture Critical

**TUBE TYPE AND SIZE**

TRANSITION	SIZE
80-298001-1, Inlet	.375 OD x .020 Wall
80-298001-3, Outlet	.375 OD x .020 Wall
	9.525 x .5 mm

