



TANK TYPE	MOUNT	LOCATION
Diaphragm	Lugs	Girth

This is a 16.5-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 four (4) lugs parallel with and adjacent to the sphere mid-plane.

ATK Part Number 80358-1

SIZE: 16.5-inch ID Sphere
SIZE: 419-mm

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000382
Cleaning	CPP 3681

TANK CHARACTERISTICS

Operating Pressure, psig	396	Total Volume, ci	2,300
Proof Pressure, psig	792	Prop Volume, ci	1,965
Cryo Proof, psig	NA	Max Design Wt, lbs	13.0
Burst Pressure, psig	1,212	Minimum Wall, inch	0.040

ACCEPTANCE TESTS

Preliminary Examination of Product
 Pre-Proof Volume Determination
 Proof Pressure Test
 Post-Proof Volume Determination
 Internal Leakage
 External Leakage
 Outside Surface Quality Inspection
 Weld Quality Inspection
 Weight Test
 Examination of Product
 Cleanliness

DIAPHRAGM INFORMATION

Diaphragm P/N	80-271007-1
Diaphragm Mold P/N	SK 666
Diaphragm Gross Wt	0.88
Diaphragm Matl Type	AF-E-332
Diaphragm, Material, Note 2	90-000075
Diaphragm Processing, Note 2	90-000087
N-Ray Procedure	1002

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	27.30	Total Volume, l	38.32
Proof Pressure, bar	54.61	Prop Volume, l	32.74
Cryo Proof, bar	NA	Max Design Wt, kg	5.90
Burst Pressure, bar	83.56	Minimum Wall, MM	1.016

QUALIFICATION TESTS

Qual by similarity on tank 80303-1

Notes:

- Majority of tooling belongs to ATK
- Proprietary Document
- This tank is similar to 80303 & 80275
- Each lug ring will make 9 lugs
- General Electric Astro Space
- Fracture Critical

FORGINGS

FORGINGS P/N	SUPPLIER	Die
80011-63, Pressurant		
80157-61, Propellant		

RING FORGING	RING SIZE, (Rough Machined)
80-214065-1, Retainer	16.75 +.06 OD x 15.5 -.06 ID x 1.4 +/- .06 Lg
80-271060-3, Lug	19.38 +.06 OD x 17.19 -.06 ID x .87 +/- .06 Lg

TUBE TYPE AND SIZE

TRANSITION	SIZE
80-275001-3, Outlet	.500 OD x .025 Wall (12.7 x .635)
80-358001-1, Inlet	.375 OD x .025 Wall (9.525 x .635)

