

TANK TYPE	MOUNT	LOCATION
DIAPHRAGM		

The Ammonia Tank is a light-weight, spherical 6Al-4V Titanium Pressure Vessel used with the ammonia boiler for the Environmental Controls and Life Support System for the Crew Exploration Vehicle. Pressurized regulated helium is applied to the back of the tank causing ammonia to flow from the tank. The tank contains a rubber diaphragm, within the tank, that separates the ammonia from the helium.

Part Number 80591-1

SIZE: 17" DIA x 19.62" LONG
SIZE: 431.8 mm DIA x 498.3 mm LONG

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000776
Protoflight Test Procedure	50-000889
Stress and Fracture Analysis	54-000499
Cleaning	CPP 4059

TANK CHARACTERISTICS

Operating Pressure, psig	712	Total Volume, in ³	2,390
Proof Pressure, psig	1,065	Max Design Wt, lbs	17.85
Cryo Proof, psig	N/A	Minimum Wall, inch	
Burst Pressure, psig		Qual Tank Mass, lbs	
Actual Burst, psig			

ACCEPTANCE TESTS

- Preliminary Examination of Product
- Pre-Proof Volume Determination
- Shell Proof Pressure
- Post-Proof Volume Determination
- Ammonia Volume Test
- Ammonia Flow Rate Test
- Internal Leak Test: Pressurant to Ammonia
- Internal Leak Test: Ammonia to Pressurant
- External Leak Test
- Radiographic Inspection
- Penetrant Inspection
- Determination of Weight and Final Inspection
- Cleanliness Verification
- Final Examination of Product

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	49.1	Total Volume, l	39.2
Proof Pressure, bar	73.4	Max Design Wt, kg	8.1
Cryo Proof, bar	N/A	Minimum Wall, mm	
Burst Pressure, bar		Qual Tank Mass, kg	
Actual Burst, bar			

HEMISPHERE FORGINGS

HEMI P/N	QTY
80-591040-1	1
80-591020-1	1

RING FORGINGS

P/N	QTY	SIZE
80-591009-1	1	16.105" OD x 15.480" ID x 1.13" LONG

TUBE TYPE AND SIZE

	QTY	SIZE
80-591005-1	2	.250-.292" OD x .028-.040" WALL x 3.70" LONG

QUALIFICATION TESTS

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