



TANK TYPE DIAPHRAGM	MOUNT POLAR FLEX PLATES AND SIDE TRUNNION
The propellant tank is a cylindrical pressure vessel with hemispherical heads constructed of 6AL-4V Titanium. Positive propellant expulsion is provided by a reversing AF-E-332 rubber diaphragm retained at the cylinder section. Tank mount is accomplished by a side trunnion and flex plates mounted on the tank bosses. Connection is made to the propellant and pressurant compartments through tube stubs.	
ISO 9001 & AS 9100 REGISTERED	

ATK Part Number 80557-1

Size: 34.7" ID x 43.5" Long inside
Size: 881 mm ID x 1105 mm Long

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000780
Qual Test Procedure	50-000779
Qualification Test Report	
Stress and Dynamics Report	54-000359
FMECA	
Cleaning	CPP 4057

TANK CHARACTERISTICS

Operating Pressure, psig	350	Total Volume, in ³	29340
Proof Pressure, psig	525	Qualified Volume, in ³	28000
Cryo Proof, psig	N/A	Max Design Wt, lb _m	74
Burst Pressure, psig	700	Minimum Wall, inch	0.041
Actual Burst, psig		Qual Tank Mass	

ACCEPTANCE TESTS

- Preliminary Examination of Product
- Pre-Proof Volume Determination
- Proof Pressure
- post-Proof Volume Determination
- Differential pressure, mass flow rate, & expulsion assembly
- Internal leak
- Negative pressure
- External leak
- Weld quality inspection: X-ray and penetrant
- Determination of Weight and Final Inspection
- Cleanliness Verification
- Final Examination

Notes:

* Performed Two Qual Tests Concurrently

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	24.1	Total Volume, l	481
Proof Pressure, bar	36.2	Max Design Wt, kg	33.57
Cryo Proof, bar	N/A	Minimum Wall, mm	1.041
Burst Pressure, bar	48.3	Qual Tank Mass	-
Actual Burst, bar			

HEMISPHERE FORGINGS

HEMI P/N	QTY
80-557061-1	2

RING FORGINGS

P/N	QTY	SIZE
80-557009-1	1	

TUBE TYPE AND SIZE

Ti 3AL-2.5V	QTY	SIZE
80-557025-3	2	0.375" OD x 0.020" Wall 9.5 mm x 0.508 mm Wall

80557-1 QUALIFICATION TESTS

- Volume capacity
- Proof pressure
- Volume capacity
- Internal leak
- Negative pressure
- External leak
- Proof pressure cycling
- MEOP pressure cycling
- System priming test
- Differential pressure, mass flow rate, & expulsion assembly
- Weld quality inspection: X-ray and penetrant
- Visual inspection
- Vibration test
- Internal leak
- Negative pressure
- Volume capacity
- Proof pressure
- Volume capacity
- Differential pressure, mass flow rate, & expulsion assembly
- External leak
- Weld quality inspection: X-ray and penetrant
- Mass measurement
- Final visual & dimensional examination
- Burst pressure

