



TANK TYPE	MOUNT	LOCATION
DIAPHRAGM	Lug	Girth

The Propellant Tank is a pressure vessel constructed of STA 6AL-4V Titanium shell. Positive propellant expulsion is provided by a reversing AF-E-332 rubber diaphragm retained at the sphere mid-plane. Mounting is accomplished by four (4) equally spaced lugs parallel with and adjacent to the mid-plane. Connection is made to the propellant and pressurant compartments through tube stubs.

ATK Part Number 80531-1

SIZE: 23.7" Ø x 27.22" boss-to-boss
SIZE: 602 mm Ø x 691 mm boss-to-boss

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000727
Qual Test Procedure-80323	50-000315
QBS Report	56-000253
Stress and Dynamics Report	203, 370
FMECA	54-000290
Cleaning	CPP 3894
Qual Test Report	56-000129

TANK CHARACTERISTICS

Operating Pressure, psig	450 psi @ 140°F	Total Volume, in ³	7261
Proof Pressure, psig	562.5 psi @ 140°F	Max Design Wt, lbs	29.0
Cryo Proof, psig	N/A	Minimum Wall, inch	0.040
Burst Pressure, psig	675 psi @ 140°F	Flight Tank Mass	27.38
Actual Burst, psig	See 80323 - up to 1104 psi		

ACCEPTANCE TESTS

Preliminary Examination of Product
Pre-Proof Volume Determination
Proof Pressure
Post-Proof Volume Determination
Expulsion Efficiency
Internal leakage
External Leakage
Radiographic Inspection
Penetrant Inspection
Determination of Weight and Final Inspection
Cleanliness Verification
Final Exam

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	31 bar @ 60°C	Total Volume, l	119
Proof Pressure, bar	38.8 bar @ 60°C	Max Design Wt, kg	13.2
Cryo Proof, bar	N/A	Minimum Wall, mm	1.02
Burst Pressure, bar	46.5 bar @ 60°C	Flight Tank Mass	12.4
Actual Burst, bar	See 80323 - up to 76 bar		

80323-1 QUALIFICATION TESTS

Acceptance Test
Vibration
Internal Leakage
External Leakage
Differential Pressure Test
Internal Leakage
Life Cycling
Penetrant Inspection
Radiographic Inspection
Internal leakage
External Leakage
Burst Pressure - no rupture
Penetrant Inspection
Radiographic Inspection
Final Examination of Product
Preparation for Delivery

HEMISPHERE FORGINGS

HEMI P/N	QTY
80-323061-1	2

RING FORGINGS

P/N	QTY	SIZE
80-323063-1	1	22.00" ID x 23.44" OD x 1.75" LONG 58.8mm ID x 595.376mm OD x 44.45mm LONG
80-323063-3	1	22.44" ID x 24.00" OD x 3.56" LONG 569.976mm ID x 609.6mm OD x 90.424mm LONG

TUBE TYPE AND SIZE

TI 3AL-2.5V	QTY	SIZE
80-428001-5	2	0.250" OD x 0.035" Wall x 7.58" LONG 3.35 OD mm x 0.889 mm Wall x 192.532mm LONG

