



TANK TYPE DIAPHRAGM	MOUNT Tabs	LOCATION MID-PLANE	PMD DEVICE
The propellant tank is a 23" diameter x 25" long pressure vessel constructed of 6AL-4V Titanium. Positive propellant expulsion is provided by a reversing AF-E-332 rubber diaphragm retained at the sphere mid-plane. Mounting is accomplished by (4) equally spaced tabs parallel with and adjacent to the mid-plane. Connection is made to the propellant and pressurant compartments through tube stubs.			
ISO 9001 & AS 9100 REGISTERED			

ATK Part Number 80469-1

SIZE: 23.13-inch ID x 25.46 inch Long
SIZE: 587.5 mm x 646.7 mm

APPLICABLE DOCUMENTS **TANK CHARACTERISTICS**

Acceptance Test Procedure	50-000630
Fracture Analysis Plan	54-000224
Cleaning	CPP 3965

Operating Pressure, psig	417	Total Volume, in ³	7,261
Proof Pressure, psig	625	Prop Volume	250 lb _m hydrazine
Cryo Proof, psig	N/A	Prop Volume, lbs	250
Burst Pressure, psig	1,000	Max Design Wt, lbs	29.00
Actual Burst, psig		Minimum Wall, inch	0.040

DIAPHRAGM INFORMATION

Diaphragm P/N	80-323007-1
Diaphragm Mold P/N	T-3129
Diaphragm Gross Wt	3 Lbs.
Diaphragm Matl Type	AF-E-332
Material Specification, Rubber	MT3-73
Diaphragm Processing Note 2	90-000094
N-Ray Procedure	1002

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	28.75	Total Volume, l	119
Proof Pressure, bar	43.09	Prop Volume	113.4 kg hydrazine
Cryo Proof, bar	N/A	Prop Volume, kg	113.40
Burst Pressure, bar	68.95	Max Design Wt, kg	13.15
Actual Burst, bar		Minimum Wall, MM	1.016

ACCEPTANCE TESTS

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

Notes:

1. Tooling belongs to ATK
2. Proprietary Document
3. Tube Protector SK 1505
4. Fracture Critical
5. This tank is derivative of 80428-1.
6. Transition tube is attached to outlet tube
7. QTR 56-000130
8. 80428 is a modified 80323

HEMISPHERE FORGINGS

HEMI P/N	QTY	SUPPLIER	Die No
80-323061-1	2	ARCTURUS	3475

RING FORGINGS (Roughed Machined)

80-323063-1, Retainer	23.44 +/- .06 ODx22.0 +/- .06 IDx1.7 +.25 Lg
80-323063-3, Cylinder	24.0 +/- .06 ODx22.44 +/- .06 IDx3.56+.25 Lg
80-323065-1, Lug	23.87 +.13 ODx22.25 +/- .06 IDx4.0 +.25 Lg

PROGRAM INFORMATION

Program	Orbital Express
Customer	Northrup Grumman
Customer P/N	C113807-1
Original Job No	0316
Customer Installed Device	No
Customer Controlled Des.	No

TRANSITION TUBE

Ti 6AL-4V -304L	SIZE
80-454001-3 (2)	0.250" OD x .016" Wall Press (6.350 mm x 0.4064 mm Wall)

QUALIFICATION TESTS

Qual performed on 80323-1

Acceptance Test
Vibration Test
Internal Leakage
External Leakage
Differential Pressure Test
Internal Leakage
Life Cycling
Penetrant Inspection
Radiographic Inspection
Internal Leakage
External Leakage
Vibration (X-Axis Only)
Burst Pressure
Penetrant Inspection
Radiographic Inspection
Final Examination of Product
Preparation for Delivery

