

TANK TYPE	MOUNT	LOCATION	PMD DEVICE
PMD	Tabs	Prop hemi	

The 80520 Propellant Tank is an assembly consisting of titanium elliptical domes and cylinder, with an incorporated propellant management device. A tank mounting ring is located above the aft dome. The aft dome contains an outlet/drain port as well as the pressurization port.

Part Number 80520-1

SIZE: 45.95" ID x 59.145" Length
SIZE: 1,158 mm ID x 1,524 mm

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS	TANK CHARACTERISTICS	ACCEPTANCE TESTS
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Acceptance Test Procedure	50-000715
Qualification Test Procedure	50-000714
Cleaning	CPP 4039
Qualification Test Report	

Operating Pressure, psig	338	Total Volume, in ³	76,525
Proof Pressure, psig	423	Prop Volume, in ³	54,353
Cryo Proof, psig	N/A	Prop Volume, lbs	1,980
Burst Pressure, psig	507	Max Design Wt, lbs	139.00
Actual Burst, psig		Minimum Wall, inch	0.044

Preliminary Examination of Product
Pre-Proof Volumetric Capacity Test
Proof Pressure Test
Tank Dimensions
Post-Proof Volumetric Capacity Test
In-Tank PMD Bubble Point Test
External Leak Test
Visual Inspection
Radiographic Inspection of Welds
Penetrant Inspection
Final Examination of Product

Notes:

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	23.30	Total Volume, l	1,254
Proof Pressure, bar	29.16	Prop Volume, l	891
Cryo Proof, bar	N/A	Prop Volume, kg	898.12
Burst Pressure, bar	34.956	Max Design Wt, kg	63.05
Actual Burst, bar		Minimum Wall, mm	1.118

QUALIFICATION TESTS

Cyclic Pressurization
Flow Rate and Pressure Drop
PMD Integrity Radiographic Inspection
Bubble Point
External Leakage
Dry Sine Sweep - Tank Empty and Pressurized
Dry Random Vibration - Tank Empty and Pressurized
Natural Frequency - Tank Loaded and Pressurized
Sine Burst (Launch Accelerations - Tank Loaded and Pressurized)
Acoustic - Tank Empty and Pressurized
PMD Integrity Radiographic Inspection*
Bubble Point Test *
External Leakage
Visual Inspection
Penetrant Inspection
Radiographic Inspection
Final Dimensional Inspection
Burst Pressure

HEMISPHERE FORGINGS

HEMI P/N	QTY	SUPPLIER	Die No
80-507061-1	2	ARCTURUS	3937

RING FORGINGS (Roughed Machined) (inches)

80-520065-1, Mounting Tab Ring	47.00 OD x 44.88 ID x 3.38 Lg
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RING FORGINGS (Roughed Machined) (mm)

80-520065-1, Mounting Tab Ring	1,193.8 OD x 1,139.952 ID x 85.85200 Lg
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TUBE TYPE AND SIZE (inches)

Titanium		SIZE
80-520005-5	Pressurant	0.250 OD x 0.020 Wall
80-520007-5	Outlet	.3750 OD x 0.020 Wall

TUBE TYPE AND SIZE (mm)

Titanium		SIZE
80-520005-5	Pressurant	6.350 mm x 0.508 Wall
80-520007-5	Outlet	9.525 mm x 0.508 Wall

