

<u>TANK TYPE</u> PMD WRAP	<u>MOUNT</u> SKIRT	<u>LOCATION</u> CYLINDER	<u>PMD DEVICE</u> VANE, TRAP, & SPONGE
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This Hydrazine propellant tank is constructed of a 6Al-4V titanium liner with the cylindrical portion overwrapped with T1000 carbon fiber/ epoxy composite for an overall diameter of 35.5" X 71" length. Mounting of the tank is provided by a carbon/cyanate ester composite skirt with 12 attach points around the cylinder, and a polar flex plate at the pressurant end. The tank contains an internally mounted propellant management device (PMD) to provide gas free liquid throughout the mission.

Part Number 80476-1

SIZE: 35.5" dia X 71" length
SIZE: 902 mm dia. X 1803 mm long

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000575
Bubble Point Test Procedure	50-000562
Stress Report (3)	54-000184
Dynamics Report (3)	54-000183
Performance Analysis (3)	54-000197
Bond Line Analysis	54-000199
Fracture Analysis Plan (3)	54-000177
Cleaning (tank)	CPP-3911

Notes:

- 1: Fracture Critical
- 2: Tank is qualified by similarity to 80425-1
- 3: Documents Prepared for 80425-1
- 4: Same PMD as 80442-1.
- 5: Tube Protectors SK 1420 & SK 1425

PROGRAM INFORMATION

Program	OPTUS
Customer	OSC
Customer P/N	N/A
Original Job No	0404
Customer Installed Device	No
Customer Controlled Des.	No

TANK CHARACTERISTICS

Operating Pressure, psig	300	Total Volume, in ³	54,288
Proof Pressure, psig	406	Prop Volume, in ³	
Cryo Proof, psig	N/A	Prop Volume, lbs	1,802
Burst Pressure, psig	450	Max Design Wt, lbs	70.46
Actual Burst, psig		Minimum Wall, inch	0.026

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	20.68	Total Volume, l	890
Proof Pressure, bar	28.02	Prop Volume, l	
Cryo Proof, bar	N/A	Prop Volume, kg	817.38
Burst Pressure, bar	31.03	Max Design Wt, kg	31.96
Actual Burst, bar		Minimum Wall, MM	0.660

HEMISPHERE FORGINGS

HEMI P/N	QTY	SUPPLIER	Die No
80-391061-1	2	ARCTURUS	3540B

ROLLED AND SEAM WELDED CYLINDER

P/N	QTY	SIZE
80-425016-1	1	35.2 in ID X 34.5 in LONG

TUBE TYPE AND SIZE (in.)

TI 3AL-2.5V	SIZE
80-425011-5	0.375 OD x 0.020 Wall
80-425007-5	0.375 OD x 0.020 Wall

TUBE SIZE (mm)

80-425011-5	9.525 OD x 0.508 Wall
80-425007-5	9.525 OD x 0.508 Wall

QUALIFICATION TEST

Qual by similarity on 80425-1.
Examination of Product, Preliminary
Volumetric Capacity Measurement
Proof Pressure Test
Volumetric Capacity Measurement
PMD Bubble Point Testing
Z-Axis Qualification Vibration Testing
Proof Pressure Test
Differential Pressure Test
PMD Bubble Point Testing
External Leak Test
Weld Quality Inspection
Mass Measurement
Burst Pressure Test

ACCEPTANCE TEST

Examination of Product, Preliminary
Volumetric Capacity Measurement
Proof Pressure Test
Volumetric Capacity Measurement
Static Load Test
PMD Bubble Point Test
External Leak Test
Weld Quality Inspection
Mass Measurement
Final Visual Inspection
Final Cleanliness

