

TANK TYPE PMD WRAP	MOUNT Sidemount, strut	LOCATION CYLINDER	PMD DEVICE VANE, TRAP, & SPONGE
------------------------------	----------------------------------	-----------------------------	--

The tank is a 21.5"Ø x48" log titanium tank. The tank is constructed from titanium 6AL-4V with a nominal membrane thickness of 0.029" - 0.032". Mounting is provided by one welded sidemount and four strut supports located on the tank inlet and outlet bosses. The tank contains an internal PMD (propellant management device) assembly, constructed from titanium perforated sheet. The PMD serves to maintain separation of liquid propellant and gaseous pressurant, and to provide predictable gas-free liquid propellant expulsion from the tank under low or zero gravity conditions. The propellant and pressurant ports are 3/8" titanium tubes.

Part Number 80518-1

SIZE: 21.5"Ø x48"

SIZE: 561.1 mm dia. X 1219.2 mm long

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000518B
Bubble Point Test Procedure	
Stress Report (3)	
Dynamics Report (3)	
Performance Analysis (3)	
Bond Line Analysis	
Fracture Analysis Plan (3)	
Cleaning (tank)	CPP 3820

TANK CHARACTERISTICS

Operating Pressure, psig	300	Total Volume, in ³	13,996
Proof Pressure, psig	375	Prop Volume, in ³	52,335
Cryo Proof, psig	N/A	Prop Volume, lbs	1,802
Burst Pressure, psig	450	Max Design Wt, lbs	63.75
Actual Burst, psig		Minimum Wall, inch	0.026

ACCEPTANCE TESTS

Examination of Product
Vol. Determination and Proof Pressure Test
Vibration Test
External Leakage Test
Radiographic & Penetrant Inspection
Examination of Product
Cleanliness
Data Review

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	20.68	Total Volume, l	229
Proof Pressure, bar	25.85	Prop Volume, l	858
Cryo Proof, bar	N/A	Prop Volume, kg	817.38
Burst Pressure, bar	31.03	Max Design Wt, kg	28.92
Actual Burst, bar		Minimum Wall, MM	0.660

QUALIFICATION TESTS

Qual by similarity on 80425-1.

Notes:

- 1: Fracture Critical
- 2: Tank is qualified by similarity to 80425-1
3. Documents Prepared for 80425-1
4. Variation of 80432-101 with additional flex plate 80-518008-1

HEMISPHERE FORGINGS

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

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 x 0.020 Wall Press
80-425007-5	0.375 x 0.020 Wall Prop

TUBE SIZE (mm)

80-425011-5	9.525 x 0.508 Wa;; (ress
80-425007-5	9.525 x 0.508 Wall Prop

PROGRAM INFORMATION

Program	STAR 2
Customer	Orbital Sciences Corporation
Customer P/N	
Original Job No. (4)	
Customer Installed Device	
Customer Controlled Design	

