

TANK TYPE PMD WRAP	MOUNT 4 SIDEMOUNT BRACKETS	LOCATION CYLINDER	PMD DEVICE VANE, SPONGE, & TRAP
------------------------------	---	-----------------------------	--

The tank is a 21.5" OD x 48" long 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 sheet and titanium woven screen. 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 80491-1

SIZE: 21.5" DIA X 48" L

SIZE: 546.1 mm DIA X 1219.1 mm L

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000491b
Qual Test Procedure	50-000591
Qualification Test Report	56-000224
Bubble Point Test Procedure	50-000492
Shell Stress Analysis (Foster)	20-029
Fracture Mechanics (Foster)	20-027
PMD Stress Analysis (Wada)	288-2
Fracture Plan	54-000186
Cleaning (tank)	CPP 3820

TANK CHARACTERISTICS

Operating Pressure, psig	300	Total Volume, in ³	13,937
Proof Pressure, psig	375	Prop Volume, in ³	
Cryo Proof, psig	N/A	Prop Volume, lbs	
Burst Pressure, psig	450	Max Design Wt, lbs	
Actual Burst, psig		Minimum Wall, inch	

ACCEPTANCE TESTS

Examination of Product
Tank Assembly Bubble Point Test
Vol Determination and Proof Pressure Test
Pressure Drop Test
Vibration Test
Tank Assembly Bubble Point Test
External Leakage Test
Radiographic & Penetrant Inspection
Examination of Product
Cleanliness
Data Review

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	20.68	Total Volume, l	228
Proof Pressure, bar	25.85	Prop Volume, l	
Cryo Proof, bar	N/A	Prop Volume, kg	
Burst Pressure, bar	31.03	Max Design Wt, kg	
Actual Burst, bar		Minimum Wall, MM	

Notes:

1. Cylinder seam welding and center tube
2. Cylinder and center tube seam weld
3. Fracture critical
4. Shortened version of 80434

Program Information

Program: A2100 Extended Range
Customer: Lockheed Martin Stennis

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	3	35.2 in ID X 34.5 in LONG

TUBE TYPE AND SIZE (in.)

Ti 3AL-2.5V	SIZE
80-391011-5	0.375 x 0.025 Wall Press
80-391007-5	0.375 x 0.025 Wall Prop

TUBE SIZE (mm)

80-391011-5	9.525 x 0.635 Wall Press
80-391007-5	9.525 x 0.635 Wall Prop

