

<u>TANK TYPE</u>	<u>MOUNT</u>	<u>LOCATION</u>
PRESSURANT	POLAR	POLAR

This composite overwrapped pressure vessel (COPV) Helium tank is 16.7" (424 mm) in diameter and 34" (863 mm) in length. The tank is constructed of a CP Titanium center cylinder welded to two CP Titanium end domes and overwrapped with T1000 carbon fiber. Mounting is provided by two polar bosses located on the tank centerline axis.

Part Number 80475-201

Original Qual

SIZE: 16.7" DIA X 34" LONG

SIZE: 424 mm DIA X 863 mm LONG

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000652
Qual Test Procedure	50-000653
Qualification Test Report	56-000225
Stress and Dynamics Report	54-000229
FMECA	54-000232
Cleaning	CPP 3987

TANK CHARACTERISTICS

Operating Pressure, psig	4,496	Total Volume, in ³	5,309
Proof Pressure, psig	6,744	Max Design Wt, lbs	37.1
Cryo Proof, psig	N/A	Minimum Wall, inch	0.032
Burst Pressure, psig	8,996	Qual Tank Mass	47.40
Actual Burst, psig	13,117		

QUALIFICATION TESTS

Preliminary Examination of Product
 Volumetric Measure @ MEOP
 Proof Pressure @ Ambient
 Volumetric Capacity @ Ambient
 Volumetric Capacity @ MEOP
 MEOP Pressure Cycle Life Test
 Proof Pressure Cycle Life Test
 Non-Destructive Exam
 External Leakage Test
 Sinusoidal & Random Vibration Test
 External Leakage Test
 Pressure Guage
 Thermal Cycle Test
 External Leakage Test
 Weld Quality Inspection
 Final Examination of Product
 Burst Pressure

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	310	Total Volume, l	87
Proof Pressure, bar	465	Max Design Wt, kg	16.83
Cryo Proof, bar	N/A	Minimum Wall, MM	0.813
Burst Pressure, bar	620	Qual Tank Mass	1,204
Actual Burst, bar	904		

HEMISPHERE FORGINGS

HEMI P/N	QTY	SUPPLIER	Die No
80-436061-1	2	ARCTURUS	3852

ROLLED AND SEAM WELDED CYLINDER

P/N	QTY	SIZE
80-475100-1	1	15.87 in ID X 19 in LONG

TUBE TYPE AND SIZE

Ti 3AL-2.5V	SIZE
80-400002-1	0.375" OD x 0.050" Wall
NOTE: 1 port only	9.525 OD mm x 1.270 mm Wall

ACCEPTANCE TESTS

Examination of Product, Preliminary
 Volumetric Measurement @ Ambient
 Proof Pressure Test @ Ambient
 Volumetric Capacity @ Ambient
 Volumetric Capacity @ MEOP
 Non-Destructive Examination
 External Leakage Test
 Weld Quality Inspection
 Examination of Product, Final
 Cleanliness Verification
 Data Review

