



TANK TYPE	MOUNT	LOCATION	PMD DEVICE
PROPELLANT WRAP	Bosses	Polar	NONE

The Xenon Propellant Tank is a composite overwrapped pressure vessel (COPV) with a linear constructed of a center cylinder welded to end domes and overwrapped with T1000 carbon fiber. The commercially pure titanium liner has a nominal .032" membrane thickness. Mounting is provided by polar bosses located on the tank centerline axis.

ATK Part Number 80458-1

SIZE: 16.7" OD x 44.6" Long
 SIZE: 419.1 x 1143 mm

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS	
Acceptance Test Procedure	50-000625
Qualification Test Procedure	50-000626
LBB Test Procedure	50-000658
Stress Analysis 6-4 Liner	54-000215
Fracture Analysis	54-000230
Stress Analysis - CP Liner	54-000231
Qualification Test Report	56-000206
LBB Test Procedure	56-000207
Fracture Analysis	327-1
Cleaning	CPP 3870

TANK CHARACTERISTICS			
Operating Pressure, psig	2,700	Total Volume, in ³	7,928
Proof Pressure, psig	3,375	Prop Volume, in ³	7,928
Cryo Proof, psig	N/A	Max Design Wt, lbs	43.50
Burst Pressure, psig	4,137	Minimum Wall, inch	0.032
Actual Burst, psig	5,926		

QUALIFICATION TESTS
Examination of Preliminary Product
Autofrettage
Volumetric Measurement
Proof Pressure Test
Volumetric Measurement
Strain Data Correlation
Volumetric Capacity @ MEOP
External Leakage Test
Weight Measurement and Inspection
Propellant Flow Rate Test
MEOP Pressure Cycle Life Test
Proof Pressure Cycle Life Test
External Leakage Test
Dynamic Testing Approval
Sinusoidal Vibration Test
Sine Burst Test
Random Vibration Test
External Leakage Test
Thermal Cycling Test
Random Vibration Test
External Leakage Test
Weld Quality Inspection
Examination of Final Product
Burst Test

TANK CHARACTERISTICS (Metrics)			
Operating Pressure, bar	186.16	Total Volume, l	129.91
Proof Pressure, bar	232.69	Prop Volume, l	129.92
Cryo Proof, bar	NO	Max Design Wt, kg	19.73
Burst Pressure, bar	285.23	Minimum Wall, MM	0.813
Actual Burst, bar	408.58		

Notes:

- 1: All tooling belongs to ATK.
- 2: Acceleration of 12g's in any direction.
- 3: Compatible with xenon, helium, nitrogen, argon IPA, PF-5060 mass sim & DI water.
- 4: Fracture Critical
- 5: Tube protector is SK 1589

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

TUBE TYPE AND SIZE	
Ti 3AL-2.5V	SIZE
80-458001-1	.375 OD x .035 Wall

TUBE SIZE (mm)	
80-458001-1	9.525 x .889 mm

VACUUM RATED
YES

ACCEPTANCE TESTS
Examination of Preliminary Product
Autofrettage @ Ambient
Volumetric Measurement @ Ambient
Proof Pressure Test @ Ambient
Volumetric Measurement @ Ambient
Volumetric Capacity @ MEOP
Boroscope Inspection
Internal Vacuum Test
External Leak Test
Weld Quality Inspection
Examination of Final Product
Final Clean

