TANK	MOUNT	LOCATION	PMD DEVICE
PMD	Tabs	Girth Weld	Complex

NORTHROP GRUMMAN

The Tank Assembly is a hemispherical pressure vessel with a cylindrical section of all welded construction. It is mounted by 32 circumferential tabs with nut plates located on one of the hemispheres near the girth weld joint. The tank contains an internally-mounted propellant management device (PMD), with perforated sheet and woven screen, fabricated 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 PMD has been designed to allow horizontal handling with low fill fractions. The PMD has also been modified by the addition of a slosh control device to allow multiple erection and de-erection cycles.

Part Number: 80602-1

SIZE: 48.9" ID DIA x 54" Long

SIZE: 1242 mm DIA x 1371.6 mm Long

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000925
Qual Test Procedure	
Qualification Test Report	
Stress and Dynamics Report	
FMECA	
Cleaning	CPP 3849

TANK CHARACTERISTICS

Operating Pressure, psig	250	Total Volume, in^3	70,335
Proof Pressure, psig	312.5	Prop Volume, lbs	
Cryo Proof, psig	N/A	Max Design Wt, lbs	82.7
Burst Pressure, psig	375	Minimum Wall, inch	0.034
Actual Burst, psig	519	Qual Tank Mass 80517-1	111.52

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	17	Total Volume, l	1,153
Proof Pressure, bar	22	Prop Volume, Kg	-
Cryo Proof, bar	N/A	Max Design Wt, Kg	37.51
Burst Pressure, bar	26	Minimum Wall, MM	0.864
Actual Burst, bar	36	Qual Tank Mass	2,832.61

HEMISPHERE FORGINGS

HEMI P/N	QTY
80-363061-1	2

ROLLED AND SEAM WELDED CYLINDER

P/N	QTY	SIZE
80-363063-3	1	49.57"OD x 48.40" ID x 9.37" Long
80-363065-1	1	49.75"OD x 48.31" ID x 3.19" Long

TUBE TYPE AND SIZE

Transition Ti to SS	SIZE
80-517002-1	0.375" OD x 0.020" Wall x 3.5" Long
	9.525 OD mm x 0.508 mm Wall x 88.9mm Long
80-411001-3	0.375" OD x 0.020" Wall x 2" Long
	9.525 OD mm x 0.508 mm Wall x 50.8mm Long

ACCEPTANCE TESTS

- Preliminary Inspection of Product
- Mass Measurement
- Volume, Proof, Volume
- External Leakage Test
- Tank Assembly Bubble Point Test
- Expulsion and Pressure Drop Test
- Radiographic Inspection
- Dye Penetrant Inspection
- Cleanliness Check and
- Visual Inspection
- Data Review

QUALIFICATION TESTS 80517-1

- Preliminary Inspection of Product
- Mass Measurement
- Pre-Proof Volumetric Capacity
- Amibent Proof Pressure
- Post Proof Volumetric Capacity
- Pressure Cycle & Visual Inspection
- External Leakage Test
- Tank Assembly Bubble Point Tests
- Tank Cleanliness Verification
- Dry Sine, Wet Sine & Random Vibration Test
- Expulsion & Pressure Drop Test
- Tank Assembly Bubble Point Tests
- External Leakage Test
- Inspection of Product
- Tank Cleanliness Verification
- Burst Test
- Data Review

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