TANK TYPE	MOUNT	LOCATION	PMD DEVICE
Simple Pmd	Tabs	Girth	Channel, Trap & Screen

NORTHROP GRUMMAN

This tank assembly is a hemispherical pressure vessel 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 & woven screen, fabricated to maintain separation of liquid propellant & gaseous pressurant, & to provide predictable gas-free liquid propellant expulsion from the tank under low or zero gravity conditions.

Part Number 80366-1

SIZE: 48.9-inch ID Sphere
SIZE: 1242 mm

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000404
Qualification Test Procedure	50-000405
Protoflight Test Procedure	50-000406
Bubble Point Test Procedure	50-000407
Materials List	54-000126
Processes List	54-000127
Ring Forging Qualification Report	55-000077
Qualification Test Report	56-000157
Cleaning, PMD	CPP 3546
Cleaning, Tank	CPP 3723

TANK CHARACTERISTICS

Operating Pressure, psig	250	Total Volume, ci	61,028
Proof Pressure, psig	313	Prop Volume, ci	61,028
Cryo Proof, psig	430	Max Design Wt, lbs	73.2
Burst Pressure, psig	375	Minimum Wall, inch	0.031

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	17.24	Total Volume, l	1,000.08
Proof Pressure, bar	21.58	Prop Volume, l	1,000.08
Cryo Proof, bar	29.65	Max Design Wt, Kg	33.20
Burst Pressure, bar	25.85	Minimum Wall, MM	0.787

ACCEPTANCE TESTS

- Preliminary Inspection of Product
- Mass Measurement
- Pre-Proof Volumetric Capacity
- Ambient Proof Pressure, Visual Inspection
- Post Proof Volumetric Capacity
- Cryogenic Proof Pressure
- Visual Inspection and Post Proof Volumetric Capacity
- External Leakage Test
- Bubble Point Test
- Sine and Random Vibration
- Visual Inspection
- Expulsion Test
- Bubble Point Test
- External Leakage Test
- Radiographic Inspection
- Dye Penetrant Inspection
- Cleanliness Check
- Data Review

Notes:

1: Tooling owned by Northrop Grumman
2: Similar to 80363 & 80367 except no center section
3: Brunswick Wintec Proprietary*
4: Tube protectors are SK 1314 & SK 1315
5: Stress Analysis, Tank, 92-059A
6: Fracture Mechanics Analysis(Foster), 92-061A
7: Stress Analysis, PMD (Foster), 93-011
8: Fracture Critical

FORGINGS

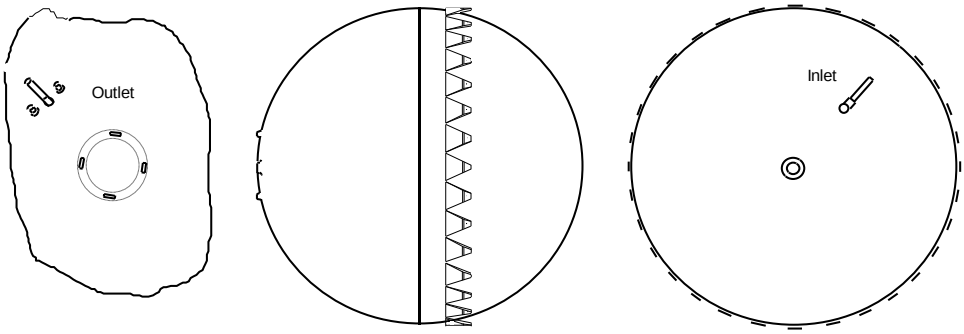
FORGINGS P/N	SUPPLIER	Die
80-363061-1 (2)		
RING FGG	**RING SIZE, (Purchased Rough Machined)**	
80-363065-1, Tab	49.75 +/-.06 OD x 48.31 +/-.06 ID x 3.19 +/-.09 Lg	
80-363069-1, Trap	12.87 +/-.06 OD x 8.25 +/-.06 ID x 2.87 +/-.09 Lg	
80-363067-1, Chnl	48.83 +/-.12 OD x 42.63 +/-.12 ID x 3.00 +/-.06 Lg	

TUBE TYPE AND SIZE

TRANSITION	SIZE
80-363001-1 (2)	500 OD x .028 Wall
	(12.7 x .711 MM)

QUALIFICATION TESTS

- Preliminary Inspection of Product
- Mass Measurement
- Pre-Proof Volumetric Capacity
- Ambient Proof Pressure Test
- Post Proof Volumetric Capacity
- Cryogenic Proof Pressure Test
- Post Proof Volumetric Capacity
- External Leakage Test
- Cleanliness Verification
- Bubble Point Tests
- Proof Pressure Cycle Test
- MEOP Cycle Test
- External Pressure Cycle Test
- Expulsion Test
- External Leakage Test
- Final Inspection of Product
- Cleanliness Verification
- Bubble Point Tests
- Burst Test
- Data Review



6033 East Bandini Boulevard
Commerce, California 90040

Telephone (323) 722-0222
Facsimile (323) 721-6002