

|  |                      |                          |   |
|--|----------------------|--------------------------|---|
| <b>TANK &amp; FUEL TYPE</b><br>Simple Pmd<br>MMH & NTO | <b>MOUNT</b><br>Tabs | <b>LOCATION</b><br>Girth | <b>PMD DEVICE</b><br>Vane, Trap<br>& Sponge |
|--|----------------------|--------------------------|---|

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

**Part Number 80403-1**

**SIZE: 48.9-inch ID Sphere X 57.8 Long**  
**SIZE: 1242 X 1468-mm**

**ISO 9001 & AS 9100 REGISTERED**

**APPLICABLE DOCUMENTS**

|                             |           |
|-----------------------------|-----------|
| Bubble Point Test Procedure | 50-000447 |
| Acceptance Test Procedure   | 50-000515 |
| Protoflight Test Procedure  | 50-000516 |
| Materials List              | 54-000160 |
| Processes List              | 54-000161 |
| Cleaning                    | CPP 3849  |

**TANK CHARACTERISTICS**

|                          |     |                    |        |
|--------------------------|-----|--------------------|--------|
| Operating Pressure, psig | 250 | Total Volume, ci   | 77,805 |
| Proof Pressure, psig     | 313 | Prop Volume, ci    | 77,805 |
| Cryo Proof, psig         | 430 | Max Design Wt, lbs | 87.6   |
| Burst Pressure, psig     | 375 | Minimum Wall, inch | 0.031  |

**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
- Post-Proof Volumetric Capacity
- External Leakage Test
- Tank Assembly Bubble Point Test
- Sine Vibration Test and
- Visual Inspection
- Pressure Drop Test
- Tank Assembly Bubble Point Test
- External Leakage Test
- Radiographic Inspection
- Dye Penetrant Inspection
- Cleanliness Check and
- Visual Inspection
- Data Review

**TANK CHARACTERISTICS (Metrics)**

|                         |       |                   |       |
|-------------------------|-------|-------------------|-------|
| Operating Pressure, Bar | 17.24 | Total Volume, l   | 1,275 |
| Proof Pressure, Bar     | 21.58 | Prop Volume, l    | 1,275 |
| Cryo Proof, Bar         | 29.65 | Max Design Wt, Kg | 39.74 |
| Burst Pressure, Bar     | 25.85 | Minimum Wall, MM  | 0.787 |

**FORGINGS**

| FORGINGS P/N                | SUPPLIER  | Die |
|-----------------------------|---|-----|
| 80-363061-1, (2)            |   |     |
| <b>RING FORGING</b>         | <b>RING SIZE. (Rough Machined)</b>                              |     |
| 80-363065-1, Tab            | 49.75 +/- .06 OD x 48.31 +/- .06 ID x 3.19 +/- .09 Long         |     |
| 80-380063-1, Trap Base      | 12.75+ .13, -.00 OD x 6.18+ .00, -.13 ID x 1.38+ .13, -.00 Long |     |
| 80-380067-1, Support Plate  | 13.42+ .13, -.00 OD x 6.62+ .00, -.13 ID x .93+ .13, -.00 Long  |     |
| 80-380065-1, Platform       | 13.42+ .13, -.00 OD x 6.62+ .00, -.13 ID x 1.25+ .13, -.00 Long |     |
| 80-363063-3, Center Section | 49.57+/- .09, OD x 48.4 +/- .09, ID x 9.37 +/- .06, Long        |     |

**Notes:**

- 1: Tooling owned by Northrop Grumman
- 2: Tank shell is similar to P/N 80366-1
- 3: PMD design is by PMD Technology
- 4: Cryogenic Fixture: T-4647
- 5: Tube protectors are SK 1353 & SK 1354
- 6: Vibration Fixture: T-4646.
- Only the axial axis & one lateral axis to be tested.
- 7: Fracture Critical

**TUBE TYPE AND SIZE**

| TRANSITION      | SIZE                |
|-----------------|---------------------|
| 80-380002-1 (2) | .375 OD x .020 Wall |

**QUALIFICATION TESTS**

Qual by similarity on 80366-1.

**TUBE TYPE AND SIZE (Metrics)**

| TRANSITION      | SIZE             |
|-----------------|------------------|
| 80-380002-1 (2) | 9.525 OD x .5 MM |

