



|                  |              |                 |                             |
|------------------|--------------|-----------------|-----------------------------|
| <b>TANK TYPE</b> | <b>MOUNT</b> | <b>LOCATION</b> | <b>PMD DEVICE</b>           |
| PROPELLANT       | LUGS (32)    | GIRTH           | VANE, TRAP, SCREEN & SPONGE |

The Extended 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 at 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.

**ATK Part Number 80422-1**

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

**ISO 9001 & AS 9100 REGISTERED**

|                             |                             |                         |
|-----------------------------|-----------------------------|-------------------------|
| <b>APPLICABLE DOCUMENTS</b> | <b>TANK CHARACTERISTICS</b> | <b>ACCEPTANCE TESTS</b> |
|-----------------------------|-----------------------------|-------------------------|

|                             |           |
|-----------------------------|-----------|
| Bubble Point Test Procedure | 50-000554 |
| Acceptance Test Procedure   | 50-000556 |
| Protoflight Test Procedure  | 50-000557 |
| Cleaning                    | CPP 3849  |

|                          |     |                               |        |
|--------------------------|-----|-------------------------------|--------|
| Operating Pressure, psig | 250 | Total Volume, in <sup>3</sup> | 77,805 |
| Proof Pressure, psig     | 313 | Prop Volume, in <sup>3</sup>  | 77,805 |
| Cryo Proof, psig         | N/A | Max Design Wt, lbs            | 90.4   |
| Burst Pressure, psig     | 375 | Minimum Wall, inch            | 0.020  |
| Actual Burst, psig       |     |                               |        |

Preliminary Inspection of Product  
 Mass Measurement  
 Pre-Proof Volumetric Capacity, Ambient Proof Pressure, Visual Inspection, and 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

**Notes:**

- Sine Vib Wet
- Vib Fixture T-4646
- Tube Protector Press. SK-1353
- Tube Protector Prop. SK-1354

|                                       |       |                   |       |
|---------------------------------------|-------|-------------------|-------|
| <b>TANK CHARACTERISTICS (Metrics)</b> |       |                   |       |
| Operating Pressure, bar               | 17.24 | Total Volume, l   | 1,275 |
| Proof Pressure, bar                   | 21.58 | Prop Volume, l    | 1,275 |
| Cryo Proof, bar                       | NO    | Max Design Wt, kg | 41.01 |
| Burst Pressure, bar                   | 25.85 | Minimum Wall, mm  | 0.508 |
| Actual Burst, bar                     |       |                   |       |

|                            |     |          |        |
|----------------------------|-----|----------|--------|
| <b>HEMISPHERE FORGINGS</b> |     |          |        |
| HEMI P/N                   | QTY | SUPPLIER | Die No |
| 80-363061-1                | 2   |          |        |

|                      |     |  |  |
|----------------------|-----|--|--|
| <b>RING FORGINGS</b> |     |  |  |
| RING P/N             | QTY | RING SIZE, (Rough Machined)                  |  |
| 80-363063-3          | 1   | 49.57+/--.09 x 48.40+/--.09 IDx .937 +.06 lg |  |

|                                 |              |
|---------------------------------|--------------|
| <b>TUBE TYPE AND SIZE (in.)</b> |              |
| <b>TRANS Ti to SS</b>           | <b>SIZE</b>  |
| 80-380126-2                     | .400 x .375" |
| 80-380126-1                     | .350 x .375" |

|                       |                  |
|-----------------------|------------------|
| <b>TUBE SIZE (mm)</b> |                  |
| <b>Ti 3AL-2.5V</b>    | <b>SIZE</b>      |
| 80-380126-2           | 10.16 x 9.525 mm |
| 80-380126-1           | 8.89 x 9.525 mm  |

