



|                               |                      |                          |
|-------------------------------|----------------------|--------------------------|
| <b>TANK TYPE</b><br>Diaphragm | <b>MOUNT</b><br>Lugs | <b>LOCATION</b><br>Girth |
|-------------------------------|----------------------|--------------------------|

This is a 16.5-inch spherical pressure vessel constructed of 6Al-4V titanium. Positive fuel expulsion is provided by a reversible ethylene-propylene terpolymer (AF-E-332) rubber diaphragm retained (welded in) at the sphere mid-plane. Mounting is accomplished by four (4) lugs parallel with and adjacent to the sphere mid-plane.

**ATK Part Number 80303-1**

**ISO 9001 & AS 9100 REGISTERED**

**SIZE: 16.5-inch Sphere**  
**SIZE: 419-mm**

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

|                              |           |
|------------------------------|-----------|
| Acceptance Test Procedure    | 50-000264 |
| Qualification Test Procedure | 50-000265 |
| Qualification Test Report    | 56-000098 |
| Cleaning                     | CPP 9106  |

|                          |       |                    |       |
|--------------------------|-------|--------------------|-------|
| Operating Pressure, psig | 340   | Total Volume, ci   | 2,300 |
| Proof Pressure, psig     | 792   | Prop Volume, ci    | 1,963 |
| Cryo Proof, psig         | NA    | Max Design Wt, lbs | 13.0  |
| Burst Pressure, psig     | 1,584 | Minimum Wall, inch | 0.040 |

|                                    |
|------------------------------------|
| Acceptance Test                    |
| Random Vibration                   |
| Internal Leakage High/Low Pressure |
| External Leakage                   |
| Proof Pressure cycles              |
| Internal Leakage High/Low Pressure |
| External Leakage                   |
| Life Cycle & Expulsion Efficiency  |
| Internal Leakage High/Low Pressure |
| External Leakage                   |

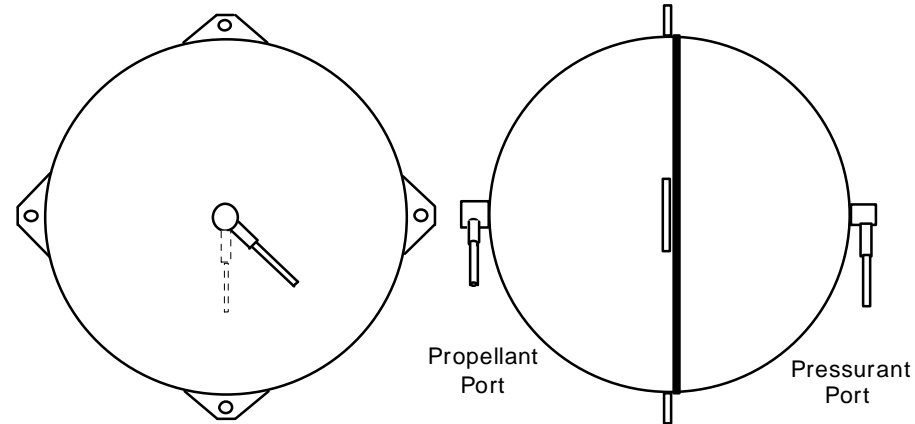
|                              |                  |
|------------------------------|------------------|
| <b>DIAPHRAGM INFORMATION</b> |                  |
| Diaphragm P/N                | 80-271007-1      |
| Diaphragm Mold P/N           | SK 666           |
| Diaphragm Gross Wt           | .88 Lbs          |
| Diaphragm Matl Type          | AF-E-332         |
| Material Specification       | Note 2 90-000075 |
| Diaphragm Processing         | Note 2 90-000087 |
| N-Ray Procedure              | 1002             |

|                                       |        |                   |        |
|---------------------------------------|--------|-------------------|--------|
| <b>TANK CHARACTERISTICS (Metrics)</b> |        |                   |        |
| Operating Pressure, bar               | 23.44  | Total Volume, l   | 158.58 |
| Proof Pressure, bar                   | 54.61  | Prop Volume, l    | N/A    |
| Cryo Proof, bar                       | N/A    | Max Design Wt, kg | 0.90   |
| Design Burst Pressure, bar            | 109.21 | Minimum Wall, MM  | 0.00   |

- Notes:**
- 1: Majority of tooling is owned by ATK
  - 2: Proprietary Document
  - 3: Each roll ring will make 9 lugs
  - 4: This tank is similar to 80275-1
  - 5: Random vibration requires high strength bolts
  - 6: Vibration fixture is T-2528
  - 7: Proof pressure (792 psig) is fracture mechanics proof per System proof is 606 psig
  - 8: Global Positioning Satellite (GPS)
  - 9: Rockwell International (Downey)
  - 10: Fracture critical

|                       |   |               |
|-----------------------|---|---------------|
| <b>FORGINGS</b>       |   |               |
| <b>FORGINGS P/N</b>   | <b>SUPPLIER</b>                               | <b>Die No</b> |
| 80011-63              |   |               |
| 80-276061-1           |   |               |
| <b>RING FORGING</b>   |   |               |
|                       | <b>RING SIZE, (Rough Machined)</b>            |               |
| 80-214065-1, Retainer | 16.75 +.06 OD x 15.5 -.06 ID x 1.4 +/- .06 Lg |               |
| 80-271060-3, Lug      | 19.38 + .06 ODx17.19 -.06 IDx.87 +/- .06 Lg   |               |

|                           |                     |
|---------------------------|---------------------|
| <b>TUBE TYPE AND SIZE</b> |                     |
| <b>TRANSITION</b>         | <b>SIZE</b>         |
| 80-216001-1 (2)           | .250 OD x .020 Wall |



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