



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

This is a 40-inch oblate spheroid pressure vessel constructed of 6Al-4V titanium. The tank has two elliptical heads welded to a cylindrical center section. The tank contains an internal perforated titanium dome to allow complete reversal of the elastomeric diaphragm. Mounting of the propellant tank is provided by an integral flange around tank girth. This tank was qualified by qualification testing.

**ATK Part Number 80483-1**

**SIZE: 40.85" x 41.70" Oblate Spheroid**

**SIZE: 1037.59-mm x 1059.18 mm**

**ISO 9001 & AS 9100 REGISTERED**

| APPLICABLE DOCUMENTS         |            |
|------------------------------|------------|
| Acceptance Test Procedure    | see Note 5 |
| Qualification Test Procedure | see Note 5 |
| Qualification Test Report    | see Note 5 |
| Cleaning                     | see Note 5 |

| TANK CHARACTERISTICS     |       |                    |        |
|--------------------------|-------|--------------------|--------|
| Operating Pressure, psic | 412   | Total Volume, ci   | 38,000 |
| Proof Pressure, psig     | 619   | Prop Mass, lbm     | 1,000  |
| Cryo Proof, psig         | NA    | Max Design Wt, lbm | 110.0  |
| Design Burst, psig       | 824   | Minimum Wall, inch | 0.071  |
| Actual Burst, psig       | 1,015 |                    |        |

| ACCEPTANCE TESTS           |
|----------------------------|
| Performed on tank 80451-1. |

| QUALIFICATION TESTS            |
|--------------------------------|
| Qual by similarity on 80451-1. |

| DIAPHRAGM INFORMATION        |               |
|------------------------------|---------------|
| Diaphragm P/N                | 80-263027-1   |
| Diaphragm Mold P/N           | T-1868        |
| Diaphragm Gross Wt           | 7.6 (3.44 Kg) |
| Diaphragm Matl Type          | AF-E-332      |
| Material Spec, Rubber        | MT3-73        |
| Diaphragm Processing, Note 2 | 90-000094     |
| N-Ray Inspection Procedure   | 1002          |

| TANK CHARACTERISTICS (Metrics) |       |                   |       |
|--------------------------------|-------|-------------------|-------|
| Operating Pressure, Bar        | 28.41 | Total Volume, l   | 622.7 |
| Proof Pressure, Bar            | 42.68 | Prop Volume, l    |       |
| Cryo Proof, Bar                | NA    | Max Design Wt, Kg | 49.9  |
| Design Burst, Bar              | 56.81 | Minimum Wall, mm  | 1.803 |
| Actual Burst, Bar              | 69.98 |                   |       |

**Notes:**

- 1: Tooling owned by TRW / Lockheed Martin
- 2: Proprietary Document
- 3: Frcture Critical
- 4: This Tank was qualified to 1000 lb. mass of fluid
- 5: This tank is a derivative of 80451-1.

| FORGINGS        |          |        |
|-----------------|----------|--------|
| FORGINGS P/N    | SUPPLIER | Die No |
| 80-260061-1 (3) |          |        |

| RING SIZE, (Rough Machined) |  |  |
|-----------------------------|--|--|
| 80-451067-1, Cylinder       | 40.90 +.09 OD x 39.80 -.09 ID x 7.12 +.25 Lg |  |
| 80-263065-1, Retainer       | 40.46 +.09 OD x 39.12 -.09 ID x 1.68 +.09 Lg |  |
| 80-263063-1, Cylinder       | 42.57 +.09 OD x 39.56 -.09 ID x 3.81 +.25 Lg |  |

| TUBE TYPE AND SIZE (in.) |                     |
|--------------------------|---------------------|
| TI 3AL-2.5V              | SIZE                |
| 80-451003-3              | .375 OD x .035 wall |

| TUBE SIZE (mm) |                 |
|----------------|-----------------|
| 80-451003-3    | 9.525 x .889 mm |



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