

|                               |                          |                         |
|-------------------------------|--------------------------|-------------------------|
| <b>TANK TYPE</b><br>Diaphragm | <b>MOUNT</b><br>Pedestal | <b>LOCATION</b><br>Apex |
|-------------------------------|--------------------------|-------------------------|

This is a cylindrical 6Al-4V titanium pressure vessel with a pedestal mount & two ports (pressurant and propellant). The tank contains a fully reversible ethylene propylene terpolymer (AF-E-332) rubber diaphragm retained (welded in) near the mid-plane.

**Part Number 80455-1**

**SIZE: 16.5" ID x 19.92" LONG**

**SIZE: 419 mm ID x 506 mm LONG**

**ISO 9001 & AS 9100 REGISTERED**

**APPLICABLE DOCUMENTS**

|                              |           |
|------------------------------|-----------|
| Acceptance Test Procedure    | 50-000613 |
| Qualification Test Procedure | 50-000290 |
| Qualification Test Report    | 56-000108 |
| Fracture Analysis Plan       | 54-000151 |
| Cleaning                     | CPP 3954  |

**TANK CHARACTERISTICS**

|                          |      |                    |       |
|--------------------------|------|--------------------|-------|
| Operating Pressure, psig | 320  | Total Volume, ci   | 2,996 |
| Proof Pressure, psig     | 500  | Prop Volume, lbs   | 83    |
| Cryo Proof, psig         | NA   | Max Design Wt, lbs | 12.4  |
| Burst Pressure, psig     | 640  | Minimum Wall, inch | 0.020 |
| Actual Burst, psig       | 1030 |                    |       |

**QUALIFICATION TESTS**

Qual by 80308-1

**ACCEPTANCE TESTS**

- Preliminary Examination of Product
- Pre-Proof Volume Determination
- Proof Pressure
- Post-Proof Volume Determination
- Expulsion Efficiency
- Radiographic Inspection
- Penetrant Inspection
- Internal Leakage
- External Leakage
- Determination of Weight & Final Inspection
- Cleanliness Verification
- Final Examination

**DIAPHRAGM INFORMATION**

|                             |             |
|-----------------------------|-------------|
| Diaphragm P/N               | 80-288007-1 |
| Diaphragm Mold Tool No      | T-2318      |
| Diaphragm Gross Wt          | 1.42        |
| Diaphragm Material Type     | AF-E-332    |
| Diaphragm Material Note 4   | 90-000075   |
| Diaphragm Processing Note 4 | 90-000087   |
| N-Ray Inspection Procedure  | 1002        |

**TANK CHARACTERISTICS (Metrics)**

|                         |       |                   |       |
|-------------------------|-------|-------------------|-------|
| Operating Pressure, Bar | 22.06 | Total Volume, l   | 49.10 |
| Proof Pressure, Bar     | 34.47 | Prop Volume, Kg   | 37.7  |
| Cryo Proof, Bar         | NA    | Max Design Wt, Kg | 5.63  |
| Burst Pressure, Bar     | 44.13 | Minimum Wall, MM  | 0.508 |
| Actual Burst, Bar       | 71.01 |                   |       |

**FORGINGS**

| FORGINGS P/N                    | SUPPLIER | Die No |
|---------------------------------|----------|--------|
| 80-288061-1, Propellant, Note 3 | ARCTURUS | 2849A  |
| 80011-63, Pressurant            | ARCTURUS | 2272   |

**VACUUM RATED**

YES

**Notes:**

- 1: Tooling owned by Northrop Grumman
- 2: This tank is similar to 80288-1 & 80308-1
- 3: Alternate propellant forging is 80-276061-1
- 4: Proprietary Document
- 5: Tube protectors are SK 1394 & SK 1435
- 6: This tube is used on both sides of the tank
- 7: Burst Pressure shown above is design burst
- 8: Fracture Critical

**Ring Size (Rough Machined)**

|                       |   |
|-----------------------|---|
| 80-214065-1, Retainer | 16.75 +.06 OD x 15.5 -.06 ID x 1.4 +/- .06 Long |
| 80-288063-1, Cylinder | 17 +.09 OD x 15.87 -.09 ID x 3.31 +.12 Long     |
| 80-276065-1, Base     | 9.5 +.09 OD x 7.03 -.09 ID x 1.38 +.09 Long     |

**TUBE TYPE AND SIZE**

| TITANIUM                   | SIZE                            |
|----------------------------|---------------------------------|
| 80-455001-1                | .250 OD x .035 Wall x 8.2 Long  |
| 80-455007-3                | .250 OD x .035 Wall x 5.0 Long  |
| 80-392019-1, Extension (2) | .310 OD x .035 Wall x 2.41 Long |

**PROGRAM INFORMATION**

|                            |         |
|----------------------------|---------|
| Program                    | STEREO  |
| Customer                   | Aerojet |
| Customer P/N               | N/A     |
| Original Job No.           | 211     |
| Customer Installed Device  | No      |
| Customer Controlled Design | No      |

**TUBE SIZE (mm)**

|                            |                       |
|----------------------------|-----------------------|
| 80-455001-1                | 6.35 x .088 x 127 mm  |
| 80-455007-3                | 6.35 x .088 x 127 mm  |
| 80-392019-1, Extension (2) | 7.874 x .88 x 61.2 mm |

