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|-------------------------------|--------------------------|-------------------------|
| TANK TYPE DIAPHRAGM | MOUNT PEDESTAL | LOCATION APEX |
|-------------------------------|--------------------------|-------------------------|

This is a 13-inch pressure vessel constructed of 6Al-4V titanium. The tank shell consists of an elliptical pressurant head and a hemispherical head. Positive fuel expulsion is provided by a reversible ethylene-propylene terpolymer (AF-E-332) rubber diaphragm retained (welded in) at the girth. Mounting is accomplished on a pedestal mount located on the apex of the propellant hemisphere.

ATK Part Number 80444-1

SIZE: 12.88 inch ID
SIZE: 327- mm

ISO 9001 & AS 9100 REGISTERED

| APPLICABLE DOCUMENTS | |
|----------------------------------|------------|
| Acceptance Test Procedure | 50-000589 |
| Protoflight Test Procedure, Note | 50-000589 |
| Qualification Test Procedure | see Note 7 |
| Fracture Analysis Plan | 54-000211 |
| Qualification Test Report | see Note 7 |
| Cleaning | CPP 3668 |

| TANK CHARACTERISTICS | | | |
|-----------------------------|-------|-------------------------------|-------|
| Operating Pressure, psig | 480 | Total Volume, in ³ | 920 |
| Proof Pressure, psig | 720 | Prop Volume, in ³ | 882 |
| Cryo Proof, psig | NA | Max Design Wt, lbs | 6.0 |
| Burst Pressure, psig | 945 | Minimum Wall, inch | 0.021 |
| Actual Burst, psig (Note 8) | 1,450 | Propellant Weight, Lb | 22.05 |

| ACCEPTANCE TESTS |
|---|
| Preliminary Inspection & Examination of Product |
| Volumetric Capacity Test |
| Proof Pressure Test |
| Volumetric Expansion and Permanent Set Test |
| Internal Leakage |
| External Leakage |
| Protoflight Sine Vibration |
| Internal Leakage |
| External Leakage |
| Outside Surface Quality Inspection |
| Weld Quality Inspection |
| Weight Test |
| Final Examination of Product |
| Cleanliness |

| DIAPHRAGM INFORMATION | |
|-----------------------------|-------------|
| Diaphragm P/N | 80-216007-1 |
| Diaphragm Mold Tool No | T-1262 |
| Diaphragm Gross Wt | 1.0 |
| Diaphragm Material Type | AF-E-332 |
| Diaphragm, Material Note 2 | 90-000075 |
| Diaphragm Processing Note 2 | 90-000087 |
| N-Ray Inspection | 1002 |

| TANK CHARACTERISTICS (Metrics) | | | |
|--------------------------------|-------|-----------------------|-------|
| Operating Pressure, Bar | 33.09 | Total Volume, l | 15.08 |
| Proof Pressure, Bar | 49.64 | Prop Volume, l | 14.45 |
| Cryo Proof, Bar | NA | Max Design Wt, Kg | 2.72 |
| Burst Pressure, Bar | 65.15 | Minimum Wall, MM | 0.533 |
| Actual Burst, Bar | 99.97 | Propellant Weight, Kg | 10.00 |

- Notes:**
- Majority of this tooling is owned by ATK
 - Proprietary Document
 - This tanks is a derivative of 80342-1 and 80216
 - Tube protectors are SK 1127 & SK 1128
 - Protoflight sine vibration testing added to Acceptance Test Procedure
 - Fracture Critical
 - QTP & QTR for tank P/N 80342-1
 - Rupture pressure of 80342-1

| FORGINGS | | |
|------------------------|--|-----|
| FORGINGS P/N | SUPPLIER | Die |
| 80-342061-1, Press | | |
| 80-216061-1, Prop | | |
| RING FORGING | | |
| | RING SIZE, (Rough Machined) | |
| 80-216003-11, Retainer | 13.13 +.09 OD x 11.81 -.09 ID x 1.38 +.09 Lg | |

| QUALIFICATION TESTS |
|--------------------------------|
| Qual by similarity on 80342-1. |

| TUBE TYPE AND SIZE | | |
|---------------------|--|---------------------|
| TITANIUM | | SIZE |
| 80-444001-1, Inlet | | .250 OD x .020 Wall |
| 80-444004-1, Outlet | | .250 OD x .020 Wall |

| TUBE TYPE AND SIZE (Metrics) | | |
|------------------------------|--|--------------------------|
| TITANIUM | | SIZE |
| 80-444001-1, Inlet | | 6.35 mm OD X .508mm Wall |
| 80-444004-1, Outlet | | 6.35 mm OD X .508mm Wall |

