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|------------------------------|-----------------------|-----------------------------|---|
| TANK TYPE PMD WRAP | MOUNT SKIRT | LOCATION CYLINDER | PMD DEVICE VANE, TRAP, & SPONGE |
|------------------------------|-----------------------|-----------------------------|---|

This Hydrazine propellant tank is constructed of a 6Al-4V titanium liner with the cylindrical portion overwrapped with T1000 carbon fiber/ epoxy composite for an overall diameter of 35.5" X 69.2" length. Mounting of the tank is provided by a carbon/cyanate ester composite skirt with 12 attach points around the cylinder, and a polar flex plate at the pressurant end. The tank contains an internally mounted propellant management device (PMD) to provide gas free liquid throughout the mission.

ATK Part Number 80432-1

SIZE: 35.5" dia X 69.2" length
SIZE: 902 mm dia. X 1758 mm long

ISO 9001 & AS 9100 REGISTERED

| APPLICABLE DOCUMENTS | |
|-----------------------------|-----------|
| Acceptance Test Procedure | 50-000575 |
| Bubble Point Test Procedure | 50-000562 |
| Stress Report (3) | 54-000184 |
| Dynamics Report (3) | 54-000183 |
| Performance Analysis (3) | 54-000197 |
| Bond Line Analysis | 54-000199 |
| Fracture Analysis Plan (3) | 54-000177 |
| Cleaning (tank) | CPP-3911 |

| TANK CHARACTERISTICS | | | |
|--------------------------|-----|-------------------------------|--------|
| Operating Pressure, psig | 300 | Total Volume, in ³ | 52,335 |
| Proof Pressure, psig | 375 | Prop Volume, in ³ | 52,335 |
| Cryo Proof, psig | N/A | Prop Volume, lbs | 1,802 |
| Burst Pressure, psig | 450 | Max Design Wt, lbs | 63.75 |
| Actual Burst, psig | | Minimum Wall, inch | 0.026 |

| ACCEPTANCE TESTS |
|-------------------------------------|
| Examination of Product, Preliminary |
| Volumetric Capacity Measurement |
| Proof Pressure Test |
| Volumetric Capacity Measurement |
| Static Load Test |
| PMD Bubble Point Test |
| External Leak Test |
| Weld Quality Inspection |
| Mass Measurement |
| Final Visual Inspection |
| Final Cleanliness |

| TANK CHARACTERISTICS (Metrics) | | | |
|--------------------------------|-------|-------------------|--------|
| Operating Pressure, bar | 20.68 | Total Volume, l | 858 |
| Proof Pressure, bar | 25.85 | Prop Volume, l | 858 |
| Cryo Proof, bar | N/A | Prop Volume, kg | 817.38 |
| Burst Pressure, bar | 31.03 | Max Design Wt, kg | 28.92 |
| Actual Burst, bar | | Minimum Wall, MM | 0.660 |

Notes:

- 1: Fracture Critical
- 2: Tank is qualified by similarity to 80425-1
- 3: Documents Prepared for 80425-1

| HEMISPHERE FORGINGS | | | |
|---------------------|-----|----------|--------|
| HEMI P/N | QTY | SUPPLIER | Die No |
| 80-391061-1 | 2 | | |

| ROLLED AND SEAM WELDED CYLINDER | | | |
|---------------------------------|-----|----------------------|------|
| P/N | QTY | | SIZE |
| 80-425016-1 | 1 | 35.2 in ID X 34.5 in | LONG |

| TUBE TYPE AND SIZE (in.) | | |
|--------------------------|--|--------------------------|
| Ti 3AL-2.5V | | SIZE |
| 80-425011-5 | | 0.375 x 0.020 Wall Press |
| 80-425007-5 | | 0.375 x 0.020 Wall Prop |

| TUBE SIZE (mm) | | |
|----------------|--|--------------------------|
| 80-425011-5 | | 9.525 x 0.508 Wall Press |
| 80-425007-5 | | 9.525 x 0.508 Wall Prop |

| QUALIFICATION TESTS |
|--------------------------------|
| Qual by similarity on 80425-1. |

