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|--------------------------------|------------------------|--------------------------|------------------------------|
| TANK TYPE Simple Pmd | MOUNT Flange | LOCATION Girth | PMD DEVICE Channel |
|--------------------------------|------------------------|--------------------------|------------------------------|

This is a 42-inch spherical pressure vessel constructed of 6AL-4V titanium. A channel type propellant management device (PMD) is provided to expel NTO under low or zero gravity conditions. Mounting is accomplished by a continuous flange parallel with and adjacent to the mid-plane.

Part Number 80352-1

SIZE: 42-inch ID Sphere

SIZE: 1067-mm

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS

| | |
|------------------------------|-----------|
| Acceptance Test Procedure | 50-000368 |
| Qualification Test Procedure | 50-000369 |
| Bubble Point Test Procedure | 50-000370 |
| Weight Analysis | 54-000109 |
| PMD Failure Analysis | 54-000117 |
| Fracture Analysis Plan | 54-000102 |
| Qualification Test Report | 56-000145 |
| Cleaning Procedure, Tank | CPP 3684 |
| Cleaning Procedure, PMD | CPP 3546 |

TANK CHARACTERISTICS

| | | | |
|--------------------------|-----|--------------------|--------|
| Operating Pressure, psig | 300 | Total Volume, ci | 39,440 |
| Proof Pressure, psig | 375 | Prop Volume, ci | 39,230 |
| Cryo Proof, psig | 600 | Max Design Wt, lbs | 51.5 |
| Burst Pressure, psig | 450 | Minimum Wall, inch | 0.036 |

TANK CHARACTERISTICS (Metrics)

| | | | |
|-------------------------|-------|-------------------|--------|
| Operating Pressure, Bar | 20.68 | Total Volume, l | 646.31 |
| Proof Pressure, Bar | 25.85 | Prop Volume, l | 642.87 |
| Cryo Proof, Bar | 41.37 | Max Design Wt, kg | 23.4 |
| Burst Pressure, Bar | 31.03 | Minimum Wall, MM | 0.914 |

Notes:

- 1: Tooling owned by Northrop Grumman
- 2: Original program was Mars Observer (MO)
- 3: Protoflight Test Procedure for Telstar is 50-000390
- 4: Flange has 48 holes
- 5: The PMD design is proprietary to GE/ASD
- 6: Tube protectors are SK-1220 & SK 1221
- 7: Foster Engineering
- 8: Telstar Fracture Mech Analysis No.Ge No.1R5H-91-TS4-059
- 9: Fracture Analysis Plan, 88-045
- 10: Stress Report, PMD, 88-059
- 11: Stress Report, Tank, 88-066A
- 12: Fracture Analysis Report, Tank, 89-005C
- 13: Fracture Critical

FORGINGS

| FGGS P/N | SUPPLIER | Die |
|-----------------|----------|-----|
| 80-352061-1 (2) | | |

TUBE TYPE AND SIZE

| TITANIUM | SIZE |
|---------------------|---------------------|
| 80-352001-5, Inlet | .375 OD x .035 Wall |
| 80-352002-5, Outlet | .500 OD x .028 Wall |

TUBE TYPE AND SIZE (Metrics)

| TITANIUM | SIZE |
|---------------------|--------------------|
| 80-352001-5, Inlet | 9.52 OD x .88 Wall |
| 80-352002-5, Outlet | 12.7 OD x .71 Wall |

PSI P/N 80352-1

