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|--------------------|----------------------|-------------------------------|------------------------------|
| TANK PMD | MOUNT Tabs | LOCATION Girth Weld | PMD DEVICE Complex |
|--------------------|----------------------|-------------------------------|------------------------------|

The Tank Assembly is a hemispherical pressure vessel with a cylindrical section of all welded construction. It is mounted by 32 circumferential tabs with nut plates located on one of the hemispheres near the girth weld joint. The tank contains an internally-mounted propellant management device (PMD), with perforated sheet and woven screen, fabricated to maintain separation of liquid propellant and gaseous pressurant, and to provide predictable gas-free liquid propellant expulsion from the tank under low or zero gravity conditions. The PMD has been designed to allow horizontal handling with low fill fractions. The PMD has also been modified by the addition of a slosh control device to allow multiple erection and de-erection cycles.

Part Number 8U517-1

SIZE: 48.9" ID x 72.285" Long
SIZE: 1242.06-mm x 1836.04-mm

ISO 9001 & AS 9100 REGISTERED

| APPLICABLE DOCUMENTS | TANK CHARACTERISTICS | QUALIFICATION TESTS |
|----------------------|----------------------|---------------------|
|----------------------|----------------------|---------------------|

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|------------------------------|-----------|
| Qualification Test Procedure | 50-000703 |
| Acceptance Test Procedure | 50-000702 |
| Bubble Point Test Procedure | |
| Materials List | |
| Processes List | |
| Cleaning | CPP 3849 |

| | | | |
|--------------------------|-------|--------------------|---------|
| Operating Pressure, psig | 250 | Total Volume, ci | 104,344 |
| Proof Pressure, psig | 312.5 | Prop Volume, ci | |
| Cryo Proof, psig | NA | Max Design Wt, lbs | 130.0 |
| Burst Pressure, psig | 375 | Minimum Wall, inch | 0.031 |
| Actual Burst Pressure | | | |

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|---|
| Preliminary Inspection of Product |
| Mass Measurement |
| Pre-Proof Volumetric Capacity |
| Amibent Proof Pressure |
| Visual Inspection |
| Post Proof Volumetric Capacity |
| Pressure Cycle & Visual Inspection |
| External Leakage Test |
| Bubble Point Test |
| Cleanliness Check and Visual Inspection |
| Sine & Random Vibration Tests and Visual Inspection |
| Expulsion & Pressure Drop Test |
| Bubble Point Test |
| External Leakage Test |
| Radiographic Inspection |
| Dye Penetrant Inspection |
| Cleanliness Check and Visual Inspection |
| Burst Test & Visual Inspection Data Review |

Notes:

- 1: Tooling owned by Northrop Grumman
- 2: Tank shell is similar to P/N 80442-1
- 3: PMD design is by PMD Technology
- 4: Tube protectors are SK 1353 & SK 1354
- 5: Vibration Fixture: T-4646.

TANK CHARACTERISTICS (Metrics)

| | | | |
|-------------------------|-------|-------------------|----------|
| Operating Pressure, Bar | 17.24 | Total Volume, l | 1,709.91 |
| Proof Pressure, Bar | 21.55 | Prop Volume, l | 0.00 |
| Cryo Proof, Bar | NA | Max Design Wt, Kg | 58.97 |
| Burst Pressure, Bar | 25.85 | Minimum Wall, MM | 0.787 |
| Actual Burst Pteasure | 0.00 | | |

FORGINGS

| FORGINGS P/N | SUPPLIER | Die |
|--------------|----------------|-----|
| 80-363061-1 | Hemi Forge | |
| 80-363063-9 | Center Section | |
| 80-363065-1 | Tab Ring | |

TUBE TYPE AND SIZE

| TRANSITION | SIZE |
|-----------------|--|
| 80-380002-1 (2) | .375 OD X .020 Wall (9.525 x .508 mm) |

ACCEPTANCE TESTS

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|---|
| Preliminary Inspection of Product |
| Mass Measurement |
| Pre-Proof Volumetric Capacity |
| Amibent Proof Pressure |
| Visual Inspection |
| Post Proof Volumetric Capacity |
| External Leakage Test |
| Bubble Point Test |
| Sine Vibration Test and Visual Inspection |
| Pressure Drop Test |
| Bubble Point Test |
| External Leakage Test |
| Radiographic Inspection |
| Dye Penetrant Inspection |
| Cleanliness Check and Visual Inspection |
| Data Review |

