

<b>TANK TYPE</b> Diaphragm	<b>MOUNT</b> Tab	<b>LOCATION</b> Press Hemi	<b>PMD DEVICE</b> AF-E-332 Rubber Diaphragm
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The propellant tank is a family of 22" diameter x 36" length pressure vessel constructed of 6AL-4V titanium. A rubber diaphragm Propellant Management Device (PMD) provides gas-free expulsion of propellant. Mounting is provided via three (3) welded tabs located on the pressurant side dome and a customer-provided flex plate on the propellant side boss.

**Part Number 80534-1**

**SIZE: 22.14" ID x 35.71" LONG**  
**SIZE: 562 mm ID x 907 mm LONG**

**ISO 9001 & AS 9100 REGISTERED**

**APPLICABLE DOCUMENTS**

Acceptance Test Procedure	50-000753
Qualification Test Procedure	50-000751
Qualification Test Report	56-000280
Cleaning	CPP 4049

**TANK CHARACTERISTICS**

Operating Pressure, psig	325 psig @ 122°F	Total Volume, in <sup>3</sup>	10,700
Proof Pressure, psig	406 psig @ 122°F	Prop Volume, in <sup>3</sup>	5,022
Cryo Proof, psig	N/A	Prop Volume, lbs N <sub>2</sub> H <sub>4</sub>	226
Burst Pressure, psig	488 psig @ 122°F	Max Design Wt, lbs	28.51
Actual Burst, psig	719 psig	Minimum Wall, inch	0.040

**ACCEPTANCE TESTS**

- Preliminary Examination of Product
- Pre-Proof Volumetric Capacity Test
- Proof Pressure Test
- Post-Proof Volumetric Capacity Test
- NDE
- Expulsion Efficiency
- Internal Vacuum
- Internal (Diaphragm) Leak Test
- External Leak Test
- Vibration Test
- Internal (Diaphragm) Leak Test
- External leak Test
- NDE
- Final Examination
- Cleanliness

**TANK CHARACTERISTICS (Metrics)**

Operating Pressure, bar	22.41 bar @ 50°C	Total Volume, l	175.3
Proof Pressure, bar	27.99 bar @ 50°C	Prop Volume, l	82.3
Cryo Proof, bar	N/A	Prop Volume, kg N <sub>2</sub> H <sub>4</sub>	102.5
Burst Pressure, bar	33.646 bar @ 50°C	Max Design Wt, kg	12.93
Actual Burst, bar	49.57	Minimum Wall, mm	1.016

**NOTES**  
The 80547-1 tank is identical to the 80534-1 tank except that the diaphragm orientation is reversed.

**HEMISPHERE FORGINGS**

HEMI P/N	QTY	SUPPLIER	Die No
80-313061-3	2	Arcturus	3045B

**QUALIFICATION TESTS**

- Preliminary Examination of Product
- Pre-Proof Volumetric Capacity Test,
- Proof Pressure Test
- Post-Proof Volumetric Capacity Test
- MEOP / Proof Pressure Cycling
- Diaphragm Cycle Test
- Internal (Diaphragm) Leak Test
- External Leak Test
- Expulsion Efficiency
- Expulsion Cycle Test
- Internal Vacuum
- Vibration Testing
- Static Load Test
- Burst Pressure

**RING FORGINGS (Roughed Machined)**

P/N	QTY	SIZE
80-534060-1	2	23.12" OD x 21.37" ID x 16.32" Long
Cylinder Forging		587.3 mm OD x 542.8 mm ID x 414.5 mm Long

**TUBE TYPE AND SIZE**

Bi-Metallic - Titanium / CRES	SIZE
80-534001-1	0.250" OD x 0.028" Wall x 4.50" Long
Pressurant / Propellant	6.350 mm x 0.711 mm Wall x 114.3 mm Long



**VACUUM RATED**  
Yes