



TECHNICAL DATA

**VERTICAL AND HORIZONTAL
BLADDER TANKS MODEL VFT
ASME Sec.VIII Div.1 - U-1A**

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com
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1. GENERAL DESCRIPTION

The bladder tank is a carbon steel pressure vessel containing an elastomeric bladder between the water and foam concentrate. The bladder permits water pressure to be transferred to the foam concentrate without the two fluids mixing together.

This Technical Data Page is intended for trained experts. It contains basic information needed to use the product described. Legally binding is the product operation and maintenance manual which must be observed.

For further information, please contact the appropriate sales office in Section 5 Availability or refer to the technical documentation.

The contents of this publication are subject to modifications without notice.



Photographs are for illustration purposes only. Refer to drawings for actual design details.

2. LISTINGS AND APPROVALS

The bladder tank is FM Approved and/or UL Listed as part of a fire extinguishing system combining designated foam concentrates, specific proportioning equipment, and discharge devices. Approved and Listed system components can be found at www.approvalguide.com and <https://iq.ulprospector.com>



FM Approved – Low Expansion Foam Systems (FM5130)



UL Listed – Guide GFGV.EX27255 & GHXV.EX5002 (UL162)

Constructed according to ASME Boiler and Pressure Vessel Code (BPVC) Sec.VIII Div.1 with U-1A (“U” Stamp certification process.



CE marked according to the PED Directive 2014/68/EU (Europe Only)

NOTE: Other international approval certificates may be available upon request.

“SFFF compatible” refers to this product as being part of a SFFF Foam system that has been tested to recognized standards. Not all configurations are available. Please consult technical data and/or the Approval/Listing for usage requirements.



WARNING: Cancer and Reproductive Harm-
www.P65Warnings.ca.gov



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3. TECHNICAL DATA

3.1 Construction Features

- Vertical tanks on legs or horizontal tanks on saddles
- Legs and saddles are provided with mounting brackets/holes.
- Approved system design pressure of 175 PSI (12.1 bar) or 232 PSI (16.0 bar)
- 100% pressure tested according to the applied design code
- Shell and heads in ASME SA-516 Gr.70
- Lockable corrosion resistant brass tank trim/service ball valves (UL Listed / FM Approved)
- Inspection flange available on left or right side of horizontal tanks (left as standard)
- Machine welded circumferential and longitudinal seams for maximum quality and durability
- Welded lifting lugs to facilitate safe handling operations
- Earth lug for electrical safety
- Safety thermal valve for water side of bladder to prevent slow overpressure and relieve thermal fluctuations
- Bladder equipped with cast rubber caps to ensure water & foam integrity under constant pressure
- Bladder specifically tested for compatibility with foams shown in FM Approval and UL Listing
- Oversized to permit concentrate thermal expansion (volume expansion allowance)
- Tank equipped with inside protection at any opening to ensure no damage to the bladder
- Internal PVC foam concentrate distribution pipe ensures optimal foam concentrate usage
- Internal water distribution channel to equalize the water pressure everywhere avoiding damage to the bladder and to drain the tank during service and maintenance
- Nameplate holder to avoid undetected corrosion on the tank's shell behind the plate
- Sight Tube level indicator
- External epoxy zinc rich primer with aliphatic polyurethane finish tested by FM and UL for corrosive atmosphere (salt fog)

3.2 Standard Materials

| Table 3.2.1 - Standard Materials | |
|----------------------------------|---|
| Tank shell and heads: | ASME SA-516 Gr. 70 |
| Bladder: | Reinforced NBR and EPDM |
| Trim valves: | Brass |
| Safety thermal relief valve: | Brass |
| Level indicator: | Sight Tube: PVC |
| Paint: | Epoxy zinc rich primer with aliphatic polyurethane finish |
| Standard colour: | Flame Red RAL3000 |
| Connection: | Grooved (2.5" available with 73.0 or 76.1 mm - specify upon ordering) |

3.3 Standard Design Specifications

| Table 3.3.1 - Standard Design Specifications | |
|--|---|
| Design pressure: | 175 PSI / 12.1 bar (1.2MPa) or 232 PSI /16.0 bar (1.6MPa) |
| Operating temperature range*: | 35°F to 120°F (1.7°C to 49°C) |
| Capacity: | See tables |
| Empty weight: | See tables |
| Proportioning range: | See Ratio Controller data sheet |
| (*) Refer to the appropriate proportioner for foam concentrate being used. | |



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3.4 Ordering Information

The following information is provided to ensure that the correct design requirements are provided during the order and manufacturing process. Mandatory information is required in every case. Optional information is required in case of special project or specification requirements.

| Table 3.4.1: Ordering Information | | | |
|---|----------|----------------------------------|--|
| | Ref | Criteria | Option |
| Mandatory Information (required for quote/order processing) | 1a | Configuration | a) Vertical b) Horizontal |
| | 1b | Capacity | a) 25 to 4000 US Gallons Vertical b) 50 to 5250 US Gallons Horizontal (see tables for available sizes) |
| | 1c | Design Code | ASME Bolier and Pressure Vessel (BPVC) Code with U-1A Manufacturer Data Report |
| | 1d | Standby Pressure Rating | a) 175 PSI / 12.1 bar (1.2 MPa) b) 232 PSI /16.0 bar (1.6 MPa) |
| | 1e | Inspection Flange | a) Left (Standard) b) Right (required for Horizontal Tanks only) |
| | 1g | Language | Select Bladder Tank Manual Language (see Table 12.1.2) |
| | Optional | 2a | Design Temperature |
| 2b | | Corrosion Allowance | Contact technical department |
| 2c | | Radiographic Test Report (*) | Contact technical department |
| 2d | | Liquid Penetrant Test Report (*) | Contact technical department |
| Pre-Assembled with Ratio Controller | 3a | Ratio Controller Size(s) | 2", 2.5", 3", 4", 6", 8" |
| | 3b | Direction of Flow | a) Left to right b) Right to left (direction of flow as you face the tank) |
| | 3c | Water Line Piping | Carbon Steel |
| | 3d | Foam Line Piping | a) Brass b) Stainless Steel |
| | 3e** | Foam Concentrate Type(**) | a) 3% xMAX b) Viking ARK 3% c) Viking USP 3% |
| | 3f | Concentrate Control Valve | Viking Halar CCV (FM UL) or Hydraulic Ball Valve |
| (*) With additional cost | | | |
| (**) These foam concentrates have been tested for bladder compatibility as per UL162 and/or FM5130. The long term compatibility of other foams concentrates cannot be verified. | | | |

INFORMATION

Some of the available options may be not covered by the UL Listing or FM Approval. Please always make reference to the appropriate approval directory or guides or contact the appropriate sales office in Section 5 Availability for further assistance.



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4. SCOPE OF DELIVERY

Ensure that all components are complete and in good condition.

The bladder tank is supplied in or on a suitable wooden pallet skid or shipping crate in the horizontal position.

All bladder tanks have lifting lugs to allow safe maneuverability on site.

Tank is supplied empty with pre-installed bladder.

Small trim valves and contents level device are supplied pre-assembled to the tank as standard.

Safety thermal relief valve supplied as standard, unmounted from tank. UV marked Safety Valve according to ASME BPVC Sec. VIII Div.1 available for an additional cost.

Anchor fixing bolts are not part of our supply scope.

Table 4.1.1 - Documentation

| Standard Documentation | Optional Documentation * |
|---|--|
| Warranty Certificate | Dimensional Drawings |
| PED Declaration or Conformity | Material Certificates according to ASME Code Specifications |
| Safety Thermal Relief Valve Declaration of Conformity | Certificate of Conformity Type 2.1 to EN10204 |
| Hydrostatic Pressure Test Certificate | Design Structural Calculations |
| Bladder Pneumatic Test Certificate | Spot or Full Radiographic Examination with Report (when not mandatorily required by design parameters) |
| Painting Inspection Certificate | Spare Parts List |
| Final Inspection Certificate | Copy of Procedure Qualification Record (PQR) and Welding Procedure Specification (WPS) according to tank construction code |
| Operating, Filling and Maintenance Manual (English) | Operating, Filling and Maintenance Manual (Language) |
| Manufacturer Data Report Form U-1A | |

(*) Contact the sales office listed in section 5 for further information and price.

5. AVAILABILITY

The Viking Corporation, 210 N. Industrial Park Drive, Hastings, Michigan 49058, Toll free phone: (800) 968-9501

6. PRODUCT VARIANTS

6.1 Options

- Flanged connections (ANSI or PN16)
- Special coatings for salt-water applications or harsh environmental conditions
- Nameplate in corrosion resistant material
- Increased wall thickness for corrosion allowance
- Internal coatings such as epoxy tar
- 232 PSI /16.0 bar (1.6 MPa) design pressure rating with UL Listing and FM Approval
- Other design pressure and seismic ratings
- Ladders | Work Platform | Sunshield
- Full bladder tank stainless steel construction
- Heat tracing and/or insulation
- Bladder tank pre-installed on base frame or containerized to customer requirements
- Various colors and painting cycles with UL Listing and FM Approval (120-300 microns)
- Nondestructive examinations
- Factory acceptance test, notified body or third party inspections
- Special sea freight and fumigated packaging
- UV certified Safety Valve according to ASME BPVC Code Sec.VIII Div.1

Please contact us for further details, pricing and availability

INFORMATION

Some of the available options may be not covered by the UL Listing or FM Approval. Please always make reference to the appropriate approval directory or guides or contact us for further assistance.



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6.2 General bladder tank layout and P&ID

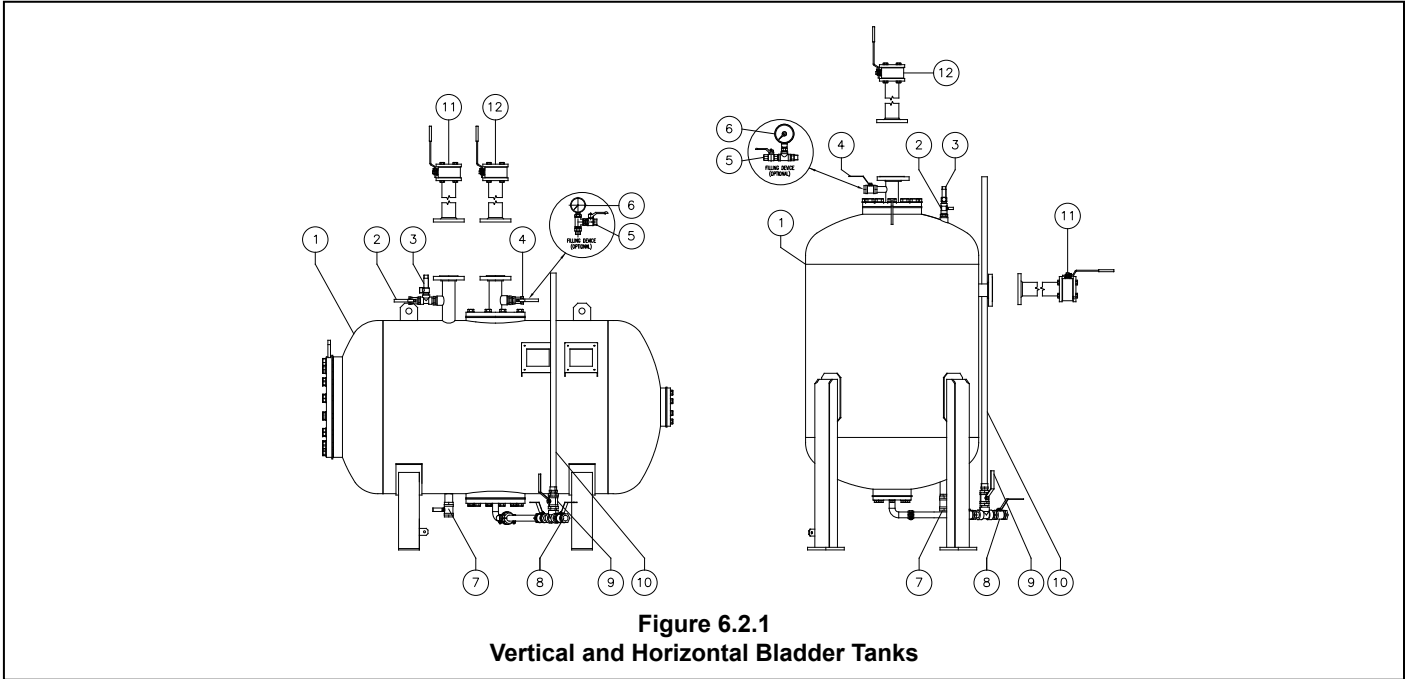


Figure 6.2.1
Vertical and Horizontal Bladder Tanks

Table 6.2.2 - General Bladder Tank Layout and P&ID

| Item | Description | Item | Description |
|------|--|------|--|
| 1 | Bladder Tank | 7 | Water Filling/Drain Valve (NPT) |
| 2 | Water Vent Valve (NPT) | 8 | Foam Concentrate Filling/Drain Valve (NPT) |
| 3 | Safety Thermal Relief Valve | 9 | Concentrate Level Indicator Drain Valve |
| 4 | Foam Concentrate Vent Valve (NPT) | 10 | Concentrate Level Indicator |
| 5 | Filling Vent Valve (Optional) | 11 | Water Shut Off Valve (to be ordered separately) |
| 6 | Filling Pressure Gauge 1-10 kpa (Optional) | 12 | Foam Concentrate Shut Off Valve (to be ordered separately) |

Note: Item 10 shown with Sight Tube. Level Gauge also available and connected at position 10.

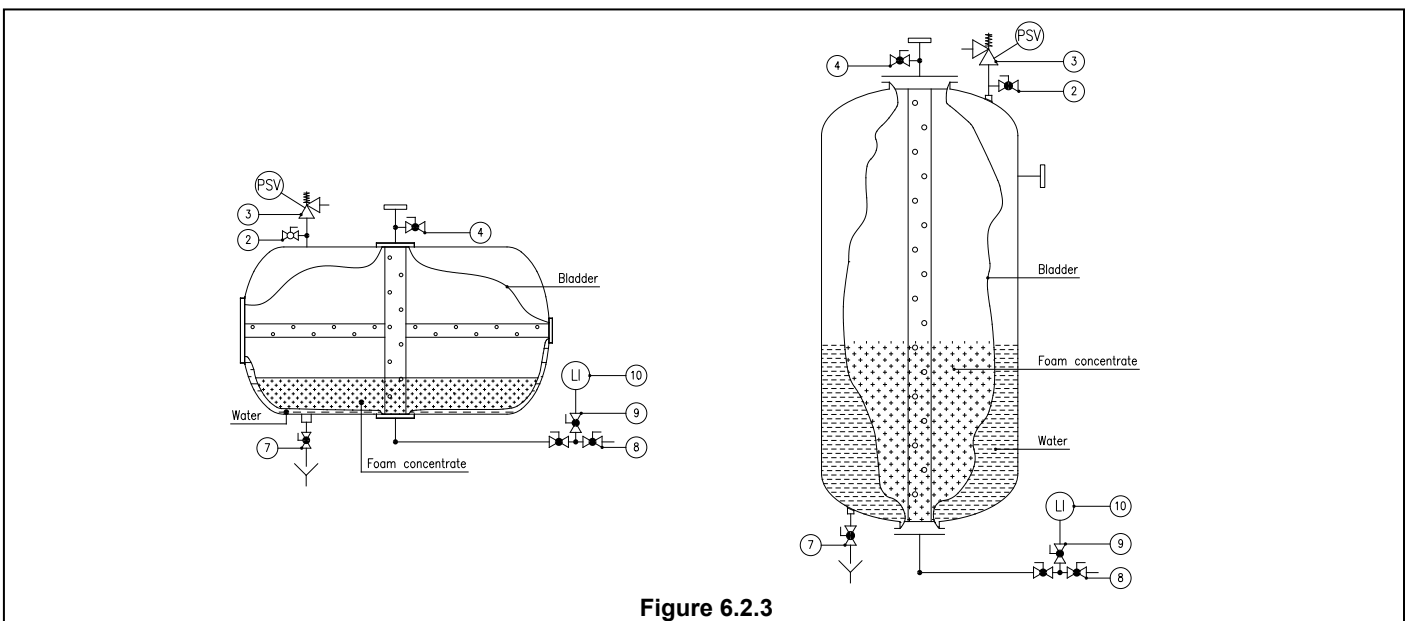


Figure 6.2.3

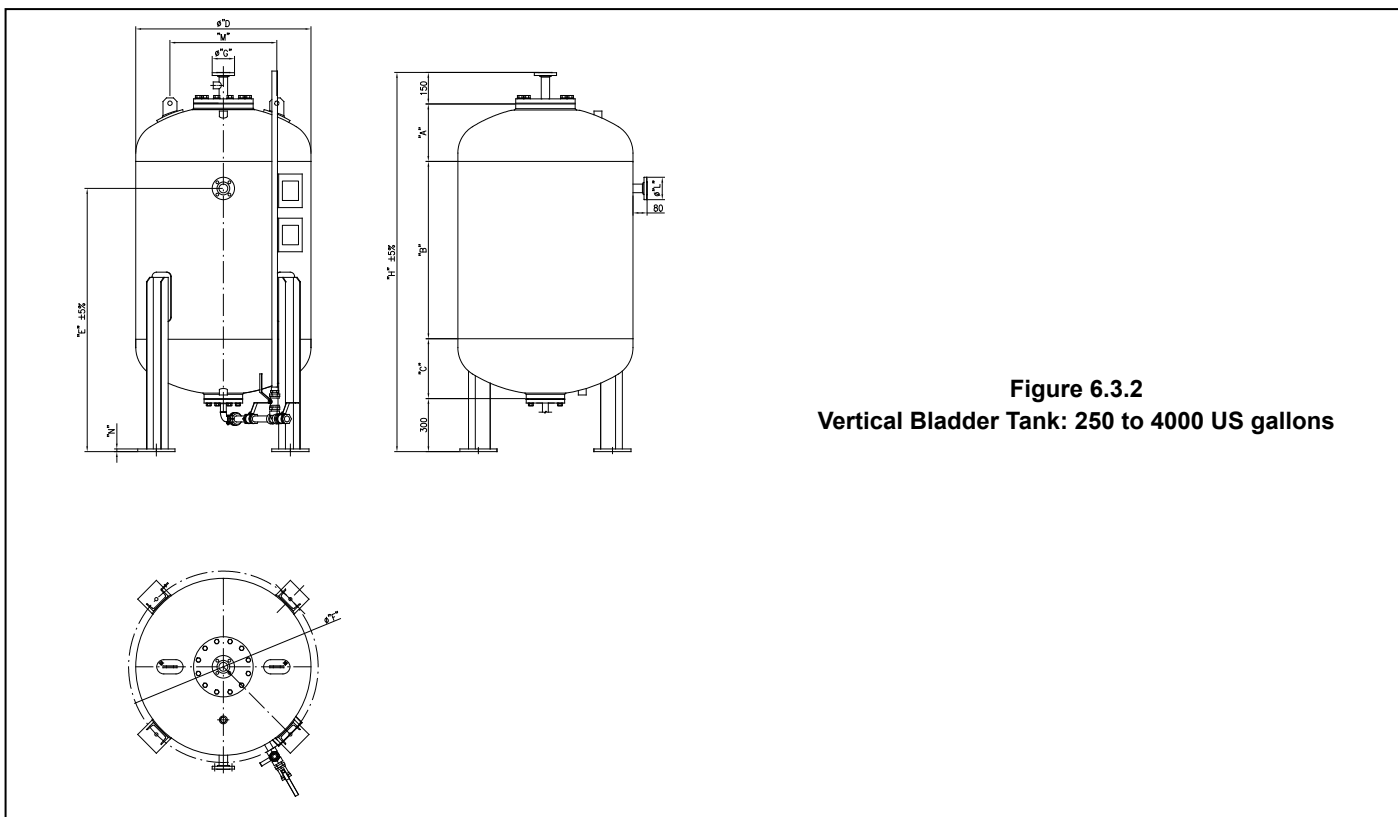
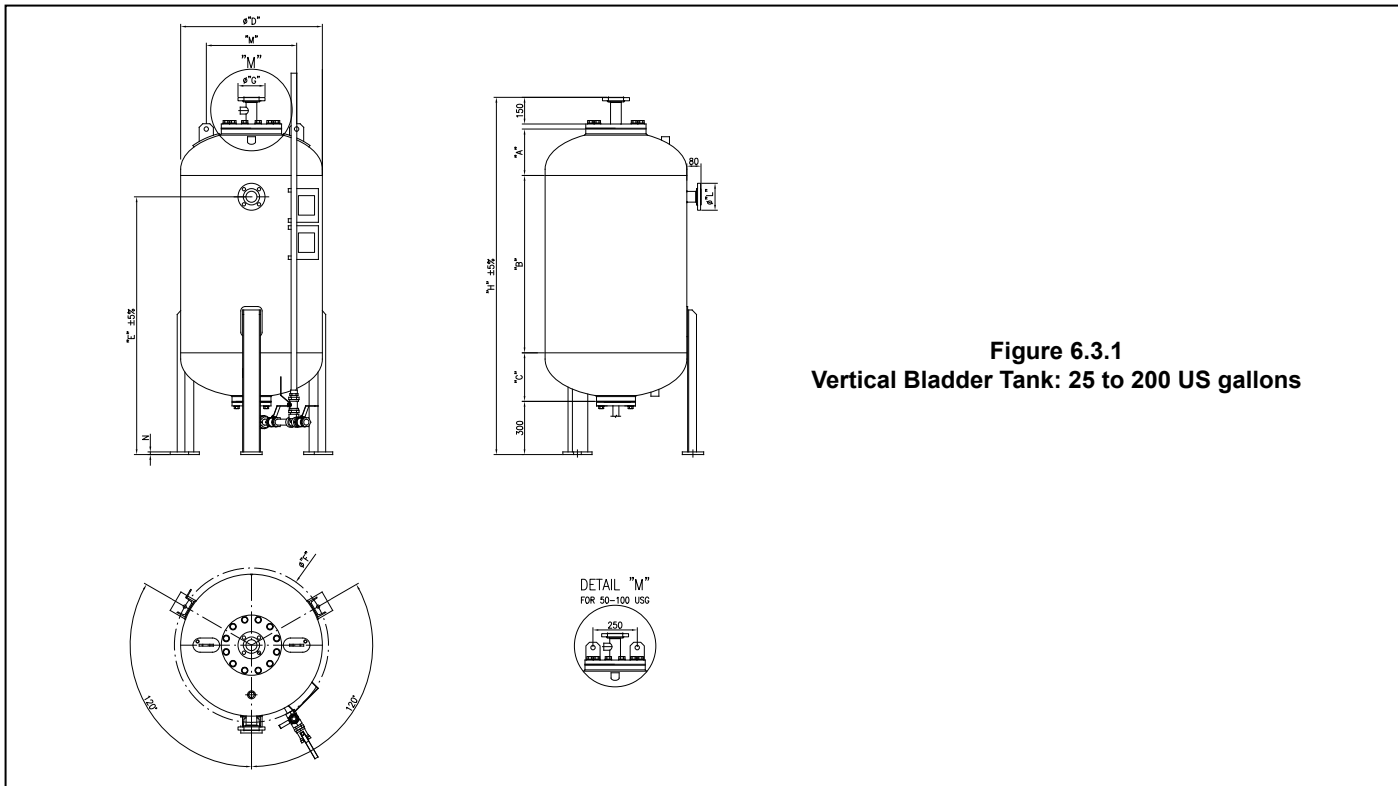


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6.3 Dimensions

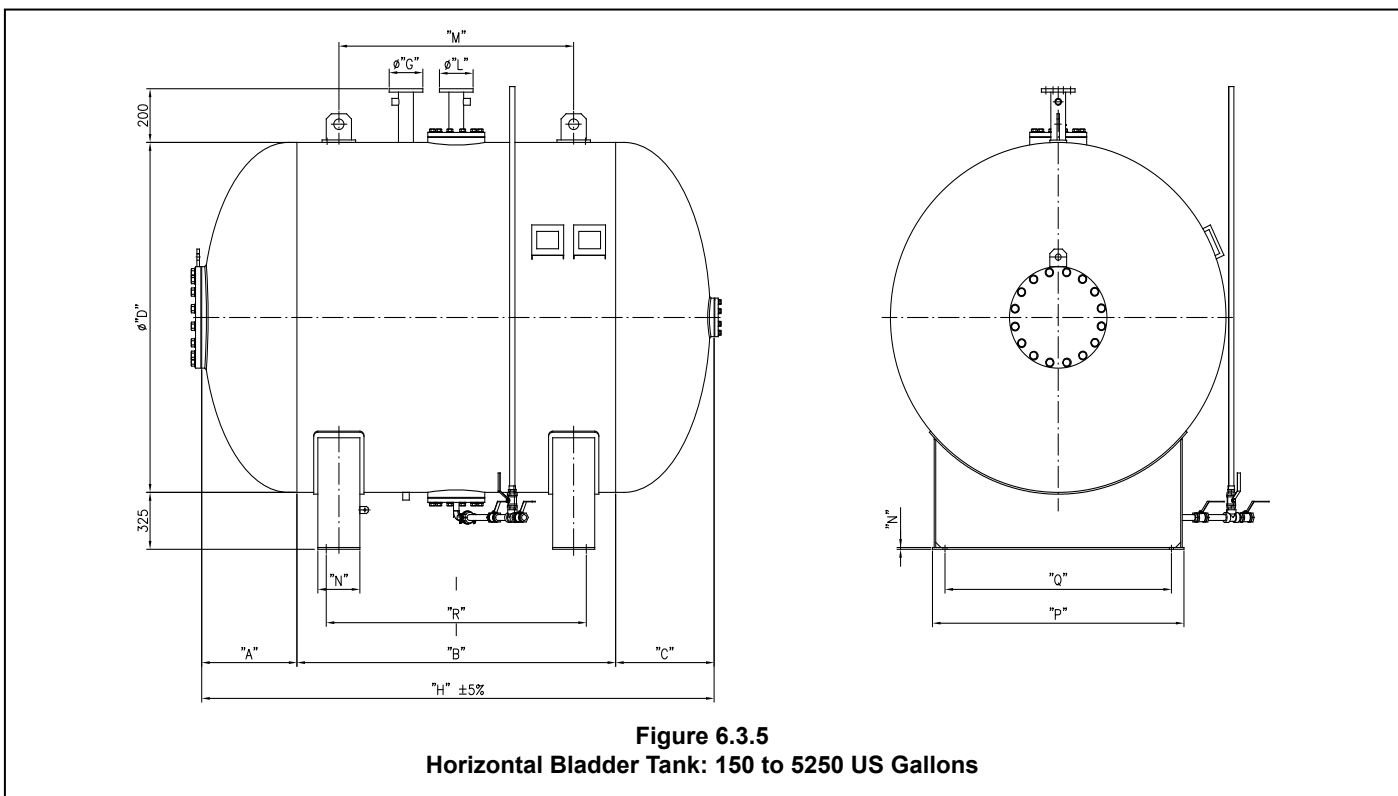
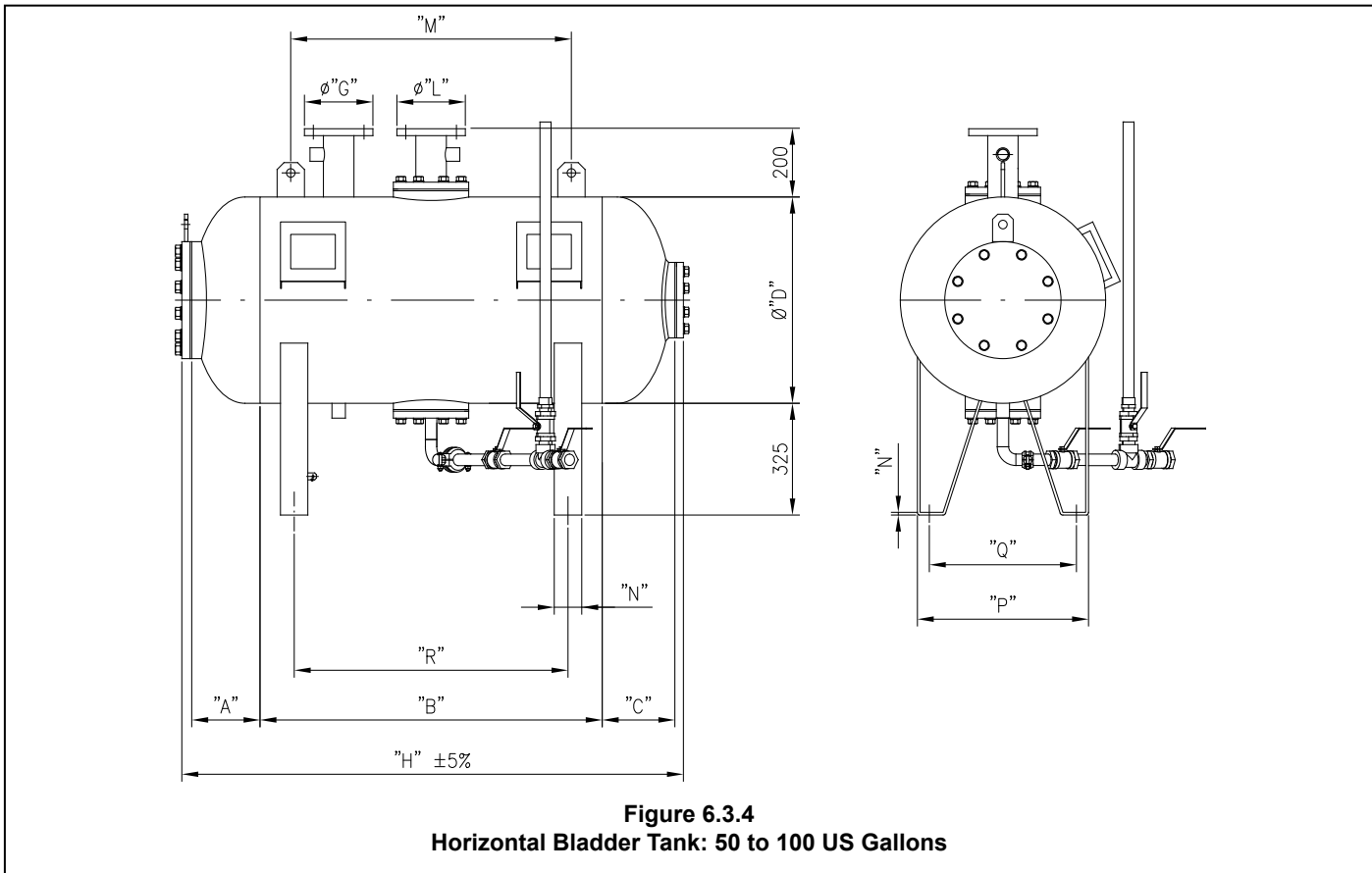




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Table 6.3.6 - Horizontal Bladder Tank Dimensions (ASME Sec VIII Design Code)

| Bladder Tank : ASME Sec VIII Design Code | | Capacity | | Weight | | A | B | C | ØD | ØG | H | ØL | M | N | O | P | Q | R | |
|--|--------------------|----------|--------|--------|------|------|-------|------|------|------|-------|------|------|------|------|------|------|-------|----|
| 175 PSI / 12.1 bar | 232 PSI / 16.0 bar | USG | Litres | LBS | KG | inch | inch | inch | inch | inch | inch | inch | inch | inch | inch | inch | inch | inch | |
| | | | | | | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm |
| VFTH0050U | VFTH0050U-16 | 50 | 189 | 574 | 260 | 8.0 | 39.4 | 8.0 | 19.7 | 2 | 55.4 | 2 | 32.3 | 0.3 | 7.9 | 16.7 | 13.8 | 32.3 | |
| | | | | | | 203 | 1000 | 203 | 500 | 50 | 1406 | 50 | 820 | 8 | 200 | 425 | 350 | 820 | |
| VFTH0075U | VFTH0075U-16 | 75 | 283 | 640 | 290 | 9.0 | 39.4 | 9.0 | 23.6 | 2 | 57.3 | 2 | 32.3 | 0.3 | 7.9 | 19.7 | 16.9 | 32.3 | |
| | | | | | | 228 | 1000 | 228 | 600 | 50 | 1456 | 50 | 820 | 8 | 200 | 500 | 430 | 820 | |
| VFTH0100U | VFTH0100U-16 | 100 | 378 | 684 | 310 | 9.0 | 49.2 | 9.0 | 23.6 | 2 | 67.2 | 2 | 42.1 | 0.3 | 7.9 | 19.7 | 16.9 | 40.2 | |
| | | | | | | 228 | 1250 | 228 | 600 | 50 | 1706 | 50 | 1070 | 8 | 200 | 500 | 430 | 1020 | |
| VFTH0150U | VFTH0150U-16 | 150 | 567 | 828 | 375 | 10.3 | 39.4 | 10.8 | 31.5 | 2 | 60.5 | 2 | 51.0 | 0.3 | 7.9 | 19.7 | 15.7 | 32.3 | |
| | | | | | | 262 | 1000 | 274 | 800 | 50 | 1536 | 50 | 1295 | 8 | 200 | 500 | 400 | 820 | |
| VFTH0200U | VFTH0200U-16 | 200 | 757 | 883 | 400 | 10.3 | 51.2 | 10.8 | 31.5 | 2 | 72.3 | 2 | 62.8 | 0.3 | 7.9 | 19.7 | 15.7 | 42.1 | |
| | | | | | | 262 | 1300 | 274 | 800 | 50 | 1836 | 50 | 1595 | 8 | 200 | 500 | 400 | 1070 | |
| VFTH0250U | VFTH0250U-16 | 250 | 946 | 1258 | 570 | 11.3 | 39.4 | 13.2 | 39.4 | 2.5 | 63.9 | 2.5 | 51.0 | 0.3 | 7.9 | 27.6 | 23.6 | 32.3 | |
| | | | | | | 288 | 1000 | 336 | 1000 | 65 | 1624 | 65 | 1295 | 8 | 200 | 700 | 600 | 820 | |
| VFTH0300U | VFTH0300U-16 | 300 | 1135 | 1391 | 630 | 11.3 | 51.2 | 13.2 | 39.4 | 2.5 | 75.7 | 2.5 | 39.4 | 0.3 | 7.9 | 27.6 | 23.6 | 42.1 | |
| | | | | | | 288 | 1300 | 336 | 1000 | 65 | 1924 | 65 | 1000 | 8 | 200 | 700 | 600 | 1070 | |
| VFTH0350U | VFTH0350U-16 | 350 | 1324 | 1453 | 650 | 11.3 | 55.1 | 13.2 | 39.4 | 2.5 | 79.7 | 2.5 | 39.4 | 0.3 | 7.9 | 27.6 | 23.6 | 42.1 | |
| | | | | | | 288 | 1400 | 336 | 1000 | 65 | 2024 | 65 | 1000 | 8 | 200 | 700 | 600 | 1070 | |
| VFTH0400U | VFTH0400U-16 | 400 | 1514 | 1479 | 670 | 11.3 | 65.0 | 13.2 | 39.4 | 2.5 | 89.5 | 2.5 | 51.2 | 0.3 | 5.9 | 27.6 | 23.6 | 53.5 | |
| | | | | | | 288 | 1650 | 336 | 1000 | 65 | 2274 | 65 | 1300 | 8 | 150 | 700 | 600 | 1360 | |
| VFTH0450U | VFTH0450U-16 | 450 | 1703 | 2137 | 968 | 11.6 | 59.1 | 13.2 | 43.3 | 2.5 | 83.9 | 2.5 | 45.3 | 0.3 | 5.9 | 31.5 | 27.6 | 48.0 | |
| | | | | | | 294 | 1500 | 336 | 1100 | 65 | 2130 | 65 | 1150 | 8 | 150 | 800 | 700 | 1220 | |
| VFTH0500U | VFTH0500U-16 | 500 | 1892 | 2318 | 1050 | 11.6 | 70.9 | 13.2 | 43.3 | 2.5 | 95.7 | 2.5 | 57.1 | 0.3 | 5.9 | 31.5 | 27.6 | 59.8 | |
| | | | | | | 294 | 1800 | 336 | 1100 | 65 | 2430 | 65 | 1450 | 8 | 150 | 800 | 700 | 1520 | |
| VFTH0600U | VFTH0600U-16 | 600 | 2271 | 2377 | 1077 | 12.7 | 65.0 | 14.2 | 47.2 | 3 | 91.9 | 3 | 53.5 | 0.3 | 5.9 | 35.4 | 31.5 | 56.7 | |
| | | | | | | 322 | 1650 | 361 | 1200 | 80 | 2333 | 80 | 1360 | 8 | 150 | 900 | 800 | 1440 | |
| VFTH0700U | VFTH0700U-16 | 700 | 2649 | 2651 | 1201 | 13.8 | 65.0 | 15.2 | 51.2 | 3 | 94.0 | 3 | 58.3 | 0.3 | 5.9 | 35.4 | 31.5 | 56.7 | |
| | | | | | | 351 | 1650 | 386 | 1300 | 80 | 2387 | 80 | 1480 | 8 | 150 | 900 | 800 | 1440 | |
| VFTH0800U | VFTH0800U-16 | 800 | 3028 | 2898 | 1313 | 13.8 | 78.7 | 15.2 | 51.2 | 3 | 107.8 | 3 | 63.0 | 0.3 | 5.9 | 35.4 | 31.5 | 66.1 | |
| | | | | | | 351 | 2000 | 386 | 1300 | 80 | 2737 | 80 | 1600 | 8 | 150 | 900 | 800 | 1680 | |
| VFTH0900U | VFTH0900U-16 | 900 | 3406 | 3680 | 1667 | 15.3 | 78.7 | 16.3 | 55.1 | 3 | 110.3 | 3 | 63.0 | 0.3 | 5.9 | 39.4 | 33.5 | 66.1 | |
| | | | | | | 389 | 2000 | 413 | 1400 | 80 | 2801 | 80 | 1600 | 8 | 150 | 1000 | 850 | 1680 | |
| VFTH1000U | VFTH1000U-16 | 1000 | 3785 | 3592 | 1627 | 15.8 | 74.8 | 16.8 | 57.1 | 3 | 107.4 | 3 | 63.0 | 0.4 | 5.9 | 39.4 | 33.5 | 62.2 | |
| | | | | | | 402 | 1900 | 426 | 1450 | 80 | 2728 | 80 | 1600 | 10 | 150 | 1000 | 850 | 1580 | |
| VFTH1100U | VFTH1100U-16 | 1100 | 4163 | 3777 | 1711 | 15.8 | 82.7 | 16.8 | 57.1 | 3 | 115.3 | 3 | 63.0 | 0.4 | 5.9 | 39.4 | 33.5 | 66.1 | |
| | | | | | | 402 | 2100 | 426 | 1450 | 80 | 2928 | 80 | 1600 | 10 | 150 | 1000 | 850 | 1680 | |
| VFTH1200U | VFTH1200U-16 | 1200 | 4542 | 4159 | 1884 | 16.5 | 82.7 | 17.3 | 59.1 | 3 | 116.4 | 3 | 66.9 | 0.4 | 5.9 | 39.4 | 33.5 | 70.1 | |
| | | | | | | 418 | 2100 | 439 | 1500 | 80 | 2957 | 80 | 1700 | 10 | 150 | 1000 | 850 | 1780 | |
| VFTH1300U | VFTH1300U-16 | 1300 | 4921 | 4355 | 1973 | 17.5 | 78.7 | 18.3 | 63.0 | 3 | 114.6 | 3 | 63.0 | 0.4 | 5.9 | 43.3 | 37.4 | 68.1 | |
| | | | | | | 445 | 2000 | 465 | 1600 | 80 | 2910 | 80 | 1600 | 10 | 150 | 1100 | 950 | 1730 | |
| VFTH1400U | VFTH1400U-16 | 1400 | 5299 | 4629 | 2097 | 17.5 | 88.6 | 18.3 | 63.0 | 3 | 124.4 | 3 | 70.9 | 0.4 | 5.9 | 43.3 | 37.4 | 76.0 | |
| | | | | | | 445 | 2250 | 465 | 1600 | 80 | 3160 | 80 | 1800 | 10 | 150 | 1100 | 950 | 1930 | |
| VFTH1500U | VFTH1500U-16 | 1500 | 5678 | 4525 | 2050 | 19.6 | 74.8 | 20.6 | 68.9 | 3 | 115.0 | 3 | 61.0 | 0.4 | 5.9 | 47.2 | 41.3 | 63.4 | |
| | | | | | | 498 | 1900 | 522 | 1750 | 80 | 2920 | 80 | 1550 | 10 | 150 | 1200 | 1050 | 1610 | |
| VFTH1600U | VFTH1600U-16 | 1600 | 6056 | 4746 | 2150 | 19.6 | 78.7 | 20.6 | 68.9 | 3 | 118.9 | 3 | 61.0 | 0.4 | 5.9 | 47.2 | 41.3 | 65.4 | |
| | | | | | | 498 | 2000 | 522 | 1750 | 80 | 3020 | 80 | 1550 | 10 | 150 | 1200 | 1050 | 1660 | |
| VFTH1700U | VFTH1700U-16 | 1700 | 6435 | 4967 | 2250 | 20.2 | 78.7 | 21.1 | 70.9 | 3 | 120.0 | 3 | 61.0 | 0.4 | 5.9 | 47.2 | 41.3 | 66.1 | |
| | | | | | | 513 | 2000 | 535 | 1800 | 80 | 3047 | 80 | 1550 | 10 | 150 | 1200 | 1050 | 1680 | |
| VFTH1800U | VFTH1800U-16 | 1800 | 6813 | 5700 | 2582 | 22.3 | 59.1 | 23.1 | 78.7 | 3 | 104.4 | 3 | 47.2 | 0.4 | 5.9 | 59.1 | 53.1 | 49.2 | |
| | | | | | | 566 | 1500 | 586 | 2000 | 80 | 2652 | 80 | 1200 | 10 | 150 | 1500 | 1350 | 1250 | |
| VFTH1900U | VFTH1900U-16 | 1900 | 7192 | 5854 | 2652 | 22.3 | 63.0 | 23.1 | 78.7 | 3 | 108.3 | 3 | 52.4 | 0.4 | 5.9 | 59.1 | 53.1 | 49.2 | |
| | | | | | | 566 | 1600 | 586 | 2000 | 80 | 2752 | 80 | 1330 | 10 | 150 | 1500 | 1350 | 1250 | |
| VFTH2000U | VFTH2000U-16 | 2000 | 7570 | 6086 | 2757 | 22.3 | 68.9 | 23.1 | 78.7 | 3 | 114.3 | 3 | 52.4 | 0.4 | 5.9 | 59.1 | 53.1 | 55.1 | |
| | | | | | | 566 | 1750 | 586 | 2000 | 80 | 2902 | 80 | 1330 | 10 | 150 | 1500 | 1350 | 1400 | |
| VFTH2200U | VFTH2200U-16 | 2200 | 8327 | 6581 | 2981 | 22.3 | 82.7 | 23.1 | 78.7 | 3 | 128.0 | 3 | 63.0 | 0.4 | 5.9 | 59.1 | 53.1 | 68.9 | |
| | | | | | | 566 | 2100 | 586 | 2000 | 80 | 3252 | 80 | 1600 | 10 | 150 | 1500 | 1350 | 1750 | |
| VFTH2400U | VFTH2400U-16 | 2400 | 9084 | 6823 | 3091 | 22.3 | 88.6 | 23.1 | 78.7 | 3 | 133.9 | 3 | 68.9 | 0.4 | 5.9 | 59.1 | 53.1 | 74.8 | |
| | | | | | | 566 | 2250 | 586 | 2000 | 80 | 3402 | 80 | 1750 | 10 | 150 | 1500 | 1350 | 1900 | |
| VFTH2600U | VFTH2600U-16 | 2600 | 9842 | 7362 | 3335 | 22.3 | 102.4 | 23.1 | 78.7 | 3 | 147.7 | 3 | 82.7 | 0.4 | 5.9 | 59.1 | 53.1 | 88.6 | |
| | | | | | | 566 | 2600 | 586 | 2000 | 80 | 3752 | 80 | 2100 | 10 | 150 | 1500 | 1350 | 2250 | |
| VFTH2800U | VFTH2800U-16 | 2800 | 10599 | 7870 | 3565 | 22.3 | 114.2 | 23.1 | 78.7 | 3 | 159.5 | 3 | 94.5 | 0.4 | 5.9 | 59.1 | 53.1 | 100.4 | |
| | | | | | | 566 | 2900 | 586 | 2000 | 80 | 4052 | 80 | 2400 | 10 | 150 | 1500 | 1350 | 2550 | |



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Table 6.3.6 - Horizontal Bladder Tank Dimensions (ASME Sec VIII Design Code) (cont.)

| Bladder Tank : ASME Sec VIII Design Code | | Capacity | | Weight | | A | B | C | ØD | ØG | H | ØL | M | N | O | P | Q | R |
|--|--------------------|----------|--------|--------|------|------|-------|------|------|------|-------|------|-------|------|------|------|------|-------|
| 175 PSI /12.1 bar | 232 PSI / 16.0 bar | USG | Litres | LBS | KG | inch | inch | inch | inch | inch | inch | inch | inch | inch | inch | inch | inch | inch |
| | | | | | | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm |
| VFTH3000U | VFTH3000U-16 | 3000 | 11356 | 8177 | 3704 | 22.3 | 122.0 | 23.1 | 78.7 | 3 | 167.4 | 3 | 102.4 | 0.4 | 5.9 | 59.1 | 53.1 | 108.3 |
| | | | | | | 566 | 3100 | 586 | 2000 | 80 | 4252 | 80 | 2600 | 10 | 150 | 1500 | 1350 | 2750 |
| VFTH3200U | VFTH3200U-16 | 3200 | 12113 | 8618 | 3904 | 22.3 | 133.9 | 23.1 | 78.7 | 3 | 179.2 | 3 | 114.2 | 0.4 | 5.9 | 59.1 | 53.1 | 120.1 |
| | | | | | | 566 | 3400 | 586 | 2000 | 80 | 4552 | 80 | 2900 | 10 | 150 | 1500 | 1350 | 3050 |
| VFTH3400U | VFTH3400U-16 | 3400 | 12870 | 8925 | 4043 | 22.3 | 141.7 | 23.1 | 78.7 | 3 | 187.1 | 3 | 126.0 | 0.4 | 5.9 | 59.1 | 53.1 | 131.9 |
| | | | | | | 566 | 3600 | 586 | 2000 | 80 | 4752 | 80 | 3200 | 10 | 150 | 1500 | 1350 | 3350 |
| VFTH3600U | VFTH3600U-16 | 3600 | 13627 | 9311 | 4218 | 22.3 | 151.6 | 23.1 | 78.7 | 3 | 196.9 | 3 | 139.8 | 0.4 | 5.9 | 59.1 | 53.1 | 145.7 |
| | | | | | | 566 | 3850 | 586 | 2000 | 80 | 5002 | 80 | 3550 | 10 | 150 | 1500 | 1350 | 3700 |
| VFTH3800U | VFTH3800U-16 | 3800 | 14384 | 9631 | 4363 | 22.3 | 159.4 | 23.1 | 78.7 | 3 | 204.8 | 3 | 139.8 | 0.4 | 5.9 | 59.1 | 53.1 | 145.7 |
| | | | | | | 566 | 4050 | 586 | 2000 | 80 | 5202 | 80 | 3550 | 10 | 150 | 1500 | 1350 | 3700 |
| VFTH4000U | VFTH4000U-16 | 4000 | 15141 | 10170 | 4607 | 22.3 | 173.2 | 23.1 | 78.7 | 3 | 218.6 | 3 | 139.8 | 0.4 | 5.9 | 59.1 | 53.1 | 145.7 |
| | | | | | | 566 | 4400 | 586 | 2000 | 80 | 5552 | 80 | 3550 | 10 | 150 | 1500 | 1350 | 3700 |
| VFTH4250U | VFTH4250U-16 | 4250 | 16088 | 10631 | 4816 | 22.3 | 185.0 | 23.1 | 78.7 | 3 | 230.4 | 3 | 139.8 | 0.4 | 5.9 | 59.1 | 53.1 | 145.7 |
| | | | | | | 566 | 4700 | 586 | 2000 | 80 | 5852 | 80 | 3550 | 10 | 150 | 1500 | 1350 | 3700 |
| VFTH4500U | VFTH4500U-16 | 4500 | 17034 | 11095 | 5026 | 22.3 | 196.9 | 23.1 | 78.7 | 3 | 242.2 | 3 | 139.8 | 0.4 | 5.9 | 59.1 | 53.1 | 151.6 |
| | | | | | | 566 | 5000 | 586 | 2000 | 80 | 6152 | 80 | 3550 | 10 | 150 | 1500 | 1350 | 3850 |
| VFTH4750U | VFTH4750U-16 | 4750 | 17980 | 11634 | 5270 | 22.3 | 210.6 | 23.1 | 78.7 | 3 | 256.0 | 3 | 139.8 | 0.4 | 5.9 | 59.1 | 53.1 | 151.6 |
| | | | | | | 566 | 5350 | 586 | 2000 | 80 | 6502 | 80 | 3550 | 10 | 150 | 1500 | 1350 | 3850 |
| VFTH5000U | VFTH5000U-16 | 5000 | 18927 | 12097 | 5480 | 22.3 | 222.4 | 23.1 | 78.7 | 3 | 267.8 | 3 | 139.8 | 0.4 | 5.9 | 59.1 | 53.1 | 159.4 |
| | | | | | | 566 | 5650 | 586 | 2000 | 80 | 6802 | 80 | 3550 | 10 | 150 | 1500 | 1350 | 4050 |
| VFTH5250U | VFTH5250U-16 | 5250 | 19873 | 12636 | 5724 | 22.3 | 236.2 | 23.1 | 78.7 | 3 | 281.6 | 3 | 139.8 | 0.4 | 5.9 | 59.1 | 53.1 | 159.4 |
| | | | | | | 566 | 6000 | 586 | 2000 | 80 | 7152 | 80 | 3550 | 10 | 150 | 1500 | 1350 | 4050 |

7. INSTALLATION

Refer to appropriate Installation Standards (i.e. NFPA, VdS, LPCB, etc.) and / or FM applicable FM Global Property Loss Prevention Data Sheets such as 4-12, Foam-Water Sprinkler Systems.

The Installation, Operation and Maintenance Bladder Tank Manual shall also be referenced.

NOTICE

When designing a bladder tank into your fire protection system, please give consideration to future maintenance activities. Ensure that adequate clearance above a vertical bladder tank or at the inspection flange end of a horizontal tank is allowed. For further guidance contact us.

8. OPERATION

1. Foam concentrate is stored inside the bladder. When used in conjunction with a Ratio Controller it proportions foam concentrate accurately into the water stream.
2. During system activation, the outer side of the bladder is pressurized by the system water supply which forces foam concentrate to the proportioner or a ratio controller.
3. Simultaneously, as water flows through the venturi area of the wide range proportioner or ratio controller, a metered pressure drop draws foam concentrate into the system water stream creating a foam solution mixed to the appropriate ratios.
4. The foam solution flows through the system pipework and out of any open sprinklers, nozzles or other discharge devices.
5. As the foam concentrate continues to flow from the inside of the bladder, system water enters the bladder tank on the outside of the bladder keeping a balanced pressure system.

9. GUARANTEE

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.



TECHNICAL DATA

**VERTICAL AND HORIZONTAL
BLADDER TANKS MODEL VFT
ASME Sec.VIII Div.1 - U-1A**

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com
Visit the Viking website for the latest edition of this technical data page.

10. INSPECTION, TESTS AND MAINTENANCE

⚠ WARNING

Any system maintenance or testing that involves placing a control valve or detection system out of service may eliminate the fire protection capabilities of that system. Prior to proceeding, notify all Authorities Having Jurisdiction. Consideration should be given to employment of a fire patrol in the affected area.

Refer to respective requirements, according to the relevant standards for Inspection, Testing and Maintenance. If applicable, refer to FM Global Property Loss Prevention Datasheet 4-12 for specific test and commissioning criteria. In addition, the "Authority Having Jurisdiction" (AHJ) may have additional maintenance, testing and inspection requirements that must be followed.

11. DISPOSAL

At end of use the product described here should be disposed of via the national recycling system. Upon request the manufacturer can take back and properly dispose of the electrical equipment and electronic devices.

12. ACCESSORIES AND SPARE PARTS

Contact the appropriate sales office in Section 5 Availability for further assistance.

Table 12.1.1 - Optional / Standard Spare Parts

| Description | Material | Connection | Part Number | |
|-----------------------------|---------------------|------------------------------------|------------------------|--------------|
| | | | 175 PSI (12 bar) Tanks | 16 bar Tanks |
| Safety Thermal Relief Valve | Brass | 1/2" | B10C12.1 | B10C16 |
| ASME Safety Valve | Carbon Steel | 3/4" | EUV34CS-12.1 | EUV34CS-16.0 |
| ASME Safety Valve | Stainless Steel 316 | 3/4" | EUV34SS-12.1 | EUV34SS-16.0 |
| Filling Device & KPA Gauge | Carbon Steel | 1" | FILLDEVICE | |
| Replacement Bladder | Various | Contact us with tank serial number | | |
| Sight tube replacement kit | Various | Contact us with tank serial number | | |

Table 12.1.2 - Bladder Tank Manual

| Language | Part Number | Language | Part Number |
|----------|-------------|----------|-------------|
| English | F032216-EN | Dutch | F032216-NL |
| German | F032216-DE | Polish | F032216-PL |
| Spanish | F032216-ES | Swedish | F032216-SV |
| French | F032216-FR | Turkish | F032216-TR |
| Italian | F032216-IT | -- | -- |

13. DECLARATION OF CONFORMITY

If required, contact the appropriate sales office in **Section 5 Availability** for further assistance.