



## 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.

### 1. GENERAL DESCRIPTION

The bladder tank together with ratio controllers, form a balanced pressure proportioning system used to mix water and firefighting foam concentrate together to produce an effective extinguishing medium. The bladder tank technology is a dependable and precise mixing method that is widespread in the fixed fire protection market.

This method gives a stable water/foam ratio by adjusting automatically to the variable flow rate and pressure conditions that occur during system operation. This feature makes bladder tanks particularly suitable to fit multiple hazard systems, sprinkler systems and any other systems operating under variable, non-predictable flow and pressure conditions.

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.



### 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, Model VRC ratio controllers, Model VLF ILBP's and discharge devices. Approved and Listed system components can be found at [www.approvalguide.com](http://www.approvalguide.com) and [www.database.UL.com](http://www.database.UL.com)



FM Approved – Low Expansion Foam Systems (FM5130)



UL Listed – Guide GFGV.EX27255 & GHXV5002 (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.



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



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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 ground fixing holes
- Approved system design pressure of 175PSI (12.1bar) or 232PSI (16.0bar)
- 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**

<b>Tank shell and heads:</b>	ASME SA-516 Gr.70
<b>Bladder:</b>	polyester reinforced hypalon-neoprene polymers
<b>Trim valves:</b>	brass
<b>Safety thermal relief valve:</b>	brass
<b>Level indicator:</b>	Sight Tube: PVC
<b>Paint:</b>	epoxy zinc rich primer with aliphatic polyurethane finish
<b>Standard colour:</b>	Flame Red RAL3000
<b>Connection:</b>	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**

<b>Design pressure:</b>	175PSI / 12.1bar (1.2MPa) <b>or</b> 232PSI /16.0bar (1.6MPa)
<b>Operating temperature range*:</b>	35°F to 120°F (1.7°C to 49°C)
<b>Capacity:</b>	see tables
<b>Empty weight:</b>	see tables
<b>Proportioning range:</b>	see ratio controller data sheet

(\* ) Further temperature limitations come from foam concentrate and water.



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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. Pre-assembled Bladder Tank information is required when the bladder tank will be supplied pre-piped including the Ratio Controller.

Table 3.4.1: Ordering Information			
	Ref	Criteria	Option
Mandatory Information (required for quote   order processing)	1a	Configuration	a) Vertical b) Horizontal c) Twin Vertical
	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) 175PSI / 12.1bar (1.2MPa) b) 232PSI /16.0bar (1.6MPa)
	1e	Inspection Flange	a) Left (Standard) b) Right (required for Horizontal Tanks only)
	1f	Level Indicator	Sight Tube
	1g	Language	Select Bladder Tank Manual Language (see Table 12.1.2)
Optional	2a	Design Temperature	Contact technical department
	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) Carbon Steel b) Stainless Steel
	3e	Foam Concentrate Type	a) AFFF 1%S C6 b) AFFF 3%S C6 c) ARC 3X3S C6 d) FP 3% C6 e) AFFF 3%M C6
	3f	Concentrate Control Valve	Viking Halar CCV (FM UL) or Hydraulic Ball Valve

### 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 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

Please contact your local Viking sales office for further information.

The product is available directly from Viking and official distributors only.

**EMEA: Viking SA**, ZI Haneboesch, L-4562 Differdange / Niederkorn, Tel.: +352 58 37 37 - 1, Fax: +352 38 37 36, vikinglux@viking-emea.com

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

**APAC: The Viking Corporation (Far East) Pte. Ltd.**, 69 Tuas View Square, Westlink Techpark, Singapore 637621  
Tel: (+65) 6 278 4061, Fax: (+65) 6 278 4609, Email: vikingsingapore@vikingcorp.com

### 6. PRODUCT VARIANTS

#### 6.1 Options

- Pre-Assembled with Ratio Controller and water/foam pipe work
- Flanged connections (ANSI or PN16)
- Twin tank configurations
- Special coatings for salt-water applications or harsh environmental conditions
- Nameplate in corrosion resistant material
- Increased wall thickness for corrosion allowance
- 232PSI /16.0bar (1.6MPa) 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.

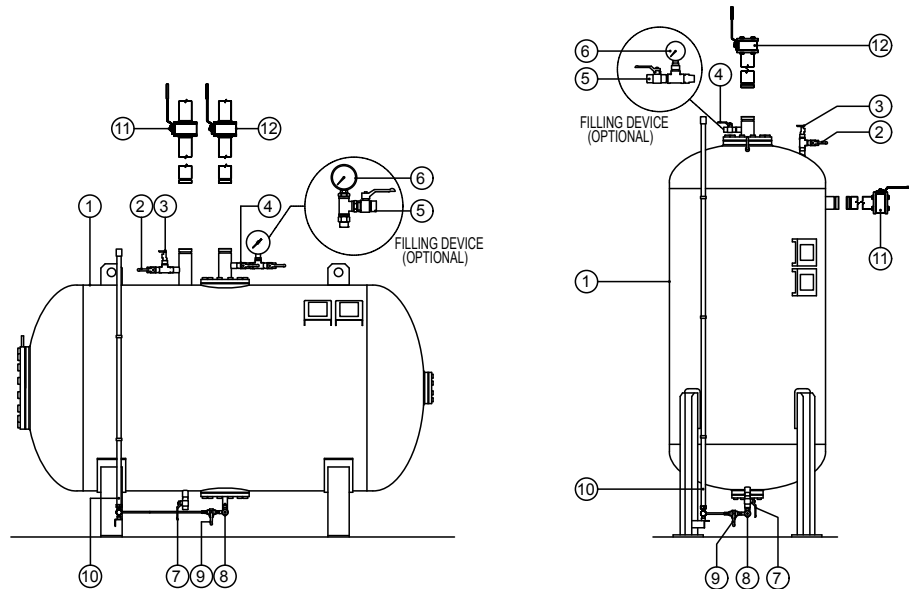


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## 6.2 General bladder tank layout and P&ID

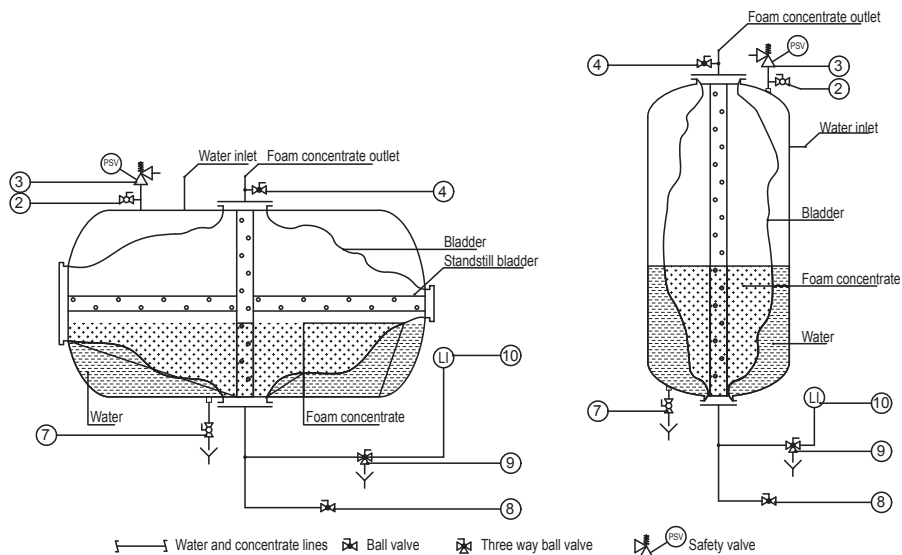


**Figure 6.2.1  
Vertical and Horizontal Bladder Tanks**

**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**

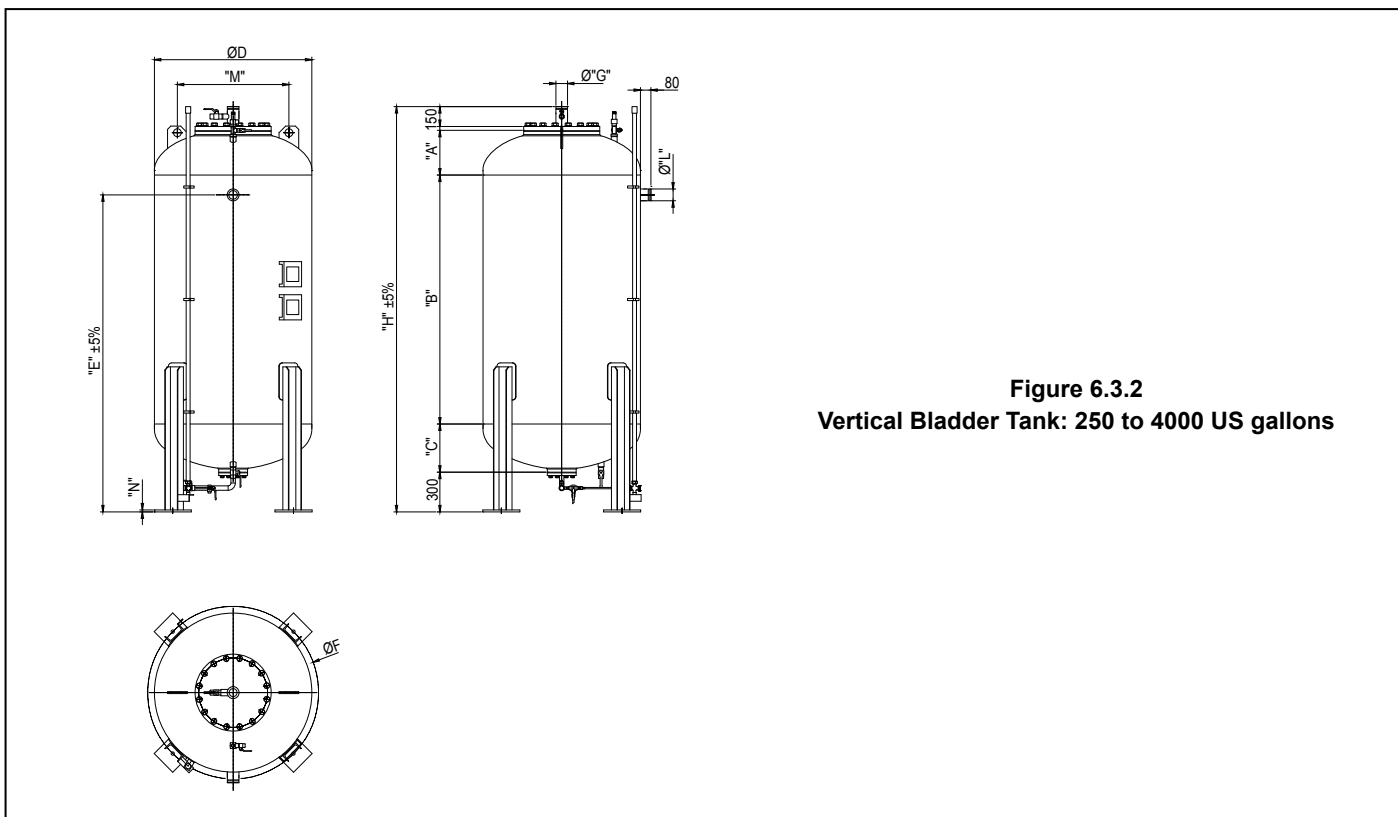
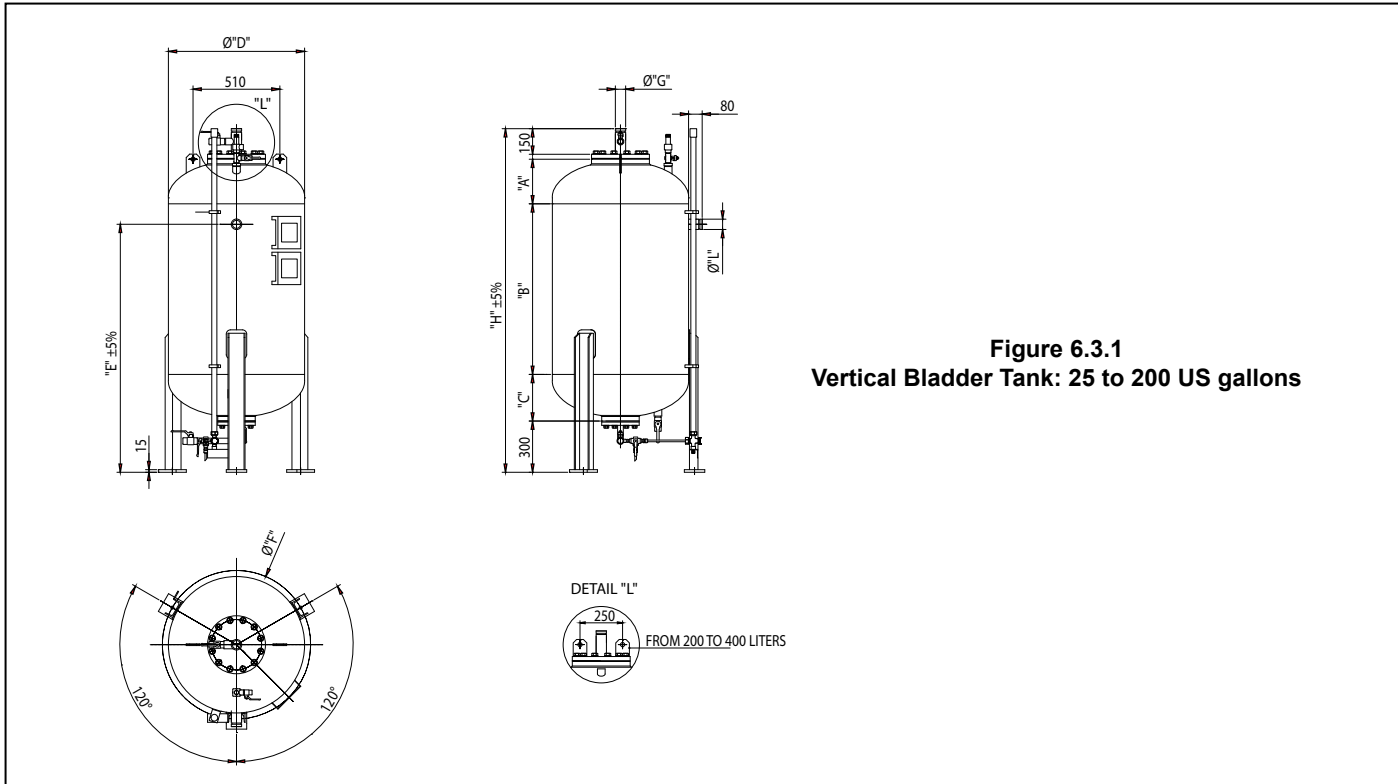


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## 6.3 Dimensions







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**Table 6.3.3 - Vertical Bladder Tank Dimensions (ASME Sec VIII Design Code)**

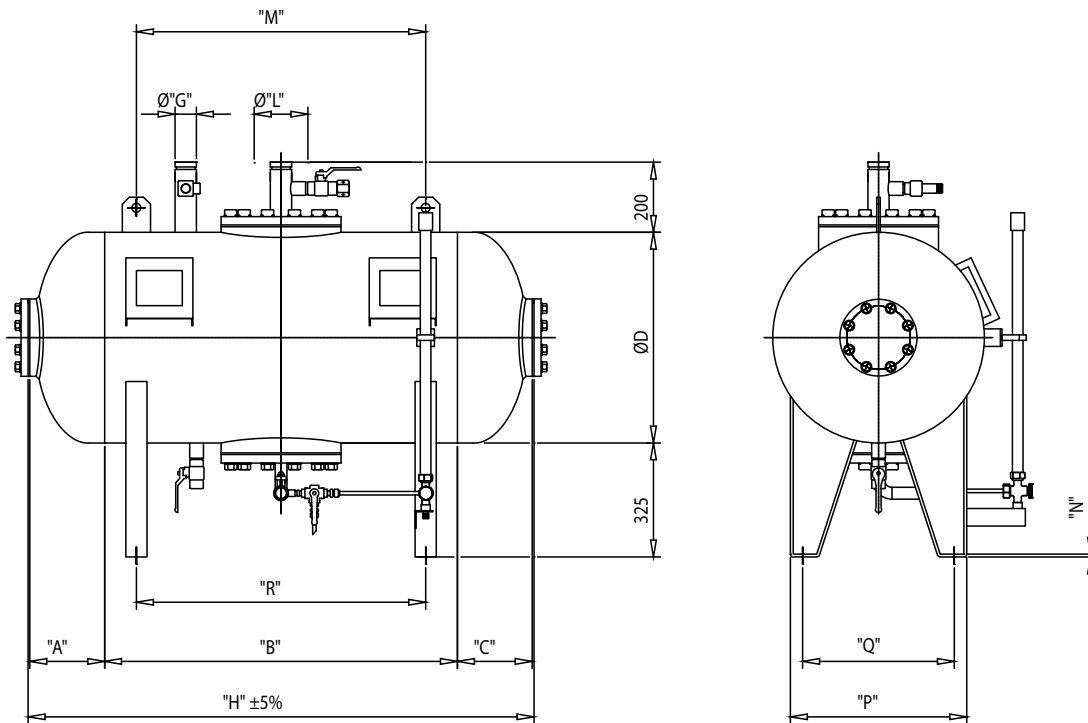
ASME Sec VIII Design Code		Capacity		Weight		A	B	C	ØD	E	ØF	ØG	H	ØL	M	N
175PSI / 12.1 bar	232PSI / 16.0 bar	USG	Litres	LBS	KG	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch
						mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
VFTV0025U	--Not Available--	25	94	221	100	6.4	15.7	7.0	19.7	30.2	22.4	2	48.1	2	9.8	0.6
						163	400	178	500	768	570	50	1221	50	250	15
VFTV0036U	VFTV0036U-16	36	136	309	140	6.4	23.6	7.0	19.7	38.1	22.4	2	55.9	2	9.8	0.6
						163	600	178	500	968	570	50	1421	50	250	15
VFTV0050U	VFTV0050U-16	50	189	411	186	7.4	27.6	8.0	23.6	44.5	26.4	2	61.8	2	9.8	0.6
						187	700	203	600	1130	670	50	1570	50	250	15
VFTV0075U	VFTV0075U-16	75	283	450	204	7.4	35.4	8.0	23.6	44.5	26.4	2	69.7	2	9.8	0.6
						187	900	203	600	1130	670	50	1770	50	250	15
VFTV0100U	VFTV0100U-16	100	378	528	239	7.4	49.2	8.0	23.6	64.6	26.4	2	83.4	2	9.8	0.59
						187	1250	203	600	1640	670	50	2120	50	250	15
VFTV0150U	VFTV0150U-16	150	567	850	385	10.3	39.4	10.8	31.5	57.1	34.3	2	79.4	2	9.8	0.6
						262	1000	274	800	1450	870	50	2016	50	510	15
VFTV0200U	VFTV0200U-16	200	757	938	425	10.3	51.2	10.8	31.5	57.1	34.3	2	91.2	2	9.8	0.6
						262	1300	274	800	1450	870	50	2316	50	510	15
VFTV0250U	VFTV0250U-16	250	946	940	426	12.9	39.4	13.2	39.4	59.7	42.6	2.5	84.3	2.5	24.0	0.6
						327	1000	336	1000	1516	1082	65	2142	65	610	15
VFTV0300U	VFTV0300U-16	300	1135	1091	494	12.9	51.2	13.2	39.4	71.5	42.6	2.5	96.1	2.5	24.0	0.6
						327	1300	336	1000	1816	1082	65	2442	65	610	15
VFTV0350U	VFTV0350U-16	350	1324	1113	504	12.9	55.1	13.2	39.4	75.4	42.6	2.5	100.1	2.5	24.0	0.6
						327	1400	336	1000	1916	1082	65	2542	65	610	15
VFTV0400U	VFTV0400U-16	400	1514	1150	521	12.9	65.0	13.2	39.4	85.3	42.6	2.5	109.9	2.5	24.0	0.6
						327	1650	336	1000	2166	1082	65	2792	65	610	15
VFTV0450U	VFTV0450U-16	450	1703	1823	826	13.0	59.1	13.3	43.3	79.4	46.5	2.5	104.1	2.5	24.0	0.6
						329	1500	337	1100	2017	1181	65	2645	65	610	15
VFTV0500U	VFTV0500U-16	500	1892	2004	908	13.0	70.9	13.3	43.3	91.2	46.5	2.5	115.9	2.5	24.0	0.6
						329	1800	337	1100	2317	1181	65	2945	65	610	15
VFTV0600U	VFTV0600U-16	600	2271	2267	1027	13.0	65.0	14.5	47.2	84.6	51.2	3	110.5	3	33.5	0.6
						330	1650	368	1200	2148	1300	80	2807	80	850	15
VFTV0700U	VFTV0700U-16	700	2649	2514	1139	14.1	65.0	15.5	51.2	86.4	55.3	3	113.4	3	33.5	0.6
						358	1650	394	1300	2194	1405	80	2881	80	850	15
VFTV0800U	VFTV0800U-16	800	3028	2695	1221	14.1	78.7	15.5	51.2	100.2	55.3	3	127.2	3	33.5	0.6
						358	2000	394	1300	2544	1405	80	3231	80	850	15
VFTV0900U	VFTV0900U-16	900	3406	3907	1770	15.3	78.7	16.5	55.1	100.0	59.3	3	129.4	3	36.6	0.6
						388	2000	420	1400	2540	1505	80	3287	80	930	15
VFTV1000U	VFTV1000U-16	1000	3785	3583	1623	15.8	74.8	17.1	57.1	96.6	61.2	3	126.6	3	36.6	0.6
						402	1900	434	1450	2454	1555	80	3215	80	930	15
VFTV1100U	VFTV1100U-16	1100	4163	3764	1705	15.8	82.7	17.1	57.1	104.5	61.2	3	134.4	3	36.6	0.6
						402	2100	434	1450	2654	1555	80	3415	80	930	15
VFTV1200U	VFTV1200U-16	1200	4542	3817	1729	16.4	82.7	17.6	59.1	105.0	63.2	3	135.5	3	37.4	0.6
						416	2100	447	1500	2667	1605	80	3442	80	950	15
VFTV1300U	VFTV1300U-16	1300	4921	4276	1937	17.4	78.7	18.5	63.0	102.0	67.1	3	133.6	3	41.3	0.6
						443	2000	471	1600	2591	1705	80	3393	80	1050	15
VFTV1400U	VFTV1400U-16	1400	5299	4358	1974	17.4	88.6	18.5	63.0	111.9	67.1	3	143.4	3	41.3	0.6
						443	2250	471	1600	2841	1705	80	3643	80	1050	15
VFTV1500U	VFTV1500U-16	1500	5678	4525	2050	19.6	74.8	20.6	68.9	100.1	73.2	3	133.8	3	45.3	0.6
						497	1900	522	1750	2542	1860	80	3398	80	1150	15
VFTV1600U	VFTV1600U-16	1600	6056	4636	2100	19.6	78.7	20.6	68.9	104.0	73.2	3	137.7	3	45.3	0.6
						497	2000	522	1750	2642	1860	80	3498	80	1150	15
VFTV1700U	VFTV1700U-16	1700	6435	4724	2140	20.5	78.7	21.5	70.9	103.4	75.2	3	139.6	3	45.3	0.6
						521	2000	547	1800	2627	1910	80	3547	80	1150	15
VFTV1800U	VFTV1800U-16	1800	6813	5347	2422	22.6	59.1	23.5	78.7	88.5	83.5	3	121.3	3	51.2	0.8
						575	1500	598	2000	2248	2120	80	3082	80	1300	20
VFTV1900U	VFTV1900U-16	1900	7192	5501	2492	22.6	63.0	23.5	78.7	92.4	83.5	3	125.3	3	51.2	0.8
						575	1600	598	2000	2348	2120	80	3182	80	1300	20
VFTV2000U	VFTV2000U-16	2000	7570	5722	2592	22.6	68.9	23.5	78.7	98.3	83.5	3	131.2	3	51.2	0.8
						575	1750	598	2000	2498	2120	80	3332	80	1300	20
VFTV2200U	VFTV2200U-16	2200	8327	6459	2926	22.6	82.7	23.5	78.7	112.1	83.5	3	145.0	3	51.2	0.8
						575	2100	598	2000	2848	2120	80	3682	80	1300	20
VFTV2400U	VFTV2400U-16	2400	9084	6691	3031	22.6	88.6	23.5	78.7	119.2	83.5	3	150.9	3	51.2	0.8
						575	2250	598	2000	3028	2120	80	3832	80	1300	20
VFTV2600U	VFTV2600U-16	2600	9842	6954	3150	22.6	102.4	23.5	78.7	131.8	83.5	3	164.6	3	51.2	0.8
						575	2600	598	2000	3348	2120	80	4182	80	1300	20
VFTV2800U	VFTV2800U-16	2800	10599	7605	3445	22.6	114.2	23.5	78.7	143.6	83.5	3	176.5	3	51.2	0.8
						575	2900	598	2000	3648	2120	80	4482	80	1300	20
VFTV3000U	VFTV3000U-16	3000	11356	7901	3579	22.6	122.0	23.5	78.7	151.5	83.5	3	184.3	3	51.2	0.8
						575	3100	598	2000	3848	2120	80	4682	80	1300	20
VFTV3200U	VFTV3200U-16	3200	12113	8442	3824	22.6	133.9	23.5	78.7	163.3	83.5	3	196.1	3	51.2	0.8
						575	3400	598	2000	4148	2120	80	4982	80	1300	20
VFTV3400U	VFTV3400U-16	3400	12870	8881	4023	22.6	145.7	23.5	78.7	175.1	83.5	3	208.0	3	51.2	0.8
						575	3700	598	2000	4448	2120	80	5282	80	1300	20
VFTV3600U	VFTV3600U-16	3600	13627	9113	4128	22.6	151.6	23.5	78.7	181.0	83.5	3	213.9	3	51.2	0.8
						575	3850	598	2000	4598	2120	80	5432	80	1300	20
VFTV3800U	VFTV3800U-16	3800	14384	9629	4362	22.6	165.4	23.5	78.7	194.8	83.5	3				



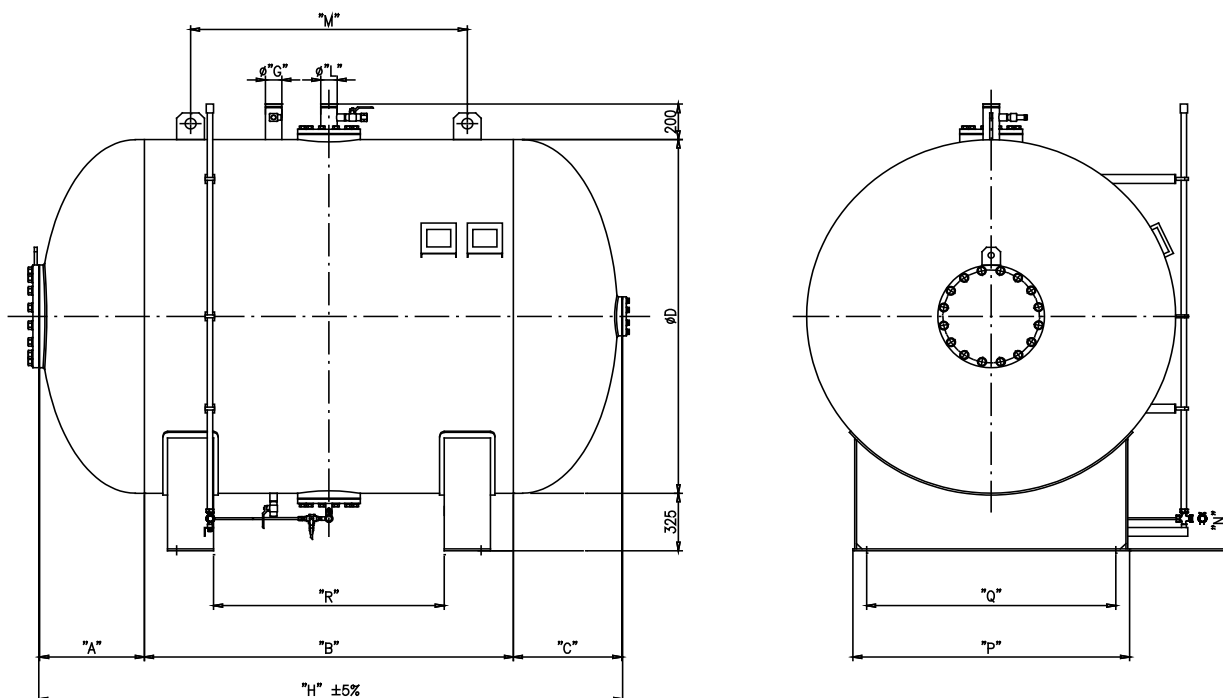
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**Figure 6.3.4**  
**Horizontal Bladder Tank: 50 to 100 US Gallons**



**Figure 6.3.5**  
**Horizontal Bladder Tank: 150 to 5250 US Gallons**





# 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 [www.vikinggroupinc.com](http://www.vikinggroupinc.com) for the latest edition of this Technical Data page.

**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
175PSI / 12.1bar	232PSI / 16.0bar	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
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	15.7	13.8	32.3
						203	1000	203	500	50	1406	50	820	8	200	400	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	32.3	0.3	7.9	19.7	15.7	32.3
						262	1000	274	800	50	1536	50	820	8	200	500	400	820
VFTH0200U	VFTH0200U-16	200	757	883	400	10.3	51.2	10.8	31.5	2	72.3	2	44.1	0.3	7.9	19.7	15.7	42.1
						262	1300	274	800	50	1836	50	1120	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	31.5	0.3	7.9	27.6	23.6	32.3
						288	1000	336	1000	65	1624	65	800	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	58.3	0.3	5.9	35.4	31.5	56.3
						322	1650	361	1200	80	2333	80	1480	8	150	900	800	1430
VFTH0700U	VFTH0700U-16	700	2649	2651	1201	13.8	65.0	15.2	51.2	3	94.0	3	63.0	0.3	5.9	35.4	31.5	56.3
						351	1650	386	1300	80	2387	80	1600	8	150	900	800	1430
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	66.1
						445	2000	465	1600	80	2910	80	1600	10	150	1100	950	1680
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	75.2
						445	2250	465	1600	80	3160	80	1800	10	150	1100	950	1910
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	64.2
						498	1900	522	1750	80	2920	80	1550	10	150	1200	1050	1630
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	66.1
						498	2000	522	1750	80	3020	80	1550	10	150	1200	1050	1680
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	52.4	0.4	5.9	59.1	53.1	49.2
						566	1500	586	2000	80	2652	80	1330	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



# TECHNICAL DATA

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

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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
175PSI / 12.1bar	232PSI / 16.0bar	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
						22.3	133.9	23.1	78.7	3	179.2	3	114.2	0.4	5.9	59.1	53.1	120.1
VFTH3200U	VFTH3200U-16	3200	12113	8618	3904	566	3400	586	2000	80	4552	80	2900	10	150	1500	1350	3050
						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
VFTH3400U	VFTH3400U-16	3400	12870	8925	4043	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
						22.3	159.4	23.1	78.7	3	204.8	3	139.8	0.4	5.9	59.1	53.1	145.7
VFTH3600U	VFTH3600U-16	3600	13627	9311	4218	566	4050	586	2000	80	5202	80	3550	10	150	1500	1350	3700
						22.3	173.2	23.1	78.7	3	218.6	3	139.8	0.4	5.9	59.1	53.1	159.4
						566	4400	586	2000	80	5552	80	3550	10	150	1500	1350	4050
VFTH3800U	VFTH3800U-16	3800	14384	9631	4636	22.3	185.0	23.1	78.7	3	230.4	3	139.8	0.4	5.9	59.1	53.1	159.4
						566	4700	586	2000	80	5852	80	3550	10	150	1500	1350	4050
						22.3	196.9	23.1	78.7	3	242.2	3	139.8	0.4	5.9	59.1	53.1	159.4
VFTH4000U	VFTH4000U-16	4000	15141	10170	4607	566	5000	586	2000	80	6152	80	3550	10	150	1500	1350	4050
						22.3	210.6	23.1	78.7	3	256.0	3	139.8	0.4	5.9	59.1	53.1	159.4
						566	5350	586	2000	80	6502	80	3550	10	150	1500	1350	4050
VFTH4250U	VFTH4250U-16	4250	16088	10631	4816	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
						22.3	236.2	23.1	78.7	3	281.6	3	139.8	0.4	5.9	59.1	53.1	159.4
VFTH4500U	VFTH4500U-16	4500	17034	11095	5026	566	6000	586	2000	80	7152	80	3550	10	150	1500	1350	4050
						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
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	159.4
						566	5350	586	2000	80	6502	80	3550	10	150	1500	1350	4050
						22.3	222.4	23.1	78.7	3	267.8	3	139.8	0.4	5.9	59.1	53.1	159.4
VFTH5000U	VFTH5000U-16	5000	18927	12097	5480	566	5650	586	2000	80	6802	80	3550	10	150	1500	1350	4050
						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
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
						22.3	236.2	23.1	78.7	3	281.6	3	139.8	0.4	5.9	59.1	53.1	159.4

### 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 ratio controller.
3. Simultaneously, as water flows through the venturi area of the 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

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Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com  
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### 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

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	Hypalon-Neoprene	Contact us		

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	--	--

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

### 13. DECLARATION OF CONFORMITY

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