



## 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.*



## 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.

### 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>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.



## 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.

### 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.



## 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.

#### 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.



# TECHNICAL DATA

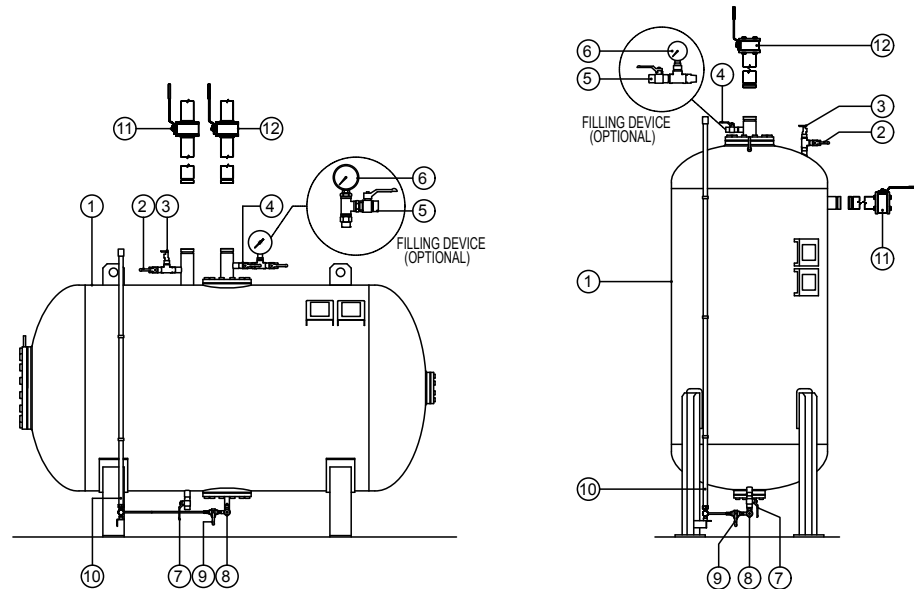
## VERTICAL AND HORIZONTAL BLADDER TANKS MODEL VFT ASME Sec.VIII Div.1 - U-1A

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.

### 6.2 General bladder tank layout and P&ID

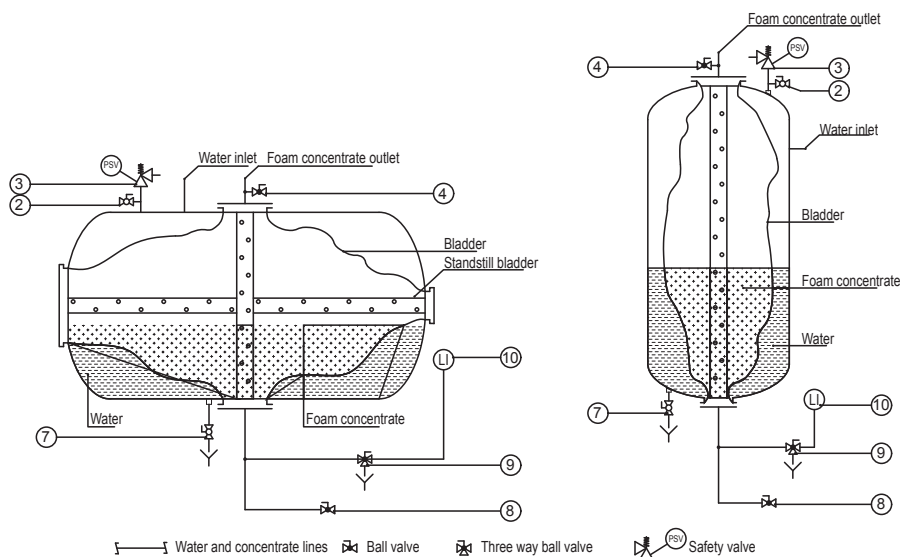


**Figure 6.2.1**  
**Vertical and Horizontal Bladder Tanks**

**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**

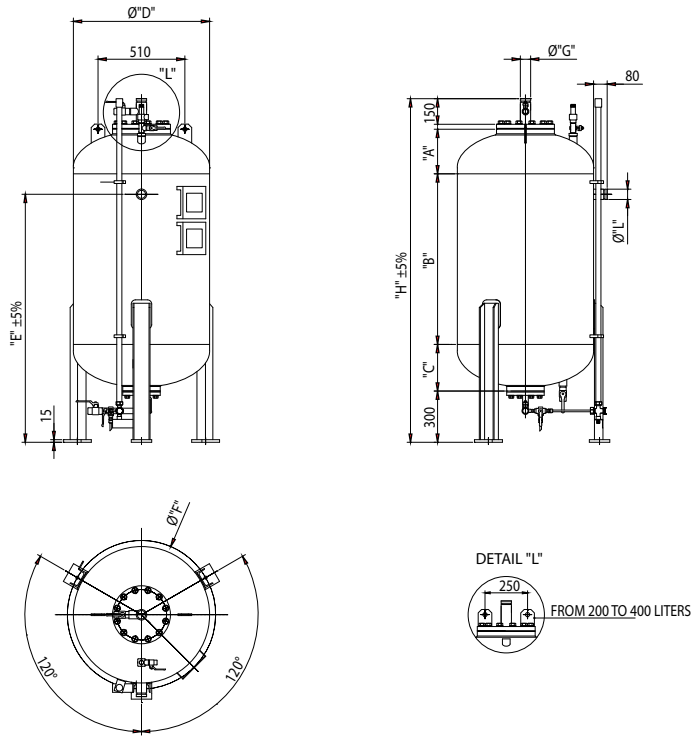


# TECHNICAL DATA

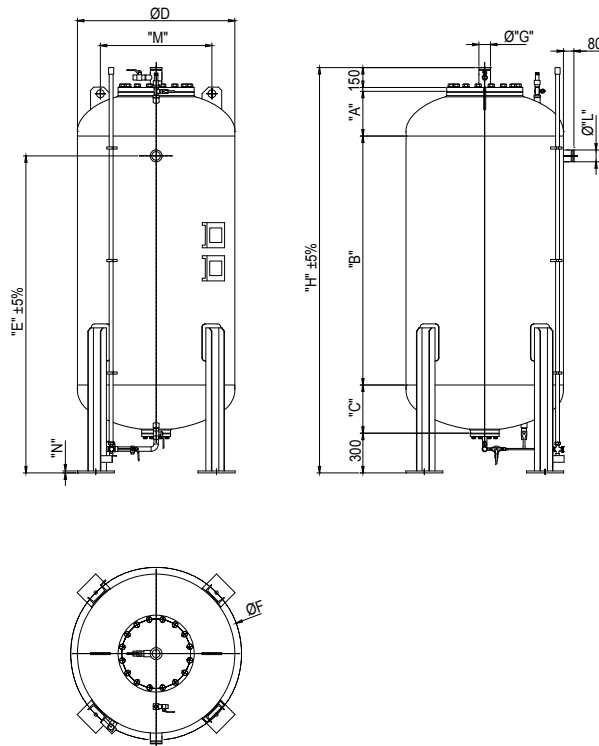
## VERTICAL AND HORIZONTAL BLADDER TANKS MODEL VFT ASME Sec.VIII Div.1 - U-1A

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.

### 6.3 Dimensions



**Figure 6.3.1**  
**Vertical Bladder Tank: 25 to 200 US gallons**



**Figure 6.3.2**  
**Vertical Bladder Tank: 250 to 4000 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 6.3.3 - Vertical Bladder Tank Dimensions (ASME Sec VIII Design Code)**

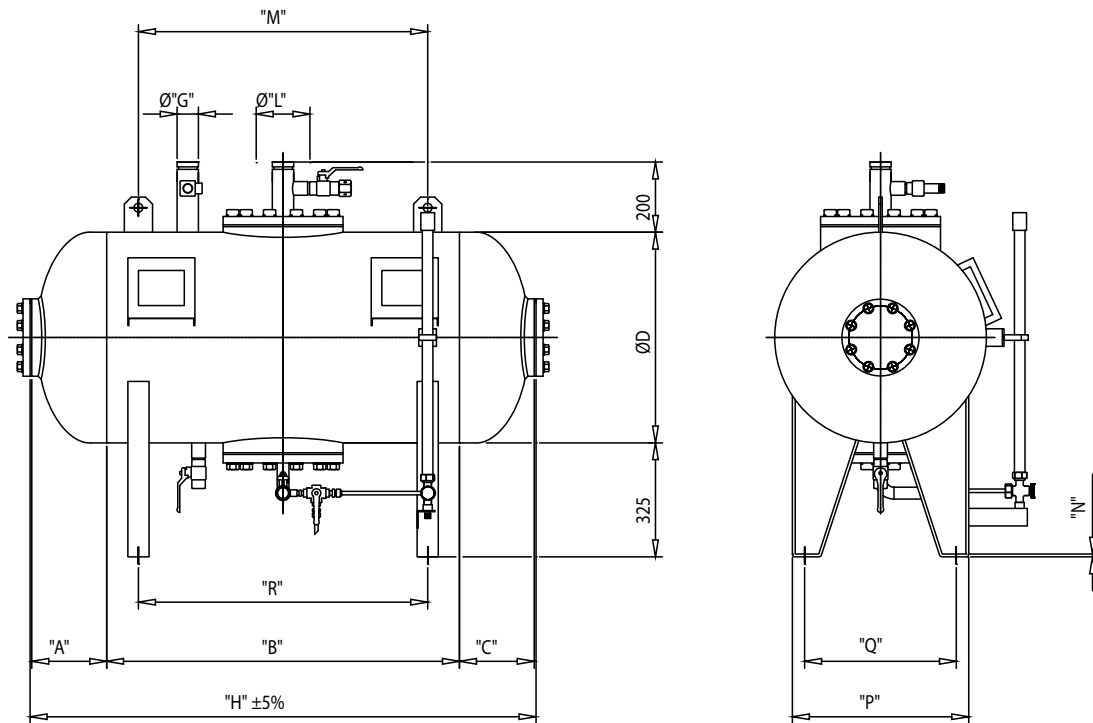
Bladder Tank : ASME Sec VIII Design Code	Capacity		Weight		A	B	C	ØD	E	ØF	ØG	H	ØL	M	N
175PSI / 12.1bar	USG	Litres	LBS	KG	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm
VFTV0025U	25	94	221	100	6.4 163	15.7 400	7.0 178	19.7 500	30.2 768	22.4 570	2 50	48.1 1221	2 50	9.8 250	0.6 15
VFTV0036U	36	136	309	140	6.4 163	23.6 600	7.0 178	19.7 500	38.1 968	22.4 570	2 50	55.9 1421	2 50	9.8 250	0.6 15
VFTV0050U	50	189	411	186	7.4 187	27.6 700	8.0 203	23.6 600	44.5 1130	26.4 670	2 50	61.8 1570	2 50	9.8 250	0.6 15
VFTV0075U	75	283	450	204	7.4 187	35.4 900	8.0 203	23.6 600	44.5 1130	26.4 670	2 50	69.7 1770	2 50	9.8 250	0.6 15
VFTV0100U	100	378	528	239	7.4 187	49.2 1250	8.0 203	23.6 600	64.6 1640	26.4 670	2 50	83.4 2120	2 50	9.8 250	0.59 15
VFTV0150U	150	567	850	385	10.3 262	39.4 1000	10.8 274	31.5 800	57.1 1450	34.3 870	2 50	79.4 2016	2 50	9.8 510	0.6 15
VFTV0200U	200	757	938	425	10.3 262	51.2 1300	10.8 274	31.5 800	57.1 1450	34.3 870	2 50	91.2 2316	2 50	9.8 510	0.6 15
VFTV0250U	250	946	940	426	12.9 327	39.4 1000	13.2 336	39.4 1000	59.7 1516	42.6 1082	2.5 65	84.3 2142	2.5 65	24.0 610	0.6 15
VFTV0300U	300	1135	1091	494	12.9 327	51.2 1300	13.2 336	39.4 1000	71.5 1816	42.6 1082	2.5 65	96.1 2442	2.5 65	24.0 610	0.6 15
VFTV0350U	350	1324	1113	504	12.9 327	55.1 1400	13.2 336	39.4 1000	75.4 1916	42.6 1082	2.5 65	100.1 2542	2.5 65	24.0 610	0.6 15
VFTV0400U	400	1514	1150	521	12.9 327	65.0 1650	13.2 336	39.4 1000	85.3 2166	42.6 1082	2.5 65	109.9 2792	2.5 65	24.0 610	0.6 15
VFTV0450U	450	1703	1823	826	13.0 329	59.1 1500	13.3 337	43.3 1100	79.4 2017	46.5 1181	2.5 65	104.1 2645	2.5 65	24.0 610	0.6 15
VFTV0500U	500	1892	2004	908	13.0 329	70.9 1800	13.3 337	43.3 1100	91.2 2317	46.5 1181	2.5 65	115.9 2945	2.5 65	24.0 610	0.6 15
VFTV0600U	600	2271	2267	1027	13.0 330	65.0 1650	14.5 368	47.2 1200	84.6 2148	51.2 1300	3 80	110.5 2807	3 80	33.5 850	0.6 15
VFTV0700U	700	2649	2514	1139	14.1 358	65.0 1650	15.5 394	51.2 1300	86.4 2194	55.3 1405	3 80	113.4 2881	3 80	33.5 850	0.6 15
VFTV0800U	800	3028	2695	1221	14.1 358	78.7 2000	15.5 394	51.2 1300	100.2 2544	55.3 1405	3 80	127.2 3231	3 80	33.5 850	0.6 15
VFTV0900U	900	3406	3907	1770	15.3 388	78.7 2000	16.5 420	55.1 1400	100.0 2540	59.3 1505	3 80	129.4 3287	3 80	36.6 930	0.6 15
VFTV1000U	1000	3785	3583	1623	15.8 402	74.8 1900	17.1 434	57.1 1450	96.6 2454	61.2 1555	3 80	126.6 3215	3 80	36.6 930	0.6 15
VFTV1100U	1100	4163	3764	1705	15.8 402	82.7 2100	17.1 434	57.1 1450	104.5 2654	61.2 1555	3 80	134.4 3415	3 80	36.6 930	0.6 15
VFTV1200U	1200	4542	3817	1729	16.4 416	82.7 2100	17.6 447	59.1 1500	105.0 2667	63.2 1605	3 80	135.5 3442	3 80	37.4 950	0.6 15
VFTV1300U	1300	4921	4276	1937	17.4 443	78.7 2000	18.5 471	63.0 1600	102.0 2591	67.1 1705	3 80	133.6 3393	3 80	41.3 1050	0.6 15
VFTV1400U	1400	5299	4358	1974	17.4 443	88.6 2250	18.5 471	63.0 1600	111.9 2841	67.1 1705	3 80	143.4 3643	3 80	41.3 1050	0.6 15
VFTV1500U	1500	5678	4525	2050	19.6 497	74.8 1900	20.6 522	68.9 1750	100.1 2542	73.2 1860	3 80	133.8 3398	3 80	45.3 1150	0.6 15
VFTV1600U	1600	6056	4636	2100	19.6 497	78.7 2000	20.6 522	68.9 1750	104.0 2642	73.2 1860	3 80	137.7 3498	3 80	45.3 1150	0.6 15
VFTV1700U	1700	6435	4724	2140	20.5 521	78.7 2000	21.5 547	70.9 1800	103.4 2627	75.2 1910	3 80	139.6 3547	3 80	45.3 1150	0.6 15
VFTV1800U	1800	6813	5347	2422	22.6 575	59.1 1500	23.5 598	78.7 2000	88.5 2248	83.5 2120	3 80	121.3 3082	3 80	51.2 1300	0.8 20
VFTV1900U	1900	7192	5501	2492	22.6 575	63.0 1600	23.5 598	78.7 2000	92.4 2348	83.5 2120	3 80	125.3 3182	3 80	51.2 1300	0.8 20
VFTV2000U	2000	7570	5722	2592	22.6 575	68.9 1750	23.5 598	78.7 2000	98.3 2498	83.5 2120	3 80	131.2 3332	3 80	51.2 1300	0.8 20
VFTV2200U	2200	8327	6459	2926	22.6 575	82.7 2100	23.5 598	78.7 2000	112.1 2848	83.5 2120	3 80	145.0 3682	3 80	51.2 1300	0.8 20
VFTV2400U	2400	9084	6691	3031	22.6 575	88.6 2250	23.5 598	78.7 2000	119.2 3028	83.5 2120	3 80	150.9 3832	3 80	51.2 1300	0.8 20
VFTV2600U	2600	9842	6954	3150	22.6 575	102.4 2600	23.5 598	78.7 2000	131.8 3348	83.5 2120	3 80	164.6 4182	3 80	51.2 1300	0.8 20
VFTV2800U	2800	10599	7605	3445	22.6 575	114.2 2900	23.5 598	78.7 2000	143.6 3648	83.5 2120	3 80	176.5 4482	3 80	51.2 1300	0.8 20
VFTV3000U	3000	11356	7901	3579	22.6 575	122.0 3100	23.5 598	78.7 2000	151.5 3848	83.5 2120	3 80	184.3 4682	3 80	51.2 1300	0.8 20
VFTV3200U	3200	12113	8442	3824	22.6 575	133.9 3400	23.5 598	78.7 2000	163.3 4148	83.5 2120	3 80	196.1 4982	3 80	51.2 1300	0.8 20
VFTV3400U	3400	12870	8881	4023	22.6 575	145.7 3700	23.5 598	78.7 2000	175.1 4448	83.5 2120	3 80	208.0 5282	3 80	51.2 1300	0.8 20
VFTV3600U	3600	13627	9113	4128	22.6 575	151.6 3850	23.5 598	78.7 2000	181.0 4598	83.5 2120	3 80	213.9 5432	3 80	51.2 1300	0.8 20
VFTV3800U	3800	14384	9629	4362	22.6 575	165.4 4200	23.5 598	78.7 2000	194.8 4948	83.5 2120	3 80	227.6 5782	3 80	51.2 1300	0.8 20
VFTV4000U	4000	15141	9916	4492	22.6 575	173.2 4400	23.5 598	78.7 2000	202.7 5148	83.5 2120	3 80	235.5 5982	3 80	51.2 1300	0.8 20



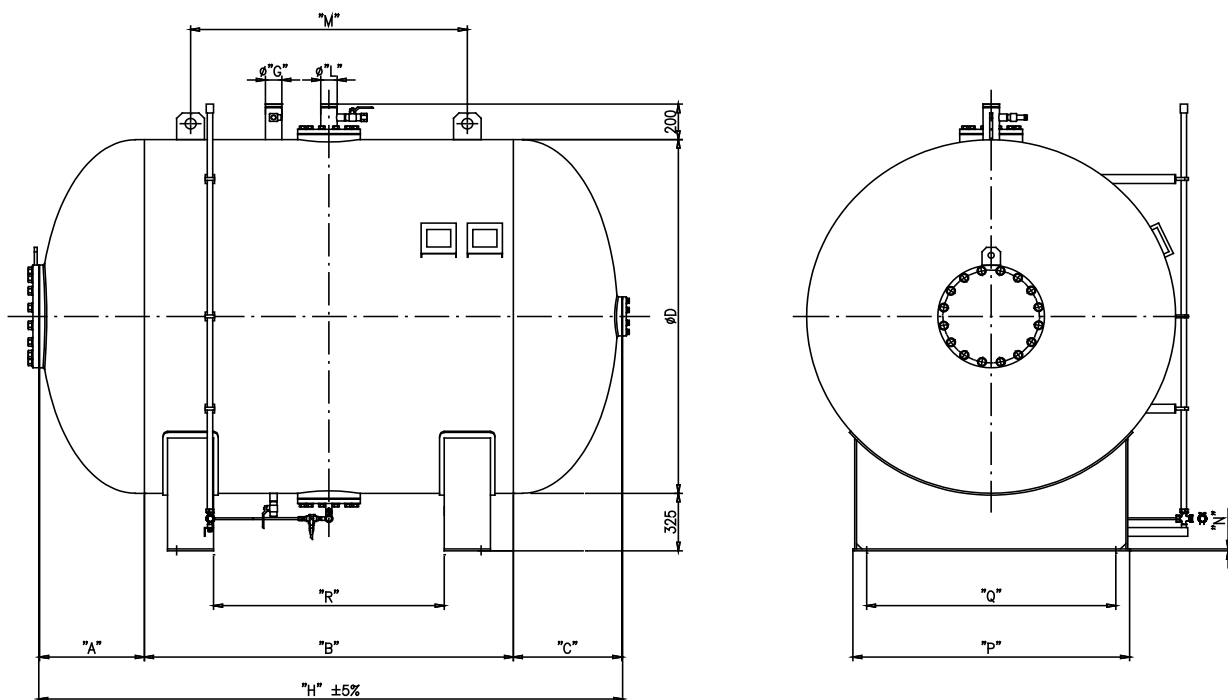
# TECHNICAL DATA

**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.



**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	USG	Litres	LBS	KG	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm
VFTH0050U	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
VFTH0075U	75	283	640	290	203	1000	203	500	50	1406	50	820	8	200	400	350	820
VFTH0100U	100	378	684	310	9.0	39.4	9.0	23.6	2	57.3	2	32.3	0.3	7.9	19.7	16.9	32.3
VFTH0150U	150	567	828	375	228	1000	228	600	50	1456	50	820	8	200	500	430	820
VFTH0200U	200	757	883	400	9.0	49.2	9.0	23.6	2	67.2	2	42.1	0.3	7.9	19.7	16.9	40.2
VFTH0250U	250	946	1258	570	228	1250	228	600	50	1706	50	1070	8	200	500	430	1020
VFTH0300U	300	1135	1391	630	10.3	39.4	10.8	31.5	2	60.5	2	32.3	0.3	7.9	19.7	15.7	32.3
VFTH0350U	350	1324	1453	650	262	1000	274	800	50	1536	50	820	8	200	500	400	820
VFTH0400U	400	1514	1479	670	10.3	51.2	10.8	31.5	2	72.3	2	44.1	0.3	7.9	19.7	15.7	42.1
VFTH0450U	450	1703	2137	968	262	1300	274	800	50	1836	50	1120	8	200	500	400	1070
VFTH0500U	500	1892	2318	1050	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
VFTH0600U	600	2271	2377	1077	288	1000	336	1000	65	1624	65	800	8	200	700	600	820
VFTH0700U	700	2649	2651	1201	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
VFTH0800U	800	3028	2898	1313	288	1300	336	1000	65	1924	65	1000	8	200	700	600	1070
VFTH0900U	900	3406	3680	1667	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
VFTH1000U	1000	3785	3592	1627	288	1400	336	1000	65	2024	65	1000	8	200	700	600	1070
VFTH1100U	1100	4163	3777	1711	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
VFTH1200U	1200	4542	4159	1884	288	1650	336	1000	65	2274	65	1300	8	150	700	600	1360
VFTH1300U	1300	4921	4355	1973	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
VFTH1400U	1400	5299	4629	2097	294	1500	336	1100	65	2130	65	1150	8	150	800	700	1220
VFTH1500U	1500	5678	4525	2050	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
VFTH1600U	1600	6056	4746	2150	294	1800	336	1100	65	2430	65	1450	8	150	800	700	1520
VFTH1700U	1700	6435	4967	2250	12.7	65.0	14.2	47.2	3	91.9	3	58.3	0.3	5.9	35.4	31.5	56.3
VFTH1800U	1800	6813	5700	2582	322	1650	361	1200	80	2333	80	1480	8	150	900	800	1430
VFTH1900U	1900	7192	5854	2652	13.8	65.0	15.2	51.2	3	94.0	3	63.0	0.3	5.9	35.4	31.5	56.3
VFTH2000U	2000	7570	6086	2757	351	1650	386	1300	80	2387	80	1600	8	150	900	800	1430
VFTH2200U	2200	8327	6581	2981	13.8	78.7	15.2	51.2	3	107.8	3	63.0	0.3	5.9	35.4	31.5	66.1
VFTH2400U	2400	9084	6823	3091	351	2000	386	1300	80	2737	80	1600	8	150	900	800	1680
VFTH2600U	2600	9842	7362	3335	15.3	78.7	16.3	55.1	3	110.3	3	63.0	0.3	5.9	39.4	33.5	66.1
VFTH2800U	2800	10599	7870	3565	389	2000	413	1400	80	2801	80	1600	8	150	1000	850	1680
					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
					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
					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
					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
					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
					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
					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
					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
					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
					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
					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
					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
					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
					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
					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

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) (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	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	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	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	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	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	3800	14384	9631	4636	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	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	159.4
					566	4400	586	2000	80	5552	80	3550	10	150	1500	1350	4050
VFTH4250U	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	159.4
					566	4700	586	2000	80	5852	80	3550	10	150	1500	1350	4050
VFTH4500U	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	159.4
					566	5000	586	2000	80	6152	80	3550	10	150	1500	1350	4050
VFTH4750U	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
VFTH5000U	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	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 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**

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

**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.