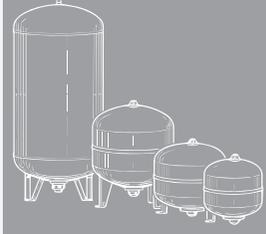
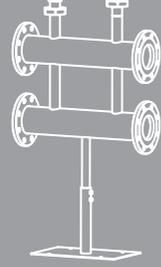
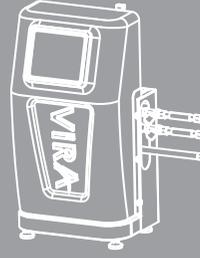
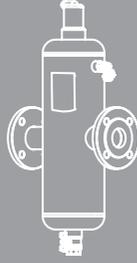


CLOSED EXPANSION TANK FOR HEATING SYSTEMS

ISITMA SİSTEMLERİ İÇİN KAPALI GENLEŞME TANKI

VIRA[®]





RUSSIA

AUSTRALIA

NEW ZEALAND

KAZAKHSTAN

MONGOLIA

INDIA

INDONESIA

LIBYA

EGYPT

SAUDI ARABIA

NIGER

CHAD

SUDAN

ETHIOPIA

NIGERIA

CAMEROON

SOUTH SUDAN

ETHIOPIA

GABON

CONGO

DEMOCRATIC REPUBLIC OF THE CONGO

ANGOLA

ANGOLA

ZAMBIA

ZAMBIA

ZAMBIA

NAMIBIA

BOTSWANA

SOUTH AFRICA

SOUTH AFRICA

ANGOLA

ZAMBIA

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6 BAR VERTICAL CLOSED EXPANSION TANK SERIES

6 BAR DİKEY KAPALI GENLESME TANKI SERİSİ

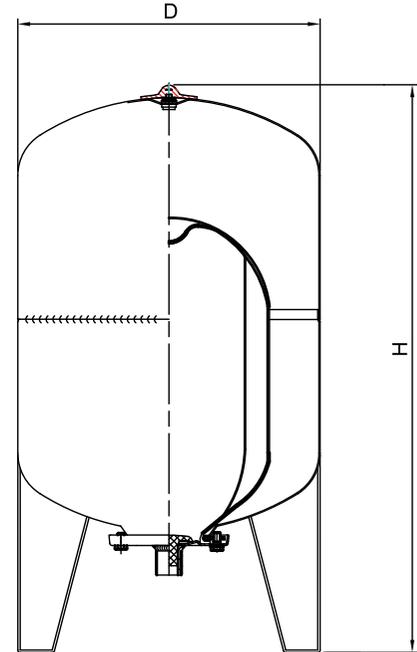
Expansion tank with replaceable membrane for closed heating systems Kapalı ısıtma sistemleri için degistirilebilir membranlı genlesme tankı	
CE marked according to directive CE direktifi uyarınca işaretlenmiş	PED 2014 / 68 / EU
Maximum working pressure Maksimum Çalışma Basıncı	6 BAR
Standart pre-set pressure Standart Önceden Belirlenmiş Basınç	2 BAR
Working temperature Çalışma Sıcaklığı	-10 °C / +100 °C
Membrane type Membran Türü	EPDM



Technical Specifications

Teknik Özellikler

Model Model	Volume Hacim	Pre-Charge Pressure Ön Gaz Basıncı	Connection Bağlantı	Dia Çap	Height Yükseklik
VEX 6 K	24 LT	2	1"	280	470
VEX 6 K	35 LT	2	1"	380	470
VEX 6 K	50 LT	2	1"	380	750
VEX 6 K	60 LT	2	1"	380	810
VEX 6 K	80 LT	2	1"	460	915
VEX 6 K	100 LT	2	1"	460	990
VEX 6 K	150 LT	2	1"	500	1100
VEX 6 K	200 LT	2	1-1/4"	585	1120
VEX 6 K	300 LT	2	1-1/4"	635	1230
VEX 6 K	500 LT	2	1-1/4"	750	1550
VEX 6 K	750 LT	2	2"	800	1850
VEX 6 K	900 LT	2	2"	800	1950
VEX 6 K	1000 LT	2	2"	800	2180



* **Stainless steel flange and butyl membrane is available for all ranges.**
İstediginiz her ürün paslanmaz flanş kapaklı ve butil membranlı olarak üretilebilmektedir.

Color Available
Renk Seçenekleri



6 BAR UPPER FLANGED CLOSED EXPANSION TANK SERIES

6 BAR TERS FLANSLI KAPALI GENLESME TANKI SERİSİ

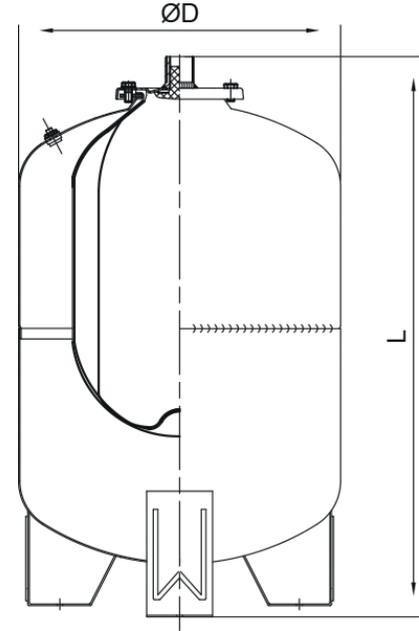
Expansion tank with replaceable membrane for closed heating systems Kapalı ısıtma sistemleri için degistirilebilir membranlı genlesme tankı	
CE marked according to directive CE direktifi uyarınca işaretleme	PED 2014 / 68 / EU
Maximum working pressure Maksimum Çalışma Basıncı	6 BAR
Standart pre-set pressure Standart Önceden Belirlenmiş Basınç	2 BAR
Working temperature Çalışma Sıcaklığı	-10 °C / +100 °C
Membrane type Membran Türü	EPDM



Technical Specifications

Teknik Özellikler

Model	Volume	Pre-Charge Pressure	Connection	Dia	Height
Model	Hacim	Ön Gaz Basıncı	Bağlantı	Çap	Yükseklik
VEX 6 R	35 LT	2	1"	380	470
VEX 6 R	50 LT	2	1"	380	620
VEX 6 R	60 LT	2	1"	380	720
VEX 6 R	80 LT	2	1"	460	700
WAT 6 R	100 LT	2	1"	460	815
VEX 6 R	150 LT	2	1"	500	970
VEX 6 R	200 LT	2	1-1/4"	585	970
VEX 6 R	300 LT	2	1-1/4"	635	1115
VEX 6 R	500 LT	2	1-1/4"	750	1370



* Stainless steel flange and butyl membrane is available for all ranges.
İstedığınız her ürün paslanmaz flanş kapalı ve butil membranlı olarak üretilebilmektedir.

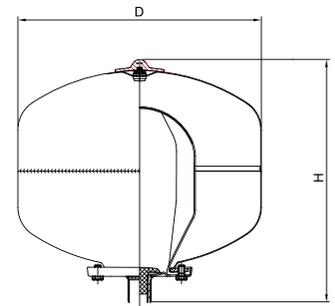
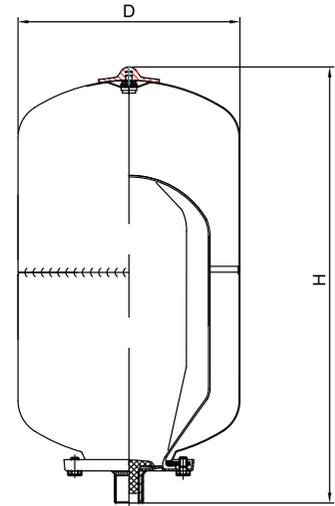
Color Available
Renk Seçenekleri



10 BAR VERTICAL PRESSURE TANK SERIES

10 BAR DİKEY GENLESME TANKI SERİSİ

Pressure tank with replaceable membrane for booster set Pompa sistemleri için değiştirilebilir membranlı genişleme tankı	
CE marked according to directive CE direktifi uyarınca işaretlenmiş	PED 2014 / 68 / EU
Maximum working pressure Maksimum Çalışma Basıncı	10 BAR
Standart pre-set pressure Standart Önceden Belirlenmiş Basınç	2 BAR
Working temperature Çalışma Sıcaklığı	-10 °C / +100 °C
Membrane type Membran Türü	EPDM



Technical Specifications

Teknik Özellikler

Model Model	Volume Hacim	Pre-Charge Pressure Ön Gaz Basıncı	Connection Bağlantı	Dia Çap	Height Yükseklik
VEX 10 L	2 LT	2	1"	120	242
VEX 10 L	5 LT	2	1"	160	300
VEX 10 L	8 LT	2	1"	202	320
VEX 10 L	12 LT	2	1"	280	300
VEX 10 L	19 LT	2	1"	280	430
VEX 10 L	24 LT	2	1"	280	470
VEX 10 L	35 LT	2	1"	380	470
VEX 10 L	50 LT	2	1"	380	620

10 Bar Technical Specifications of Oval Pressure Tank

10 Bar Küre Genleşme Tankının Teknik Özellikleri

Model Model	Volume Hacim	Pre-Charge Pressure Ön Gaz Basıncı	Connection Bağlantı	Dia Çap	Height Yükseklik
VEX 10 O	24 LT	2	1"	360	330

* Stainless steel flange and butyl membrane is available for all ranges.

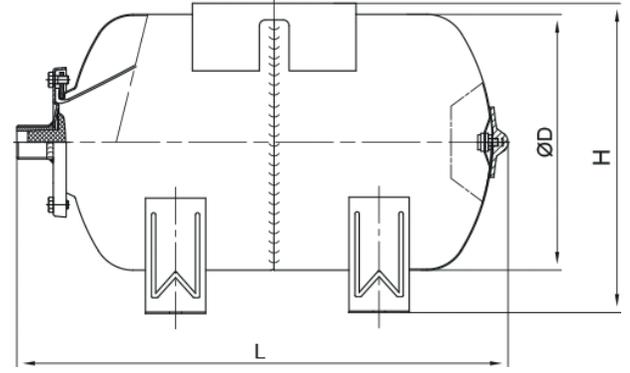
İstediginiz her ürün paslanmaz flanş kapaklı ve butil membranlı olarak üretilebilmektedir.

Color Available
Renk Seçenekleri



10 BAR YATIK GENLESME TANKI SERİSİ

Pressure tank with replaceable membrane for booster set Pompa sistemleri için deđiştirilebilir membranlı genleşme tankı	
CE marked according to directive CE direktifi uyarınca işaretlenmiş	PED 2014 / 68 / EU
Maximum working pressure Maksimum Çalışma Basıncı	10 BAR
Standart pre-set pressure Standart Önceden Belirlenmiş Basınç	2 BAR
Working temperature Çalışma Sıcaklığı	-10 °C / +100 °C
Membrane type Membran Türü	EPDM

**Technical Specifications**

Teknik Özellikler

Model Model	Volume Hacim	Pre-Charge Pressure Ön Gaz Basıncı	Connection Bağlantı	Dia Çap	Height Yükseklik
VEX 10 H	24LT	2	1"	280	470
VEX 10 H	50 LT	2	1"	380	620
VEX 10 H	60 LT	2	1"	380	700
VEX 10 H	80 LT	2	1"	460	750
VEX 10 H	100 LT	2	1"	460	800

* **Stainless steel flange and butyl membrane is available for all ranges.**
İstediginiz her ürün paslanmaz flanş kapaklı ve butil membranlı olarak üretilebilmektedir.

Color Available
Renk Seçenekleri



10 BAR HORIZONTAL PRESSURE TANK SERIES

10 BAR YATIK GENLESME TANKI SERİSİ

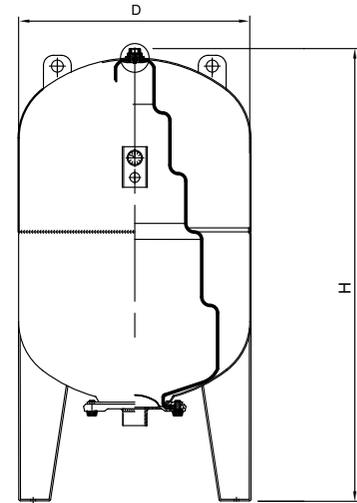
Pressure tank with replaceable membrane for booster set Pompa sistemleri için değiştirilebilir membranlı genişleme tankı	
CE marked according to directive CE direktifi uyarınca işaretlenmiş	PED 2014 / 68 / EU
Maximum working pressure Maksimum Çalışma Basıncı	10 BAR
Standart pre-set pressure Standart Önceden Belirlenmiş Basıncı	4 BAR
Working temperature Çalışma Sıcaklığı	-10 °C / +100 °C
Membrane type Membran Türü	EPDM



Technical Specifications

Teknik Özellikler

Model Model	Volume Hacim	Pre-Charge Pressure Ön Gaz Basıncı	Connection Bağlantı	Dia Çap	Height Yükseklik
VEX 10 V	50 LT	4	1"	380	750
VEX 10 V	60 LT	4	1"	380	810
VEX 10 V	80 LT	4	1"	460	915
VEX 10 V	100 LT	4	1"	460	990
VEX 10 V	150 LT	4	1"	500	1100
VEX 10 V	200 LT	4	1-1/4"	585	1120
VEX 10 V	300 LT	4	1-1/4"	635	1230
VEX 10 V	500 LT	4	1-1/4"	750	1550
VEX 10 V	750 LT	4	2"	800	1810
VEX 10 V	900 LT	4	2"	800	1950
VEX 10 V	1000 LT	4	2"	800	2180
VEX 10 V	1250 LT	4	2"	958	2220
VEX 10 V	1500 LT	4	2"	958	2380
VEX 10 V	2000 LT	4	2"	1100	2520
VEX 10 V	2500 LT	4	2"	1200	2500
VEX 10 V	3000 LT	4	2-1/2"	1200	2800
VEX 10 V	4000 LT	4	3"	1500	2940
VEX 10 V	5000 LT	4	3"	1500	3600
VEX 10 V	10000 LT	4	DIN 100	1600	5750



* Stainless steel flange and butyl membrane is available for all ranges.
İstediginiz her ürün paslanmaz flanş kapaklı ve butil membranlı olarak üretilebilmektedir.

Color Available
Renk Seçenekleri



16 BAR VERTICAL PRESSURE TANK SERIES

16 BAR DİKEY GENLESME TANKI SERİSİ

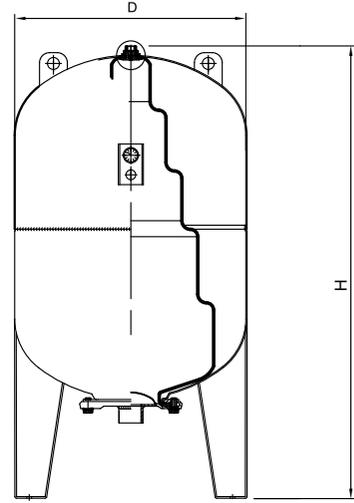
Pressure tank with replaceable membrane for booster set Pompa sistemleri için değiştirilebilir membranlı genişleme tankı	
CE marked according to directive CE direktifi uyarınca işaretlenmiş	PED 2014 / 68 / EU
Maximum working pressure Maksimum Çalışma Basıncı	16 BAR
Standart pre-set pressure Standart Önceden Belirlenmiş Basınç	4 BAR
Working temperature Çalışma Sıcaklığı	-10 °C / +100 °C
Membrane type Membran Türü	EPDM



Technical Specifications

Teknik Özellikler

Model Model	Volume Hacim	Pre-Charge Pressure Ön Gaz Basıncı	Connection Bağlantı	Dia Çap	Height Yükseklik
VEX 16 V	8 LT	4	1"	220	320
VEX 16 V	12 LT	4	1"	280	300
VEX 16 V	19 LT	4	1"	280	430
VEX 16 V	24 LT	4	1"	280	470
VEX 16 V	35 LT	4	1"	380	470
VEX 16 V	50 LT	4	1"	380	750
VEX 16 V	60 LT	4	1"	380	810
VEX 16 V	80 LT	4	1"	460	915
VEX 16 V	100 LT	4	1"	460	990
VEX 16 V	150 LT	4	1"	500	1100
VEX 16 V	200 LT	4	1-1/4"	585	1120
VEX 16 V	300 LT	4	1-1/4"	635	1230
VEX 16 V	500 LT	4	1-1/4"	750	1550
VEX 16 V	750 LT	4	2"	800	1850
VEX 16 V	1000 LT	4	2"	800	2180
VEX 16 V	1250 LT	4	2"	958	2220
VEX 16 V	1500 LT	4	2"	958	2380
VEX 16 V	2000 LT	4	2"	1100	2520
VEX 16 V	2500 LT	4	2"	1200	2500
VEX 16 V	3000 LT	4	2-1/2"	1200	2800
VEX 16 V	4000 LT	4	3"	1500	2940
VEX 16 V	5000 LT	4	3"	1500	3600
VEX 16 V	10000 LT	4	DIN 100	1600	5750



* **Stainless steel flange and butyl membrane is available for all ranges.**
İstediginiz her ürün paslanmaz flanş kapaklı ve butil membranlı olarak üretilebilmektedir.

Color Available
Renk Seçenekleri



25 BAR VERTICAL PRESSURE TANK SERIES

25 BAR DİKEY GENLESME TANKI SERİSİ

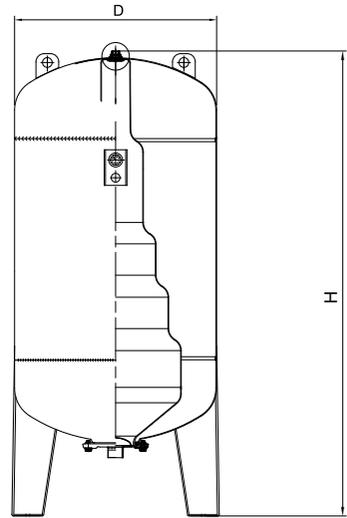
Pressure tank with replaceable membrane for booster set Pompa sistemleri için değiştirilebilir membranlı genişleme tankı	
CE marked according to directive CE direktifi uyarınca işaretlenmiş	PED 2014 / 68 / EU
Maximum working pressure Maksimum Çalışma Basıncı	25 BAR
Standart pre-set pressure Standart Önceden Belirlenmiş Basınç	4 BAR
Working temperature Çalışma Sıcaklığı	-10 °C / +100 °C
Membrane type Membran Türü	EPDM



Technical Specifications

Teknik Özellikler

Model Model	Volume Hacim	Pre-Charge Pressure Ön Gaz Basıncı	Connection Bağlantı	Dia Çap	Height Yükseklik
VEX 25 V	8 LT	4	1"	219	330
VEX 25 V	24 LT	4	1"	280	470
VEX 25 V	50 LT	4	1"	380	750
VEX 25 V	60 LT	4	1"	380	810
VEX 25 V	80 LT	4	1"	450	910
VEX 25 V	100 LT	4	1"	450	960
VEX 25 V	150 LT	4	1"	500	1100
VEX 25 V	200 LT	4	1-1/4"	600	1120
VEX 25 V	300 LT	4	1-1/4"	640	1230
VEX 25 V	500 LT	4	1-1/4"	750	1550
VEX 25 V	750 LT	4	2"	800	1850
VEX 25 V	1000 LT	4	2"	800	2180
VEX 25 V	1500 LT	4	2"	958	2380
VEX 25 V	2000 LT	4	2"	1100	2520
VEX 25 V	2500 LT	4	2"	1200	2550
VEX 25 V	3000 LT	4	2-1/2"	1200	2800
VEX 25 V	4000 LT	4	3"	1500	2940
VEX 25 V	5000 LT	4	3"	1500	3600
VEX 25 V	10000 LT	4	DIN 100	1600	5750



* Stainless steel flange and butyl membrane is available for all ranges.
İstediginiz her ürün paslanmaz flanş kapaklı ve butil membranlı olarak üretilebilmektedir.

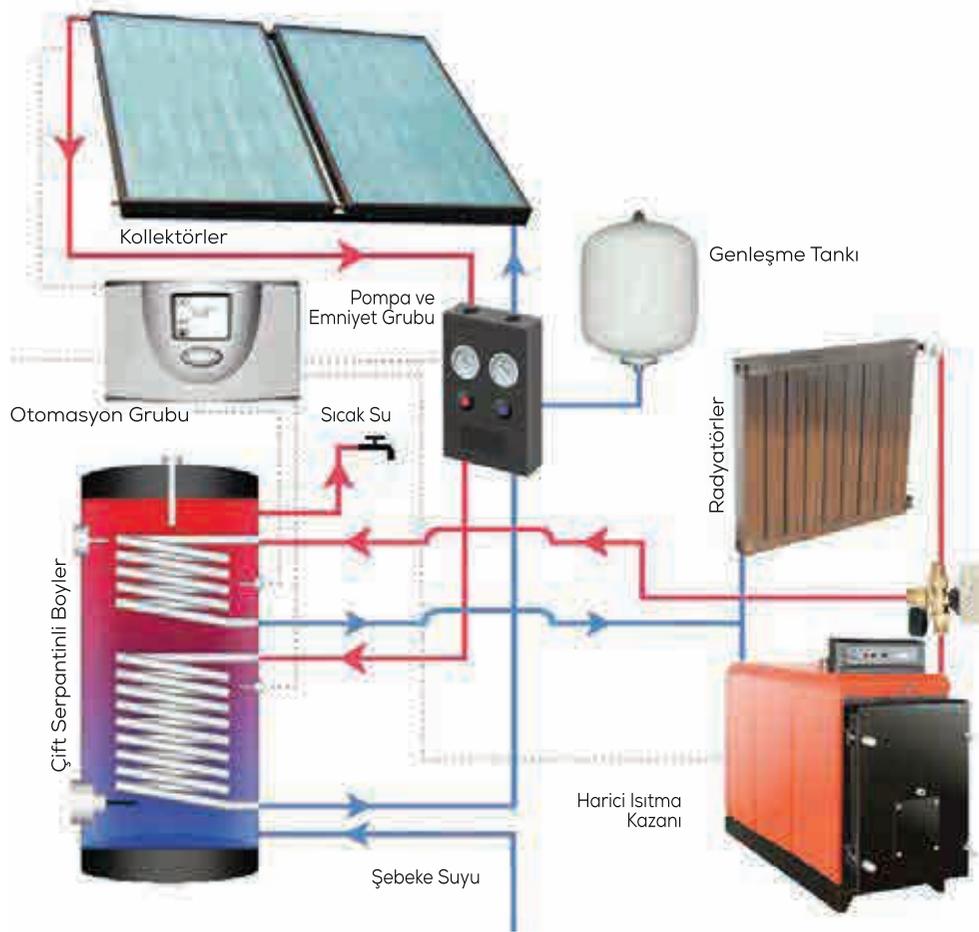
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Renk Seçenekleri





EXPANSION TANK FOR SOLAR SYSTEMS

GÜNES ENERJİSİ SİSTEMLERİ İÇİN
GENLEŞME TANKI



10 BAR CLOSED EXPANSION TANK SERIES FOR SOLAR SYSTEMS

10 BAR GÜNES ENERJİ SİSTEMLERİ İÇİN KAPALI GENLESME TANKI SERİSİ

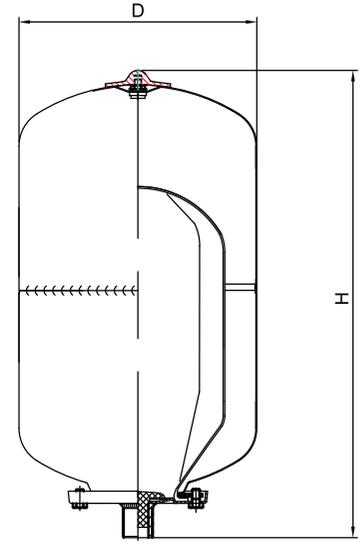
Expansion tank with replaceable membrane for closed heating systems Kapalı ısıtma sistemleri için değiştirilebilir membranlı genleşme tankı	
CE marked according to directive CE direktifi uyarınca işaretlenmiş	PED 2014 / 68 / EU
Maximum working pressure Maksimum Çalışma Basıncı	10 BAR
Standart pre-set pressure Standart Önceden Belirlenmiş Basınç	2 BAR
Working temperature Çalışma Sıcaklığı	-10 °C / +140 °C
Membrane type Membran Türü	EPDM



Technical Specifications

Teknik Özellikler

Model Model	Volume Hacim	Pre-Charge Pressure Ön Gaz Basıncı	Connection Bağlantı	Dia Çap	Height Yükseklik
VEX 10 S	2 LT	2	1"	120	242
VEX 10 S	5 LT	2	1"	160	300
VEX 10 S	8 LT	2	1"	202	320
VEX 10 S	12 LT	2	1"	280	300
VEX 10 S	19 LT	2	1"	280	430
VEX 10 S	24 LT	2	1"	280	470
VEX 10 S	35 LT	2	1"	380	470
VEX 10 S	50 LT	2	1"	380	620
VEX 10 S	50 LT	4	1"	380	750
VEX 10 S	60 LT	4	1"	380	810
VEX 10 S	80 LT	4	1"	460	915
VEX 10 S	100 LT	4	1"	460	990
VEX 10 S	150 LT	4	1"	500	1100
VEX 10 S	200 LT	4	1-1/4"	585	1120



* **Stainless steel flange and butyl membrane is available for all ranges.**
İstediginiz her ürün paslanmaz flanş kapaklı ve butil membranlı olarak üretilebilmektedir.

Color Available
Renk Seçenekleri



10 BAR STAINLESS STEEL CLOSED PRESSURE TANK SERIES

10 BAR PASLANMAZ ÇELİK KAPALI GENLESME TANKI SERİSİ

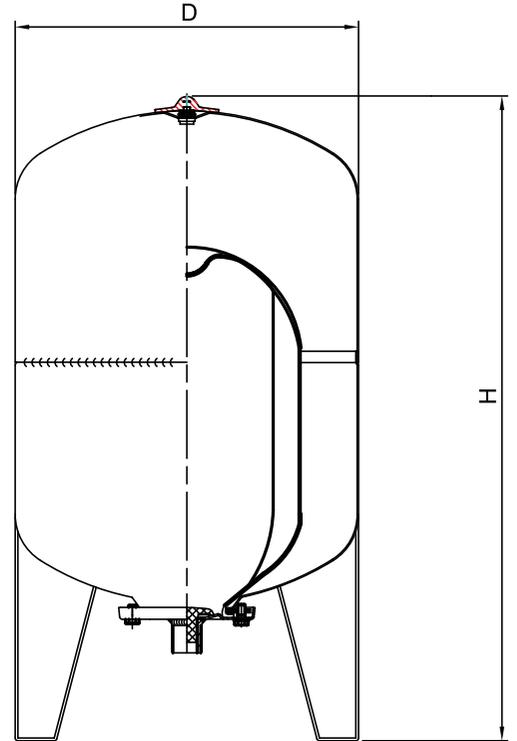
Expansion tank with replaceable membrane for closed heating systems Kapalı ısıtma sistemleri için değiştirilebilir membranlı genleşme tankı	
CE marked according to directive CE direktifi uyarınca işaretlenmiş	PED 2014 / 68 / EU
Maximum working pressure Maksimum Çalışma Basıncı	10 BAR
Standart pre-set pressure Standart Önceden Belirlenmiş Basınç	2 BAR
Working temperature Çalışma Sıcaklığı	-10 °C / +100 °C
Membrane type Membran Türü	EPDM



Technical Specifications

Teknik Özellikler

Model Model	Volume Hacim	Pre-Charge Pressure Ön Gaz Basıncı	Connection Bağlantı	Dia Çap	Height Yükseklik
VEX 10 SS	24 LT	2	1"	280	470
VEX 10 SS	50 LT	4	1"	380	750
VEX 10 SS	60 LT	4	1"	380	810
VEX 10 SS	80 LT	4	1"	460	915
VEX 10 SS	100 LT	4	1"	460	990
VEX 10 SS	150 LT	4	1"	500	1100
VEX 10 SS	200 LT	4	1-1/4"	585	1120
VEX 10 SS	300 LT	4	1-1/4"	635	1230
VEX 10 SS	500 LT	4	1-1/4"	750	1550



* Stainless steel flange and butyl membrane is available for all ranges.
İstediginiz her ürün paslanmaz flanş kapaklı ve butil membranlı olarak üretilebilmektedir.

HEATING SYSTEM APPLICATION

Calculation of the Tank Volume

Tank volume (lt) can be calculated with the next formula.

V_{tank} : Expansion tank volume (lt)

V_{su} : Total water volume in the installation (lt)

e : Expansion coefficient of the heating water

P_{min} : Absolute static pressure of the water in installation (bar)

P_{max} : Max. absolute pressure that can be applied to the system. This is also the value for open the safety valve (bar).

$$V_{\text{tank}} = \frac{V_{\text{water}} \cdot e}{1 - \frac{P_{\text{min}}}{P_{\text{max}}}}$$

Calculation

Water : The total volume of the water in the installation (lt). When the absolute calculation is difficult, the following table can be used.

TABLE: 1 RADIATOR WATER VOLUMES ACCORDING TO THE BOILER CAPACITY

Heating Element	Water Volume (lt) required for each 1000 kcal/hr	Water Volume (lt) required for each 1 kW
Convactor	6	5.2
Panel Radiator	9.7	8.33
Cast Radiator	14	12
Steel Radiator	14	12
Floor Heating	21.5	18.5

e : The expansion coefficient for the water heating from 10° to 90° is taken 0,0355 .

P_{min} : The absolute static pressure of the water in the installation where the expansion tank is connected. (1 m. building height: 1 mSS=0.1 bar)

P_{max}: Maximum absolute pressure that can be applied to the system. This is at the same time the value for opening the safety valve (bar).

Not: To make the tank selection without any calculation, Vira Closed Expansion Tank Selection Table can be used.

Sample Calculation

Examp: What is the tank volume to be used in a building with 8 normal+1 basement storey using 450.000 kcal/hr capacity boiler and panel radiator? Safety valve opening pressure is set to 4 bar. The expansion tank is located next to the boiler at the basement.

The calculation of the total water volume in the system. For panel radiator, 9,7 coefficient is found from the Table 1. V_{water}=400.000 . 9,7/1000=3880 lt. Generally, the volume of the boiler and piping is neglectable as compared to the radiator volumes. However, an increase of 10 % of the radiator volumes can be considered for the boiler and piping system. V_{water}=3880+0,1. 3880=4268,00 lt

P_{min}: The absolute static pressure of the water in the installation where the expansion tank is connected. 8 storey +1 basement =9 storeysx3 m/storey =27mSS=2.7 bar (pressure difference)

Absolute pressure=2.7 bar+1 bar=3.7 bar. P_{min}=3.7 bar.

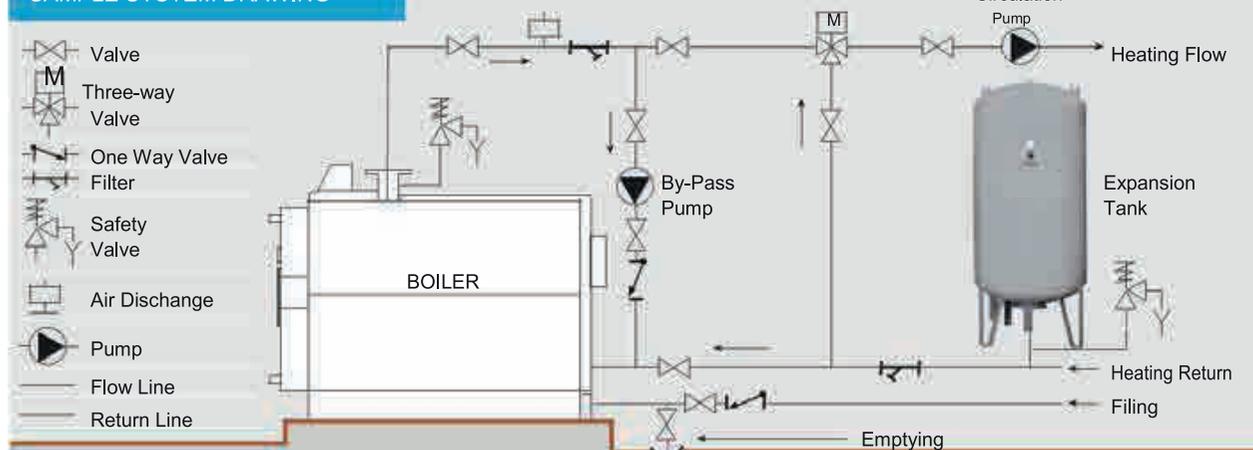
e: The expansion coefficient for the water heating from 10° to 90° is taken =0.0355 . Maximum absolute pressure that can be applied to the system. This is at the same time the value for opening the safety valve, that is 4 bars.

Absolute pressure=4 bar+1 bar=5 bar.

$$V_{\text{tank}} = \frac{V_{\text{water}} \cdot e}{1 - \frac{P_{\text{min}}}{P_{\text{max}}}} = \frac{4268,0 \cdot 0,0355}{1 - \frac{3,7}{5}} = 582,7 \text{ lt}$$

The closer tank volume bigger than this value is 750 lt. The correct selection should be GT 750.

SAMPLE SYSTEM DRAWING



WARNINGS

- The expansion tanks should absolutely be used with safety valve. Valve manufacturers inform about the utmost capacity with which their products are used. However, general the Table 2 can be used for this selection.
- There should not be any valve between the boiler, safety valve and expansion tank. ■ The expansion tank should be adjusted so that the front pressure shall be (P_{min}) 0.1 bar lower than the minimum statically pressure of the system.
- The connection of the tank either to the flow or return pipe does not effect the selection of the tank.
- The expansion tank liquid is used with fuel or natural gas boilers. It is not used with coal boilers

TABLE: 2

BOILER CAPACITY (kcal/hr)	SAFETY VALVE
Up to 45.000	1/2"
45.000-90.000	3/4"
90.000-175.000	1"
175.000-300.000	1 1/4"
300.000-500.000	1 1/2"
More then 750.000	2"

SANITARY SYSTEM APPLICATION

Calculation of the Tank Volume

$$V_{\text{tank}} = Q_{\text{max}} \frac{P_{\text{max}}}{3 \cdot \Delta P \cdot a}$$

Q_{max} : The maximum flow ratio given by pump to system. In case of new system installed, the maximum flow ratio needed by the building should be calculated from table 3 and table 4.
Maximum Required Flow Ratio= Daily Consumption (Table 3). Factor (Table 4) (lt/hr)

TABLE: 3 WATER CONSUMPTION PER PERSON FOR SAMPLE LOCALITIES

LOCATION TYPE		DAILY CONSUMPTION PER PERSON (lt/person)
House	with washbasin	60-80
	with shower	80-115
	with bathtub	120-200
Hotel	with shower	100
	with bathtub	150-200
Hospital		200-500
School		5
Nursery		80-100
Kinder garden		100-150
Barracks		60-80
Restaurant		10-20
Garden Irrigation		1,5 lt/m ² at ones
Car Washing		100 lt/day

TABLE: 4 MULTIPLYING FACTOR FOR WATER CONSUMPTION PER PERSON

LOCATION TYPE		FACTOR
Houses	1-5 apartment	0.66
	6-10 apartment	0.45
	11-20 apartment	0.40
	21-50 apartment	0.35
	51-100 apartment	0.30
100 apartment and more		0.25
Hotels	1-20 beds	0.40
	20-50 beds	0.40-0.30
	50 beds and more	0.30-0.20
Hastaneler	50-500 beds	0.30-0.20
	500-1000 beds	0.20-0.15
	1000-2000 beds	0.15-0.10
Schools		0.30
Nursery		0.40
Barracks		0.40-0.30
Business Centers		0.30

P_{max} : Maximum absolute pressure in the system. In domestic applications, it is enough to have the maximum pressure 2-3 bar higher than the minimum pressure.

P_{min} : Minimum absolute pressure in the system.
 $1,2 \cdot \left(\begin{array}{l} \text{Static pressure} \\ \text{caused by the} \\ \text{building height} \end{array} \right) + \left(\begin{array}{l} \text{Necessary pressure for} \\ \text{highest and farthest} \\ \text{locality (for houses 1,5 bar)} \end{array} \right)$

ΔP: Pressure difference (P_{max}-P_{min}) (bar)

a : The maximum start up number of the pump motor (number of motor stop-operate in 1 hour). It is defined by the manufacturer of the pump. Generally, it is around 10-15.

Sample Calculation

Examp: A 6-storey and 48-room hotel shall drag water from its well with submersible pump and use in its installation. There stay maximum 96 persons in the hotel. What should the expansion tank selected be?

Q_{max} : Maximum flow ratio

$$Q_{\text{max}} = 96 \text{ persons} \times 200 \text{ lt/person (Table 3)} \times 0,3 \text{ (Table 4)}$$

$$Q_{\text{max}} = 5760 \text{ lt/hour}$$

a : Let's take maximum reverse motion of the pump in an 1 hour =15.

P_{min} : 6 storeysx3 m/storey+5 m (basement)=23 m=23mSS=2 bar

$$P_{\text{min}} \text{ (indicator)} = 1,2 (2 \text{ bar} + 1,5 \text{ bar}) = 4,2 \text{ bar}$$

$$\text{Absolute pressure} = 4,2 \text{ bar} + 1 \text{ bar}$$

$$P_{\text{min}} = 5,2 \text{ bar.}$$

P_{max} : Let's lower the maximum utilization pressure higher than the 3 bar.

$$P_{\text{max}} = 5,2 \text{ bar} + 3 \text{ bar} = 8,2 \text{ bar}$$

$$\text{Pressure Difference} = 8,2 - 5,2 = 3 \text{ bar}$$

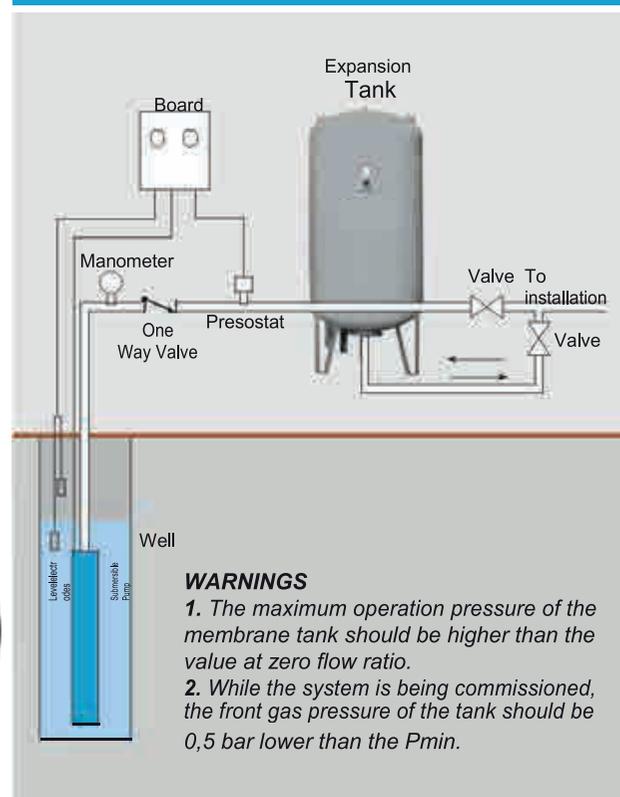
ΔP: ΔP=3 bar

$$V_{\text{tank}} = 5760 \frac{8,2}{3 \cdot 3 \cdot 15} = 345,60 \text{ litre.}$$

The standard tank volume bigger than this value is 500 lt. The correct selection should be GT 500.

Not : As can be seen from the example, the depth of the well is not important in this calculation.

SAMPLE SYSTEM DRAWING



WARNINGS

1. The maximum operation pressure of the membrane tank should be higher than the value at zero flow ratio.

2. While the system is being commissioned, the front gas pressure of the tank should be 0,5 bar lower than the P_{min}.

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