Vess-linno

Genleşme Tankları - Makina San. Tic. A.Ş

Hızlı Güvenli

İşyerimiz 3000 m2 kapalı, 3000 m2 açık alanda kurulmuş olup, müşteri memnuniyetini benimseyerek kaliteli ve güvenden ödün vermeden faaliyetini sürdürmektedir.

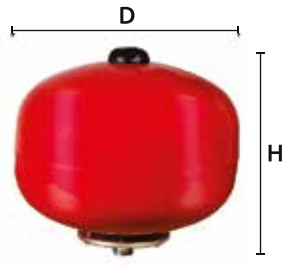
Profesyonel ve ekip ruhu anlayışı ile 'iş güvenliği' ilkesine uygun hareket ederek kaliteli genleşme tankları üretimi konusunda sektörde öncü firmalardan birisi olmaya devam etmektedir. Tecrübe ve teknolojinin getirdiği yeniliklerle birlikte genleşme tankları, yedek parça ve aksesuar imalatı gibi alanlarda profesyonel hizmetler vermeye devam etmektedir.

Our workplace has been established on an indoor area of 3000 m2 and outdoor area of 3000 m2 and continues to operate with the principle of customer satisfaction without compromising quality and trust.

It continues to be one of the leading companies in the production of quality expansion tanks by acting according to the principle of "occupational safety" with a Professional and team spirit based understanding.
The Company continues to offer Professional services in the areas such as the production of expansion tanks, spare parts and accessories with its experience and the innovations brought by technology

Придприятие основано на закрытой территории площадью 3000м2 и открытой территории площадью 3000м2 и ведет деятельность основываясь на удовлетворенности клиентов, соблюдая принципы качества и доверия.
В рамках профессионального и командного духа, действуя в соответствии с принципом «безопасности труда», продолжает занимать позицию одной из лидирующих фирм в отрасли по изготовлению качественных расширительных баков.
Продолжает предоставлять профессиональные услуги в таких областях, как производство расширительных баков, запасных частей и аксессуаров, опираясь на опыт и принесенные технологией новшествами.

10 BAR AYAKSIZ & YATIK TANK SERİSİ
10 BAR TANK FOOTLESS & HORIZONTAL SERIES
10 BAR БАК БЕЗНОГИЙ И ГОРИЗОНТАЛЬНОГО РЯДА



AYAKSIZ KAPALI GENLEŞME TANKLARININ TEKNİK ÖZELLİKLERİ
TECHNICAL SPECIFICATIONS OF CLOSED EXPANSION VESSELS
ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ ЗАКРЫТЫХ РАСШИРИТЕЛЬНЫХ БАКОВ БЕЗ ОПОРЫ

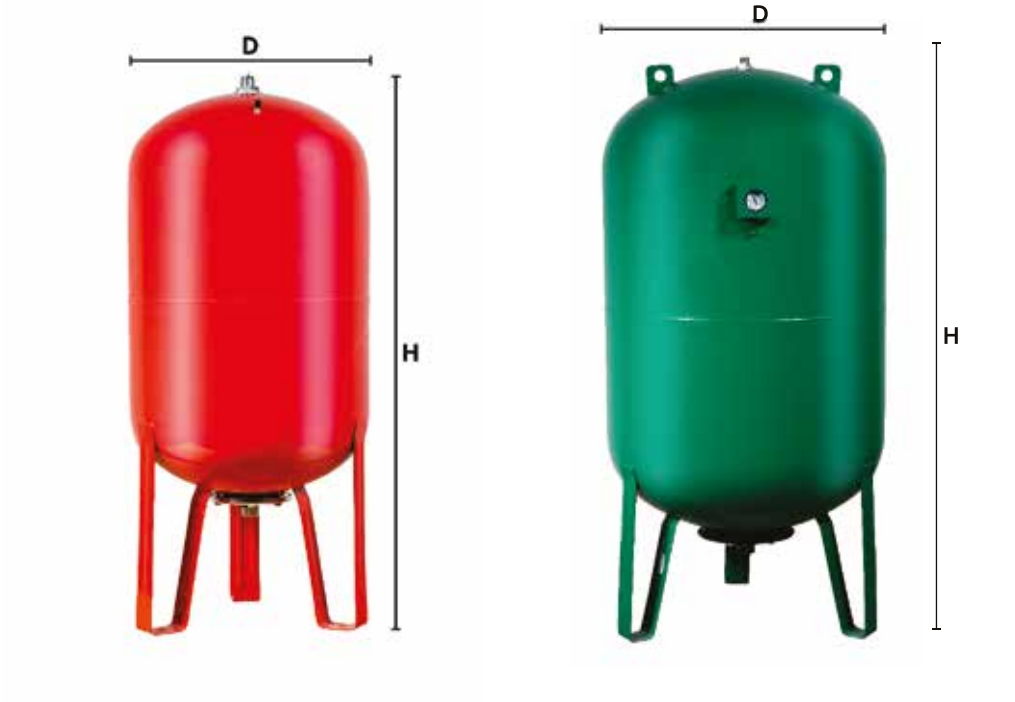
MODEL MODEL МОДЕЛЬ	HACİM VOLUME Объем	ÖN GAZ BASINCI PRE-CHARGE PRESSURE Предварительное давление	BAĞLANTI CONNECTION Соединение	ÖLÇÜLER / DIAMENTIONS РАЗМЕРЫ	
				Çap *Dia* *Диаметр*	*Yükseklik* *Height* *Высота*
VES 10 K	8 LT	2	1″	220	320
VES 10 K	12 LT	2	1″	220	380
VES 10 K	19 LT	2	1″	280	430
VES 10 K	24 LT	2	1″	280	470
VES 10 K	24 KÜRE	2	1″	360	325
VES 10 K	35 LT	2	1″	380	470
VES 10 K	50 LT	4	1″	380	560

YATIK KAPALI GENLEŞME TANKLARININ TEKNİK ÖZELLİKLERİ
TECHNICAL SPECIFICATIONS OF HORIZONTAL CLOSED EXPANSION VESSELS
ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ ГОРИЗОНТАЛЬНЫХ РАСШИРИТЕЛЬНЫХ БАКОВ

MODEL MODEL МОДЕЛЬ	HACİM VOLUME Объем	ÖN GAZ BASINCI PRE-CHARGE PRESSURE Предварительное давление	BAĞLANTI CONNECTION Соединение	ÖLÇÜLER / DIAMENTIONS РАЗМЕРЫ	
				Çap *Dia* *Диаметр*	*Boy* *Height* *Высота*
VES 10 Y	24 LT	2	1″	280	470
VES 10 Y	50 LT	4	1″	380	620
VES 10 Y	60 LT	4	1″	380	670
VES 10 Y	80 LT	4	1″	430	720
VES 10 Y	100 LT	4	1″	460	800

"Firmamız haber vermeksizin ölçülerde değişiklik yapabilir / Our company can change sizes without giving information"

10 BAR DİKEY TANK SERİSİ
10 BAR VERTICAL TANK SERIES
10 BAR ВЕРТИКАЛЬ СЕРИИ БАК

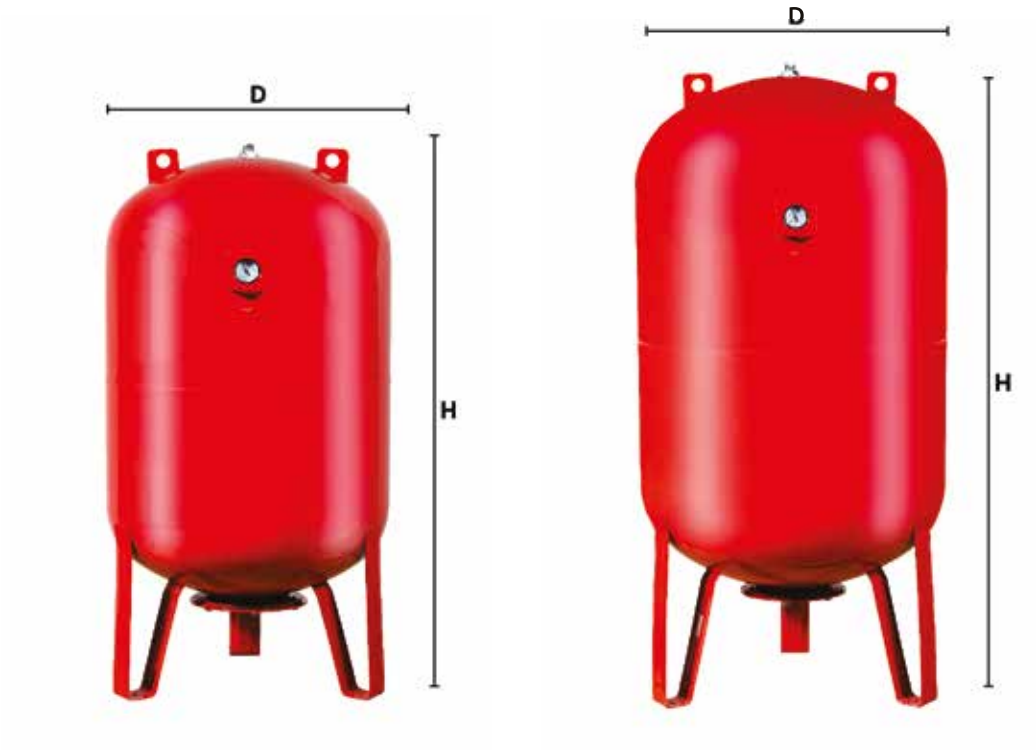


DİKEY KAPALI GENLEŞME TANKLARININ TEKNİK ÖZELLİKLERİ
TECHNICAL SPECIFICATIONS OF VERTICAL CLOSED EXPANSION VESSELS
ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ ВЕРТИКАЛЬНЫХ РАСШИРИТЕЛЬНЫХ БАКОВ

MODEL MODEL МОДЕЛЬ	HACİM VOLUME Объем	ÖN GAZ BASINCI PRE-CHARGE PRESSURE Предварительное давление	BAĞLANTI CONNECTION Соединение	ÖLÇÜLER / DIAMENTIONS РАЗМЕРЫ	
				Çap *Dia* *Диаметр*	*Yükseklik* *Height* *Высота*
VES 10	50 LT	4	1″	380	750
VES 10	60 LT	4	1″	380	810
VES 10	80 LT	4	1″	430	960
VES 10	100 LT	4	1′	460	990
VES 10	150 LT	4	1′	500	1100
VES 10	200 LT	4	1″	590	1120
VES 10	300 LT	4	1-1/4″	640	1230
VES 10	500 LT	4	1-1/4″	750	1550
VES 10	750 LT	4	2″	800	1750
VES 10	1000 LT	4	2″	800	2080
VES 10	1500 LT	4	2″	960	2380
VES 10	2000 LT	4	2″	1100	2520
VES 10	3000 LT	4	2-1/2″	1200	2800
VES 10	4000 LT	4	3″	1450	3100
VES 10	5000 LT	4	3″	1450	3720

“Firmamız haber vermeksizin ölçülerde değişiklik yapabilir / Our company can change sizes without giving information”

16 BAR DİKEY TANK SERİSİ
16 BAR VERTICAL TANK SERIES
16 BAR ВЕРТИКАЛЬ СЕРИИ БАК

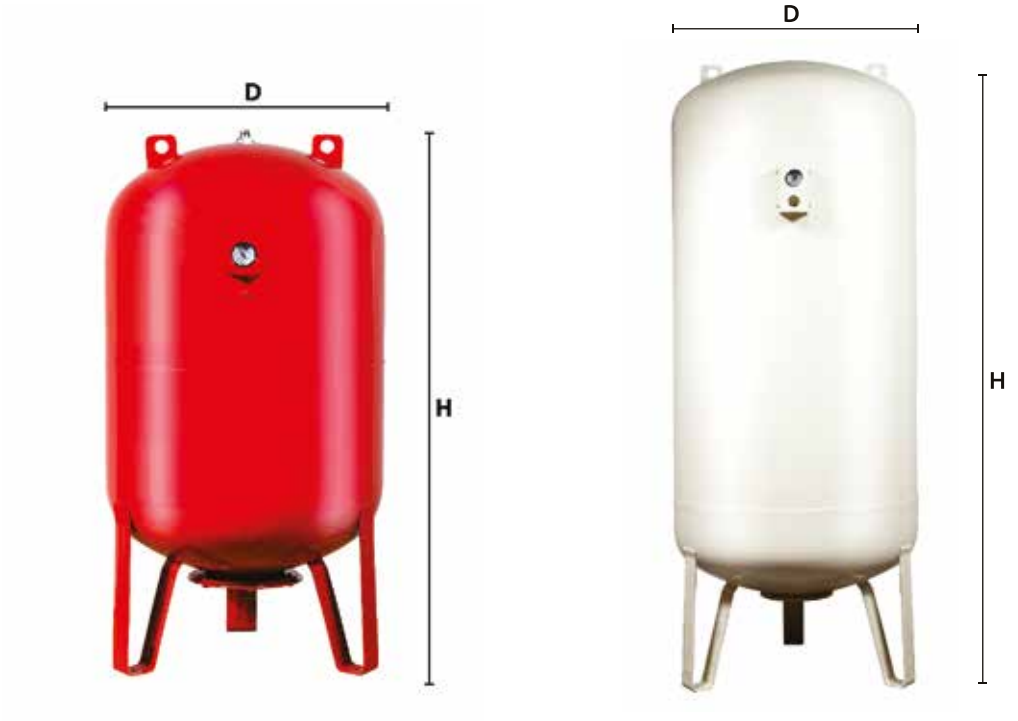


DİKEY KAPALI GENLEŞME TANKLARININ TEKNİK ÖZELLİKLERİ
TECHNICAL SPECIFICATIONS OF VERTICAL CLOSED EXPANSION VESSELS
ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ ВЕРТИКАЛЬНЫХ РАСШИРИТЕЛЬНЫХ БАКОВ

MODEL MODEL МОДЕЛЬ	HACİM VOLUME Объем	ÖN GAZ BASINCI PRE-CHARGE PRESSURE Предварительное давление	BAĞLANTI CONNECTION Соединение	ÖLÇÜLER / DIAMENTIONS РАЗМЕРЫ	
				Çap *Dia* *Диаметр*	*Yükseklik* *Height* *Высота*
VES 16	50 LT	4	1″	380	750
VES 16	60 LT	4	1″	380	810
VES 16	80 LT	4	1″	430	960
VES 16	100 LT	4	1′	460	990
VES 16	150 LT	4	1′	500	1100
VES 16	200 LT	4	1″	590	1120
VES 16	300 LT	4	1-1/4″	640	1230
VES 16	500 LT	4	1-1/4″	750	1550
VES 16	750 LT	4	2″	800	1750
VES 16	1000 LT	4	2″	800	2080
VES 16	1500 LT	4	2″	960	2380
VES 16	2000 LT	4	2″	1100	2520
VES 16	3000 LT	4	2-1/2″	1200	2800
VES 16	4000 LT	4	3″	1450	3100
VES 16	5000 LT	4	3″	1450	3720
VES 16	10000 LT	4	DN 100	1600	5750

“Firmamız haber vermeksizin ölçülerde değişiklik yapabilir / Our company can change sizes without giving information”

25 BAR DİKEY TANK SERİSİ
25 BAR VERTICAL TANK SERIES
25 BAR ВЕРТИКАЛЬ СЕРИИ БАК

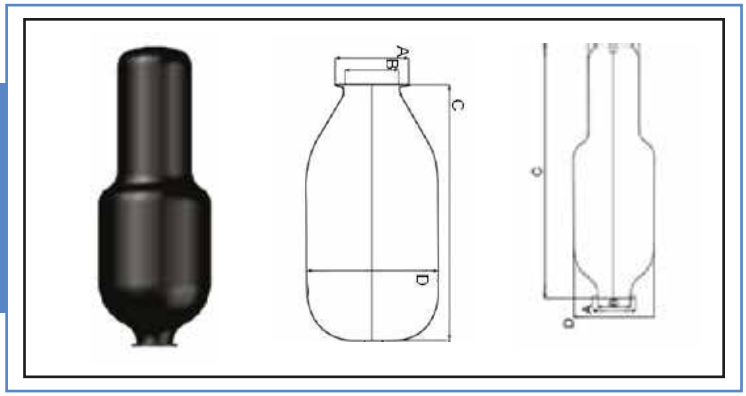


DİKEY KAPALI GENLEŞME TANKLARININ TEKNİK ÖZELLİKLERİ
TECHNICAL SPECIFICATIONS OF VERTICAL CLOSED EXPANSION VESSELS
ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ ВЕРТИКАЛЬНЫХ РАСШИРИТЕЛЬНЫХ БАКОВ

MODEL MODEL МОДЕЛЬ	HACİM VOLUME Объем	ÖN GAZ BASINCI PRE-CHARGE PRESSURE Предварительное давление	BAĞLANTI CONNECTION Соединение	ÖLÇÜLER / DIAMENTIONS РАЗМЕРЫ	
				Çap *Dia* *Диаметр*	*Yükseklik* *Height* *Высота*
VES 25	50 LT	4	1″	380	750
VES 25	60 LT	4	1″	380	810
VES 25	80 LT	4	1″	450	910
VES 25	100 LT	4	1′	450	990
VES 25	150 LT	4	1′	500	1100
VES 25	200 LT	4	1″	600	1120
VES 25	300 LT	4	1-1/4″	640	1230
VES 25	500 LT	4	1-1/4″	750	1550
VES 25	750 LT	4	2″	800	1750
VES 25	1000 LT	4	2″	800	2080
VES 25	1500 LT	4	2″	960	2380
VES 25	2000 LT	4	2″	1100	2520
VES 25	3000 LT	4	2-1/2″	1200	2800
VES 25	4000 LT	4	3″	1450	3100
VES 25	5000 LT	4	3″	1450	3720
VES 25	10000 LT	4	DN 100	1600	5750

“Firmamız haber vermeksizin ölçülerde değişiklik yapabilir / Our company can change sizes without giving information”

MEMBRAN



ÜRÜN KODU PRODUCT CODE	ÜRÜN AÇIKLAMASI PRODUCT DESCRIPTION	FLANŞ DIŞ ÇAPI (mm) FLANGED OUTER DIAMETER A	FLANŞ İÇ ÇAPI (mm) FLANGE INNER DIAMETER B	UZUNLUK (mm) LENGTH C	GENİŞLİK (mm) WIDTH D
VES 0160	8/12 LT MEMBRAN EPDM	110	80	200	115
VES 0089	19/24 LT MEMBRAN EPDM	110	80	250	200
VES 0180	35/50 LT MEMBRAN EPDM	110	80	350	200
VES 0257	80/100 LT MEMBRANE EPDM	110	80	630	240
VES 0231	100/150 LT MEMBRANE EPDM	110	80	730	270
VES 0276	150/200 LT MEMBRANE EPDM	200	150	855	270
VES 0232	200/300 LT MEMBRANE EPDM	200	150	1.000	380
VES 0233	500/750 LT MEMBRANE EPDM	200	150	1.350	440
VES 0244	750/1000 LT MEMBRANE EPDM	200	150	1450-1785	470
VES 0242	1000/1500 LT MEMBRANE EPDM	260	200	1520-2150	485

- TÜM MEMBRANLARIMIZ EPDM'DİR. / ALL MEMBRANDS ARE EPDM.
- TÜM MEMBRANLARIMIZ İTALYAN MENŞEİLİDİR. / ALL MEMBRANES ARE ITALIAN ORIGIN.
- İMALAT HATALARINA KARŞI 2 YIL GARANTİLİDİR. / GUARANTEED 2 YEARS AGAINST MANUFACTURING FAILURES.
- SICAK SOĞUK VE İÇME SUYUNA UYGUNDUR. / AVAILABLE FOR HOT, COLD AND SANITARY WATER

HEATING SYSTEM APPLICATION

Calculation of the Tank Volume

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

$$Vtank = \frac{Vwater \cdot e}{1 - \frac{Pmin}{Pmax}}$$

Vtank : Expansion tank volume (lt)
Vsu : Total water volume in the installation (lt)
e : Expansion coefficient of the heating water
Pmin : Absolute static pressure of the water in installation (bar)
Pmax : Max. absolute pressure that can be applied to the system. This is also the value for open the safety valve (bar).

Calculation

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

Heating Element	Water Volume (lt) required for each 1000 kcal/hr	Water Volume (lt) required for each 1 kW
Convector	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 .

Pmin : 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)

Pmax: 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, Alarko 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. Vwater = 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.

Vwater = 3880+0,1. 3880=4268,00 lt

Pmin: 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)

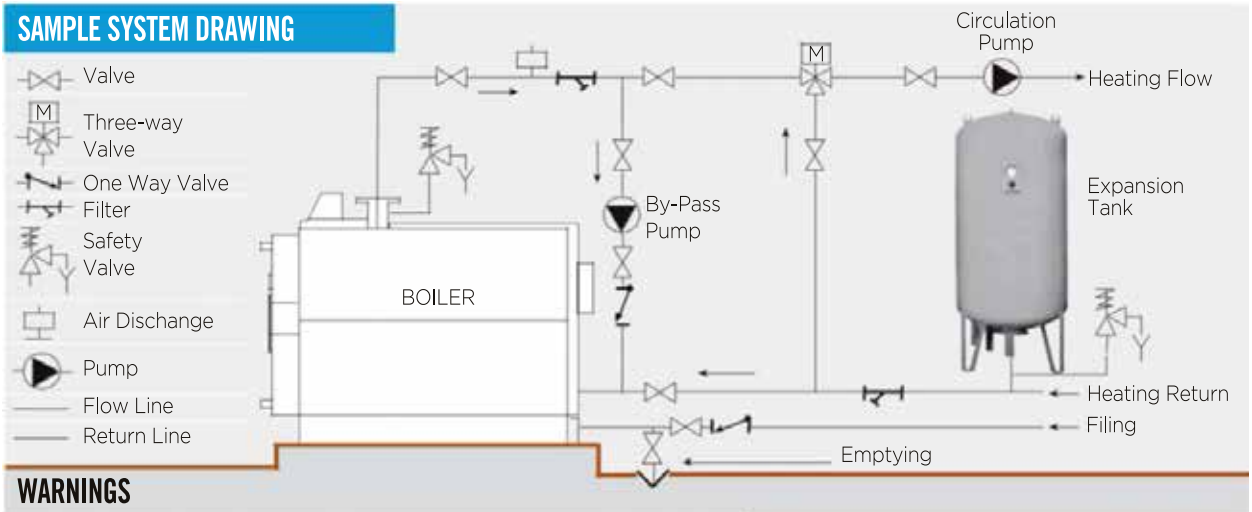
Absolute pressure=2.7 bar+1 bar=3.7 bar.
Pmin=3.7 bar.

e: The expansion coefficient for the water heating from 10°
Pmax: to 90° is taken =0.0355 .Maximumabsolutepressure 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.

$$Vtank = \frac{Vwater \cdot e}{1 - \frac{Pmin}{Pmax}} = \frac{4268,0 \cdot 0,0355}{1 - \frac{3,7}{5}} = 582,7 \text{ lt}$$

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 (Pmin) 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"

Calculation of the Tank Volume

$$Vtank = Qmax \frac{Pmax}{3.\ \Delta P.a}$$

Qmax :
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 CONSUMTION 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/m2 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
Hospitals	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

Pmax: 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.

Pmin: Minimum absolute pressure in the system.

$$1{,}2.\left(\begin{array}{ll}\text{Static pressure} & \text{Necessary pressure for}\\ \text{caused by the} + & \text{highest and farthest}\\ \text{building height} & \text{locality (for houses 1,5 bar)}\end{array}\right)$$

ΔP: Pressure difference (Pmax-Pmin) (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?

Qmax: Maximum flow ratio
Qmax=96 persons x 200 lt/person (Table 3) x0,3 (Table 4)
Qmax5760 lt/hour

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

Pmin: 6 storeysx3 m/storey+5 m (basement)=23 m=23mSS=2 bar
Pmin (indicator) =1,2 (2 bar+1,5 bar)=4,2 bar
Absolute pressure=4,2 bar+1 bar
Pmin=5,2 bar.

Pmax: Let's lower the maximum utilization pressure higher than the 3 bar.
Pmax=5,2 bar+3 bar=8,2 bar
Pressure Difference=8,2-5,2=3 bar

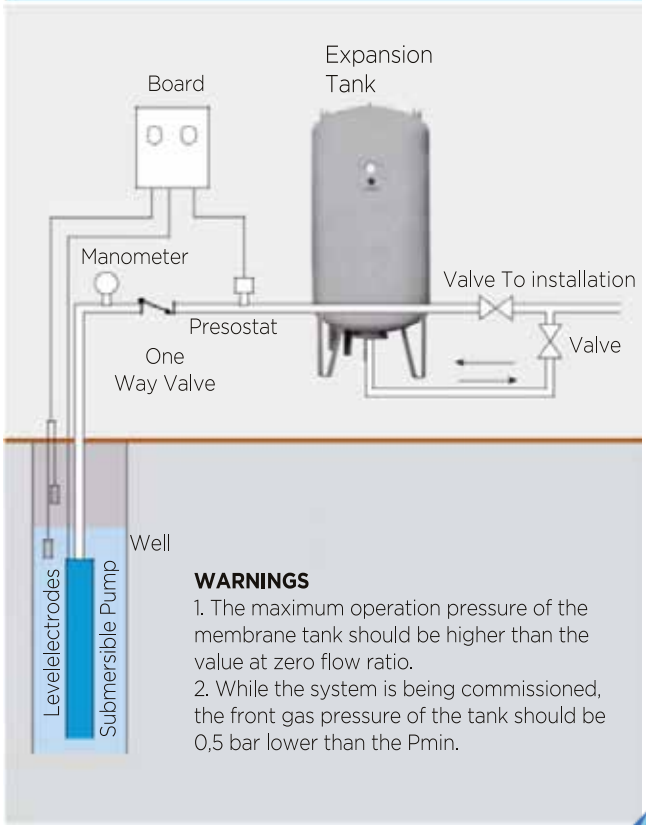
ΔP: ΔP=3 bar

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

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.

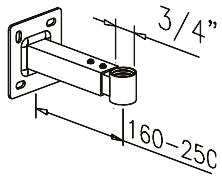
SAMPLE SYSTEM DRAWING



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 Pmin.

YEDEK PARÇA
SPARE PARTS

GENLEŞME TANKI DUVAR BAĞLANTI APARATLARI / CLOSED EXPANSION VESSEL FOR WALL FIXING TOOLS

KOD CODE	TİP TYPE		
VES1	Sabit bağlantı aparatı / Bracket for expansion tank	3/4"	
VES2	Sabit bağlantı aparatı / Bracket for expansion tank	1"	
VES3	Hareketli bağlantı aparatı / Extended for expansion tank	3/4"	
VES4	Hareketli bağlantı aparatı / Extended for expansion tank	1"	
VES5	Kelepçe tip bağlantı aparatı / Bracket for expansion tank	Ø325	
VES6	Kelepçe tip bağlantı aparatı / Bracket for expansion tank	Ø380	
VES7	Sabit "L" bağlantı aparatı / "L" bracket (Capacity 15 kg)		
VES8	Sabit "L" bağlantı aparatı / "L" bracket (Capacity 30kg)		

MANOMETRE
MANOMETER

Ø 50 bağlantı ¼ 0-25 bar

Ø 50 connecton ¼ 0-25 bar

BEŞYOL
5 WAY CONNECTION

1" giriş ve 1" çıkış

1" connection and 1" outlet

BASINÇ ŞALTERI
PRESSURE SWITCH

Monofaze / Trifaze mevcuttur

Monofaze / Trifaze is available

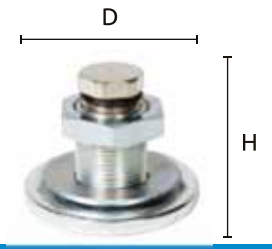
YEDEK PARÇA
SPARE PARTS

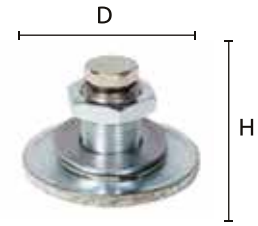


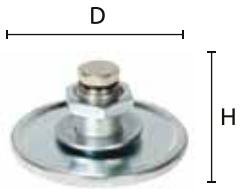
FLANŞ KAPAĞI / COUNTER FLANGE

ÖLÇÜLER DIMENSIONS	GALVANİZ GALVANIZE	BOYALI PAINTED	PASLANMAZ STAINLESS STEEL	3/4 " X	1" Y	1 1/4" X	1 1/2" X	2" X	2,5" X	3" X
Ø 140	S	-	O	O	S	O	-	-	-	-
Ø 240	O	S	O	-	-	S	O	S/O	-	-
Ø 300	O	S	O	-	-	-	O	S	O	O
Ø 380	O	S	O	-	-	-	O	-	S/O	S/O

S : STANDART / STANDART X : MANŞON / FEMALE O : OPSİYONEL / OPTIONAL Y : NİPEL / MALE







MEMBRAN ASKISI / MEMBRAN HOOK

KAPASİTE CAPACITY	ÇAP (D) DİA (D)	YÜKSEKLİK (H) HEIGHT (H)
80-500 lt.	Ø 65	60 mm
750-1000 lt.	Ø 70	60 mm
1500-2500 lt.	Ø 80	65 mm

FLEX BAĞLANTI HORTUMLARI/ FLEXIBLE HOSES

BAĞLANTI CONNECTION	BOYUTLAR SIZES
1"	50-150 CM
1 1/4"	50-150 CM

BAĞLANTI CONNECTION	BOYUTLAR SIZES
1 1/2"	50-150 CM
2"	50-150 CM

FLEXIBLE HORTUMLARINIZ İSTEĞE GÖRE PASLANMAZ VEYA GALVANİZ KAPLI ÜRETİLEBİLMEKTEDİR.
ALL OUR FLEXIBLE HOSES CAN BE PRODUCE STAINLESS STEEL OR GALVANIZE.

Vesselinno

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İstasyon Mah. E-5 Güney Yan Yol. Cad. No.106 Gebze

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