



INTERCHANGEABLE BUTYL MEMBRANE VESSELS FOR POTABLE WATER, WITH GALVANIZED FLANGE - ULTRA PRO.

Their usable capacity is superior than the one of ordinary tanks: less volume is needed. The tank is constantly kept under pressure by a air cushion that is separated from water by the membrane. Maximum working temperature + 99°C. Manufactured according to the Directive PED 97/23/CE certificate n° Z-DDK-MUC-02-396876-10 n° Z-DDK-MUC-02-396876-12 - Approved by Wrc n° 9804015. Butyl membrane for sanitary water, approved by DIN 4807-3.



ZM S 24 8B

PED 97/23/CE DRAWING/NOI PR 20014



Code	Capacity lt Débit	Max press. Pression max	Connection Raccord
ZM V 24	24 lt. vert.	10 bar	1" G
ZM S 24 8B	24 sferico	8 bar	1" G
ZM V 50	50 lt. vert.	10 bar	1" G
ZM V 60	60 lt. vert.	10 bar	1" G
ZM V 80	80 lt. vert.	10 bar	1" G
ZM V 100	100 lt. vert.	10 bar	1" G
ZM V 100 F	100 lt. vert.	10 bar	1" G
ZM V 200	200 lt. vert.	10 bar	1" 1/2
ZM V 300	300 lt. vert.	10 bar	1" 1/2
ZM V 500	500 lt. vert.	10 bar	1" 1/2
ZM V 750	750 lt. vert.	10 bar	1" 1/2
ZM V 1000	1000 lt. vert.	10 bar	1" 1/2
ZM V 1000 CE 6	1000 lt. vert.	6 bar	1" 1/2
ZM V 1000 CE 8	1000 lt. vert.	8 bar	1" 1/2

MAYOR WATER YIELD

The membrane pressure tank's usable/available capacity is much superior than that of normal tanks. Therefore, less volume at equal water yield.

COMPRESSOR ELIMINATION

Air feeder is no longer necessary as a cushion of air, separated from the water by the rubber membrane, keeps the tank constantly in pressure.

CE APPROVED

It is not necessary to submit the tank to testing. The tank is supplied already tested and certified in our factory according to the European Directive 97/23/EC

USE WITH AGGRESSIVE WATER

It is possible to use the membrane pressure tank even with calcareous water, or in the presence of earth currents (with s/steel flange), as water contacts the membrane only.

MAINTENANCE FREE

Economic installation and rapid assembly. Limited maintenance.

LIFE SPAN

Maximum duration of the membrane is assured as the membrane itself cannot bend or rub against the plate, as fixed above to the connection and below to the flange. Thus the tanks duration is practically unlimited as the membrane can be replaced.

Code	Capacity lt Débit	Max press. Pression max	Connection Raccord
ZM H 24	24 lt. Orizz	10 bar	1" G
ZM H 50	50 lt. Orizz	10 bar	1" G
ZM H 60	60 lt. Orizz	10 bar	1" G
ZM H 80	80 lt. Orizz	10 bar	1" G
ZM H 100	100 lt. Orizz	10 bar	1" G
ZM H 200	200 lt. Orizz	10 bar	1"1/2 G
ZM H 300	300 lt. Orizz	10 bar	1"1/2 G

MEMBRANES & FLANGES

membrane	application	working temperat.
butyl	either with potable water, or with non potable	-10 C° +70 C°
EPDM	either with potable water, or with non potable	-10 C° +70 C°
S.B.R.	not potable water only	-10 C° +70 C°
nitril	for oil application	-10 C° +70 C°

note: butyl is less permeable than EPDM

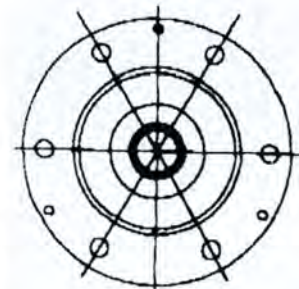


Code	Capacity/Débit
ZM MB 024	24 lt epdm
ZM MB 024 H	24 lt horizontal
ZM MB 024 X	24 lt. Butyl for inox tank
ZM MB 050	50 lt butyl
ZM MB 060	60/80 lt butyl
ZM MB 100 F	100 lt butile per ZM V 100 F
ZM MB 100 S	100 lt butile per ZM V 100 S
ZM MB 200	200 lt butyl
ZM MB 300	300 lt butyl
ZM MB 500	500 lt butyl
ZM MB 750-1000	750/1000 lt butyl

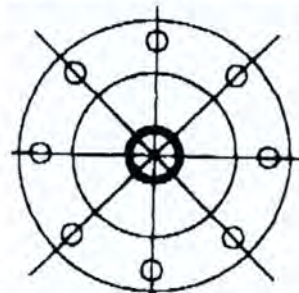


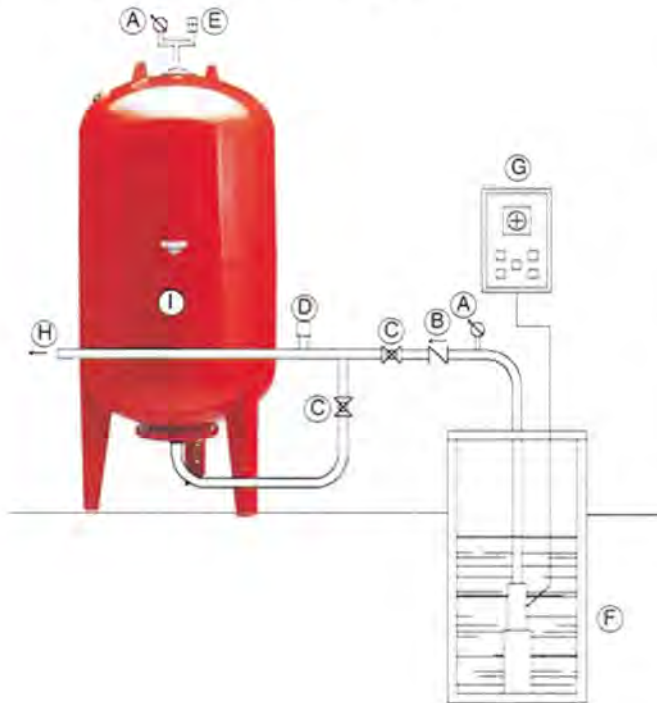
Our Code	Ref	Description	material
ZM R FLANG I 24 100	1900010000	Bottom flange 8-12-19 24-50-60-80-100 lt	galvanized
ZM R FLANG IX 24 100	1910010000	Bottom flange 8-12-19 24-50-60-80-100 lt	stainless steel
ZM R FLANG I 200 300	1900300000	Bottom flange 200-300 lt	galvanized
ZM R FLANG IX 200 300	1910030000	Bottom flange 200-300 lt	stainless steel
ZM R FLANG I 500 1000	1900050000	Bottom flange 500-750 1000 lt.	galvanized
ZM R FLANG IX 500 1000	1910050000	Bottom flange 500-750 1000 lt	stainless steel
ZM R FLANG S 100	1900010005	Top flange 100 lt	galvanized
ZM R FLANG SX 100	1900010006	Top flange 100 lt	stainless steel
ZM R FLANG S 200 300	1900030001	Top flange 200-300 lt	galvanized
ZM R FLANG SX 200 300	1910030001	Top flange 200-300 lt	stainless steel
ZM R FLANG S 5001000	1900050001	Top flange 500-1000 lt	galvanized
ZM R FLANG SX 5001000	1910050001	Top flange 500-1000 lt	stainless steel

19±100 lt.



Bottom flange
200 - 300 - 500 - 750 - 1000 lt.





- A** pressure gauge
- B** not return flow valve
- C** spheric water tap
- D** pressure switch
- E** safety valve
- F** feed basin with submerged pump
- G** switch-board
- H** water system
- I** ZILMET pressure tank (interchangeable membrane)

instructions for the vessel choice

Knowing the plant maximum absorption A_{max} (litres/min.) and the electropump power, it is possible to calculate the water reserve $V_u = K A_{max}$ and, from the table, choice the corresponding vessel volume V_t . The formula for the calculation is:

$$V_t = K A_{max} \frac{(P_{max} + 1)(P_{min} + 1)}{(P_{max} - P_{min})(P_{prec} + 1)}$$

V_t = vessel volume (litres);
 A_{max} = maximum plant absorption (litres/min.);
 P_{min} = minimum thrustmeter pressure at which the pump starts;
 P_{max} = maximum thrustmeter pressure at which the pump stops;
 P_{prec} = precharge pressure.
 All the pressures indicated are relative pressures and are expressed in bar.
 K coefficient according to the pump power P for calculating the water reserve $V_u = K A_{max}$

P (hp)	1 - 2	2,5 - 4	5 - 8	9 - 12
K	0,25	0,375	0,625	0,875

EXAMPLE

$A_{max} = 115$ litres/min.
 $P_{min} = 1,5$ bar, $P_{max} = 5$ bar, $P_{prec} = 1,3$ bar.
 Pump power = 4 hp ($K = 0,375$)

$$V_t = 0,375 \times 115 \frac{(5 + 1)(1,5 + 1)}{(5 - 1,5)(1,3 + 1)} = 80,4 \text{ litres}$$

ATTENTION: set the vessel precharge at -0.2 bar with respect to the starting pressure of pump.

selection table

$P_{min}-P_{prec}$	0,20											
P_{prec}	0,80	0,80	1,80	1,30	1,30	1,80	1,80	2,30	2,30	2,80	3,80	4,80
P_{min}	1,00	1,00	2,00	1,50	1,50	2,00	2,00	2,50	2,50	3,00	4,00	5,00
P_{max}	2,00	2,50	3,00	2,50	3,00	2,50	4,00	4,00	5,00	5,00	8,00	10,00
volume V_t	water reserves V_u -											
19	5,70	7,33	4,43	4,99	6,56	2,53	7,09	5,37	7,46	6,02	8,11	8,35
24	7,20	9,26	5,60	6,31	8,28	3,20	8,96	6,79	9,43	7,60	10,24	10,55
50	15,00	19,29	11,67	13,14	17,25	6,67	18,67	14,14	19,64	15,83	21,33	21,97
60	18,00	23,14	14,00	15,77	20,70	8,00	22,40	16,97	23,57	19,00	25,60	26,36
80	24,00	30,86	18,67	21,03	27,60	10,67	29,87	22,63	31,43	25,33	34,13	35,15
100	30,00	38,57	23,33	26,29	34,50	13,33	37,33	28,29	39,29	31,67	42,67	43,94
200	60,00	77,14	46,67	52,57	69,00	26,67	74,67	56,57	78,57	63,33	85,33	87,88
300	90,00	115,71	70,00	78,86	103,50	40,00	112,00	84,86	117,86	95,00	128,00	131,82
500	150,00	192,86	116,67	131,43	172,50	66,67	186,67	141,43	196,43	158,33	213,33	219,70
750	225,00	289,29	175,00	197,14	258,75	100,00	280,00	212,14	294,64	237,50	320,00	329,55
1000	300,00	385,71	233,33	262,86	345,00	133,33	373,33	282,86	392,86	316,67	426,67	439,39

ORLANDO srl



ZM X...:

STAINLESS STEEL AISI 304 TANKS WITH MEMBRANE SUITABLE FOR POTABLE WATER.

It is possible to use them with calcareous water or in presence of earth currents as water is in contact with the membrane only. Suitable for coastal zones where air saltness may damage all components that are not made of where air salinity steel. Having a replaceable membrane makes the tank everlasting.

The use of stainless steel AISI 304 and of the internal membrane which is suitable even for alimentary purposes as for cold water or hot water with temperatures up to 70°C, are the main features of this range of expansion vessels. This production has become necessary to offer a extremely valid product of nearly unlimited endurance for all those special applications like the compensation of water expansion in plants for sanitary hot water production or against water hammering as well or for applications in coastal areas, where the presence of brackishness is the cause of the rapid corrosion of all the parts made of carbon steel or finally in every application in which a maximum of hygiene is necessary. For such purpose we underline that the whole range of stainless expansion vessels we produce is equipped with an absolutely non-toxic membrane suitable for the contact with drinking water and also approved by the British WRc and Japanese JWA, which are the most important organisations for the evaluation of the suitability of the parts for alimentary purposes. For the high quality of materials, for manufacturing procedures and for continuous quality control our STAINLESS STEEL expansion vessels do grant a long-lasting operation with no need for special maintenance.

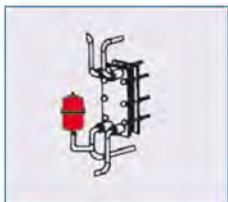
TECHNICAL DATA:

- **Stainless steel expansion tanks manufactured according to the Directive PED 97/23/CE**
- **Butyl membrane suitable for potable water, approved by DIN 4807-3**
- **Maximum working pressure + 99°C**
- **Stainless steel AISI 304**
- **Capacity from 1 to 18 litres with fixed butyl membrane**
- **Capacity from 24-50-60-100 litres with replaceable butyl membrane**

PED 97/23/CE DISEGNO/DRAWING 20018



typical installations



volume totale Total volume	materiale material	membrana diaphragm	raccordo connect.	press. max di eserc. maximum working pressure	press. di precarica precharge pressure	temperatura temperature
1 ltr	AISI 304	butile - butyl	1/2"	10 bar	3,5 bar	70°C (99°C system)
2 ltr	AISI 304	butile - butyl	1/2"	10 bar	3,5 bar	70°C (99°C system)