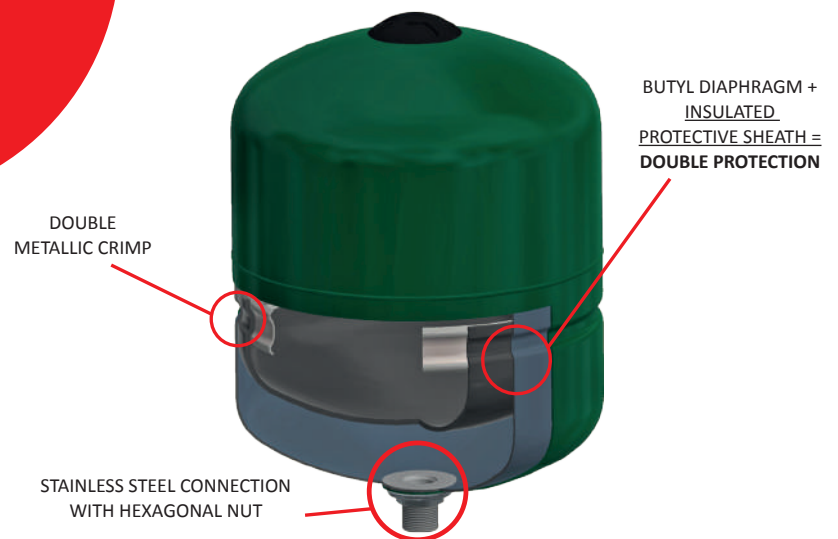


# THERMOHYDRAULICS

STORAGE  
HEATING  
COOLING  
SOLAR

NEW  
PRODUCT



## DP series

Multifunctional tanks with fixed butyl diaphragm and insulated protective sheath





# DP - CE

## MULTIFUNCTIONAL TANKS WITH FIXED BUTYL DIAPHRAGM AND INSULATED PROTECTIVE SHEATH

(5 - 500 LITRES)

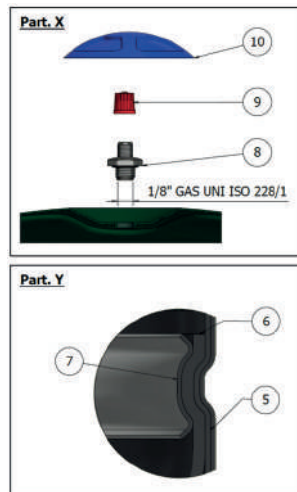
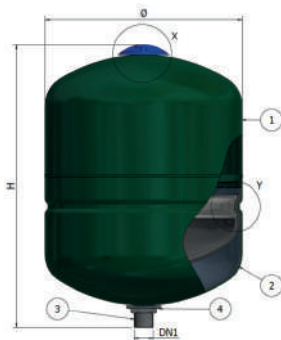
### DP / DPV - CE



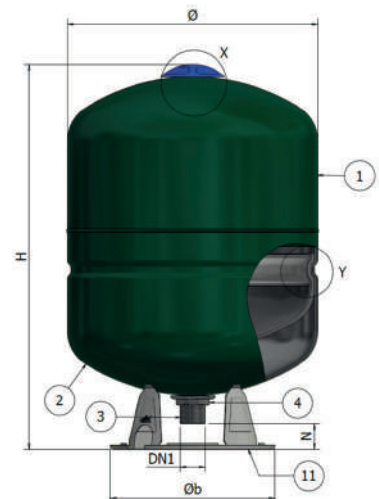
### STAINLESS STEEL CONNECTION



### DP - CE 5 - 35



### DPV - CE 50 - 500



CE certified product



For air conditioning systems



For drinking water



For pressurisation systems



For sanitary hot water



Water hammer arrestor



For heating systems

#### Multifunctional tanks with fixed-bladder and protective sheath

Multifunctional sanitary vessels with fixed bladder are designed to be fitted both as expansion tanks into sanitary systems, suitable to absorb the water expansion volume generated by a changing temperature, as well as pressure tanks for cold water sanitary systems.

Both applications are possible thanks to the protective sheath with patented crimping system that ensures the protection against corrosion of the inner surface of the tank.

*In your Domestic Hot Water system install Elbi expansion tanks in the cold water supply pipe (do not install in the hot water drawoff pipe).*

#### Characteristics:

- Min./max. working temperature: -10° / +99°C
- Max working pressure: 10 bar
- Pre-charge pressure: 2,5 bar
- Hydrostatic test pressure: 14,3 bar
- Fixed alimentary diaphragm in butyl
- Alimentary protective sheath in butyl
- Stainless steel connection with hexagonal nut
- Double metallic crimp
- Long lasting epoxy powder paint, green RAL 6005;
- NO MAINTENANCE

#### Reference standard:

- Declaration of conformity to essential safety requirements specified in 2014/68/UE Directive;
- CE approved

**WARRANTY: 5 YEARS**

## DIMENSIONS

MODEL	CODE	Cap. litres	Diam. Ø mm	H mm	Ø b mm	N mm	DN1 mm
DP - 5	A2C2L11	5	205	225	-	-	3/4" GAS
DP - 8	A2C2L16	8	205	300	-	-	3/4" GAS
DP - 11	A2C2L19	11	270	300	-	-	3/4" GAS
DP - 18	A2C2L24	18	270	410	-	-	3/4" GAS
DP - 24	A2C2L27	24	320	355	-	-	1" GAS
DP - 35	A2C2L31	35	400	390	-	-	1" GAS
DPV - 50	A2C2L34	50	400	585	330	68	1" GAS
DPV - 80	A2C2L37	80	400	820	330	68	1" GAS
DPV - 100	A2C2L38	100	500	775	330	67	1" 1/4 GAS
DPV - 150	A2C2L43	150	500	1.005	330	67	1" 1/4 GAS
DPV - 200	A2C2L47	200	600	1.065	485	107	1" 1/4 GAS
DPV - 300	A2C2L51	300	650	1.240	485	98	1" 1/4 GAS
DPV - 500	A2C2L55	500	775	1.400	485	108	1" 1/4 GAS

## HOW TO SIZE A MULTI-FUNCTIONAL TANK

The multifunctional tanks can be used either as expansion tanks for heating and DHW systems, being able to absorb the expansion due to the rise in temperature, or as autoclaves in cold water systems.

### SIZING AS AN EXPANSION TANK

The general formula for sizing of an expansion tank is:

$$V = \frac{V_0(k_i - k_f)}{1 - (P_1 / P_2)}$$

Where:

- $V$  is the total volume of the expansion tank in liter
- $V_0$  is the volume of fluid in the system, in liter
- $k_f$  is the fluid's expansion coefficient at the maximum allowable temperature in the plant (request the table of expansion coefficients)
- $k_i$  is the fluid's expansion coefficient at plant's starting temperature (request the table of expansion coefficients). If such temperature is not known, consider 10 °C as a reference
- $P_1$  is the absolute air precharge pressure in bar
- $P_2$  is the absolute set pressure of the plant's safety valve in bar. Such pressure is to be reduced by an amount equal to the difference in hydrostatic height between the safety valve and the expansion tank

**IMPORTANT!** Air precharge pressure must always be checked and properly set at the time of installation. Its value depends on the operating pressure of the plant. Italian "Raccolta R" prescribes a precharge pressure at least equal to the hydrostatic pressure acting on the expansion tank in cold conditions, but in any case no less than 1,5 bar absolute (equal to 0,5 bar relative).

### SIZING AS AN AUTOCLAVE

The general formula for autoclave sizing is:

$$V = 16,5 \times \frac{Q \max}{A} \times \frac{P_s \times P_a}{P_s - P_a} \times \frac{1}{P_p}$$

Where:

- $V$  is the total volume of the autoclave, in liter
- $Q \max$  is the maximum flow rate of the pump, or the maximum consumption of the plant, in liter per minute
- $P_s$  is the pump's absolute shut-off pressure in bar
- $P_a$  is the pump's absolute start-up pressure in bar
- $P_p$  is the autoclave's absolute air precharge pressure in bar
- $A$  is the number of pump's start-up/shut-off cycles in an hour (in case this parameter is unknown a tentative value of 12÷15 cycles is suggested)

**IMPORTANT!** Air precharge pressure must always be checked and properly set at the time of installation. Its value depends on the operating pressure of the plant. A recommended value is 0,5 bar below the pump start-up pressure  $P_a$ .





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