System Pressure Managers Mechanical & Electronic Units.

- Designed to give optimum performance whilst minimising floor/wall space.

- WRAS approved componenst used in all units.

- Ensures compliance with BS6644 when systems have an input over 70kW

- The Standard Single pump units offer ecomony and convenience.

- The Plus Single pump units offer high and low pressure monitoring for boiler or BMS interfacing

- The Electronic Single and Twin pump options, both offer full BMS interfacing, pump exercise and system leak detection functionality.

- High cold fill pressure versions available for systems requiring cold fill pressures up to 5.4 bar, in place of the standard 3.4 bar.

- Suitable for heating and cooling systems.

- A full range of system pressure vessels are also availible 35L -1000L.

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System Pressure Vessels 35L-1000L.

- Suitable for heating and colling systems.

Volume	Diameter	Height	Max Pressure	Temperature Range	Connection Size
35	404	408	4	-10+99°C	¾"
50	407	530	4	-10+99°C	¾"
80	450	608	6	-10+99°C	¾"
105	500	665	6	-10+99°C	¾"
150	500	897	6	-10+99°C	¾"
200	600	812	6	-10+99°C	¾"
250	630	957	6	-10+99°C	¾"
300	630	1105	6	-10+99°C	¾"
400	630	1450	6	-10+99°C	¾"
500	750	1340	6	-10+99°C	1"
600	750	1555	6	-10+99°C	1"
700	750	1755	6	-10+99°C	1"
800	750	1855	6	-10+99°C	1"
1000	750	2205	6	-10+99°C	1"

- Heating and Cooling Vessel Sizing Guide.

The vessel sizing formular is as follows.

$$V = \frac{e \times C}{1-Pi/Pf} = \frac{Vu}{1-Pi/Pf}$$

Where:

Vu = Total usuable volume of vessel = Vi – Vf
Vi = Initial volume = V
Vf = Final Volume.
e = Expansion coefficient corresponding to the differnce between the cold system water temperature. And the maximum working temperature.

In standard systems:

e = 0.04318 (Tmax = 99°C – Tmin = 10°C)
C = Total water capacity of the systemin litres. (Averaged to be between 5 & 15L per kW.)
Pi = Initial charge pressure of vessel (absolute) This must not be less than the hydrostatic pressure at the point where the vessel is connected to the system
Pf = Maximum operating pressure (absolute) of the pressure relief valve. Taking into account any height differences between the vessel and the pressure relief valve.

Worked example
C = 500L Pi = 1.5bar Pf = 3bar V = 0.0431 x 500 / 1- (2.5/4) = 57.5L vessel required. (Use next size up.)

Additional guidance for cooling systems:
In air conditioning system, initial charge pressure is equal to the minimum system pressure, corresponding to the maximum achievable temperature relative to the ambient temperature, which should be fixed at 50°C for safety. The final working pressure is that achieved at minimum temperature of approximatley 4°C. Under these conditions, the vessel sizing formula is as follows.

$$V = C \times e / 1 - (Pf/Pi)$$

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