Typical Installations



Instructions for use Introduction

The fixed membrane expansion vessels and the replaceable membrane accumulators are manufactured to safety requirements of the Directive 2014/68/EU of the European Parliament and of the Council of the European Union 15th May 2014 which had the objective of harmonising all of the member states regarding pressure equipment.

Description and destination of the equipment

The fixed membrane expansion vessels are intended to operate in heating installations and enclosed cooling systems. They absorb the volume increase produced by the increase in temperature of the heating circuit.

The expansion vessels (type CMF and SMF) are only suitable for use in closed circuits. The possible damage caused by their use in other types of circuit is not the responsibility of Altecnic Ltd..

Construction

Expansion vessels are of welded constructed manufactured from quality steel.

The internal membrane is manufactured from impermeable and flexible rubber having high strength and good temperature resistance.

The external protection consists of a primer and a finishing coat or a powder epoxy coating.



Installation

Before proceeding with the installation ensure that the volume of the expansion vessel has been sized correctly.

The expansion vessel must be installed between the boiler and the mixing valve, preferably in the return to the boiler. An isolating valve or similar device should NOT be installed between the boiler and expansion vessel which could isolate the expansion vessel from the system.

A safety valve correctly sized and set to suit the pressure of the boiler and the system must be installed.

The safety valve must be set to a pressure lower than the maximum boiler pressure and should incorporate a pressure gauge.

The expansion vessel should be installed vertically above the pipe with the water connection at the bottom and the air valve upper most.

Expansion vessels are supplied pre-charge with air, this may be increase or reduced via the air valve to suit site conditions.

The air pressure inside the expansion vessel should be slightly higher than the static pressure of the system.

During system filling air should be released by valves in the system (not the expansion vessel)

The system should be operated at maximum temperature for at least half a day and any air which as accumulated released.

To prevent internal corrosion, the system should be bled periodically or devices fitted to eliminate the air automatically.

Maintenance

Maintenance should only be performed by authorised and qualified personnel.

At least once every six months check the air or nitrogen pressure using the air valve at the top of the vessel. The pressure can be measured by a tyre gauge or an inflation device, if it has an integral gauge, and should be returned to the pre-charge or specified pressure as necessary.

Never remove the expansion vessel from the system without de-pressurising the system, isolate the system where possible to minimise water loss and damage.

Safety Instructions

Ensure the following are strictly adhered to;

The pre-loading pressure should never exceed the design pressure of the equipment.

It is prohibited to perforate or drill the vessel or to weld any element to it.

Never exceed the working temperature or pressure for which the vessel was designed - see the label on the vessel.

Altecnic Ltd. does not accept responsibility for damage caused in transit, injury to personnel or property caused by incorrect installation or use.

| Model | Size Range | Max. Working | Temperature Range | Pre-charge Pressure |
|---|------------|----------------|-------------------|---------------------|
| | litres | Pressure - bar | °C | bar |
| CMF Heating | 5 to 35 | 5 | | |
| | 35 to 50 | 4 | -10 to 100°C | 1.5 |
| | 80 to 1000 | 6 | | |
| PC/PR Heating Circular and Rectangular | 5 to 12 | 3 | -10 to 100°C | 1 |
| CMR Potable | 0.6 to 18 | 10 | -10 to 100°C | 2 |
| | 24 | 8 | | 3 |
| | 35 to 700 | 10 | | |
| SMF/SMR Solar | 2 to 18 | 10 | | |
| | 24 | 8 | -10 to 100°C* | 2.5 |
| | 35 to 700 | 10 | | |

Expansion Vessel Range

* Can peak at 130°C for occasional durations of less then one hour. An intermediate vessel should be installed for continuous temperatures above 70°C for heating, 100°C for solar and below 0°C in cooling systems.

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