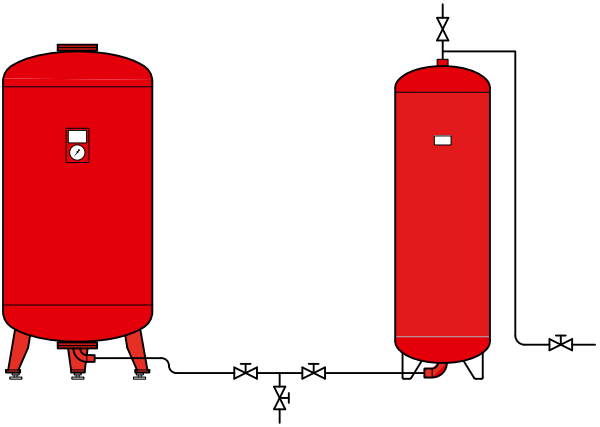
Flamco

KE KELIT®
CLIMATE CONTROL SYSTEMS

Flexcon VSV

Flexcon V-B

Flexcon VSV & V-B



1. General

The purpose of Flexcon VSV and V-B intermediate vessels in sealed heating systems with operating temperatures in excess of 70 °C is to reduce the temperature of the water entering the expansion vessel. The expansion volume temperature may exceed the critical value of 70 °C due to a number of frequently used components, e.g. pump-controlled return boost, standard connection of the expansion pipe to the hot leg or high cold leg temperatures.
The temperature is reduced by storing the water in the Flexcon VSV and V-B. The hot water entering the vessel from the top mixes with the cooler stored water volume. The expansion pipe connection to the bottom of the vessel carries significantly cooler water to the diaphragm pressure expansion vessel. In order to maintain the VSV and V-B intermediate vessel's function, these pipes must not be insulated.
Given our practical experience and synchronization with various other users we recommend vessel volumes based upon the following:

- Operating temperature up to 120 °C, 20 % of expansion volume.
- Operating temperature up to 140 °C, 30 % of expansion volume.
- Operating temperature up to 150 °C, 50 % of expansion volume.

2. Area of use

Parameters for use: see product label on vessel.
Please adhere to these parameters. They are there for your safety and must not be exceeded.
The vessel was designed in accordance with the terms of the European Pressure Equipment Directive (97/23/EC). An EC type examination certificate for the Flexcon VSV and V-B intermediate vessel is available.

Installation instructions, inspection precautions and operational safety measures

The Flexcon VSV and V-B intermediate vessels are supplied as an assembly, in either upright or horizontal position. The vessels must be installed in closed rooms not susceptible to frost in such a way that they can be serviced, checked and operated freely at all times. The minimum distances for installation of individual vessels must be ascertained in relation to the conditions in situ during planning and installation. The surfaces on which the units are to be set up must be prepared in such a way as to guarantee long-term structural stability. The connections from the system to the vessel (feed at the top, drain at the bottom) must be connected in situ.

It must be possible to shut off the vessel from the heating system; the isolating devices must be safeguarded against unintentional closure (i.e. with a lockshield valve). If the vessel needs to be emptied via a separate drain, there is an appropriate ½" opening at the bottom of the vessel.

A condition for safe use of Flexcon VSV and V-B intermediate vessels in heating systems is that they are sufficiently safeguarded against excessive inlet temperature and operating pressure. The most important features in this respect are:

- Each heat generator must have a suitable temperature controller to adjust the heating to match heat consumption.
- Each indirectly-heated heat generator must have an overtemperature protection switch with an independent sensor.
- Each directly-heated heat generator must be equipped with a suitable temperature limiter with an independent sensor.

- The heat generators in question must be fitted with safety valves as a safeguard against excessive pressure. In this regard, each heat generator may not be fitted with more than three safety valves. They must be fitted in easily-accessible areas, specifically at the highest point of the heat generator in question, or in the immediate vicinity of the hot leg.
- Each heat generator that is protected over 3 bar or has more than 350 kW nominal heat output must be fitted with a governor. The governors must be configured so that they cut in before safety valves.
- Please observe any additional local (national) regulations relating to temperature and pressure safeguards when installing the Flexcon VSV and V-B intermediate vessels.

3. Residual hazards

Residual hazards of installation of the Flexcon VSV and V-B intermediate vessels may be formed by improper installation, non-adherence to the installation parameters, incorrect use of the vessel or non-adherence to the safety regulations for heat-generation units.

The pressure in intermediate vessels must be released before any installation or servicing work.

Attention:

Water in vessel above 70 °C, max. operating temperature 120 °C / 160 °C. Do not touch the vessel when it is in operation without adequate protection. There is no insulating material needed around the vessel so the wall temperature will be approximately at the temperature of the fluid stored inside which may be in excess of 70 °C.

4. Service and regular inspections

The producer of a heat-generation unit must provide an operating and service manual for the unit including data relating to the safe functioning of the safety equipment and sign the original with the relevant customer that performed the commissioning.

The frequencies for in-service inspections of Flexcon VSV and V-B intermediate vessels are recommended as follows:

- External inspection: once per year.
- Internal inspection: every five years.
- Hydrostatic pressure test: every ten years.
- Inspection shall be made by the competent experts nominated in the user's country. Regulations contained in the national legislation should be observed with preference.

Flamco

KE KELIT®
CLIMATE CONTROL SYSTEMS

KE KELIT NZ Ltd.
0800 4 KE KELIT
0800 4 5353548
climatecontrol@kekelit.co.nz
www.kekelit.co.nz

MC00153/05-2012