544

temperature safety valve
with automatic filling

CE 1115

altecnic
Caleffi group

544 temperature safety valve with automatic filling

Application

The Altecnic 544 temperature safety valve with automatic filling is used in heating systems that use a firebox or stove as a heat generator and an intermediate heat storage vessel.

The valve integrates in a single body a heat discharge valve and a filling valve that operate simultaneously by a positive safety type remote sensor.

If the valve needs to open, hot water from the heating circuit is discharged to the drain and the cold water from the mains refills the heating circuit, thus lowering the temperature and ensuring water circulation thus protecting the heat generator.

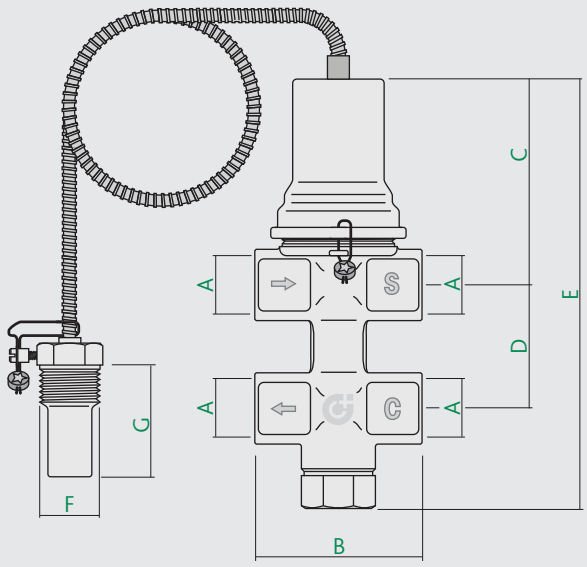
Construction Details

Component	Material	Grade
Body	Brass chrome plated	BS EN 12165 CW617N
Pocket	Brass	BS EN 12164 CW614N
Spring	Steel	
Seals	EPDM	

Technical Data

Medium:	water, glycol solution
Max. percentage glycol:	30%
Max. working range:	6 bar
Set temperature:	100˚C 0 to -5˚C
Temperature range:	5 to 110˚C
Ambient temperature range:	1 to 50˚C
Discharge flow rate at 110˚C and Δp 1 bar:	1600 l/h
Flexible tube length:	1.3 m

Dimensions

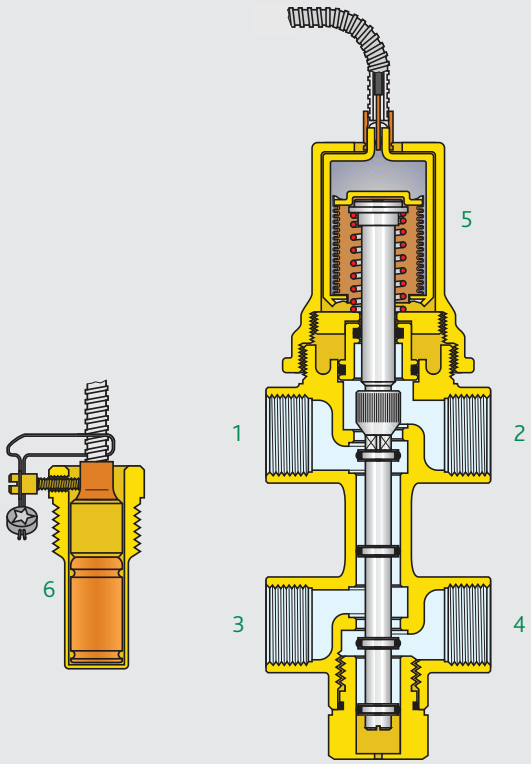


Prod Code	A	B	C	D	E	F	kg
544400	G½	60	77	50	162	G½B	1.32

Operating Principle

When the set temperature (100˚C) is reached, the cold water inlet flow path is opened (passage from 4 to 3) and, simultaneously, the drain flow path is opened (passage from 1 to 2), until the temperature drops to below the reset value and the inlet and drain close simultaneously.

In the event of a malfunction in the sensing element (5) and (6), the valve will fail safe and the drain path will open (passage from 1 to 2).



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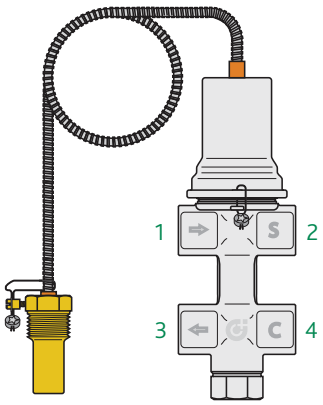
Operating Principle

The following are highlighted on the valve body:

- arrows indicating the direction of flow through the upper and lower ports.
- port 1 marked with an arrow connects the heat generator to the valve
- port 2 marked with an S is the outlet port to the drain point.
- port 4 marked with a C is the inlet port for mains cold water.
- port 3 marked with an arrow is the outlet port to the return from the heating system and return to the heat generator.



IMPORTANT:

The flow paths through the valve cannot be reversed.

The connections and flow directions must follow the body markings.

Installation

The valve can be fitted in any position, vertical, horizontal or upside down.

The temperature probe pocket (6), supplied with the valve, must be fitted on the flow pipe at a distance lower than 0.5 m from the heat storage vessel or at the highest point of the water heater and anywhere before the drain pipe.

The temperature probe pocket supplied with the valve must be used.

In order to be able to control the inlet pressure to the valve, created by the mains water, it is advisable to have a charging unit (normally open) on the valve filler pipe, set at the system operating pressure.

When the valve is open and discharging to drain, the entire system is charged directly through this pipe connected to mains water.

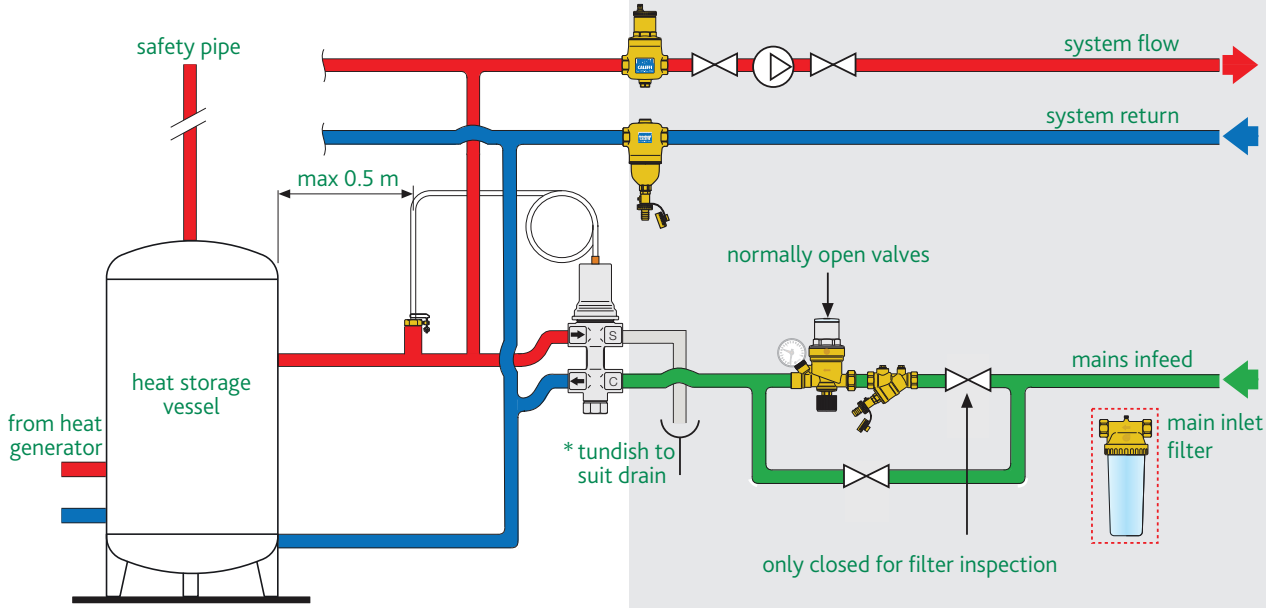
In order to avoid any type of malfunction due to the presence of debris, it is advisable to install a 'Y' type strainer on the filling inlet.

It will be necessary to check periodically to ensure that the strainer is not dirty or blocked.

Fitting the strainer with devices, such as pressure gauges upstream and downstream of the straining element, to check the state of cleanliness, is recommended.

This will enable continuous monitoring of the condition of the strainer to be under taken.

Installation



* The discharge from a temperature relief valve should be through a tundish to a suitable drain.

Rules governing the installation of a tundish are specified in the Water Supply (Water Fittings) Regulations and the Water Byelaws in recommendation R19.3.

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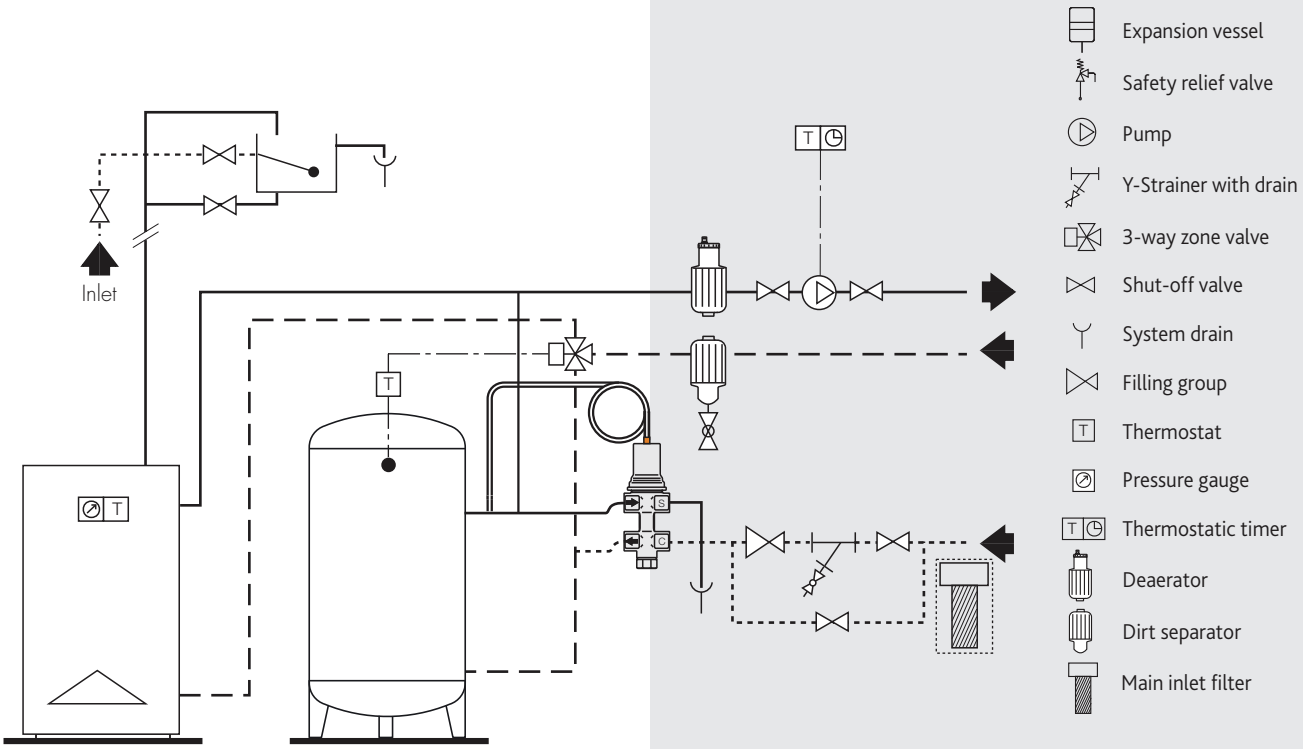
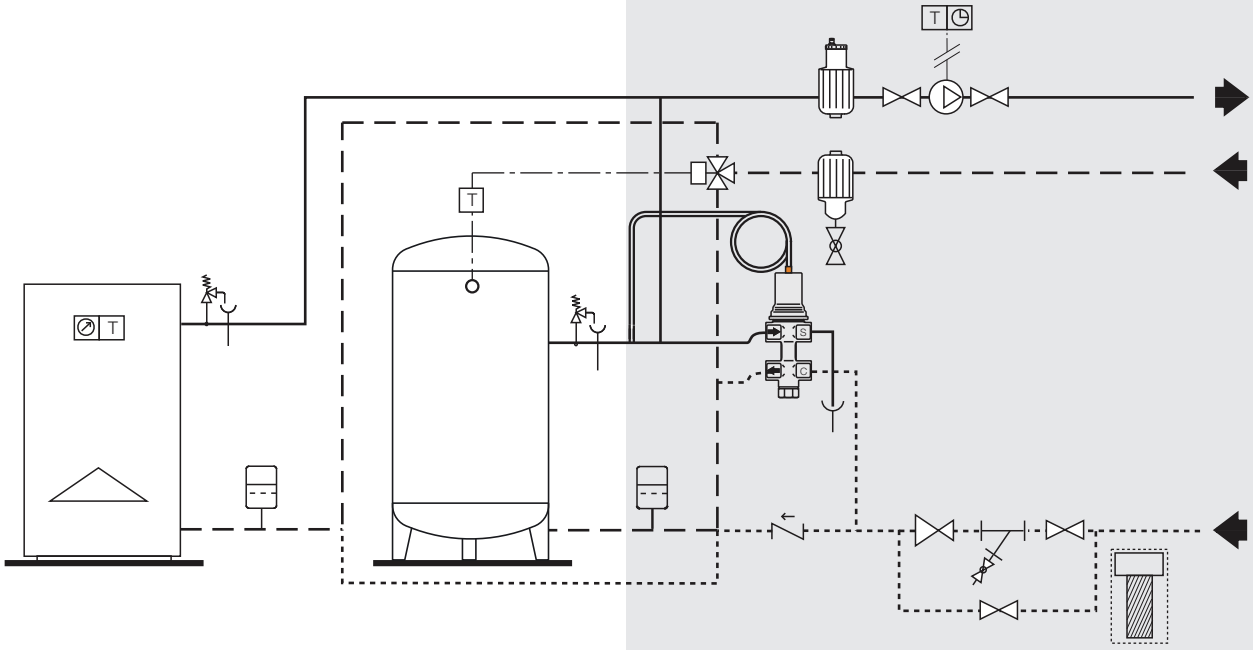
Typical Applications

IMPORTANT: for overall power levels exceeding 35 kW the dimensions of the safety pipe must comply with current regulations.

System with open expansion vessel



System with closed expansion vessel



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