

# Temperature and pressure relief valve for solar systems



## 309 series



### General information

The temperature and pressure relief valves (TP) 309 series for solar systems are made by Caleffi S.p.A in compliance with the essential safety requirements laid down by Directive 97/23/EC of the European Parliament and the Council of the European Union for harmonisation of Member States with regard to pressurised equipment.

### Function

The TP relief valve controls and limits the temperature and pressure of the hot water contained in a solar domestic water storage heater and prevents it from being able to reach temperatures of over 100°C, with the formation of steam.

On reaching the settings, the valve discharges a sufficient amount of water into the atmosphere so that the temperature and pressure return within the system's operating limits.

**This particular series of valves is certified as conforming to the performance requirements of the European standard EN 1490 (for settings of 7 - 10 bar).**



### Product range

309 series Temperature and pressure relief valve for solar systems Sizes 1/2" x Ø 15 mm, 3/4" x Ø 22 mm

### Technical specifications

**Materials:**  
 Body: dezincification-resistant alloy CR  
 EN 12165 CW602N chrome plated  
 Stem: brass EN 12164 CW614N  
 Obturator and diaphragm: EPDM  
 Spring: steel EN 10270-1 SH  
 Control knob: PA6GF

**Performance**  
 Nominal pressure: PN 10  
 Discharge rating: - 1/2" Ø 15; 10 kW  
 - 3/4" Ø 22; 25 kW  
 Medium: water  
 PED category: IV

**Settings:**  
 - temperature: 90°C  
 - pressure: 6 - 7 - 10 bar

Connections: 1/2" M x Ø 15 mm with compression fitting for copper pipe  
 3/4" M x Ø 22 mm with compression fitting for copper pipe

### Code completion (..)

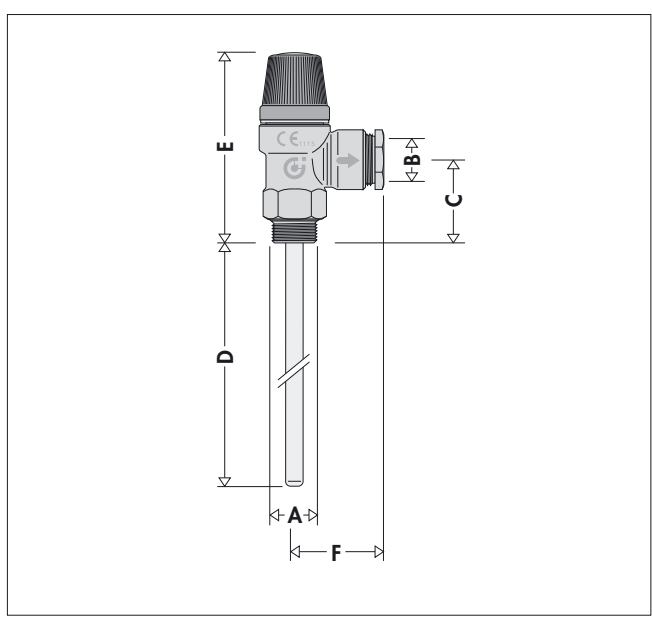
Code 3094..

61 → 6 bar	71 → 7 bar	01 → 10 bar
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Code 3095..

61 → 6 bar	71 → 7 bar	01 → 10 bar
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### Dimensions



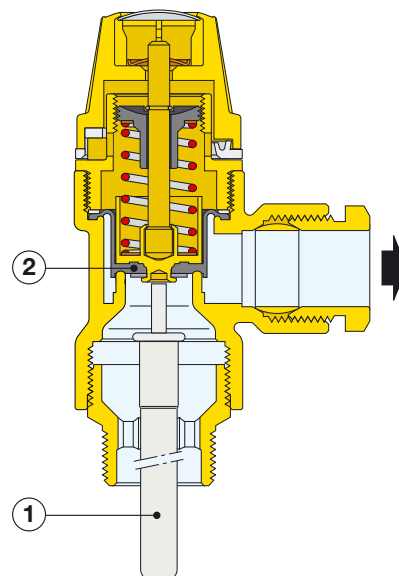
Code	A	B	C	D	E	F	Weight (kg)
3094 ..	1/2" Ø 15	40	102	88	39	0,253	
3095 ..	3/4" Ø 22	43	99	91	39	0,310	

## Operating principle

The valve opens the outlet on reaching the settings for:

- **temperature:** the thermostat compound inside the temperature sensor 1), submerged in the hot water storage heater, expands as the temperature increases. This expansion causes a thrust pin to move and act on the obturator 2) opening the valve. The valve is set to open at temperatures of over 90°C.
- **pressure:** the obturator, opposed by a set spring, raises on reaching the pressure setting and opens the outlet completely. The pressure setting is chosen according to the maximum permissible pressure in the system.

As the temperature and pressure decrease, the opposite action occurs with the valve subsequently reclosing within the set tolerances.



## Certification

### CE mark

309 series TP relief valves for solar systems comply with the essential safety requirements of Directive 97/23/EC concerning pressure equipment (also called P.E.D.). They are therefore classified as category IV and are equipped with the CE mark.

### Product certification in accordance with European Standard EN 1490

European Standard EN 1490: 2000, entitled "Building valves - Combined temperature and pressure relief valves - Tests and requirements", describes the constructional and performance specifications that TP relief valves must have.

Caleffi 309 series TP relief valves for solar systems are certified by Buildcert (UK) to comply with the requirements of the European Standard EN 1490 (for settings 7 – 10 bar).

## Installation

Before installing a TP relief valve it is necessary for the sizing to be performed correctly by specialized technical personnel in accordance with the current regulations for the specific applications. Any use other than the intended use is prohibited.

The TP relief valves must be installed by qualified technical personnel in accordance with current regulations.

The TP relief valves must be installed observing the direction of flow indicated by the arrow on the valve body.

## Assembly

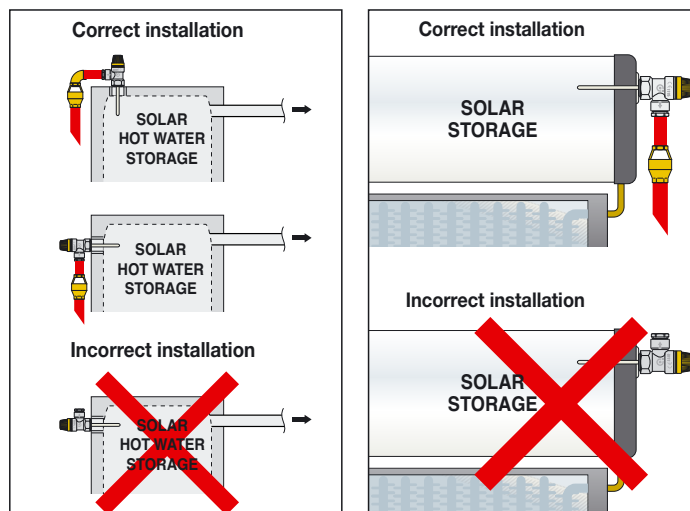
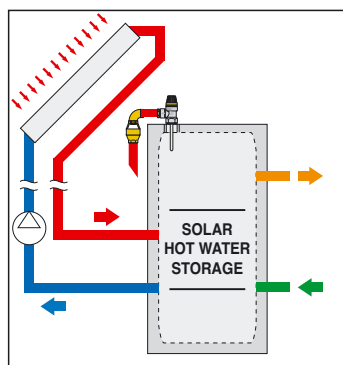
### Plumbing system

TP relief valves must be installed on the top of the solar hot water storage heater, making sure that the temperature sensor is correctly submerged in the tank.

Make sure that there are no shut-off devices between the valve and the storage heater.

TP relief valves can be fitted vertically or horizontally, but not overturned.

This prevents debris from impairing operation.



## SPECIFICATION SUMMARIES

### 309 series

Temperature and pressure relief valve for solar systems. Equipped with the CE mark in accordance with directive 97/23/EC. Dezincification-resistant alloy body. Brass stem. Obturator and diaphragm in EPDM. Steel spring. Control knob in glass-fiber re-inforced nylon. Threaded 1/2" M connections on the inlet and Ø 15 mm (and 3/4" M x Ø 22 mm) with compression fitting for copper pipe on the outlet. Temperature setting 90°C. Pressure setting 6 bar (available settings: 6-7-10 bar). Valves with 7-10 bar setting certified to EN 1490 standard. Discharge rating: 1/2" x Ø 15 mm: 10 kW, 3/4" x Ø 22 mm: 25 kW. Medium: water. Category PED IV. Nominal pressure: PN 10.

We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice.



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