

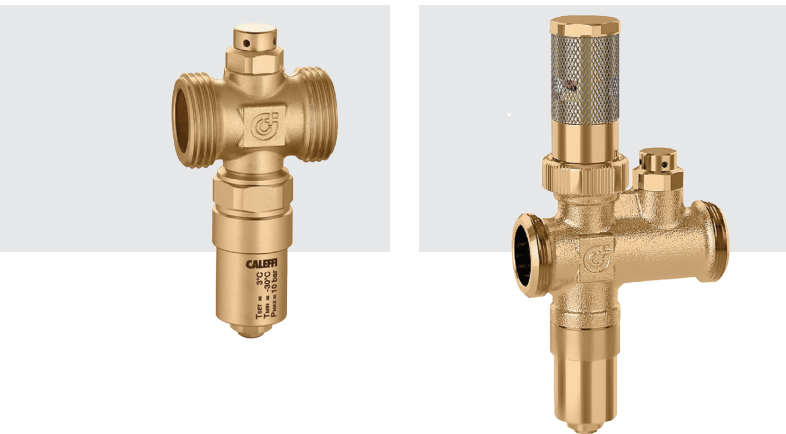
**iStop®**

antifreeze valves including  
valves with air sensor



**altecnic**  
CALEFFI group

iStop® antifreeze valves including valves with air sensor



Application

The iStop antifreeze valve allows the circuit medium to be drained when the temperature reaches an average of 3°C or below.

The 108611 and 108711 valves have an addition air sensor which limits circuit drainage if the air temperature is higher than 5°C

This prevents ice forming in the circuit of a system, generally with a heat pump, avoiding potential damage to equipment, valves and pipework.

The iStop valves are suitable for a variety of fittings and pipes connected by a union.

Construction Details

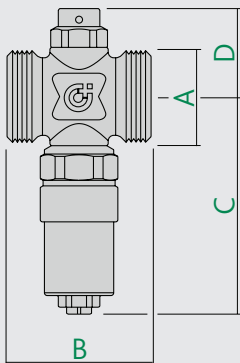
Component Material		Grade
Body:	701 & 801	Brass BS EN 12164 CW614N
Body:	601 & 301	Brass BS EN 12165 CW724R
Body:	611 & 711	Brass BS EN 12165 CW617N
Obturator:	Brass	BS EN 12164 CW617N
Springs:	Stainless steel	BS EN 10270-3 (AISI 302)
Seals:	EPDM	
Compression Nut:	Brass	BS EN 12165 CW617N
Olive:	Brass	BS EN 12164 CW614N

Technical Specification

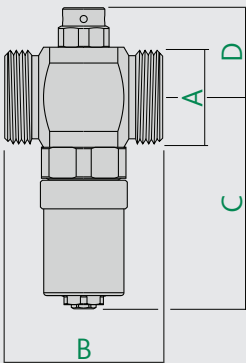
Medium:	water
Maximum working pressure:	10 bar
108611 & 108711	5 bar
Working temperature range:	0 to 65°C
Ambient temperature range:	-30 to 60°C
Medium temperature - opening:	3°C
Medium temperature - closing:	4°C
Air temperature - opening:	5°C
Accuracy:	±1°C
Connection - compression:	BS EN 1254
Connection threads:	BS EN ISO 228-1
Kv - straight path:	601 & 611 55 m³/hr
	701 & 711 70 m³/hr
	801 72 m³/hr
	301 64 m³/hr

P - bar	T <sub>outside</sub> - °C	Flow Rate - l/h
3	-5	0.5
	-20	1

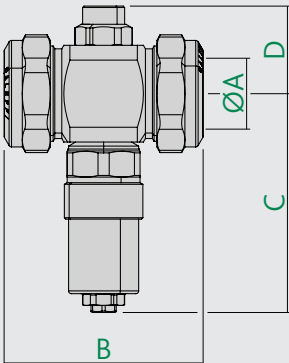
Dimensions



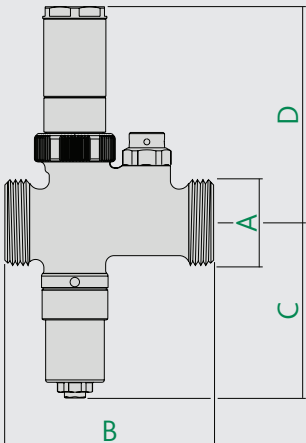
108601



108701 & 108801



108301

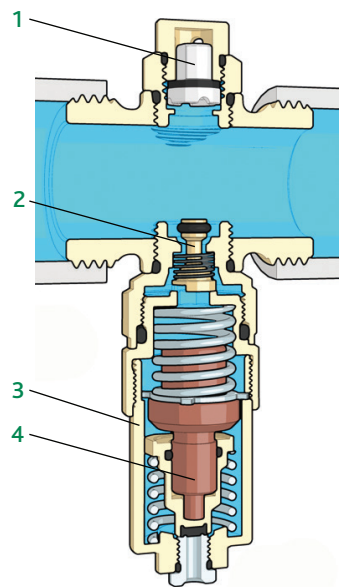


108611 & 108711

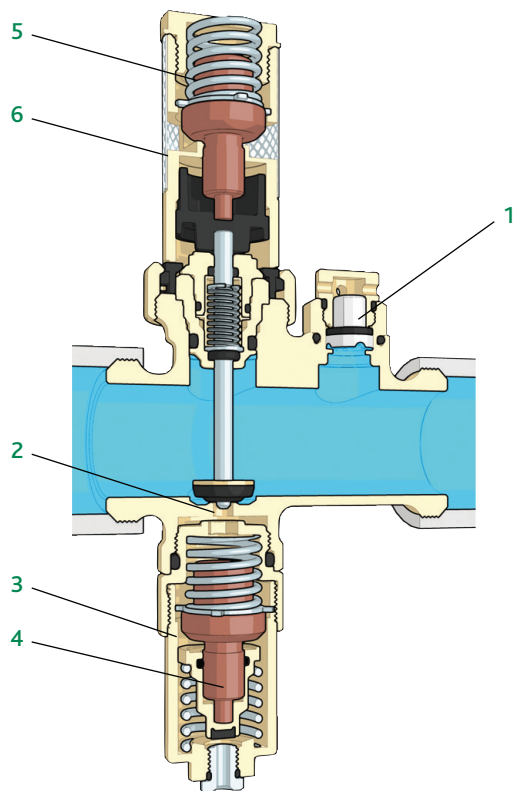
Ref No	A	B	C	D
108601	G1	52	78.6	32
108701	G1¼	59	83	36
108801	G1½	62	83	36
108301	28mm	71	80	33
108611	G1	81	74	91
108711	G1¼	91	74	91

# iStop® antifreeze valves including valves with air sensor

## Components



- | Item | Component                          |
|------|------------------------------------|
| 1    | Vacuum breaker                     |
| 2    | Obturator                          |
| 3    | Water temperature sensor cartridge |
| 4    | Water temperature sensor           |

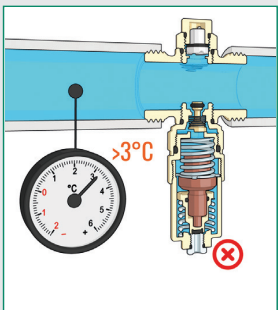
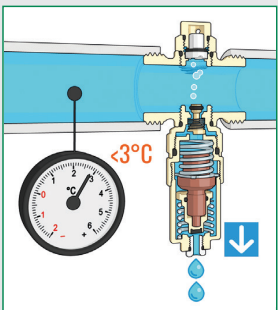
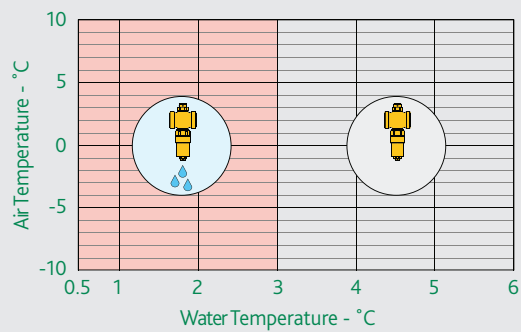


- | Item | Component                          |
|------|------------------------------------|
| 1    | Vacuum breaker                     |
| 2    | Obturator                          |
| 3    | Water temperature sensor cartridge |
| 4    | Water temperature sensor           |
| 5    | Air temperature sensor             |
| 6    | Air temperature sensor cartridge   |

## Operating Principle

### iStop Antifreeze valve

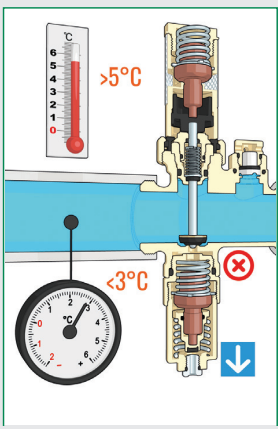
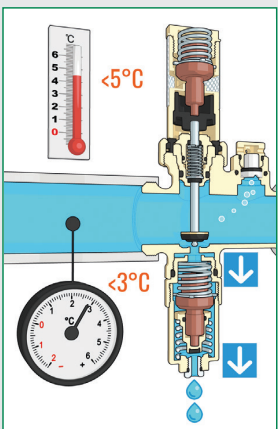
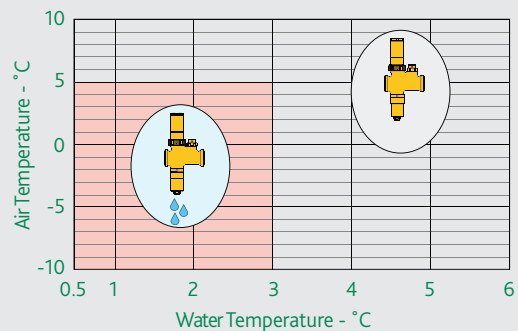
When the temperature of the water in the pipe drops below 3°C, the obturator of the antifreeze valve opens and drains off the water. The obturator closes when the medium temperature returns to 4°C.



### iStop Antifreeze valve with air sensor

When the temperature of the water in the pipe drops below 3°C and the air temperature is below 5°C the obturator of the antifreeze valve opens and drains off the water.

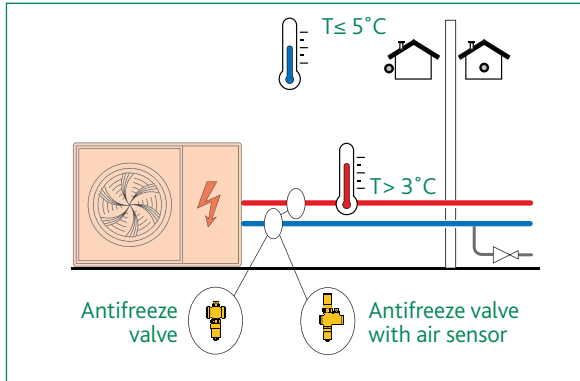
When the temperature of the water in the pipe drops below 3°C but the air temperature is above 5°C the obturator of the antifreeze valve remains closed.



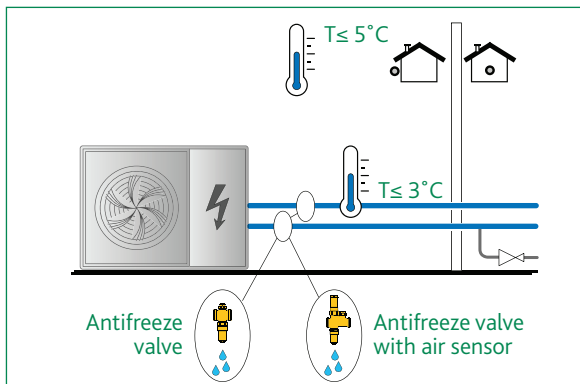
# iStop® antifreeze valves including valves with air sensor

## Operation

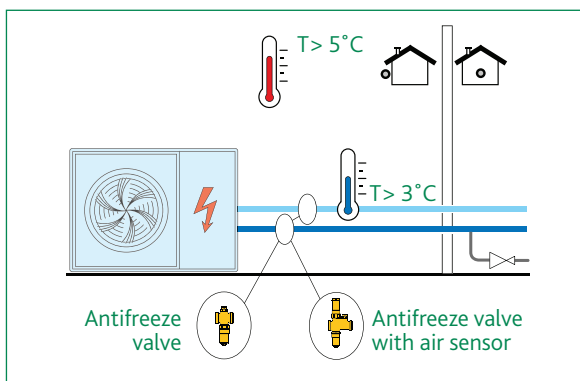
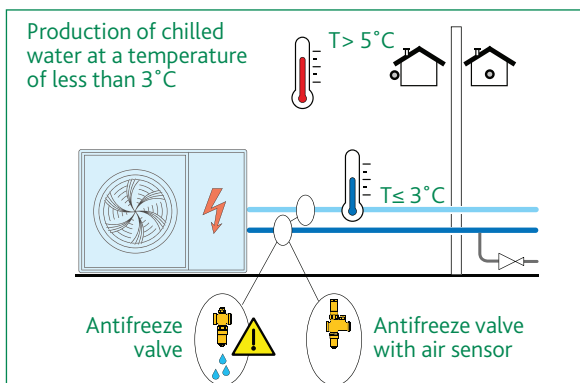
### Operating in winter with heating



### Operating in winter without electricity



### Operating in summer - cooling



## Installation

The iStop valve must only be installed in a vertical position, with the outlet facing downwards, to allow the draining water to flow out and free from obstructions.

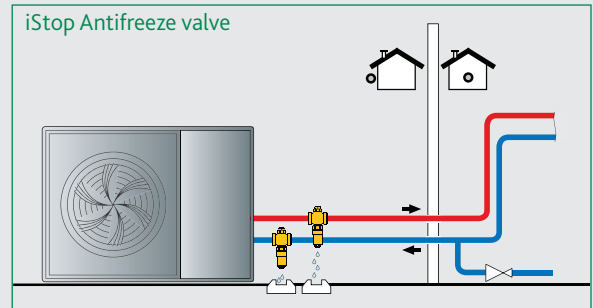
It is recommended to install the antifreeze valves on both the flow and return pipes, otherwise water may be left in one pipe which could then freeze.

The antifreeze valves must be installed outdoors, where the lowest temperatures can be reached if the heat pump is not operating.

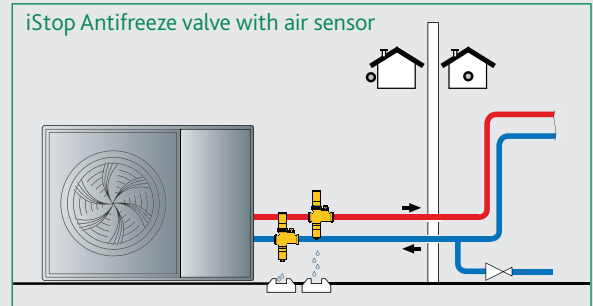
They must also not be placed close to heat sources which could interfere with their function.

For the device to work properly, keep the system under pressure at all times, even when draining the antifreeze valve.

### iStop Antifreeze valve



### iStop Antifreeze valve with air sensor



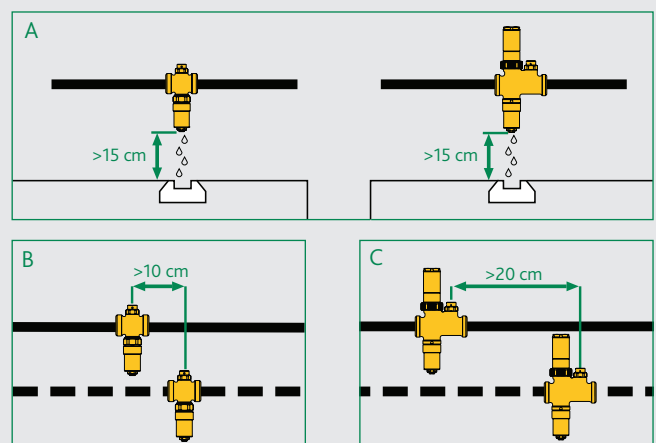
Leave at least 15 cm clearance from the ground (fig. A) to prevent the block of ice which may form below from stopping water from draining from the valve.

Route the drain to a suitable collection point.

Keep a distance of at least 10 cm between the antifreeze valves (fig. B) and 20 cm between the antifreeze valves with air sensor (fig C).

The valve must be free of insulation for the system to work properly.

When installed outdoors, the antifreeze valve must be protected from rain, snow and direct sunlight.

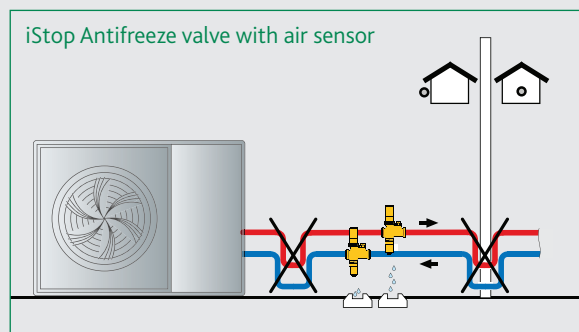
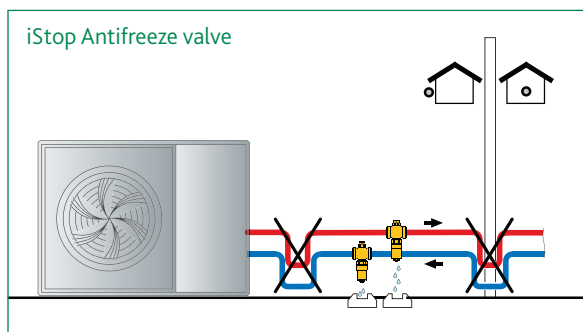


# iStop® antifreeze valves including valves with air sensor

## Presence of Traps

Do not make any trap connections.

If the shape of the connection pipes has the potential to create a trap effect (as shown below), part of the pipe will not be able to drain and frost protection will no longer be ensured.



## Maintenance Antifreeze Valve

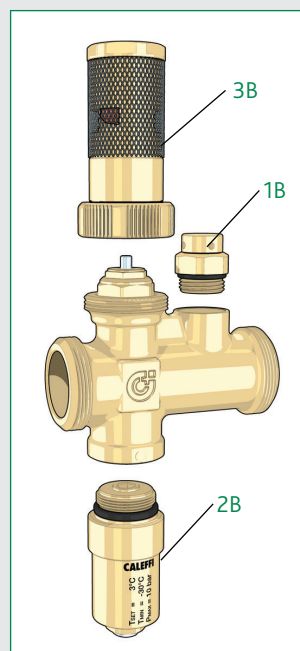
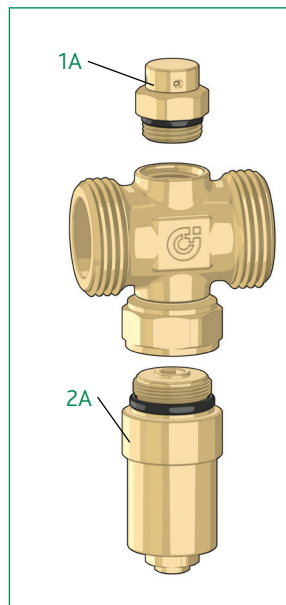
### Vacuum Breaker Replacement

In the event of a malfunction, the vacuum breaker (1A) can be replaced.

### Thermostatic Cartridge Replacement

In the event of a malfunction, the thermostatic cartridge (2A) can be replaced.

An automatic shut-off cock prevents the water from draining while the cartridge is being replaced, thereby keeping the system pressurised.



## Maintenance Antifreeze Valve

### with Air Sensor

### Air Sensor Cartridge Replacement

In the event of a malfunction, the air sensor cartridge (3B) can be replaced.

### Vacuum Breaker Replacement

In the event of a malfunction, the vacuum breaker (1B) can be replaced.

### Thermostatic Cartridge Replacement

In the event of a malfunction, the thermostatic cartridge (2A) can be replaced.

Replace the cartridge only if the outdoor temperature exceeds 5°C.

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