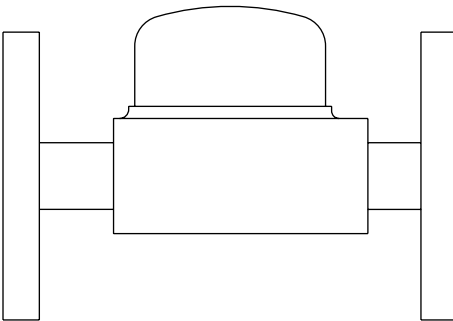


**SBP30**

**Sealed Balanced Pressure Thermostatic Steam Trap**  
**Installation and Maintenance Instructions**

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- 1. General  
safety information*
- 2. General  
product information*
- 3. Installation*
- 4. Commissioning*
- 5. Operation*
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- 7. Spare parts*

# — 1. *General safety information* —

Safe operation of the unit can only be guaranteed if it is properly installed, commissioned and maintained by a qualified person (see Section 11 of the attached Supplementary Safety Information) in compliance with the operating instructions. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment must also be complied with.

## **Isolation**

Consider whether closing isolating valves will put any other part of the system or personnel at risk. Dangers might include; isolation of vents and protective devices or alarms. Ensure isolation valves are turned off in a gradual way to avoid system shocks.

## **Pressure**

Before attempting any maintenance consider what is or may have been in the pipeline. Ensure that any pressure is isolated and safely vented to atmospheric pressure before attempting to maintain the product, this is easily achieved by fitting Spirax Sarco depressurisation valves type DV (see separate literature for details). Do not assume that the system is depressurised even when a pressure gauge indicates zero.

## **Temperature**

Allow time for temperature to normalise after isolation to avoid the danger of burns and consider whether protective clothing (including safety glasses) is required.

## **Disposal**

The product is recyclable. No ecological hazard is anticipated with the disposal of this product providing due care is taken.

# — 2. General product information —

## 2.1 General description

The SBP30 is a maintenance free sealed, stainless steel balanced pressure thermostatic steam trap with horizontal connections. It is designed for steam pressures up to 30 bar g (435 psi g) and is unaffected by waterhammer.

**Note:** For further information see the following Technical Information Sheet, TI-P120-01 which gives full details of: Materials, sizes and pipe connections, dimensions, weights, operating ranges and capacities.

<b>Standard unit</b>	<b>SBP30,</b> low capacity without check valve with 'STD' fill capsule
	<b>SBP30LCV,</b> low capacity with check valve
<b>Also available</b>	<b>SBP30H,</b> high capacity without check valve
	<b>SBP30HCV,</b> high capacity with check valve

**Note:** When placing an order always state capsule fill.

### Capsule fill and operation

As standard the trap is supplied with a 'STD' type filling for operation at approximately 12°C (21.6°F) below steam saturation temperature.

**Optionally,** the trap can be supplied for sub-cooled 'SUB' operation at approximately 24°C (43.2°F) below steam saturation temperature

## 2.2 Sizes and pipe connections

½" and ¾" screwed BSP or NPT.

½" and ¾" socket weld ends to BS 3799/ANSI B 16.11 Schedule 80.

DN15 and DN20 standard flange ANSI B 16.5 Class 150 and ANSI 300, BS 4504 and DIN PN40, PN25 and PN16.

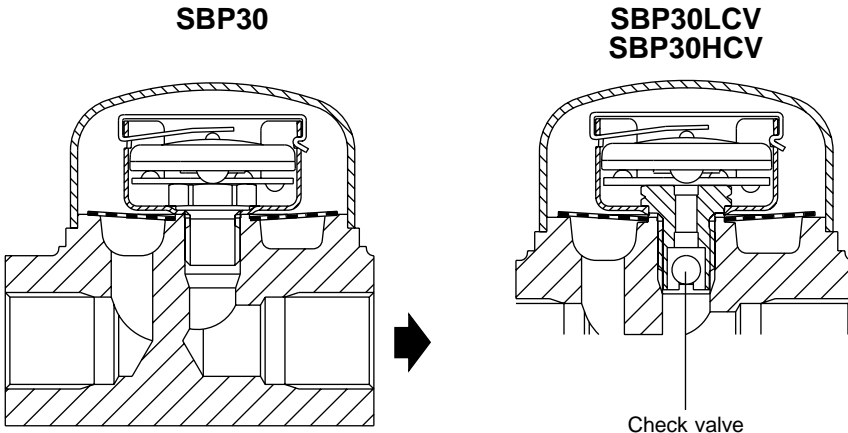
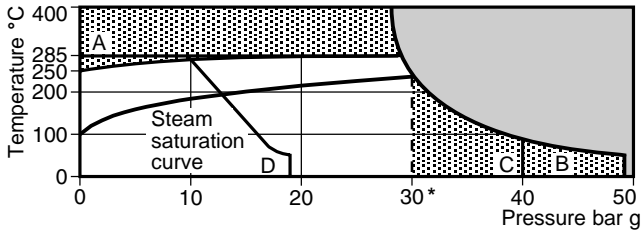



Fig. 1


## 2.3 Limiting conditions (ISO 6552)

Maximum design conditions	ANSI 300	
PMA - Maximum allowable pressure	50 bar g	(725 psi g)
TMA - Maximum allowable temperature	400°C	(752°F)
PMO - Maximum operating pressure	30 bar g	(435 psi g)
TMO - Maximum operating temperature	285°C	(545°F)
Designed for a maximum cold hydraulic test pressure of:	75 bar g	(1087.5 psi g)

## 2.4 Operating range



 The product must not be used in this region.

 The product should not be used in this region or beyond its operating range as damage to the internals may occur.

\*PMO Maximum operating pressure 30 bar g (435 psi g).

A - B Screwed, socket weld and flanged ANSI 300.

A - C Flanged BS 4504 PN40.

A - D Flanged ANSI 150.

**Note:** The pressure limit on the flange type should be greater than the pressure limit of the internal mechanism.

## 2.5 Materials

The body, cover and all of the internals are stainless steel.

**Note:** Carbon steel flanges are supplied as standard. Stainless steel flanges can be supplied as an option (at extra cost).

## 2.6 Certification

The product is available with material certification to EN 10204 3.1.B for body and cover as standard. All certification must be requested at the time of order placement.

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## 3. *Installation*

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**Note:** Before actioning any installation observe the 'Safety information' in Section 1.

Referring to the Installation and Maintenance Instructions, name-plate and Technical Information Sheet, check that the product is suitable for the intended installation:

- 3.1** Check materials, pressure and temperature and their maximum values. If the maximum operating limit of the product is lower than that of the system in which it is being fitted, ensure that a safety device is included in the system to prevent overpressurisation.
- 3.2** Determine the correct installation situation and the direction of fluid flow.
- 3.3** Remove protective covers from all connections.
- 3.4** The trap is designed for installation with the capsule in a horizontal plane and the cover at the top, preferably with a drop leg immediately preceding the trap.
- 3.5** When welding the trap into the pipeline, there is no need to remove the capsule, providing the welding is done by the electric arc method.
- 3.6** Once installed open isolation valves slowly until normal operating conditions are achieved. Check for leaks and correct operation.

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## 4. *Commissioning*

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After installation or maintenance ensure that the system is fully functioning. Carry out tests on any alarms or protective devices.

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## 5. *Operation*

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At the heart of the balanced pressure thermostatic trap is a liquid filled stainless steel capsule containing a pair of diaphragms. The liquid is selected to boil at a temperature slightly below that of steam.

On start-up, cold air and condensate enter the trap. As the capsule is also cold, the valve is open and the air and condensate are discharged. The capsule warms up as the condensate approaches steam temperature. Its liquid filling boils, and the resultant vapour pressure acting on the diaphragms pushes the valve head towards the seat, fully closing at the selected discharge temperature before any steam is lost.

As the condensate within the trap cools, the vapour filling condenses and the internal capsule pressure falls. The valve reopens, discharges condensate and the cycle repeats.

The discharge characteristics of the trap will depend on the pressure, temperature and load conditions and the location of the trap.

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## 6. Maintenance

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**Note: Before actioning any maintenance program observe the 'Safety information' in Section 1.**

The SBP30 is a sealed, balanced pressure thermostatic steam trap. It is non-adjustable and requires no maintenance.

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## 7. Spare parts

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The SBP30 is a sealed, non-maintainable, steam trap. Therefore, no spares are available.

### 7.1 How to order a new product

**Example:** 1 off ½" Spirax Sarco SBP30 sealed balanced pressure thermostatic steam trap. Screwed BSP and 'STD' fill capsule for operation at approximately 12°C (21.6°F) below steam saturation temperature.



