



## BTM7 and BTM7 Food+ Balanced Pressure Thermostatic Clean Steam Trap

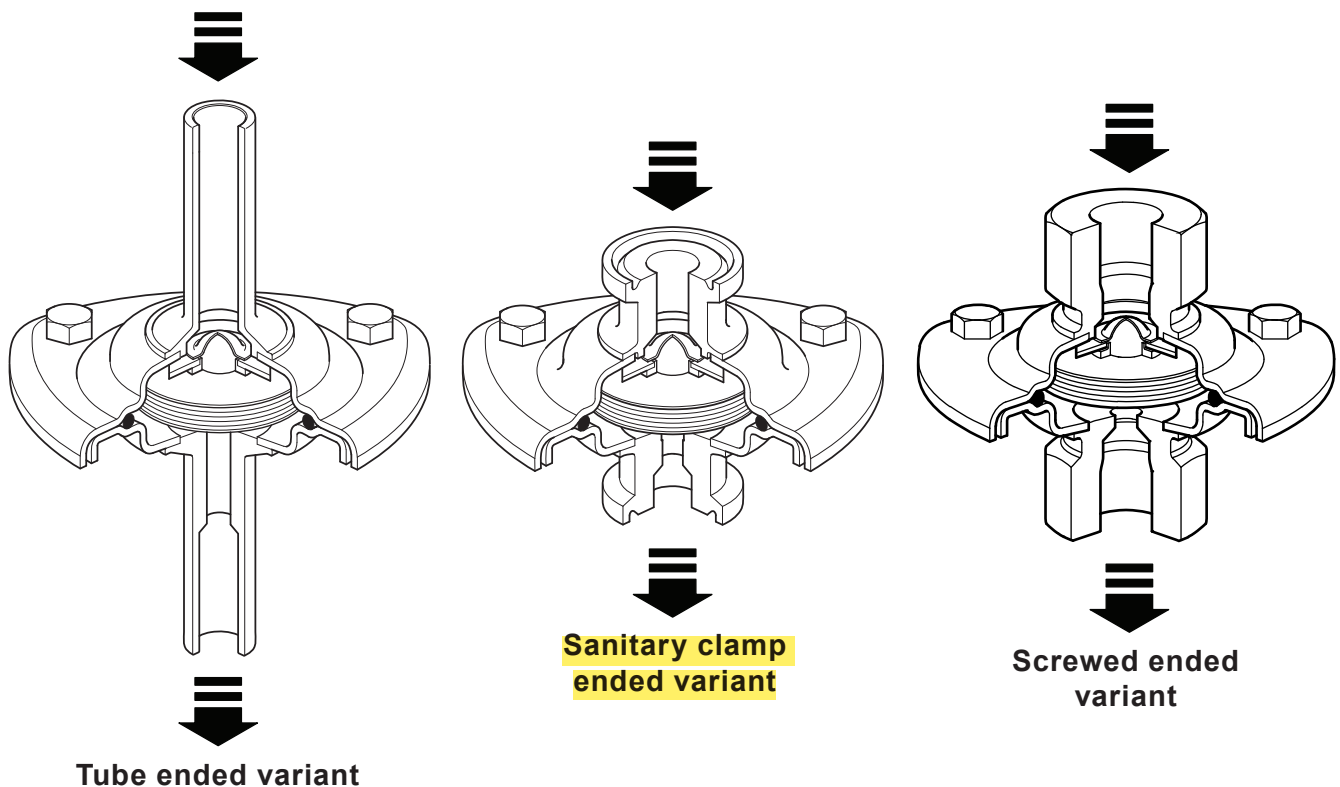
### Description

#### BTM7

The Spirax Sarco BTM7 is a maintainable thermostatic steam trap designed to remove condensate from clean (chemical free) steam systems with minimal condensate retention. Applications include steam barriers, block and bleed installations, mains drainage and CIP/SIP of vessels and reactors and process lines. Manufactured in 316L stainless steel with minimal crevices and a typical internal surface finish of 1.6 - 3.2 µm Ra, it is self-draining and operates close to steam temperature. Each trap is individually packaged within an "ISO CLASS 7" clean environment with protective end caps and sealed in a protective plastic bag.

#### BTM7 Food+

Designed, manufactured and approved for Steam and Condensate applications. The BTM7 Food+ range complies with EC1935:2004 Food Contact Materials. It also complies with regulation EC2023:2006 on good manufacturing practice for materials and articles intended to come into contact with food. A list of the materials that could come directly or indirectly into contact with foodstuffs can be found in the Declaration of Compliance available for this product.



### Options and available types

Contact Spirax Sarco for further information

**Fixed bleed** to ensure **fail open** operation.

**Special connections** to suit most piping systems.

## Standards

- The BTM7 has been designed and manufactured in general accordance with ASME BPE standards.
- The unit also complies with the requirements of the European Pressure Equipment Directive 2014/68/EU.
- FDA CFR Title 21. Paragraph 177.2600.
- USP Class VI Biological Reactivity Cytotoxicity Testing In-Vivo <88> extracted at 121 °C for 1 hour. ADI Free (Animal Derived Ingredients) for materials used, manufacturing processes involved in producing the part.
- TSE/BSE Free as Certified.
- Full material lot number product traceability.

## Sizes and pipe connections

|                                      | Standard                                | Issue   | Type     | Sizes |      |      |      |      |      |      |  |
|--------------------------------------|---|---------|----------|-------|------|------|------|------|------|------|--|
|                                      |   |         |          |       |      | 1/2" | 3/4" |      |      |      |  |
| <b>Sanitary clamp ended variants</b> | ASME BPE                                |         | Type A   |       |      | 1/2" | 3/4" |      |      |      |  |
|                                      |   |         | Type B   |       |      |      |      | 1"   |      |      |  |
|                                      | DIN32676                                | 2001-02 | Series 2 |       |      | DN15 |      |      |      |      |  |
|                                      |   |         | Series A |       |      | DN15 |      |      |      |      |  |
|                                      |   | 2009-05 | Series B | DN8   | DN10 | DN15 | DN20 | DN25 | DN32 | DN40 |  |
| Series C                             |   |         |          | 1/2"  | 3/4" | 1"   |      |      |      |      |  |
| <b>Tube ended variants</b>           | DIN11866                                | 2016-11 | Series A |       |      | DN15 |      |      |      |      |  |
|                                      |   |         | Series C |       |      | DN15 | DN20 | DN25 |      |      |  |
|                                      | DIN11850                                | 1999-01 | Series 1 |       | DN10 | DN15 |      |      |      |      |  |
|                                      |   |         | Series 2 |       |      | DN15 |      |      |      |      |  |
|                                      | ISO1127                                 | 1997    | Series 1 | DN8   | DN10 | DN15 |      |      |      |      |  |
| <b>Screw ended variants</b>          | Socket BSP T Rp (ISO 7-1)<br>Socket NPT |         |          |       | 1/4" | 1/2" | 3/4" | 1"   |      |      |  |

### Notes:

1. On request other connection options are available at extra cost. Please note that seat end spares for specially requested connections will require a minimum order quantity - Please consult Spirax Sarco for further information.
2. BTM7 Food+ available as tabulated above for ASME BPE and BSP connections. NPT available in 1/4" ONLY.

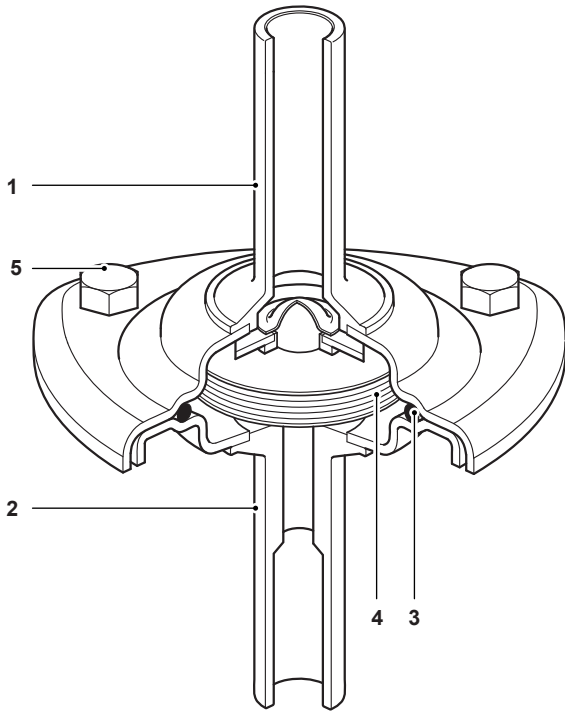
## Certification

This product is available with the following certification:

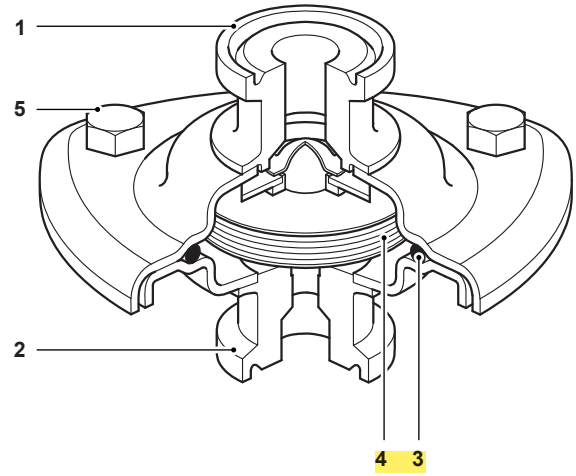
- EN 10204 3.1 Material Certification Pressure Retaining Parts - Chargeable
- EN 10204 3.1 Material Certification for Wetted Parts including the WFI element fill (also available for element spares) - Chargeable.
- Typical Internal Surface Finish - F.O.C.
- Certificate of Compliance for FDA, USP Class VI Testing Statement, and ADI Free Statement - F.O.C.
- TSE-BSE Statement - F.O.C.
- EC1935:2004 Declaration of Compliance F.O.C. (Food+ range only)
- (EC)2023:2006 Good Manufacturing Practice for Materials and Articles Intended to come into Contact with Food.
- Declaration of Conformity BS EN ISO 14644-1:2015 Class 7 Clean Room - F.O.C.
- Typical Test Report - F.O.C.

**Note:** All certification/inspection requirements must be stated at the time of order placement, and may be subject to additional cost as detailed above.

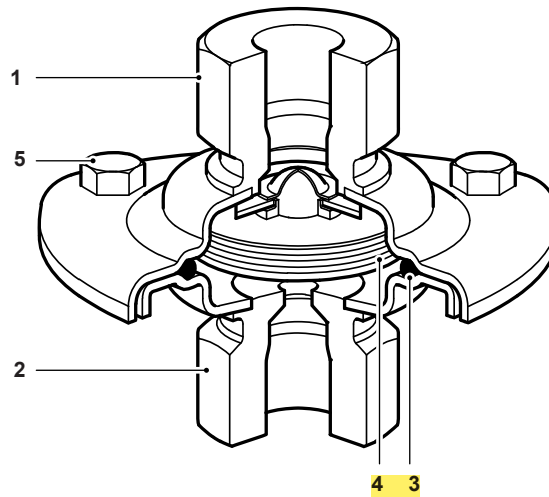
## Materials



**Tube ended variant**



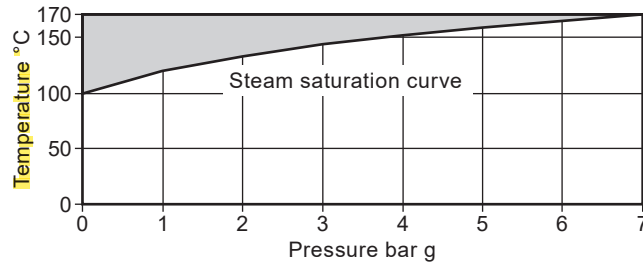
**Sanitary clamp ended variant**



**Screwed ended variant**

| No. | Part                    | Material                   |                   |
|-----|-------------------------|----------------------------|-------------------|
| 1   | Body (inlet)            | Stainless steel            | 316L (1.4404)     |
| 2   | Body with seal (outlet) | Stainless steel            | 316L (1.4404)     |
| 3   | 'O' ring                | FKM                        |                   |
| 4   | Capsule element         | Stainless steel            | 316L (1.4404)     |
| 5   | Nuts and bolts          | Stainless steel            | BS 6105 Gr. A4 80 |
|     | Washers                 | Austenitic stainless steel |                   |

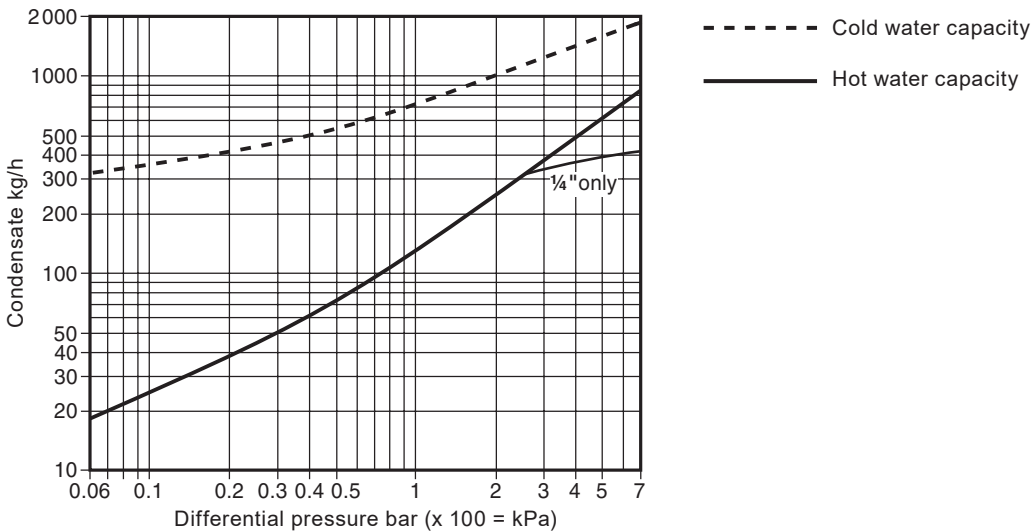
## Pressure/temperature limits



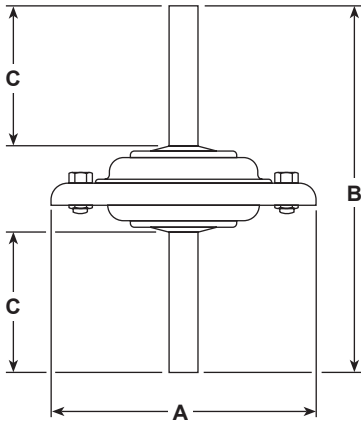
The product should not be used in this region as damage to the internals may occur.

|  |                  |
|--|------------------|
| Body design conditions                                     | PN7              |
| PMA Maximum allowable pressure                             | 7 bar g @ 170 °C |
| TMA Maximum allowable temperature                          | 170 °C @ 7 bar g |
| Minimum allowable temperature                              | -10 °C           |
| PMO Maximum operating pressure for saturated steam service | 7 bar g          |
| TMO Maximum operating temperature                          | 170 °C           |
| Minimum operating temperature                              | 0 °C             |
| Designed for a maximum cold hydraulic test pressure of:    | 10.7 bar g       |

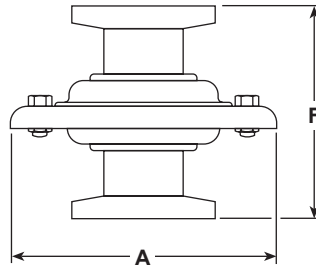
## Capacities



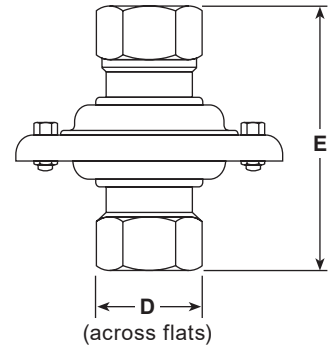
**Dimensions/weights** (approximate) in mm and kg.



**Tube ended variant**



**Sanitary clamp ended variant**



**Screwed ended variant**

Products each weigh 1 kg maximum \*

| Standard  | Sizes  | A  | B<br>Tube | C  | D<br>Screwed   | E<br>Screwed   | F<br>Sanitary Clamp  | Weight |
|---|--|----|-----------|----|----------------|----------------|--|--------|
| <b>Sanitary Clamp ended variants</b>                                      |  |    |           |    |                |                |  |        |
| ASME BPE<br>Types A and B,<br>DIN32676 Series 2 + A, B,<br>and C Variants | DN8,<br>DN10 (1/4"),<br><b>DN15 (1/2")</b> ,<br>DN20 (3/4")<br>DN25 (1")<br>DN32,<br>DN40. | 70 |           |    |                |                | 49 for<br>DN8 to DN15,<br><br>and<br><br>53 for<br>DN25 and DN40 | 1 kg * |
| <b>Tube ended variants</b>  |  |    |           |    |                |                |  |        |
| DIN11866 Series A and C,<br>DIN11850 Series 1 and 2,<br>ISO1127 Series 1  | DN8,<br>DN10,<br>DN15,<br>DN20,<br>DN25  | 70 | 106       | 40 |                |                |  | 1 kg * |
| <b>Screw ended variants</b>   |  |    |           |    |                |                |  |        |
| Socket BSP + NPT  | 1/4",<br>1/2",<br>3/4",<br>1"  | 70 |           |    | 27, 27, 32, 41 | 58, 74, 81, 95 |  | 1 kg * |

## Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P180-05) supplied with the product.

### Installation note:

The trap is designed for installation in vertical lines with the flow downward to ensure self-draining operation. Do not expose element to superheat conditions since over-expansion may result.

Suitable isolation valves must be installed to allow for safe maintenance/replacement.

### How to order

**Example:** 1 off Spirax Sarco DN15 BTM7 maintainable thermostatic clean steam trap with tube ends to ISO 1127, Series 1. (21.3 mm O/D x 1.6 mm wall thickness). Tangent length of tube ends to be 40 mm for ease of orbital welding. Body to be self-draining. Suitable for pressures up to 7 bar g.

### Spare parts

Available parts are shown in solid outline. Parts drawn in a grey line are not available as spares.

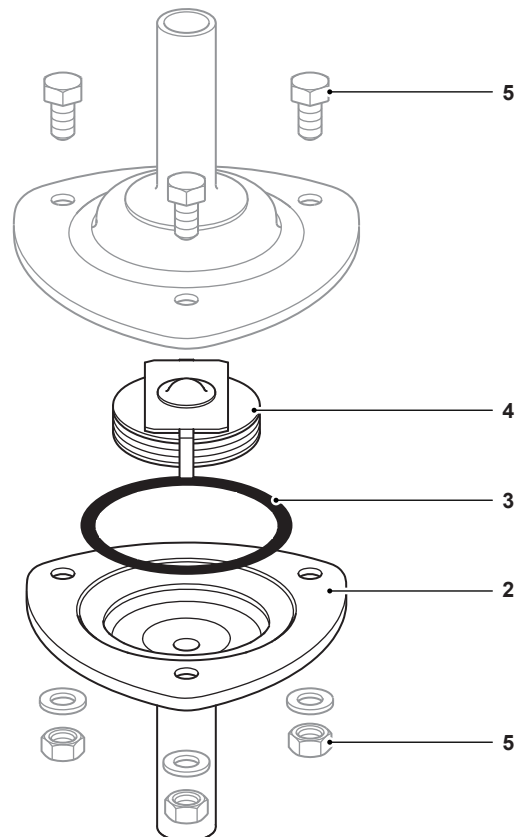
#### Available spares

|   |   |
|---|---|
| Capsule element assembly                    | 4 |
| 'O' ring (packet of 3)                      | 3 |
| Body with seat (outlet) - state connections | 2 |



#### How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size, type and end connection of the trap.

**Example:** 1 off Element assembly for a Spirax Sarco 1/2" BTM7 thermostatic clean steam trap having screwed NPT connections.



### Recommended tightening torques

| Item | Part           |  or<br>mm |  | N m |
|------|----------------|--|---|-----|
| 5    | Nuts and bolts | 8 A/F  | M5  | 3-4 |