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BTM7 and BTM7 Food+ Balanced Pressure Thermostatic Clean Steam Trap

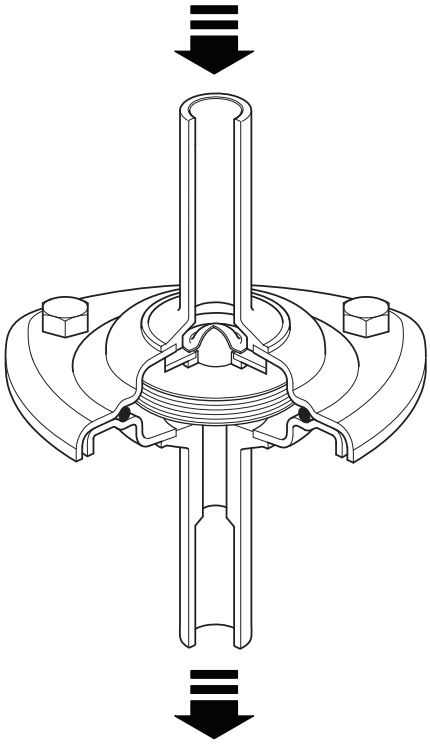
Description

BTM7

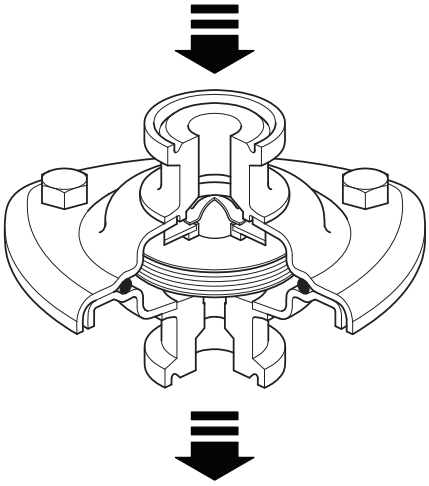
The Spirax Sarco BTM7 is a maintainable thermostatic steam trap designed to remove condensate from clean (chemical free) steam systems with minimal condensate retention. Applications include steam barriers, block and bleed installations, mains drainage and CIP/SIP of vessels and reactors and process lines. Manufactured in 316L stainless steel with minimal crevises 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+

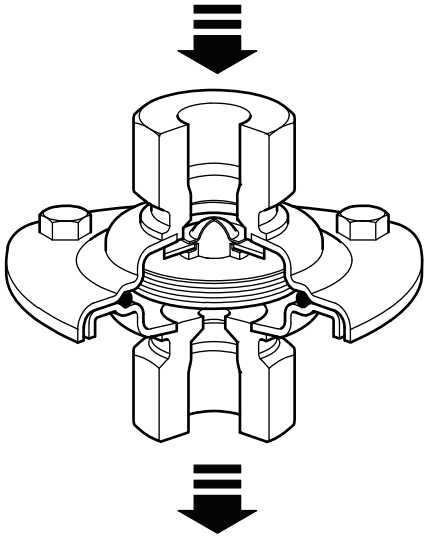
Designed, manufactured and approved for Steam and Condensate applications. The BTM7 Food+ range complies with EC1935:2004 Food Contact Materials. It also complies with regulation EC2023:2006 on good manufacturing practice for materials and articles intended to come into contact with food. A list of the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



Tube ended variant



Sanitary clamp ended variant



Screwed ended variant

Options and available types

Contact Spirax Sarco for further information

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

Special connections to suit most piping systems.

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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						
Sanitary clamp ended variants	ASME BPE		Type A			½"	¾"			
			Type B					1"		
	DIN32676	2001-02	Series 2			DN15				
		2009-05	Series A			DN15				
			Series B	DN8	DN10	DN15	DN20	DN25	DN32	DN40
			Series C			½"	¾"	1"		
Tube ended variants	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				
Screw ended variants	Socket BSP T Rp (ISO 7-1) Socket NPT				¼"	½"	¾"	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 ¼" 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.

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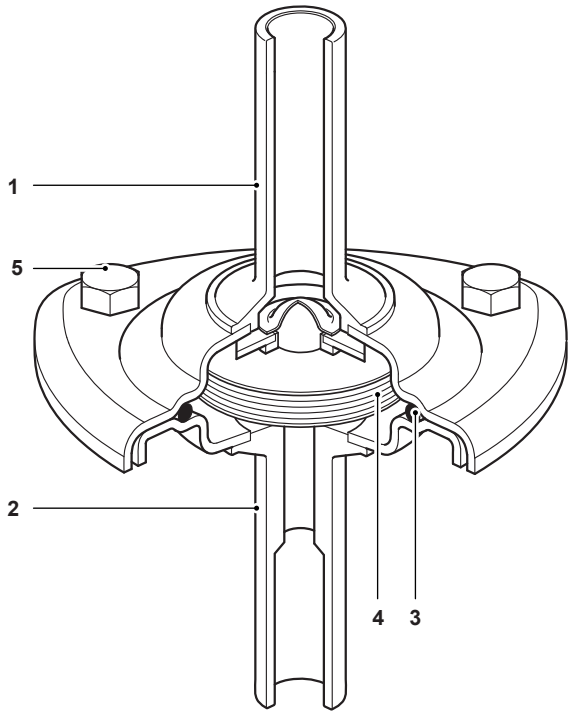
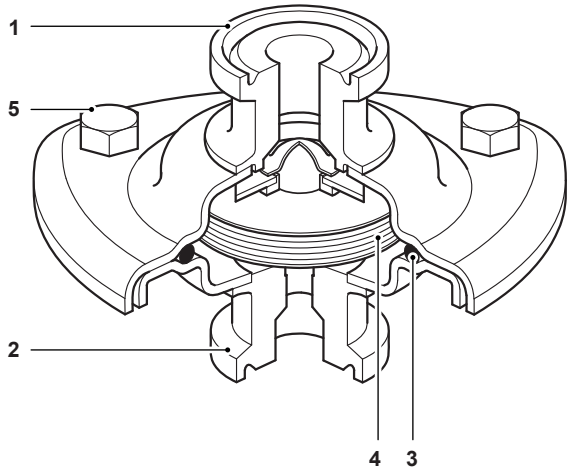
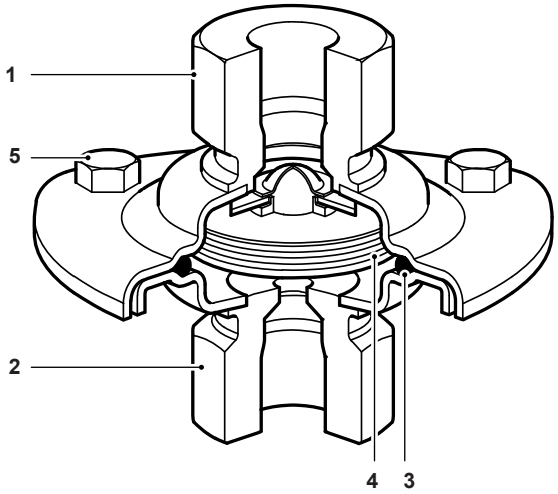
Materials



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	

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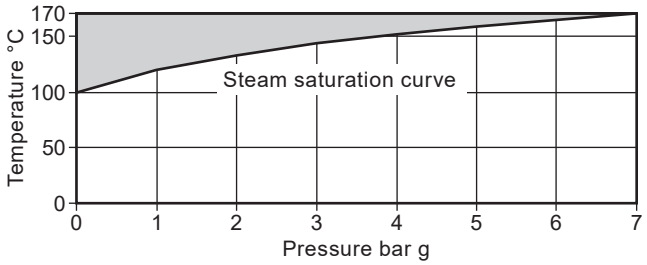
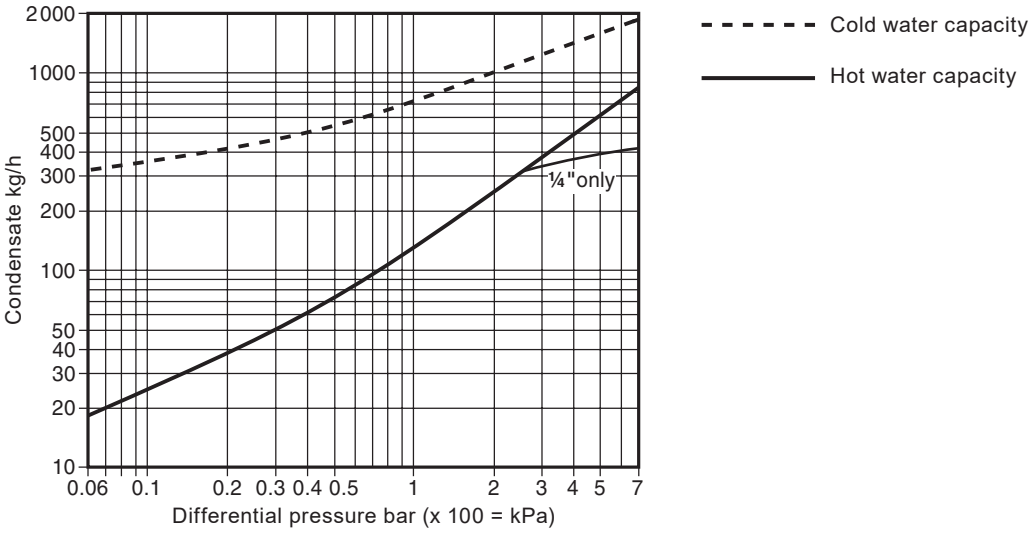
Pressure/temperature limits



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



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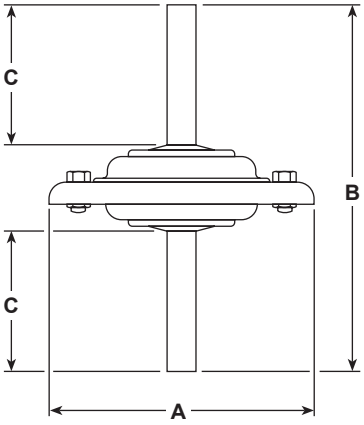
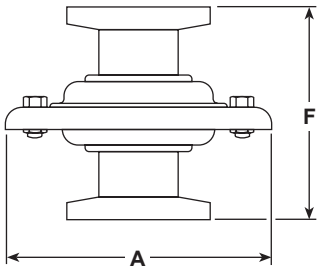
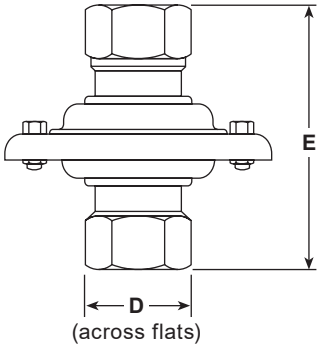
Dimensions/weights (approximate) in mm and kg.



Tube ended variant



Sanitary clamp ended variant



Screwed ended variant

Products each weigh 1 kg maximum *

Standard	Sizes	A	B Tube	C	D Screwed	E Screwed	F Sanitary Clamp	Weight
Sanitary Clamp ended variants								
ASME BPE Types A and B, DIN32676 Series 2 + A, B, and C Variants	DN8, DN10 (¼"), DN15 (½") DN20 (¾") DN25 (1") DN32, DN40.	70					49 for DN8 to DN15, and 53 for DN25 and DN40	1 kg *
Tube ended variants								
DIN11866 Series A and C, DIN11850 Series 1 and 2, ISO1127 Series 1	DN8, DN10, DN15, DN20, DN25	70	106	40				1 kg *
Screw ended variants								
Socket BSP + NPT	¼", ½", ¾", 1"	70			27, 27, 32, 41	58, 74, 81, 95		1 kg *

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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.

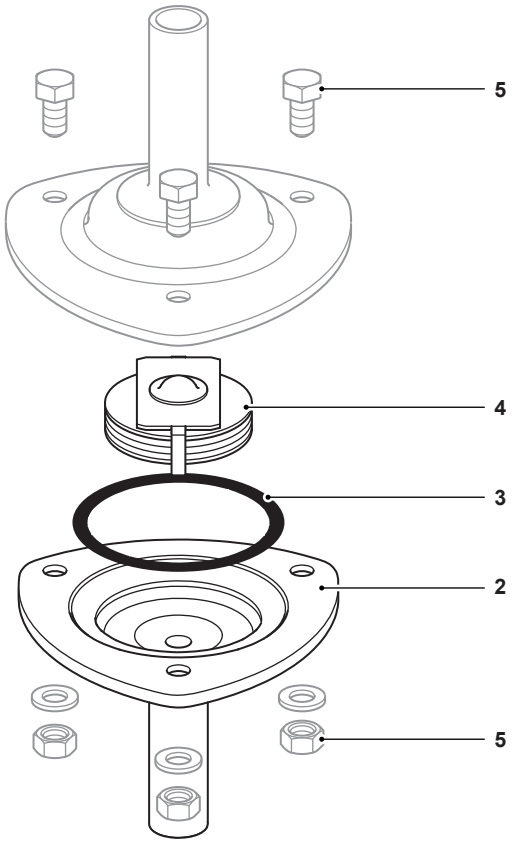
Spare parts

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 ½" BTM7 thermostatic clean steam trap having screwed NPT connections.



Recommended tightening torques

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