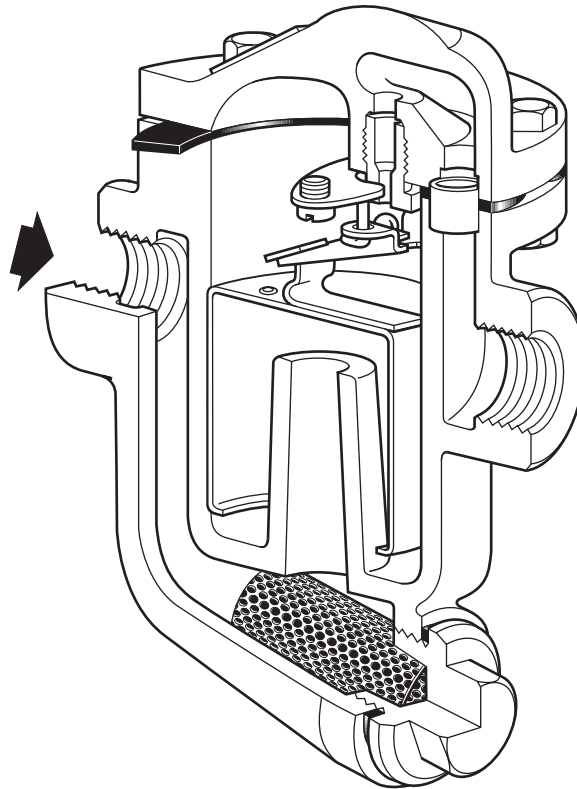


**spirax**  
**sarco**

## HM Series Cast Iron Inverted Bucket Steam Traps



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### Description

The Spirax Sarco HM Series of cast iron inverted bucket steam traps are designed for installation in horizontal pipework. They are available in screwed connections, with an optional blowdown valve.

### Sizes and pipe connections

½" - HM00, ¾" - HM10 and 1" - HM12  
Screwed BSP or NPT

### Optional extras

**Integral blowdown valve:-** The HM Series inverted bucket steam traps can be supplied with integral blowdown valves to remove debris from the inlet strainer. For further details see the relevant Technical Information Sheet.

### External air vents

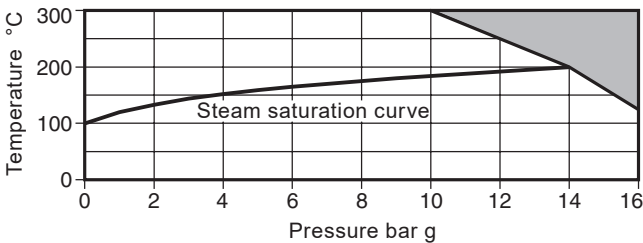
When required, HM Series inverted bucket steam traps can be supplied with separate thermostatic air vents to provide the efficient and quick release of air. Various models, both balanced pressure and bimetallic, are available. Details for the range up to 30 bar g are shown in the relevant sales brochure.

### Diffusers

Where steam traps discharge to atmosphere a diffuser should be fitted to reduce the effect of the blast discharge. The diffuser not only reduces the risk of groundwork erosion and condensate splashback, but also reduces sound pressure levels as well. Available models are detailed in the relevant sales brochure.

Steam traps  
Inverted bucket

Pressure/temperature limits



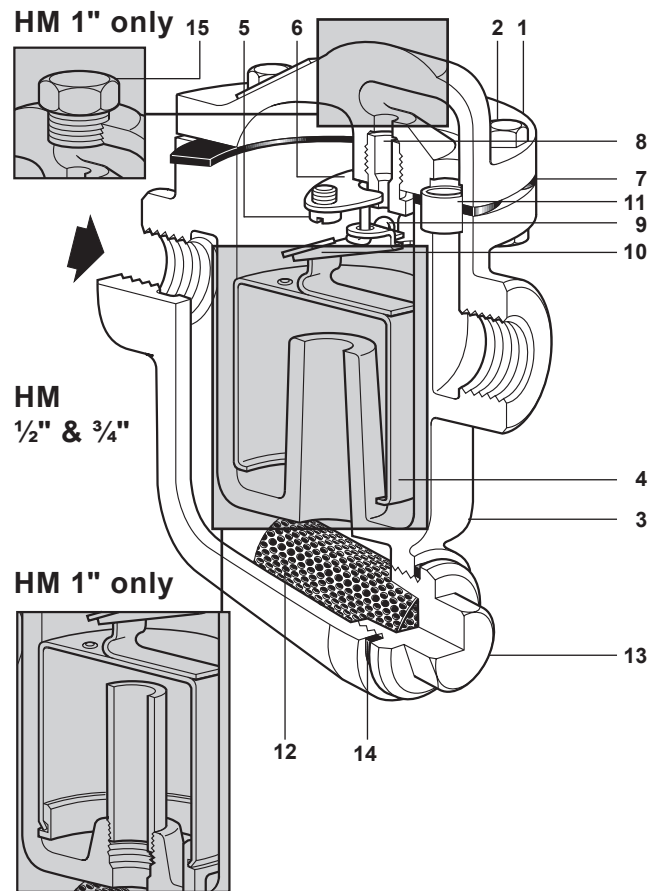
The product **must not** be used in this region.

Body design conditions		PN16
PMA	Maximum allowable pressure	16 bar g
TMA	Maximum allowable temperature	300 °C
PMO	Maximum operating pressure	16 bar g
TMO	Maximum operating temperature	300 °C
Designed for a maximum cold hydraulic test pressure of:		24 bar g

ΔPMX - Maximum differential pressure

Size		ΔPMX - Maximum differential pressure bar				
		4	8.5	10	12.5	14
Screwed	1/2"	HM00/8	HM00/7	HM00/6	-	-
	3/4"	HM10/10	HM10/8	-	HM10/7	-
	1"	HM12/12	HM12/10	-	-	HM12/7

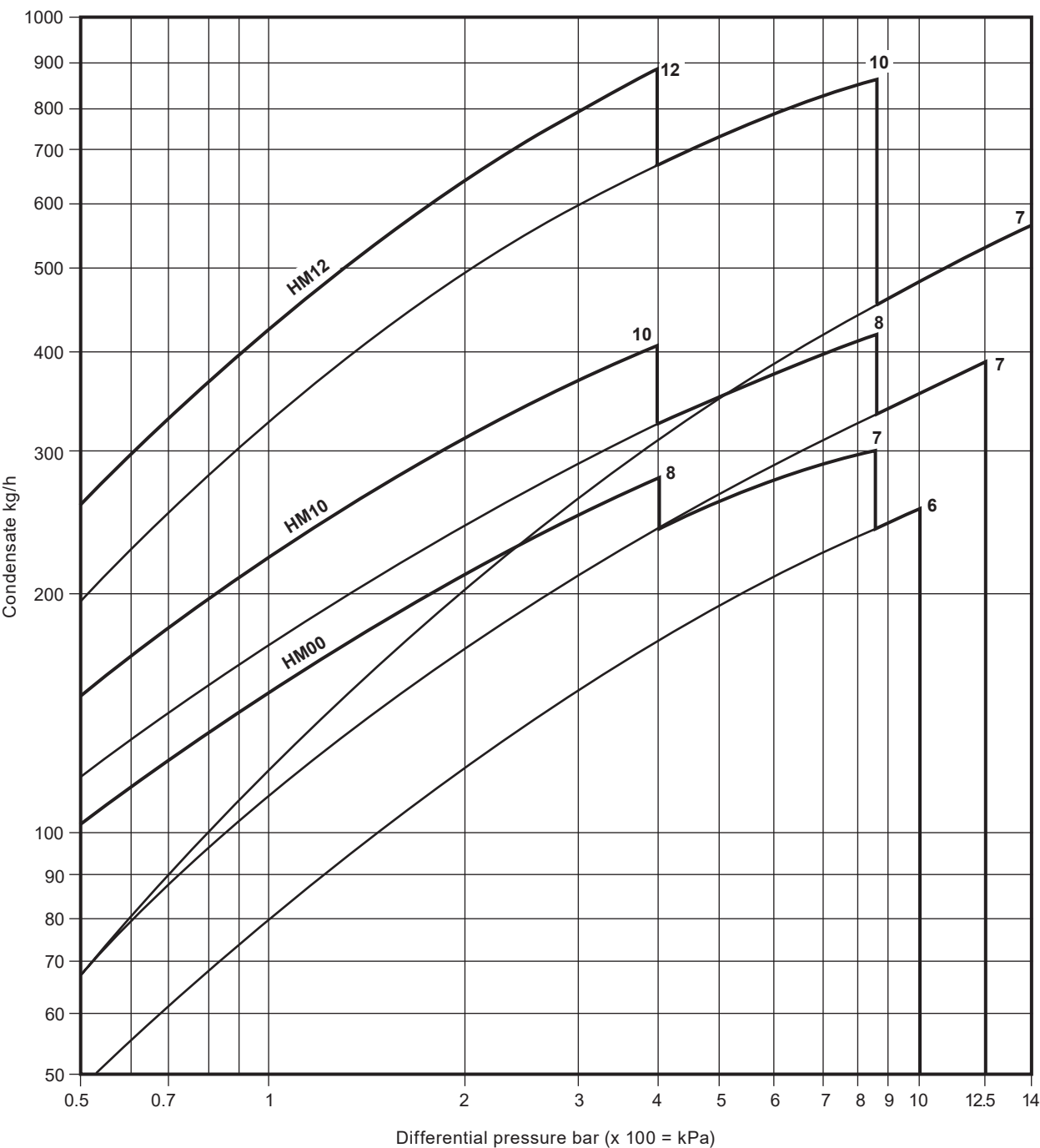
Materials



No.Part		Material	
1	Cover	Cast Iron	DIN 1691 GG 20
	Cover bolts	1/2", 3/4"	Steel BS 3692 Gr.10
	Cover nuts	1/2", 3/4"	Steel BS 3692 Gr.10.9
2	Cover bolts	1"	Steel BS 3692 Gr. 8.8
	Cover nuts	1"	Steel BS 692 Gr. 8
3	Body	Cast iron	DIN 1691 GG 20
4	Bucket	Stainless steel	BS 1449 304 S16
5	Valve guide plate screw	Stainless steel M4.5 x 10	BS 4183 18/8
6	Valve guide plate	Stainless steel	BS 1449 304 S11
7	Cover gasket	Reinforced exfoliated graphite	
8	Valve seat	Stainless steel	AISI 440B
9	Valve	Stainless steel	AISI 440B
10	Valve lever	Stainless steel	BS 1449 321 S31
11	Ferrule	HM00/10	Stainless steel BS 970 321 S31
		HM12	Stainless steel BS 3605 (CFS) 304 S14
12	Strainer screen	HM00	Stainless steel ASTM A240 316L
13	Strainer cap	1/2" and 3/4"	SG iron DIN 1693 GGG 40
		1"	Cast iron DIN 1691 GG 25
14	Strainer gasket	Reinforced exfoliated graphite	
15	Plug	Stainless steel	BS 970 416-537

Steam traps  
Inverted bucket

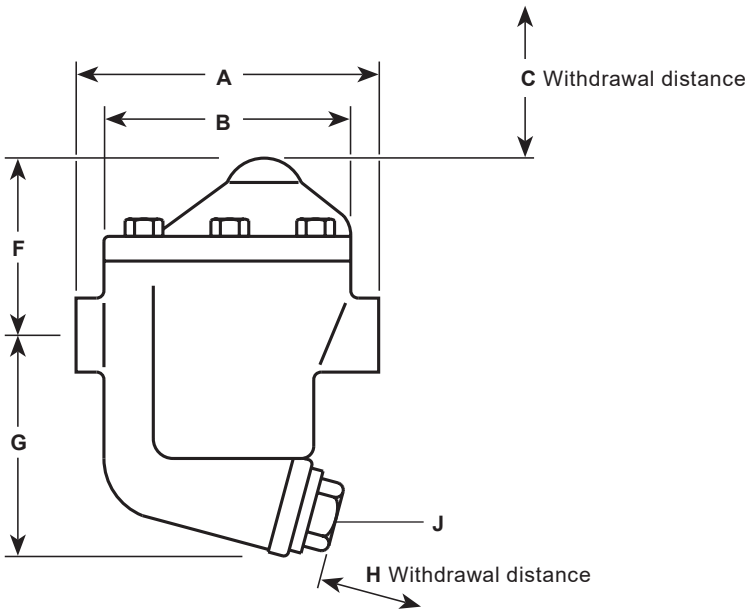
Capacities



Note: Traps should be selected for the most appropriate working pressure differential and not on the basis of load.

Dimensions/weights (approximate) in mm and kg

Size		A	B	C	F	G	H	J	Weight
DN15	½"	120	100	100	73.5	89	65	M28	2.6
DN20	¾"	120	100	140	94.5	107	65	M28	3.2
DN25	1"	180	160	160	145.0	120	85	M32	8.8



Safety information, installation and maintenance

For full safety information and installation and maintenance instructions see IM-S03-11.

Disposal

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

How to order

Example: 1 off Spirax Sarco ¾" HM10/7 inverted bucket steam trap with screwed BSP connections.

Steam traps  
Inverted bucket

Spare parts

The spare parts available are shown in heavy outline. Parts drawn in a grey line are not supplied as spares.

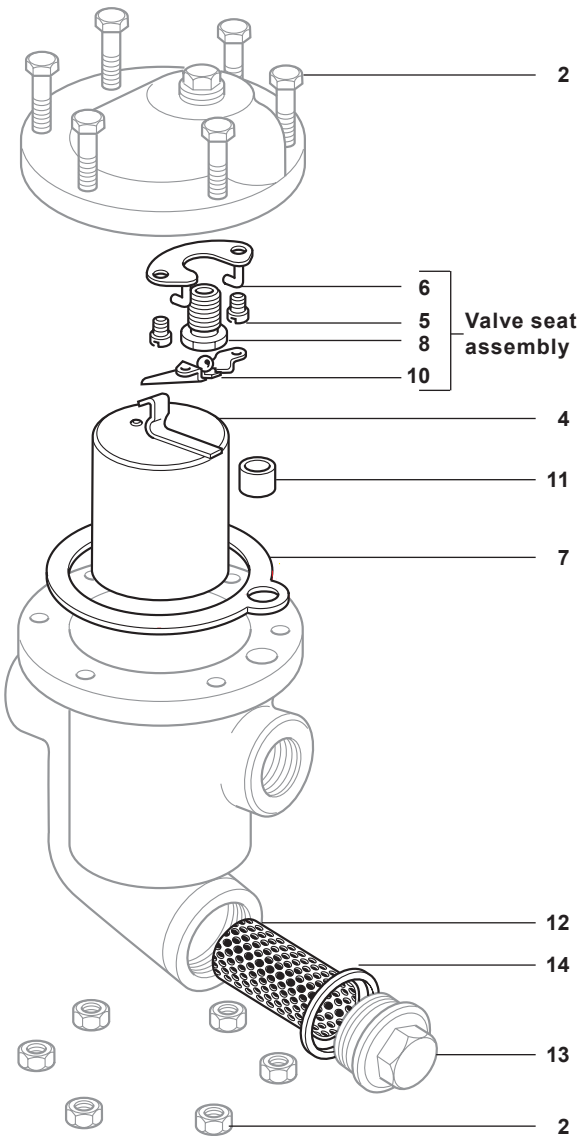
Available spares

Valve and seat assembly	5 (2 off), 6, 8, 10
Bucket	4
Cover gasket and ferrule (packet of 3 each)	7, 11
Strainer screen	12
Strainer screen gasket (packet of 3 each)	14



How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size and series of the trap.

**Example:** 1 - Valve and seat assembly for a Spirax Sarco 1/2" HM00/7 inverted bucket steam trap.



Recommended tightening torques

Item	Part		or mm		N m
2	1/2", 3/4"		M6 x 25		15 - 16
	1"		M12 x 45		85 - 95
8	1/2", 3/4"	13			50 - 55
	1"	13			80 - 88
13	1/2", 3/4"	22	M28		90 - 100
	1"	27	M32		125 - 145



TI-S03-03  
CMGT Issue 5

200 Series

Cast Iron

Inverted Bucket Steam Traps

Description

The Spirax Sarco 200 Series of inverted bucket steam traps are designed for installation in vertical pipework. With cast iron bodies and bolted cover they are maintainable and offer a very wide range of capacities, in applications up to 17 bar g.

Certification

This product is available with certification to EN 10204 2.2.  
**Note:** All certification/inspection requirements must be stated at the time of order placement.

Sizes and pipe connections

½" - 2" screwed BSP or NPT  
DN15 - 50 flanged\*  
\*Flanges meet the requirements of BS 4504 DIN PN16, PN10, PN6 and ANSI 125.  
In some sizes the inlet and outlet flanges are formed from the body casting and have tapped holes to receive studs.  
The stud holes are tapped UNC in ANSI flanges and metric in BS 4504 DIN flanges.

Limiting conditions

**Note:** Maximum operating conditions depend on the orifice size.

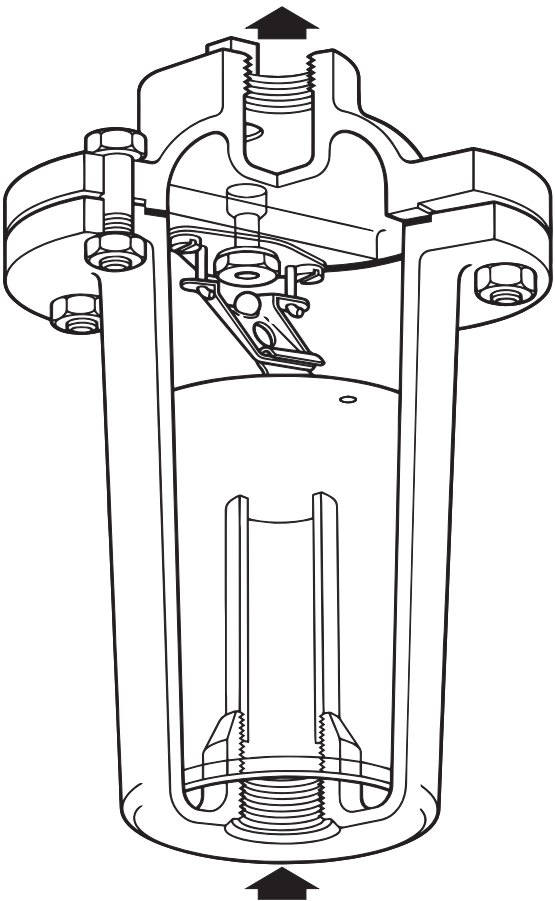
Body design conditions		PN16
PMO	Maximum operating pressure	22 bar g @ 210 °C
TMO	Maximum operating temperature	210 °C @ 22 bar g
Designed for a maximum cold hydraulic test pressure of		34 bar g

Δ PMX - Maximum differential pressure  
Screwed valves

	Δ PMX - Maximum differential pressure bar						
Size	2	2.5	4	8.5	12.5	13.8	17
½"	211/12	-	211/10	211/8	-	211/7	211/6
¾"	212/16	-	212/12	212/10	-	212/8	212/7
1"	213/24	-	213/20	213/16	213/14	-	213/12
1½"	215/36	-	215/28	215/22	215/20	-	215/18
2"	-	216/48	216/40	216/32	216/28	-	216/24

Flanged valves

	Δ PMX - Maximum differential pressure bar						
Size	2	2.5	4	8.5	12.5	13.8	17
DN15	221/12	-	221/10	221/8	-	221/7	221/6
DN20	222/16	-	222/12	222/10	-	222/8	222/7
DN25	223/24	-	223/20	223/16	223/14	-	223/12
DN40	225/36	-	225/28	225/22	225/20	-	225/18
DN50	-	226/48	226/40	226/32	226/28	-	226/24

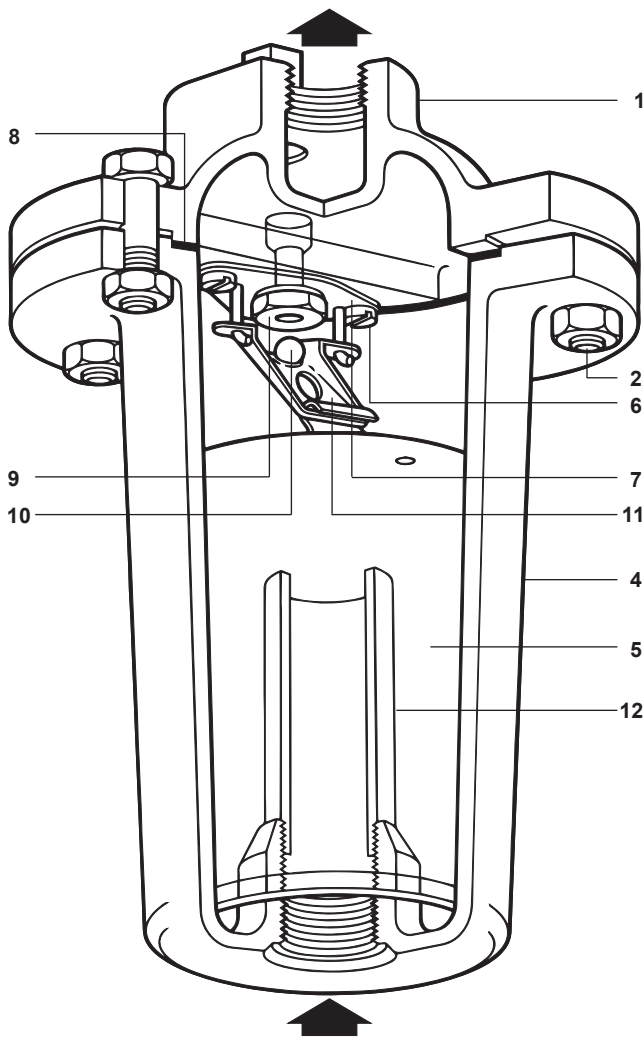


Screwed version shown  
(for details of the flanged version see overleaf)

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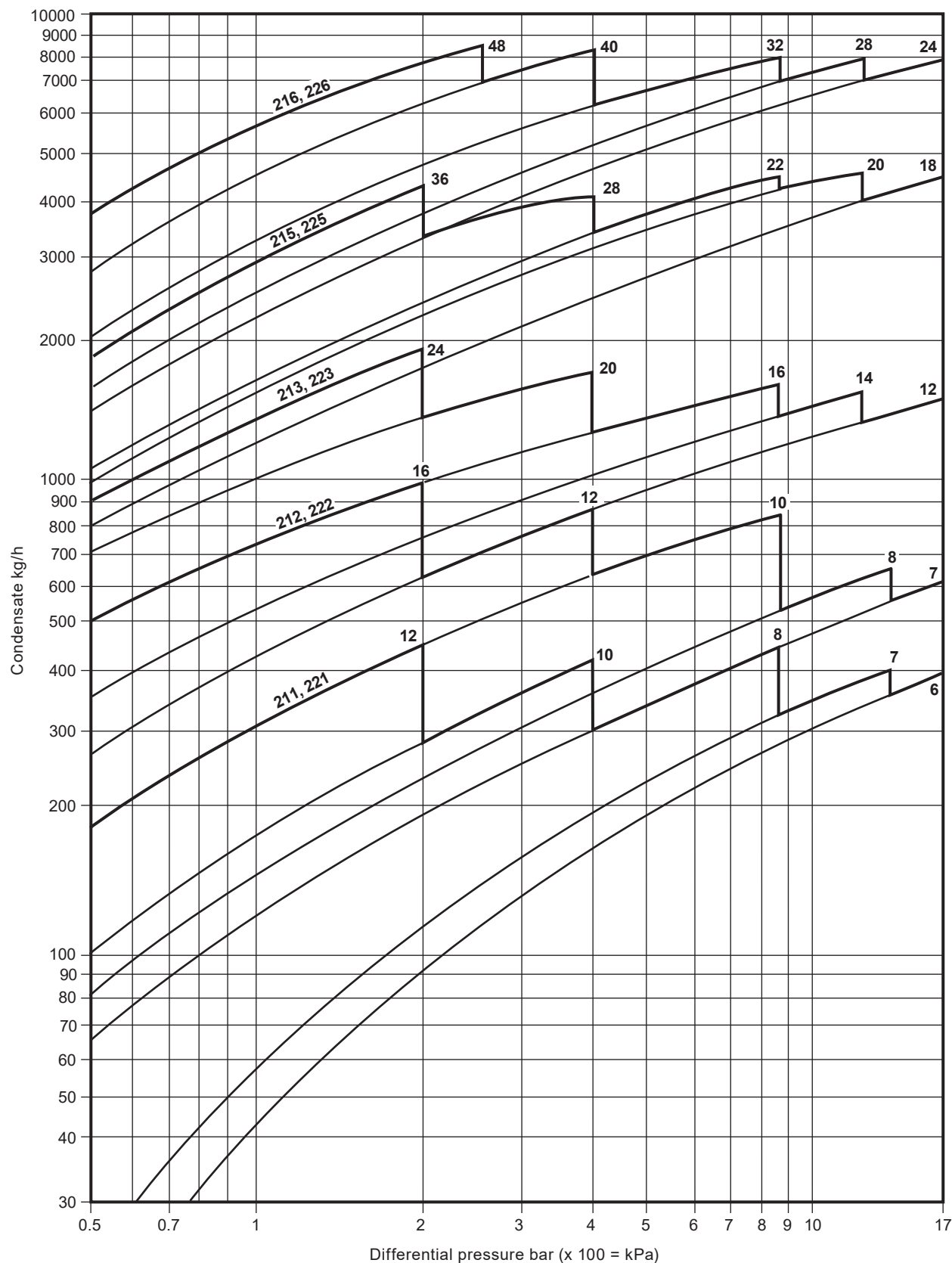
Steam traps  
Inverted bucket  
Materials



No.	Part	Material	
1	Cover	Cast iron	DIN 1691 GG 20
2	Cover bolts	Steel	BS 3692 Gr. 8.8
	Cover nuts	Steel	BS 3692 Gr. 8
4	Body	Cast iron	DIN 1691 GG 20
5	Bucket	Stainless steel	BS 1449 321 S31
6	Valve guide plate screws	Stainless steel	BS 4183 (18/8)
7	Valve guide plate	Stainless steel	BS 1449 321 S31
8	Cover gasket	Reinforced exfoliated graphite	
9	Valve seat	Stainless steel	AISI 440B
10	Valve	Stainless steel	AISI 440B
11	Valve lever	Stainless steel	BS 1449 321 S31
12	Internal tube	Steel	BS 1387 (MED)



Capacities



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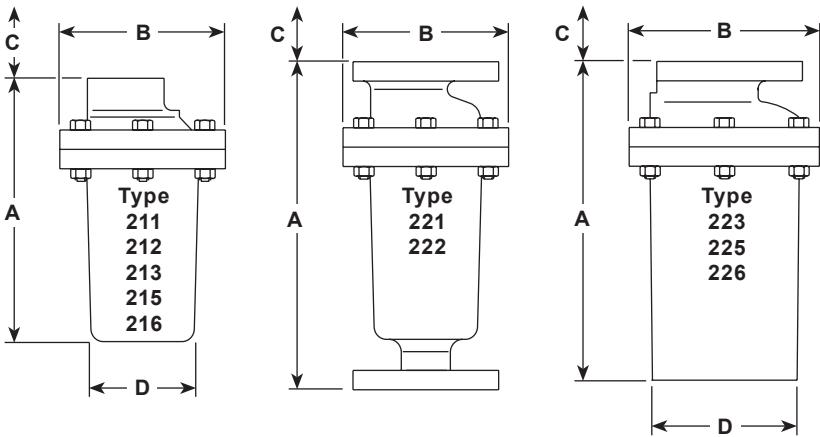
Note: Traps should be selected for the most appropriate working pressure differential and not on the basis of load.

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Steam traps  
Inverted bucket

Dimensions/weight (approximate) in mm and kg

Type		Size	A	B	C	D	Weight
Screwed	Type 211	½"	163	108	178	67	2.8
	Type 212	¾"	200	135	229	93	5.2
	Type 213	1"	269	188	280	114	12.2
	Type 215	1½"	365	238	380	140	27.0
	Type 216	2"	432	286	470	185	43.5
Flanged	Type 221	DN15	215	108	254	-	4.9
	Type 222	DN20	286	135	280	-	9.1
	Type 223	DN25	305	188	305	121	16.3
	Type 225	DN40	370	238	380	140	30.8
	Type 226	DN50	450	286	457	165	49.4



Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-S03-08) supplied with the product.  
The trap must be installed with the body upright so that the bucket is rising and falling vertically. The inlet should be at the bottom with the trap installed below the drain point so that a water seal can be maintained around the end of the bucket.

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Disposal

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

How to order

Example: 1 off DN40 225/18 Spirax Sarco inverted bucket steam trap with flanged PN16 connections.

Spare parts

The spare parts available are shown in heavy outline. Parts drawn in a grey line are not supplied as spares.

Available spares



Valve and seat assembly (state pressure range)	6 (2 off), 7, 9, 11
Bucket	5
Internal tube	12
Cover gasket (packet of 3)	8

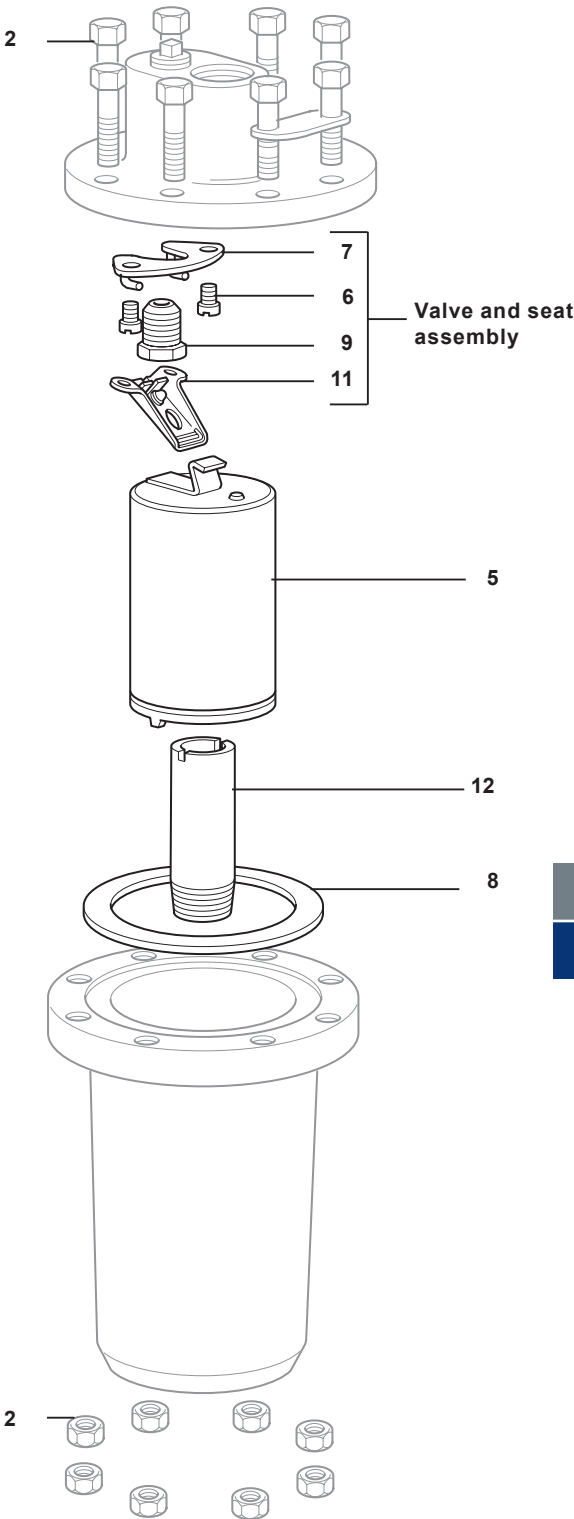
How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size and full definition of the trap e.g. 212/10.

**Example:** 1 - Valve and seat assembly for a ¾" Spirax Sarco inverted bucket steam trap Series 212/10.

Recommended tightening torques

Item	Part	 or 	N m
2 (6 off)	½" - DN15	M8 x 35	18 - 22
2 (8 off)	¾" - DN20	M10 x 40	16 - 20
2 (10 off)	1" - DN25	M12 x 60	24 - 28
2 (12 off)	1½" - DN40	M16 x 75	60 - 66
2 (12 off)	2" - DN50	M16 x 75	64 - 70
6	½" - DN15	2BA x 5/16"	4 - 5
	¾" - DN20	2BA x 5/16"	4 - 5
	1" - DN25	¼" WHIT x ½"	10 - 12
	1½" - DN40	¼" WHIT x ½"	10 - 12
	2" - DN50	⅝" WHIT x ½"	14 - 16
9	½" - DN15	½"AF	23 - 27
	¾" - DN20	⅝"AF	40 - 44
	1" - DN25	⅞"AF	80 - 88
	1½" - DN40	1¼"AF	175 - 190
	2" - DN50	1½"AF	270 - 300
12	½" - 2"	1½"AF	60 - 70
	DN15 - DN50		



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Steam traps  
Inverted bucket

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TI-P077-01  
CMGT Issue 8

S and SF Series  
Cast Iron  
Inverted Bucket Steam Traps

Description

The S and SF series are a range of inverted bucket steam traps. The body and cover are constructed from cast iron and the complete unit is readily maintainable.

Available options

S series	In-line connections and integral strainer
SF series	Integral flanged connections and integral strainer

Standards

This product fully complies with the requirements of the EU Pressure Equipment Directive/UK Pressure Equipment (Safety) Regulations.

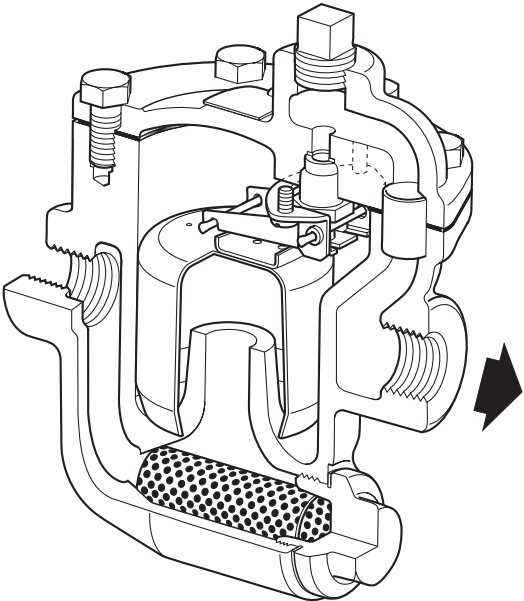
Certification

This product is available with typical test certificates.

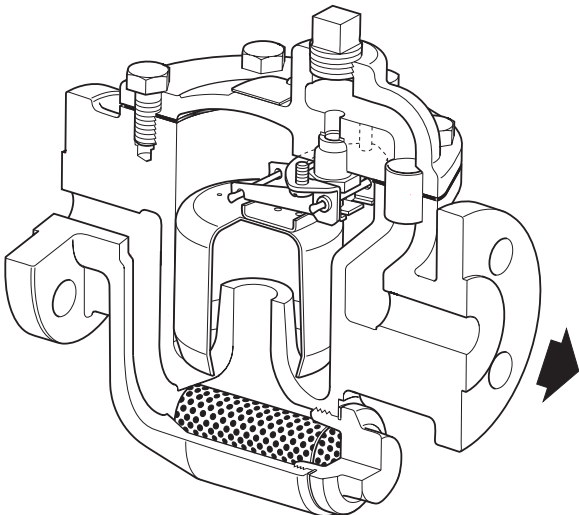
**Note:** All certification/inspection requirements must be stated at the time of order placement.

Sizes and pipe connections

1/2" - SA, 3/4" - SB, 1" - SC, 1 1/2" - SD screwed BSP and NPT  
DN15 - SFA, DN20 - SFB, DN25 - SFC, DN40 - SFD  
Standard flange EN 1092 PN16



Screwed 1/2"



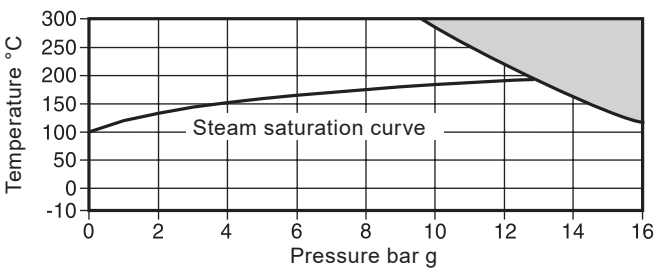
Flanged DN15

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Steam traps  
Inverted bucket

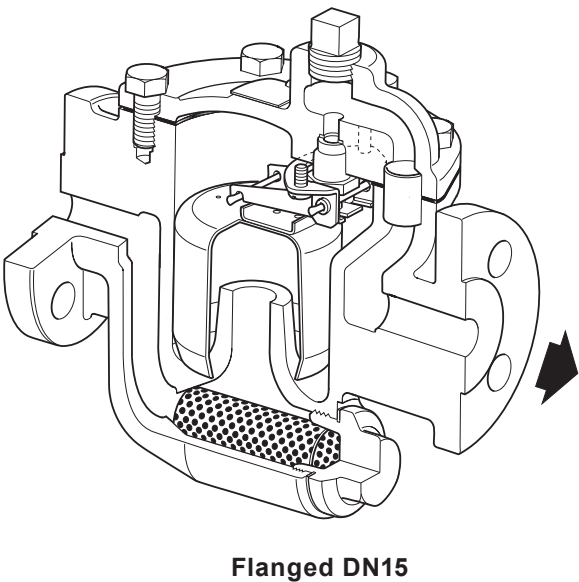
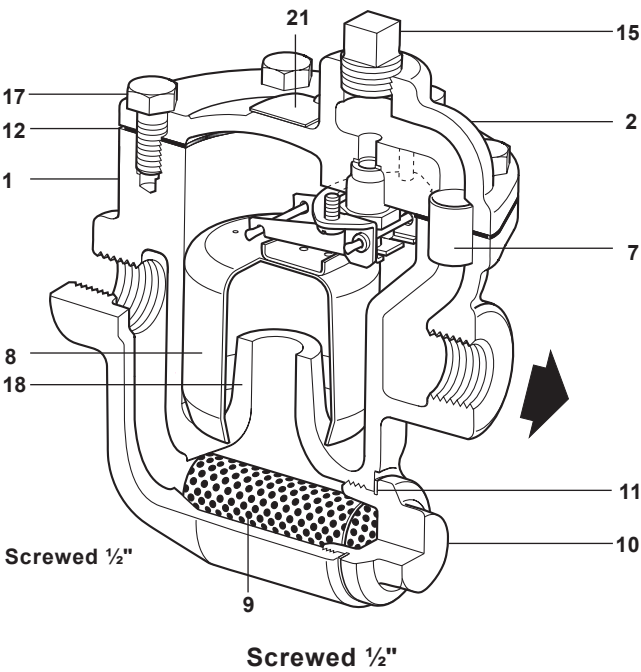
Pressure/temperature limits (ISO 6552)



The product **must not** be used in this region.

Body design conditions				PN16			
PMA	Maximum allowable pressure			16 bar g @ 120 °C			
TMA	Maximum allowable temperature			300 °C @ 9.6 bar g			
Minimum allowable temperature				-10 °C			
PMO	Maximum operating pressure for saturated steam service			13 bar g @ 195 °C			
TMO	Maximum operating temperature			300 °C @ 9.6 bar g			
Minimum operating temperature				0 °C			
ΔPMX	Maximum differential pressure						
<b>Screwed</b>	4 bar	8 bar	12 bar	<b>Flanged</b>	4 bar	8 bar	12 bar
<b>½"</b>	SA4	SA8	SA12	<b>DN15</b>	SFA4	SFA8	SFA12
<b>¾"</b>	SB4	SB8	SB12	<b>DN20</b>	SFB4	SFB8	SFB12
<b>1"</b>	SC4	SC8	SC12	<b>DN25</b>	SFC4	SFC8	SFC12
<b>1½"</b>	SD4	SD8	SD12	<b>DN40</b>	SFD4	SFD8	SFD12
Designed for a maximum cold hydraulic test pressure of				24 bar g			

Materials



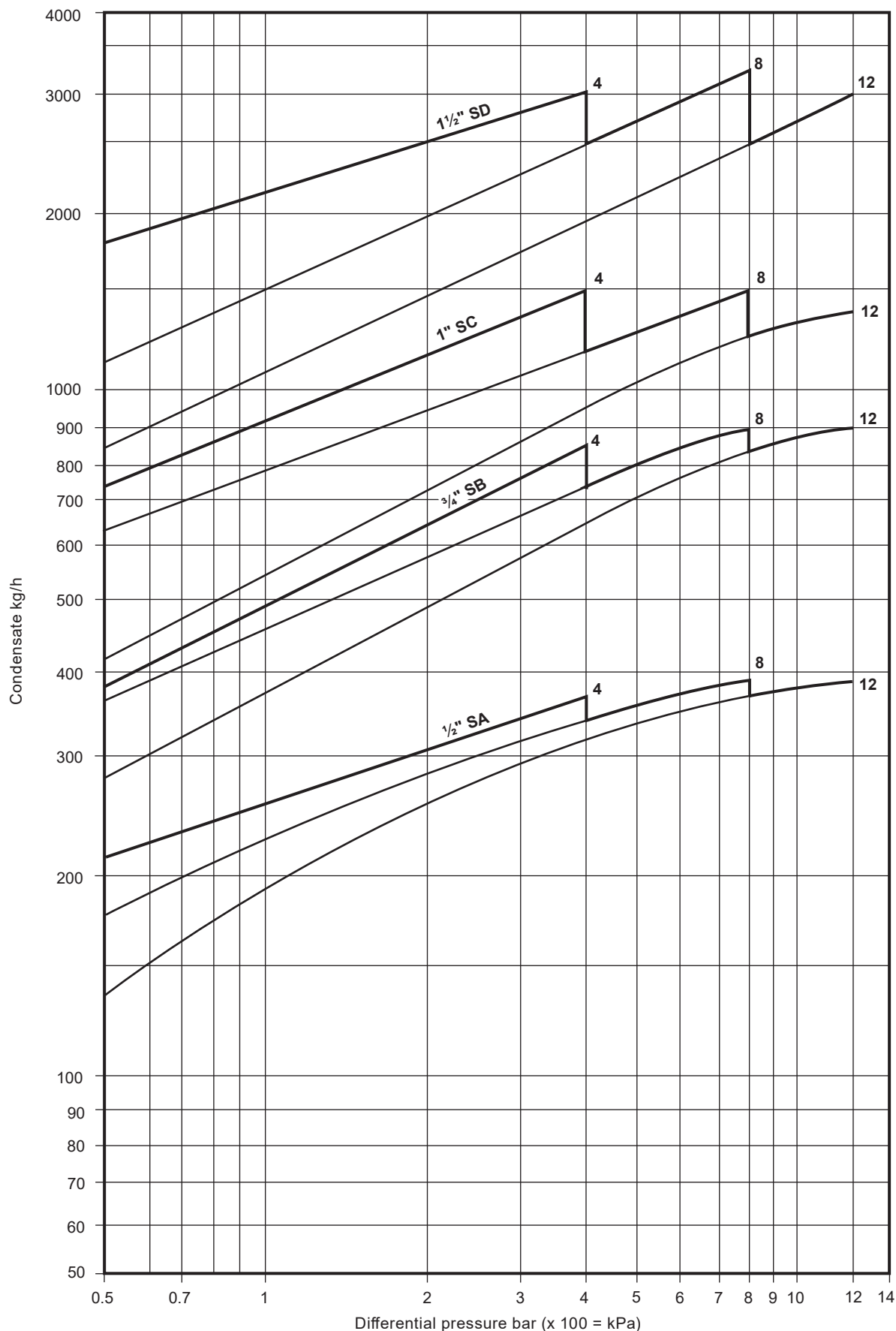
No.	Part	Material	
1	Body	Cast iron	DIN 1691 GG25
2	Cover	Cast iron	DIN 1691 GG25
3 *	Valve seat	Stainless steel	X30 Cr 13
4 *	Valve head	Stainless steel	X30 Cr 13
5 *	Valve lever	Stainless steel	BS 1449 304
6 *	Lever pivot	Stainless steel	BS 1449 304
7	Ferrule	Stainless steel	BS 3605 CF5 304 S14
8	Bucket	Stainless steel	BS 1449 304
9	Strainer screen	Stainless steel	ASTM A240 316L
10	Strainer cap	Cast iron	DIN 1691 GG25
11	Strainer gasket	Reinforced exfoliated graphite	
12	Cover gasket	Reinforced exfoliated graphite	
13 *	Valve seat gasket	Stainless steel	BS 1449 304
14 *	Pivot pin	Stainless steel	BS 970 304 S15
15	Top plug	Malleable iron	
16 *	Valve screw	Stainless steel	BS 6105 CI A2 70
17	Cover bolts	Steel	BS 3692 Gr. 8.8
18	Inlet tube 3/4", 1", 1 1/2"	Steel	BS 1387
19 *	Starlock washer	Stainless steel	
20 *	Washer	Stainless steel	
21	Name-plate	Stainless steel	BS 1449 304

\* Parts 3, 4, 5, 6, 13, 14, 16, 19 and 20 have been shown overleaf.

Steam traps  
Inverted bucket

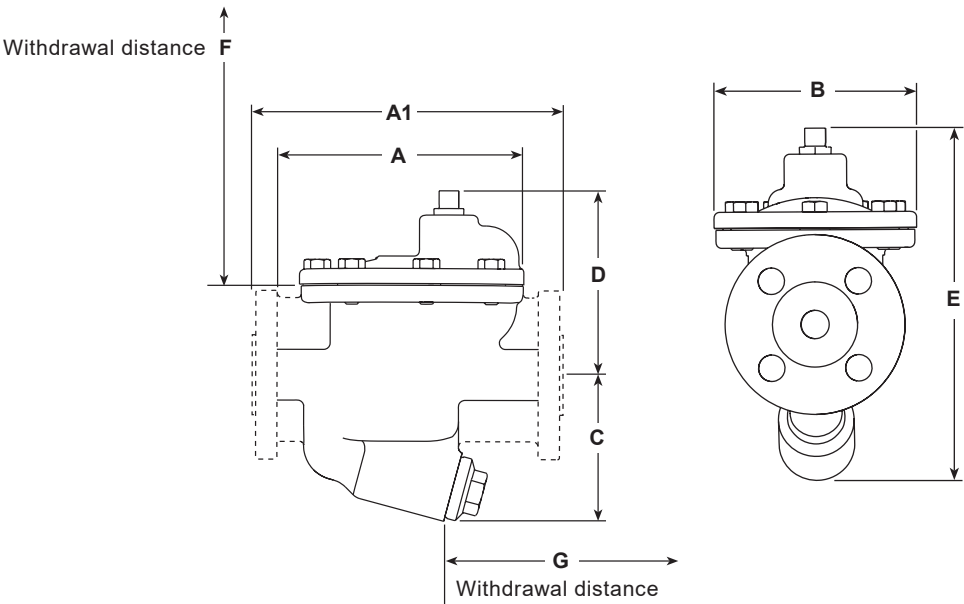
Capacities

**Note:** Traps should be selected for the most appropriate working pressure differential and not on the basis of load.





Dimensions/weights (approximate) in mm and kg



Screwed connections

Size	A	B	C	D	E	F	G	Weight
1/2"	130	105	75	95	170	70	66	3.4
3/4"	175	145	110	105	215	90	80	7.3
1"	205	155	130	120	250	105	90	10.5
1 1/2"	245	180	195	150	345	165	105	19.0

Flanged connections

Size	A1	B	C	D	E	F	G	Weight
DN15	175	105	85	95	180	70	66	4.7
DN20	225	145	110	105	215	90	80	9.3
DN25	255	155	135	120	255	105	90	12.8
DN40	295	180	195	155	350	165	105	22.3

Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P077-02) supplied with the product.

Installation note

The trap must be installed with the body upright with the strainer cap at the bottom so that the internal bucket is rising and falling vertically.

Disposal

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

Steam traps  
Inverted bucket

Spare parts

The spare parts available are shown in heavy outline. Parts shown in a grey line are not supplied as spares.

Available spares



Valve and seat assembly *(2 off) (supplied pre-assembled)	3, 4, 5, 6, 7, 12, 13, 14*, 16*, 19, 20*
Bucket assembly	8
Strainer screen	9, 11
Packet of all gaskets	7, 11, 12, 13

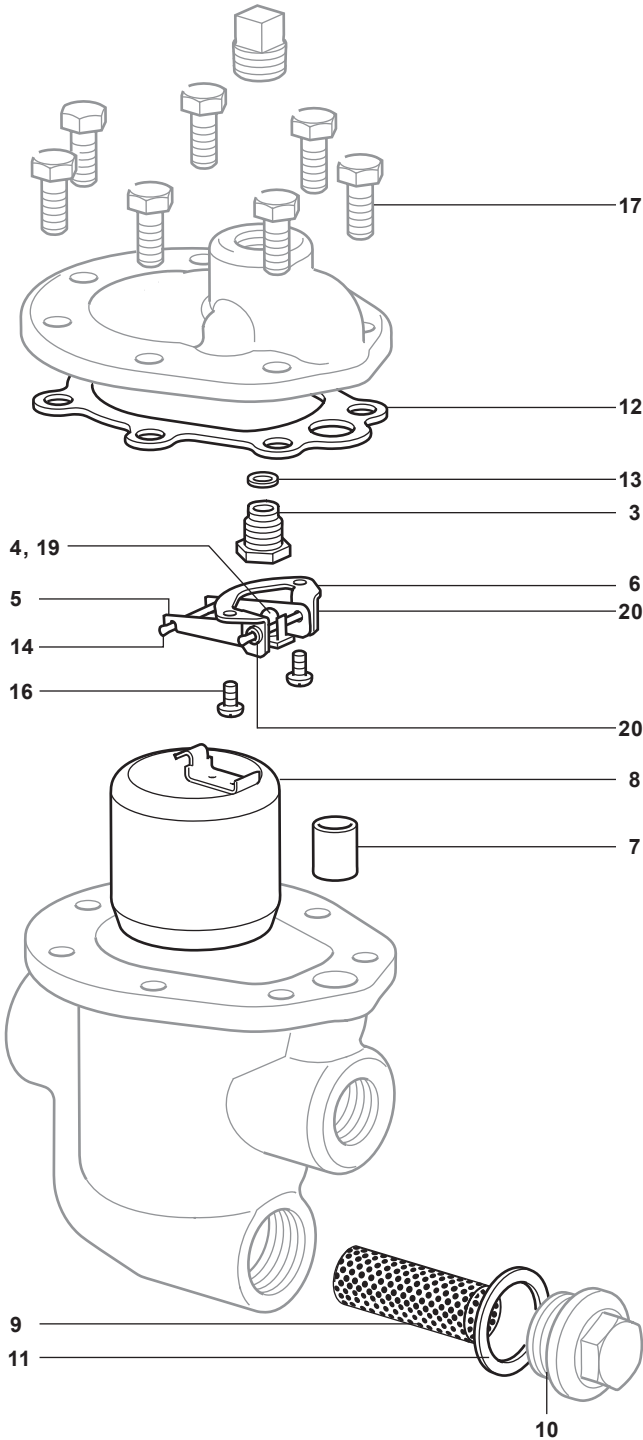
How to order spares

Always order spare parts by using the description given in the column headed 'Available spares' and state the size, Model No. and pressure rating of the trap.

**Example:** 1 off Valve and seat assembly for a Spirax Sarco DN20 SFB8 inverted bucket steam trap for differential pressures up to 8 bar.

Recommended tightening torques

Item No.	Trap size		or mm		N m
3	1/2" - DN15	15	-		25 - 30
	3/4" - DN20	17	-		25 - 40
	1" - DN25	22	-		50 - 60
	1 1/2" - DN40	30	-		80 - 90
10	1/2" - DN15	-	M28 x 30		50 - 60
	3/4" - DN20	-	M32 x 36		50 - 60
	1" - DN25	-	M42 x 46		70 - 80
	1 1/2" - DN40	-	M42 x 50		90 - 110
16	1/2" - DN15	-	M4 x 8		2.5 - 3
	3/4" - DN20	-	M5 x 10		3 - 4
	1" - DN25	-	M5 x 10		3 - 4
	1 1/2" - DN40	-	M6 x 10		5 - 6
17	1/2" - DN15	-	M8 x 20		20 - 25
	3/4" - DN20	-	M12 x 25		60 - 70
	1" - DN25	-	M10 x 30		40 - 45
	1 1/2" - DN40	-	M12 x 35		60 - 70



How to order

**Example:** 1 off Spirax Sarco DN20 SFB4 inverted bucket steam trap having flanged EN 1092 PN16 connections.