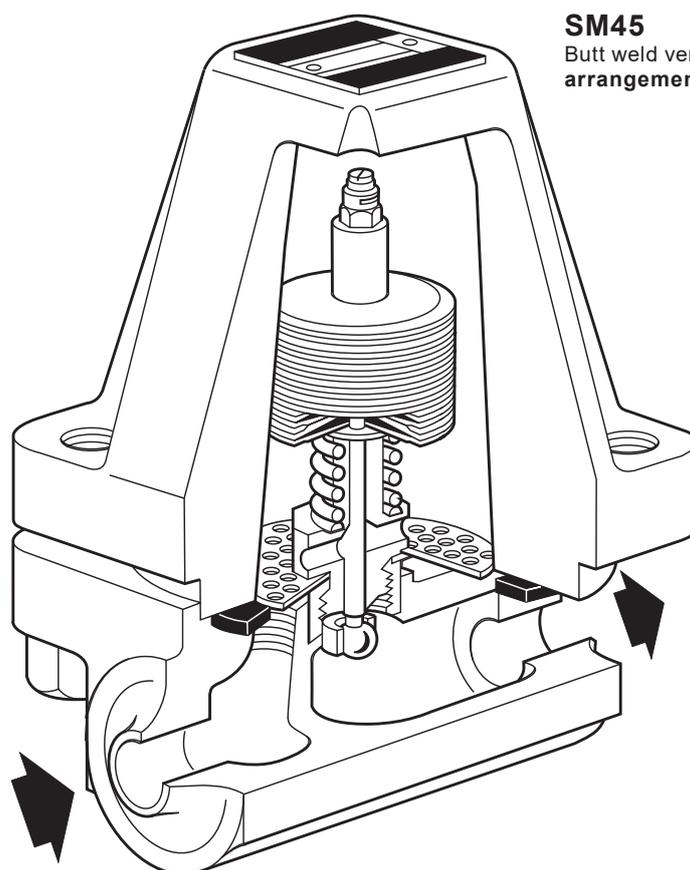




## SM45 Bimetallic Steam Trap



**SM45**  
Butt weld version shown illustrating the valve arrangement for the ¾" and 1" sizes.

### Description

The SM45 is a medium pressure, temperature sensitive, maintainable steam trap. The operating element comprises a stack of bimetals which control the flow of condensate, air and other incondensable gases at a preset temperature below steam saturation. The body and cover are forged and is available with integral flanges.

### Standards

This product fully complies with the requirements of the Pressure Equipment Directive (PED) and carries the  mark when so required.

### Certification

The product is available with certification to EN 10204 3.1.

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

### Sizes and pipe connections

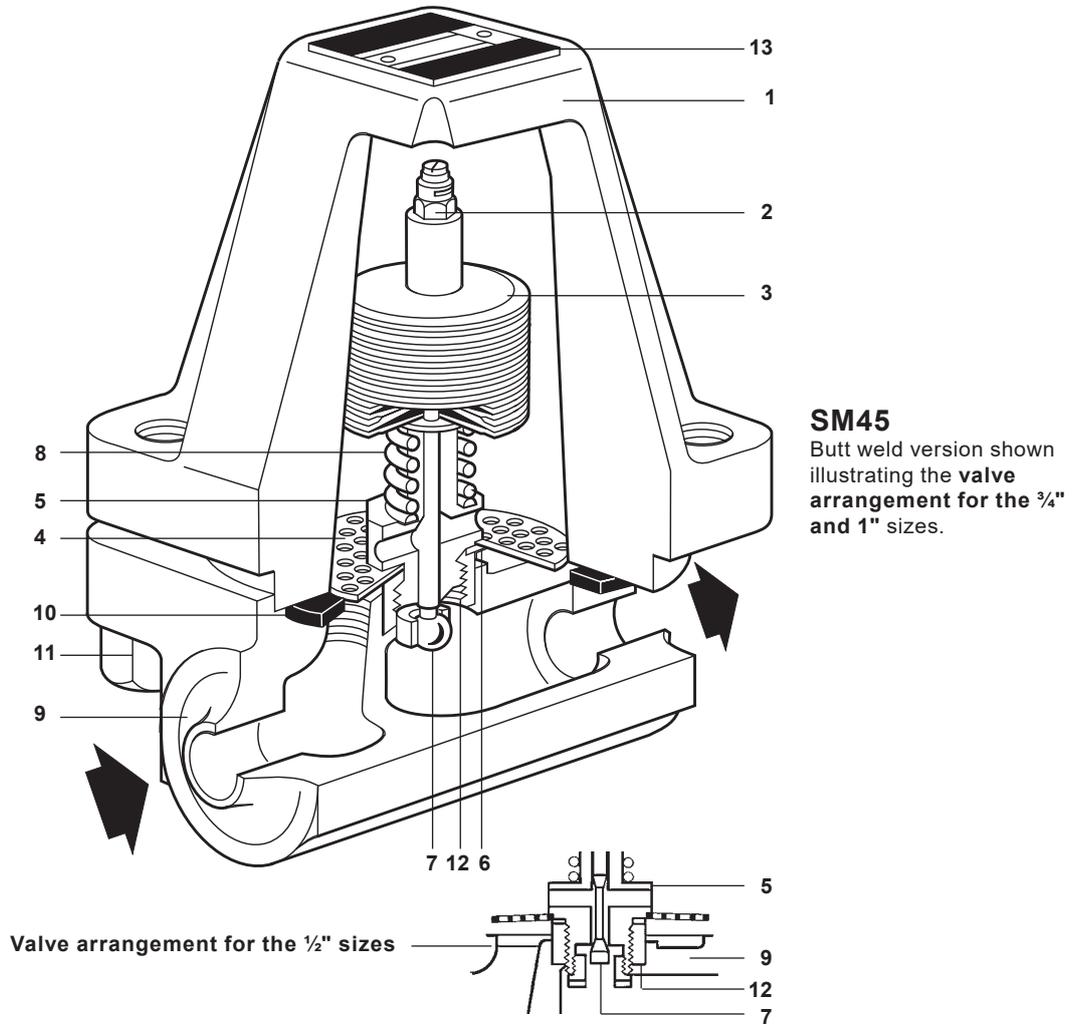
½", ¾" and 1" screwed BSP or NPT.

½", ¾", 1" and 1½" butt weld to suit schedule 80 pipe and socket weld to BS 3799 Class 3000.

DN15, DN20, DN25 and DN40 standard flange to :

EN1092 PN64, ASME 300 and JIS/KS 30K.

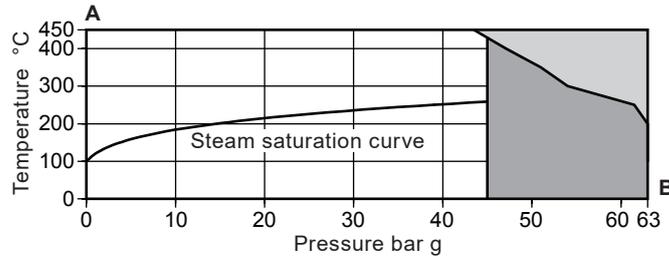
## Materials



No.	Part	Material	
1	Cover	Alloy steel	DIN 17243 13Cr Mo44 (W/S 1.7335)
2	Locking nut	Stainless steel	BS 970 303 S21
3	Thermostatic element	Corrosive resistant bimetal and stainless steel	1/2" - Rau Type RR 3/4" - 1" Type 100
4	Strainer screen	Stainless steel	ASTM A240 316L
5	Valve seat	Stainless steel	BS 970 431 S29
6	Valve seat gasket	Stainless steel	BS 1449 304 S12
7	Valve	Stainless steel	BS 970 431 S29
8	Spring	Stainless steel	BS 2056 302 S26
9	Body	Alloy steel	DIN 17245 CS 22 Mo4
10	Cover gasket	Spirally wound stainless steel graphite filled gasket	
	Cover stud	Alloy steel	ASTM A193 Gr. B7
11	Cover nut	Carbon steel	BS 4882 Gr. 2H
	Cover washer	Carbon steel	BS 4320 Table 1 Form A
12	Seat insert	Stainless steel	BS 970 321 S20
13	Name-plate	Stainless steel	BS 1449 304 S16

## Pressure/temperature limits (ISO 6552)

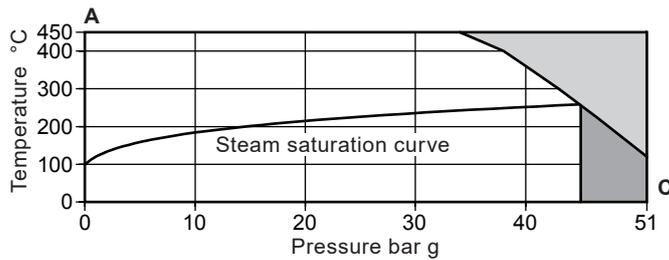
Screwed  
Socket weld  
Butt weld  
Flanged:  
EN 1092 PN64



- The product **must not** be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.
- The product should not be used in this region as damage to the internals may occur.

Body design condition	PN64
PMA Maximum allowable pressure	63 bar g @ 200 °C
TMA Maximum allowable temperature	450 °C @ 43.5 bar g
Minimum allowable temperature	-10 °C
<b>A - B</b>	
PMO Maximum operating pressure for saturated steam service	45 bar g @ 259 °C
TMO Maximum operating temperature	450 °C @ 43.5 bar g
Minimum operating temperature	0 °C
Designed for a maximum cold hydraulic test pressure of:	95 bar g

Flanged:  
ASME 300



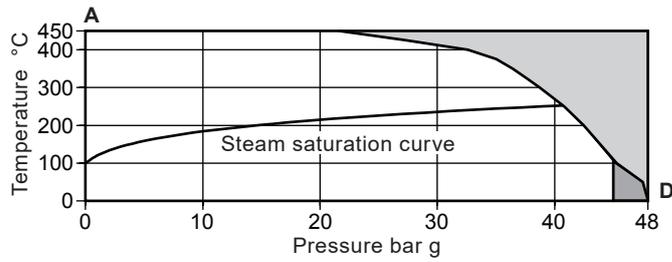
- The product **must not** be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.
- The product should not be used in this region as damage to the internals may occur.

Body design condition	ASME 300
PMA Maximum allowable pressure	51 bar g @ 120 °C
TMA Maximum allowable temperature	450 °C @ 34 bar g
Minimum allowable temperature	-10 °C
<b>A - C</b>	
PMO Maximum operating pressure for saturated steam service	45 bar g @ 259 °C
TMO Maximum operating temperature	450 °C @ 34 bar g
Minimum operating temperature	0 °C
Designed for a maximum cold hydraulic test pressure of:	72 bar g

Pressure/temperature limits continued on the next page

## Pressure/temperature limits (ISO 6552) continued

Flanged:  
JIS/KS 30K



The product **must not** be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.

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

Body design condition	JIS/KS 30K
PMA Maximum allowable pressure	48 bar g @ 0 °C
TMA Maximum allowable temperature	450 °C @ 22 bar g
Minimum allowable temperature	-10 °C
<b>A - D</b> PMO Maximum operating pressure for saturated steam service	45 bar g @ 100 °C
TMO Maximum operating temperature	450 °C @ 22 bar g
Minimum operating temperature	0 °C
Designed for a maximum cold hydraulic test pressure of:	77 bar g

## K<sub>v</sub> values

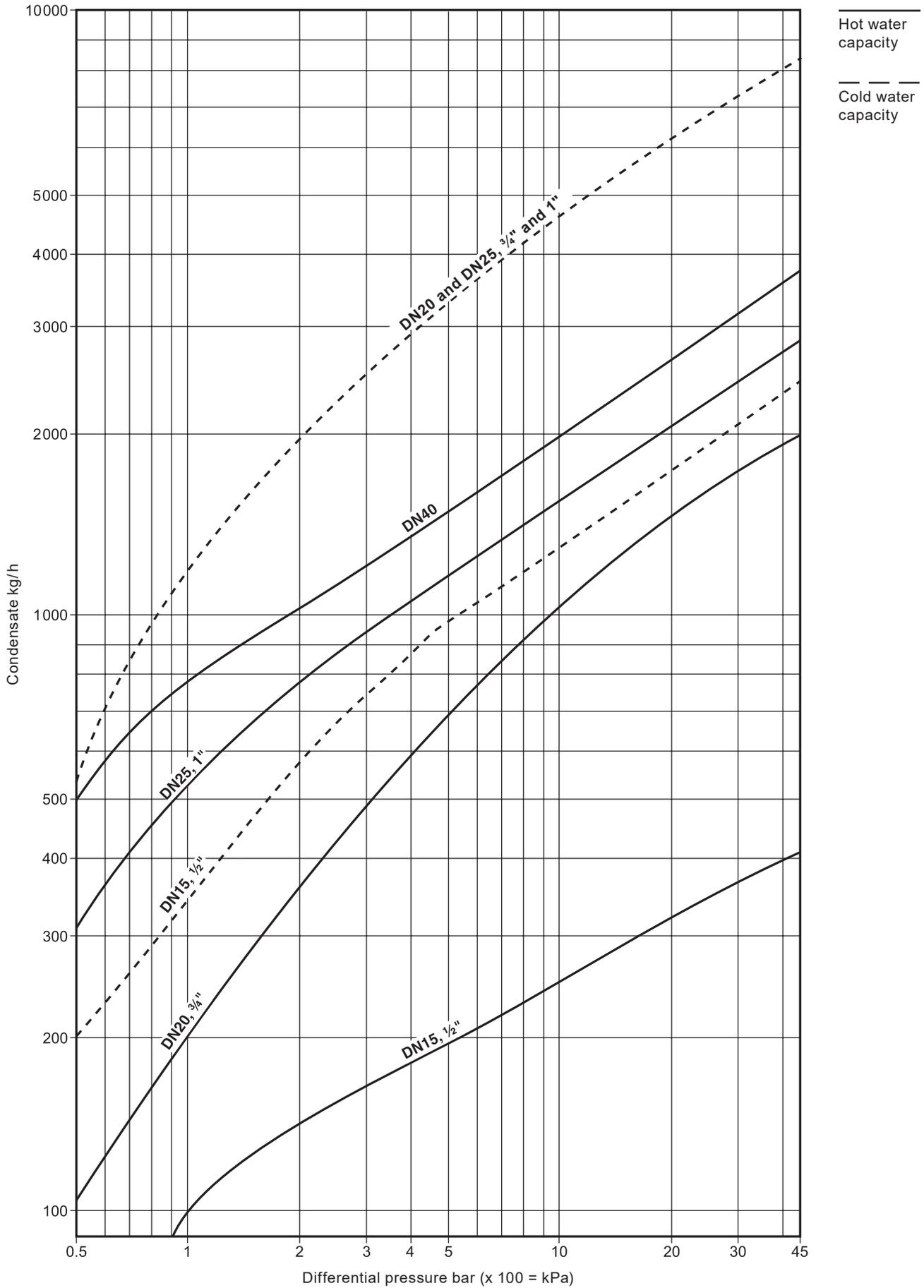
Size	DN15 - 1/2"	DN20 - 3/4"	DN25 - 1"	DN40 - 1 1/2"
K <sub>v</sub> value	0.25	0.6	0.6	0.6

For conversion:

$$C_v \text{ (UK)} = K_v \times 0.963$$

$$C_v \text{ (US)} = K_v \times 1.156$$

# Capacities



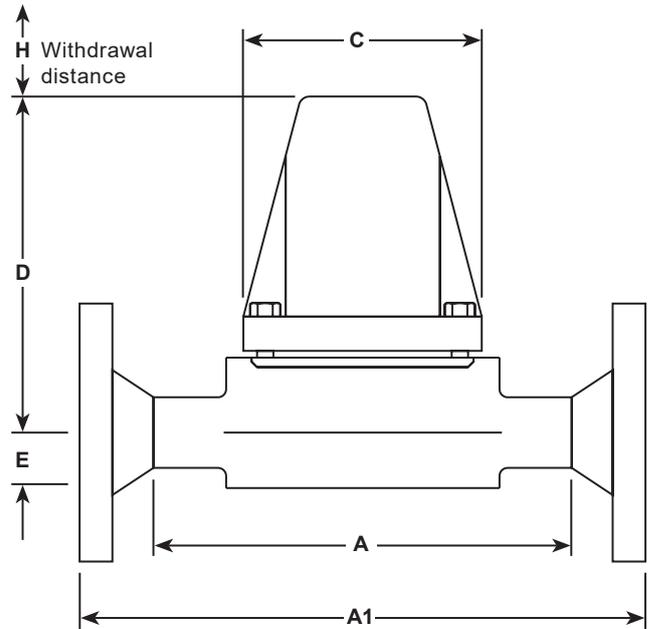
## Dimensions/weights (approximate) in mm and kg

### Screwed, butt weld and socket weld

Size	A	C	D	E	H	Weight
½"	130	102	138	24	108	5.4
¾"	130	102	138	24	108	5.4
1"	130	102	138	24	108	5.4

### Flanged

Size	A1	C	D	E	H	Weight
DN15	210	102	138	24	108	7.2
DN20	230	102	138	24	108	8.6
DN25	230	102	138	24	108	9.5
DN40	260	102	146	30	114	13.6



## Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P025-02) supplied with the product.

### Installation note:

The SM45 is designed for installation with the element in a horizontal plane with the cover at the top. When welding the the trap into the line there is no need to remove the element providing that welding is done by the electric arc method.

### Disposal

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

## How to order

**Example:** 1 off Spirax Sarco ½" SM45 bimetallic steam trap having screwed BSP connections.

