



TI-P624-02  
 ST Issue 6

## SP80 and SP100 Bimetallic Steam Traps

### Description

The SP80 and SP100 are pilot operated bimetallic steam traps made of cast steel. They have a built-in strainer screen to protect the pilot valve and an external device for adjusting the discharge temperature of the condensate. They are specially designed for high capacity process applications.

They are not sensitive to overheating and have a bimetallic pilot device which controls a main valve via a large diameter piston. These steam traps can be repaired inline and operate with no loss of steam. They quickly drain air, non-condensable gases and large quantities of cold water on start-up.

### Available types

<b>SP80N and SP100N</b>	For use at low pressures
<b>SP80E and SP100E</b>	For use at medium pressure

### Standards

This product fully complies with the requirements of the European Pressure Equipment Directive 97 / 23 / EC.

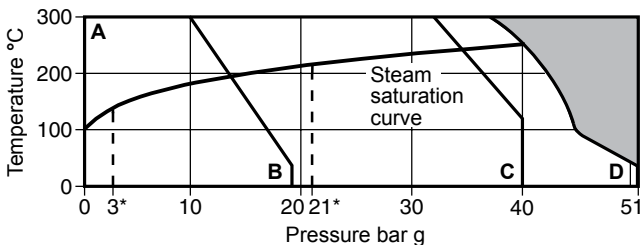
### Certification

This 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

DN80 SP80 or DN100 SP100 with  
 Flanged EN 1092 PN40, ASME 150 or ASME 300 connections.

### Pressure/temperature limits



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

- A - B** Flanged ASME 150
- A - C** Flanged PN40
- A - D** Flanged ASME 300

### SP80N and SP100N

Body design conditions Class 300

\* PMO Maximum operating pressure 3 bar g

TMO Maximum operating temperature 300°C

Minimum operating pressure 0.5 bar g

$\Delta$ PMX The backpressure for correct operation must not exceed 90% of the upstream pressure.

Designed for a maximum cold hydraulic test pressure of 76 bar g

### SP80E and SP100E

Body design conditions Class 300

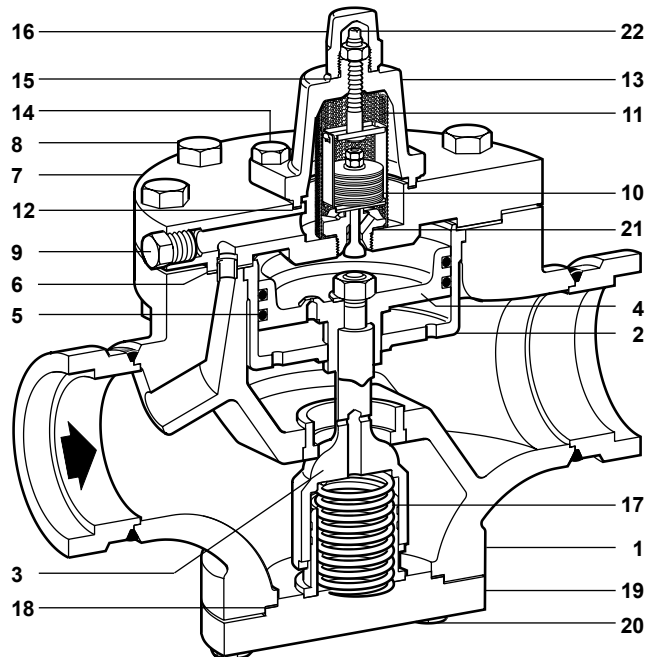
\* PMO Maximum operating pressure 21 bar g

TMO Maximum operating temperature 300°C

Minimum operating pressure 1.5 bar g

$\Delta$ PMX The backpressure for correct operation must not exceed 90% of the upstream pressure.

Designed for a maximum cold hydraulic test pressure of 76 bar g

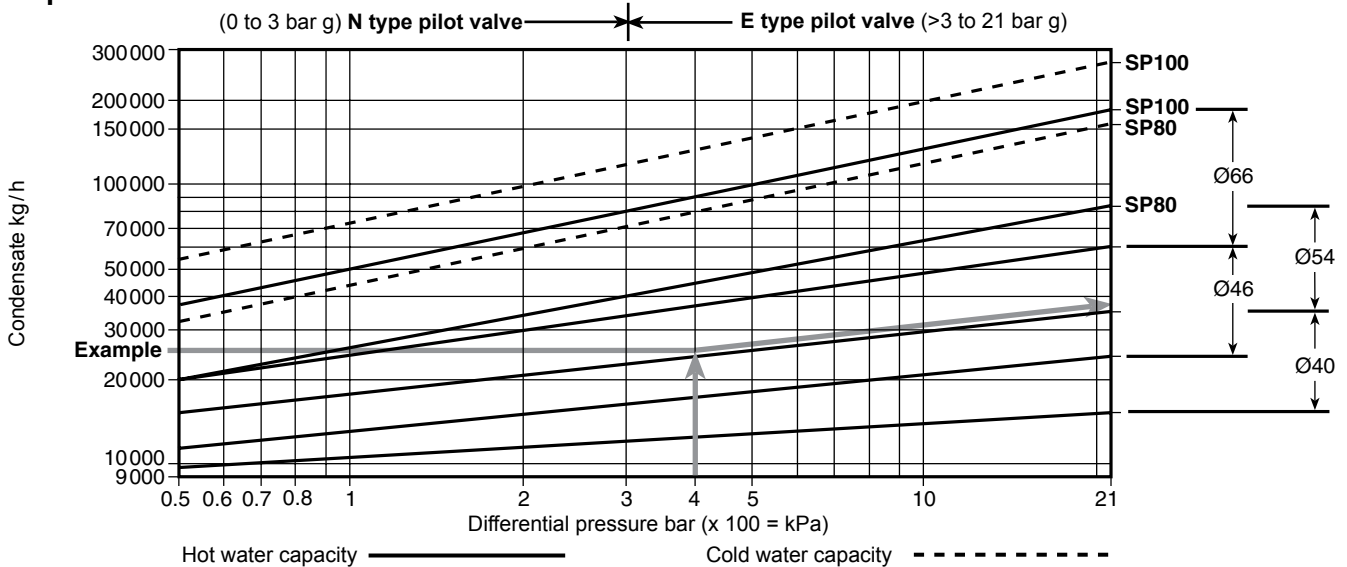


### Materials

No.	Part	Material
1	Body sub assembly	Steel ASTM A216 WCB4 and A105
2	Piston casing	Stainless steel
3	Main valve	Stainless steel AISI 304L
4	Piston	Stainless steel
5	Piston ring	Stainless steel
6	Upper cover gasket	Graphite (asbestos-free)
7	Upper cover	Steel ASTM A105N
8	Upper cover bolt and nut	Steel ASTM A193 B7 and A194 2H
9	Plug	Steel
10	Bimetallic pilot element	Stainless steel
11	Strainer screen	Stainless steel AISI 304L
12	Cap gasket	Metal - copper/graphite (asbestos-free)
13	Cap	Steel ASTM A105
14	Cap bolt	Steel ASTM A193 B7
15	Blind nut gasket	Metal - copper/graphite
16	Blind nut	Steel ASTM A105
17	Main valve spring	Stainless steel
18	Lower cover gasket	Graphite (asbestos-free)
19	Lower cover	Steel ASTM A105N
20	Lower cover bolt	Steel ASTM A193 B7
21	Pilot device seating gasket	Stainless steel AISI 304
22	Adjustment screw	Stainless steel ASTM A276 316L

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## Capacities



### How to size the SP80 and SP100

Both the SP80 and SP100 bimetallic steam traps are available with 2 different pilot valve assemblies (N type) or (E type) and 4 different seat types to achieve the rated capacities.

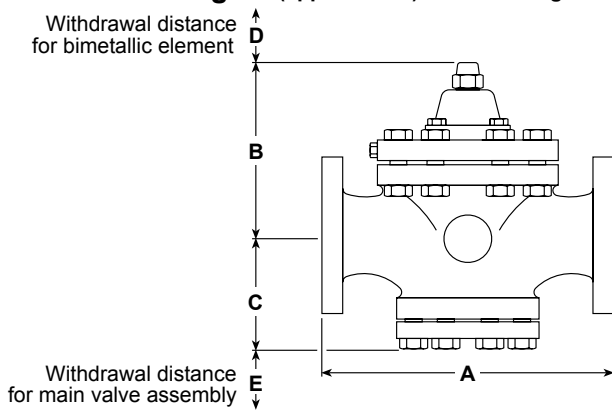
To work out the appropriate bimetallic pilot valve and seat size for your application, follow the sizing procedure listed below:

- The trap inlet pressure must be known:  
If the inlet pressure is below 3 bar g then select an **N type** pilot valve. If the inlet pressure is above 3 bar g then select an **E type** pilot valve.
- The outlet pressure must be known to determine the differential pressure across the trap.
- Depending on the desired capacity and differential pressure required, use the capacity chart above to choose the seat diameter which is closest to the seat's mid range capacity.

#### Sizing example:

- If the trap inlet pressure is 10 bar g - select E type pilot valve.
- If the outlet pressure is 6 bar g then: 10 bar g (inlet pressure) - 6 bar g (outlet pressure) means 4 bar g differential pressure exists.
- If the trap is required to drain 25 000 kg/h then select either an SP80E or SP100E with a 46 mm seat, as this is closest to the mid-range capacity for a 46 mm seat. Although the capacity is also within the lower range of a 54 mm seat, trap performance would not be optimised.

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



Size	A	B	C	D	E	Weight	
						PN40 ASME 150	ASME 300
DN80	350	210	132	150	100	43	48
DN100	400	210	132	150	100	52	60

### Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P624-01) supplied with the product.

### How to order

Example: 1 off DN80 Spirax Sarco SP80E bimetallic steam trap with 46 mm seat and flanged EN 1092 PN40 end connections

### Spare parts

The spare parts available are detailed below. No other parts are supplied as spares.

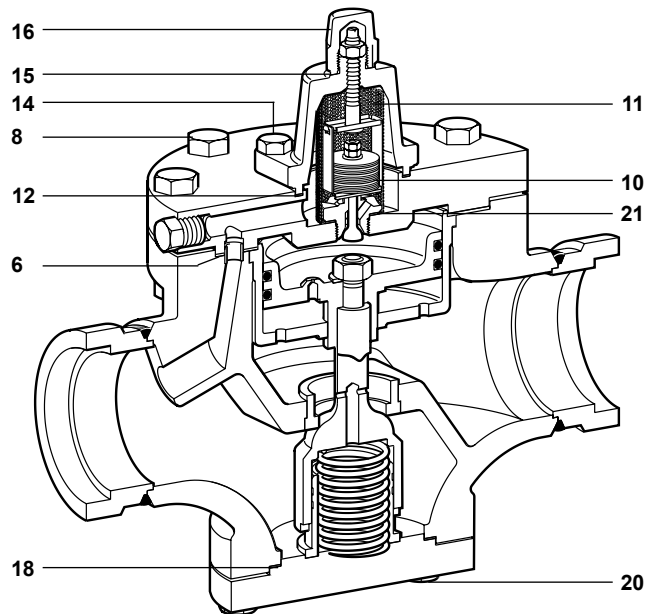
#### Available spares

Pilot valve assembly N type	10, 11, 12, 15, 21
Pilot valve assembly E type	10, 11, 12, 15, 21
Gasket kit	6, 12, 15, 18, 21

#### How to order spares

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

Example: 1 - Gasket kit for a DN80 Spirax Sarco SP80 bimetallic steam trap.



### Recommended tightening torques

Item	or	N m
8	22 A/F	72 - 78
10	36 A/F	120 - 132
14	17 A/F	45 - 55
16	29 A/F	72 - 88
20	19 A/F	54 - 66