



TI-P123-03
 ST Issue 6

AV45 Air Vent for Steam Systems

Description

The AV45 is a forged alloy steel, medium pressure, temperature sensitive, maintainable air vent. The operating element comprises a stack of bimetal discs which control the flow of air and other incondensable gases at a preset temperature below steam saturation.

Standards

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

1/2", 3/4" and 1"
 Screwed BSP or NPT,

1/2", 3/4", 1" and 1 1/2"
 Butt weld to suit Schedule 80 pipe and
 Socket weld to BS 3799 Class 3000.

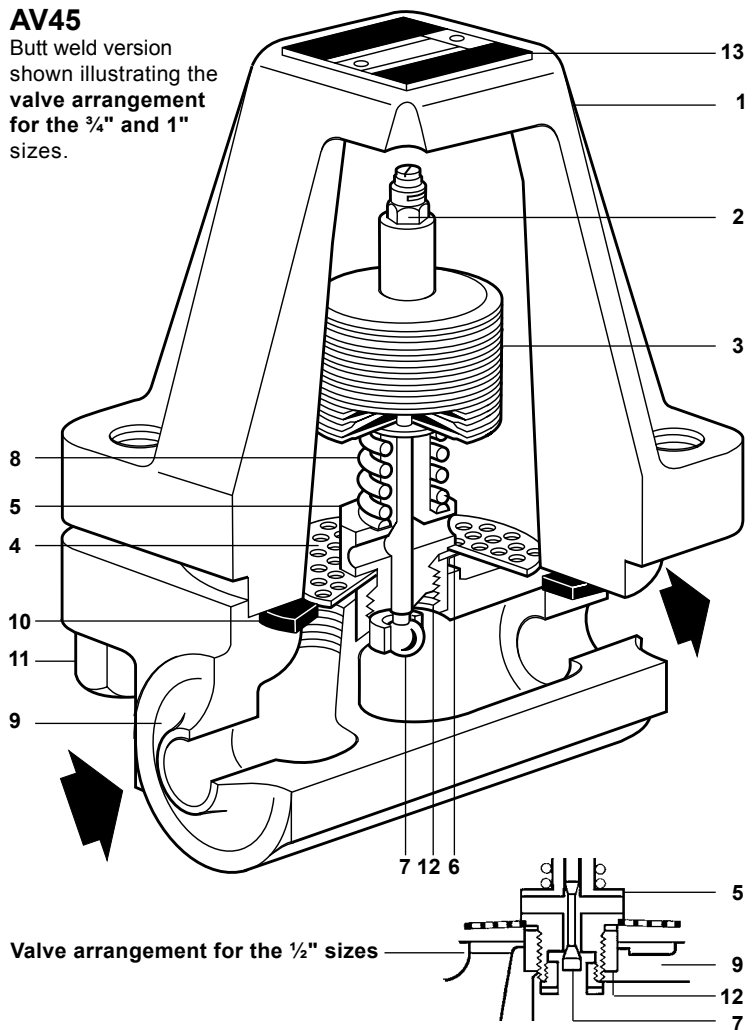
DN15, DN20, DN25 and DN40
 Standard flange to:
 EN 1092 PN64,
 ASME 300 and
 JIS/KS 30K.

Pressure/temperature limits (ISO 6552)

See page 2.

AV45

Butt weld version
 shown illustrating the
valve arrangement
 for the 3/4" and 1"
 sizes.



Materials

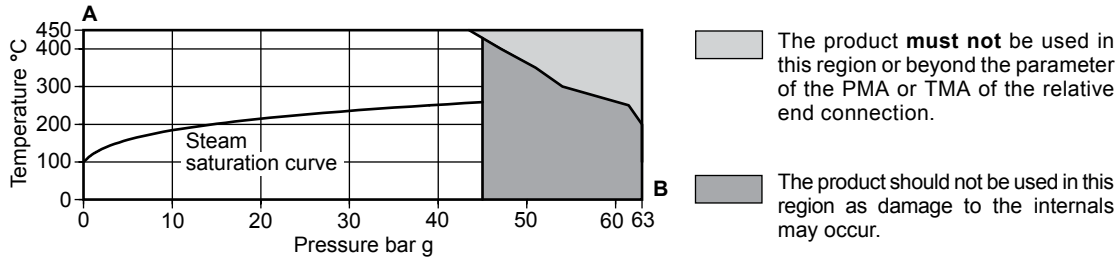
No.	Part	Material	
1	Cover	Alloy steel	DIN 17243 13Cr Mo44 (W/S 1.7335)
2	Locking nut	Stainless steel	BS 970 303 S21
3	Thermostatic element	Corrosive resistant bimetal and stainless steel	1/2" - Rau Type RR 3/4" - 1 1/2" Type 100
4	Strainer screen	Stainless steel	ASTM A240 316L
5	Valve seat	Stainless 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

K_V values

For conversion: $C_V(\text{UK}) = K_V \times 0.963$ $C_V(\text{US}) = K_V \times 1.156$

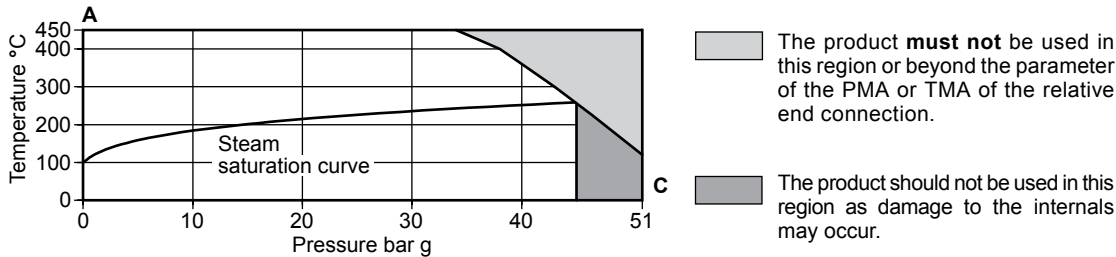
Size	DN15 - ½"	DN20 - ¾"	DN25 - 1"	DN40 - 1½"
K _V value	0.25	0.6	0.6	0.6

Pressure/temperature limits (ISO 6552)



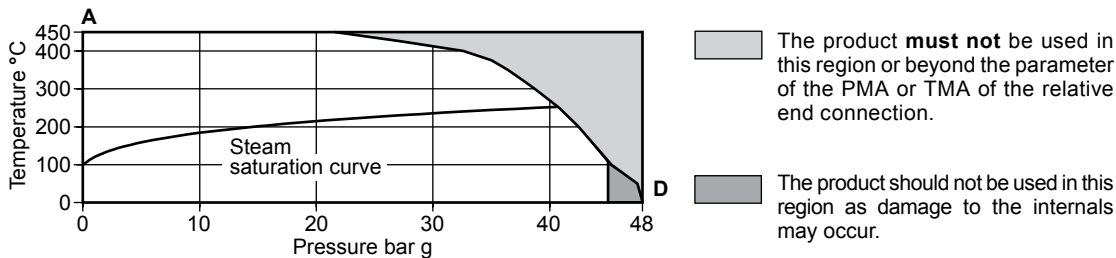
A - B Screwed
Socket weld
Butt weld
Flanged:
EN 1092 PN64

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
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



A - C Flanged:
ASME 300

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
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



A - D Flanged:
JIS/KS 30K

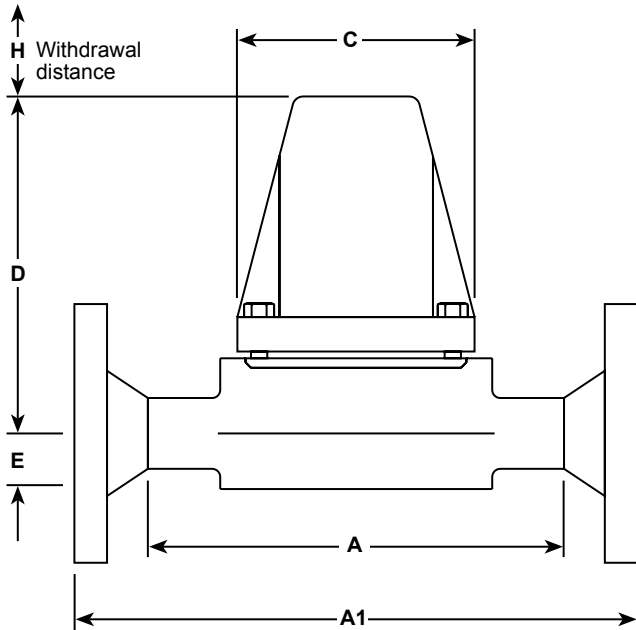
Body design condition	JIS/KS 30K
PMA Maximum allowable pressure	48 bar g @ 0°C
TMA Maximum allowable temperature	450°C @ 22 bar g
Minimum allowable temperature	-10°C
PMO Maximum operating pressure for saturated steam service	45 bar g @ 100°C
TMO Maximum operating temperature	450°C @ 22 bar g
Minimum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

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
* 1½"	149	102	146	30	114	6.0

* Butt weld and socket weld only.



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-P123-13) supplied with the product.

Installation note:

The AV45 is designed for installation with the element in a horizontal plane with the cover at the top. Positioned at the highest point of the main, or plant where air collects. For maximum air removal, the discharge should be as free as possible or piped to a safe location. When welding the trap into the line there is no need to remove the element providing the welding is done by the electric arc method. For ease and maintenance consideration should be given to fitting isolation valves upstream and downstream of the air vent. The air vent should not be insulated.

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" AV45 air vent having screwed BSP connections.

Spare parts

The spare parts available are shown in solid outline. Parts drawn in broken line are not supplied as spares.

Available spares

Element set	Complete with valve, valve seat and valve seat gasket	2, 3, 6
Strainer screen	(3 off)	4
Set of gaskets	(packet of 3 of each)	6, 10

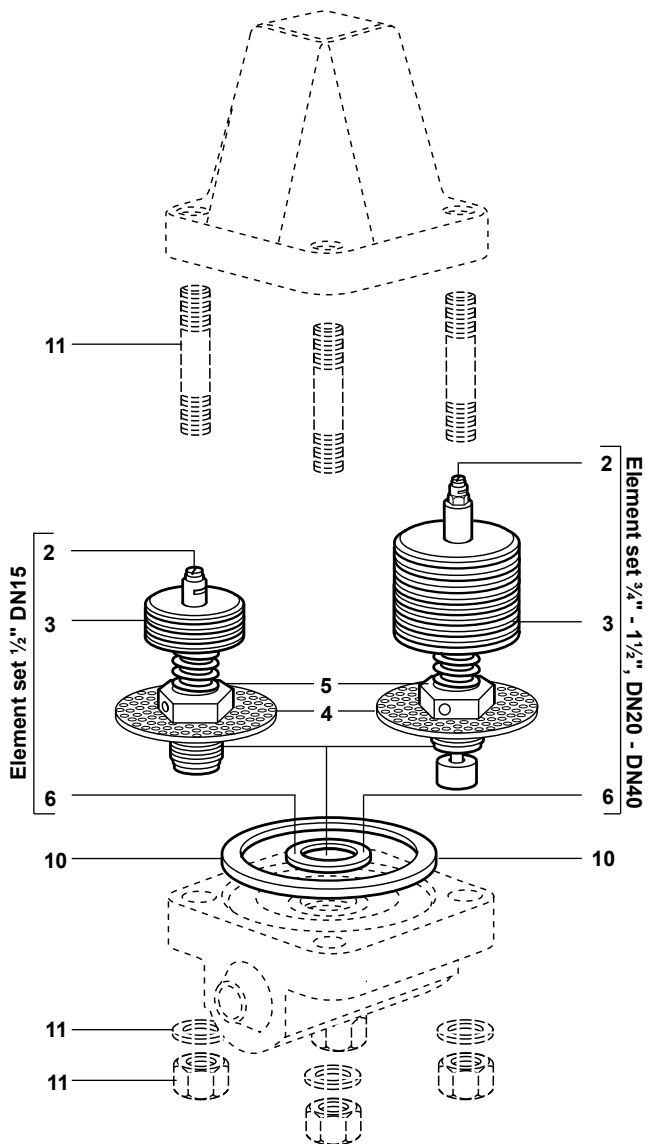
Important note

The earlier design of the AV45 incorporated 4 off long cover studs and 8 off washers and nuts for assembling the body and cover. The current design of the AV45 incorporates a threaded cover and 4 off shorter studs and 4 off washers and nuts.

How to order spares

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

Example: 1 - Element set for a DN25 Spirax Sarco AV45 air vent.



Recommended tightening torques

Item	or mm	N m
5	27 A/F	120 - 132
11	19 A/F M12	110 - 120