



TI-P402-121  
AB Issue 5

DCV3/B  
Boiler Feed Check Valve

Description

The Spirax Sarco DCV3/B boiler feed check valve is designed specifically for use on boiler feedwater systems. It is a stainless steel disc check valve with a soft EPDM seat to ensure tight shut-off against boiler pressure, even under poor water conditions. The DCV3/B is normally installed between flanges in the boiler feed water line. Cast-in lugs on the valve body allow the valve to be centralised easily. Face-to-face dimensions conform to EN 558 part 1, series 49.

**Note:** The Spirax Sarco DCV3HE is similar in specification and appearance, but has a slightly different seat design. We only recommend the DCV3/B for boiler feedwater applications.

Standards

Designed and manufactured in accordance with BS 7438.

Standard shut-off

Shut-off standard meets EN 12266-1 rate A, providing a differential pressure exists.

Certification

These products are available with a Typical Test Report. The products are also available with certification to EN 10204 3.1.

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

WARNING:

The DCV3/B must not be used on any fluids categorised as Group 1 according to the E.C. directive on the classification of dangerous substances, e.g. explosive, flammable, toxic and oxidising substances.

Sizes and pipe connections

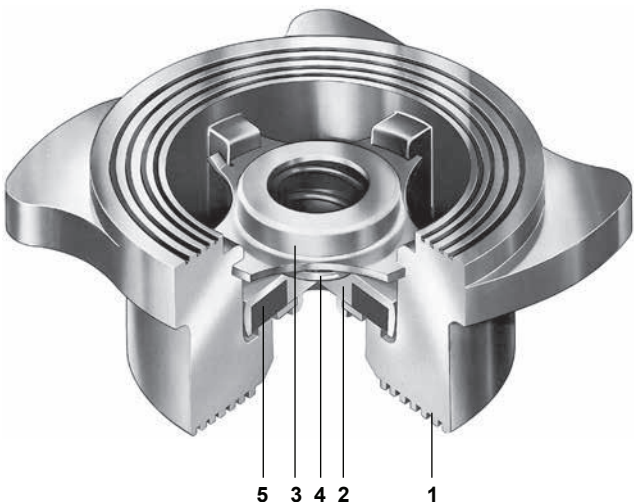
DN20, DN25, DN32, DN40 and DN50.

The valves are selected to suit the feedwater line size and are suitable for installation between the following flanges:-

EN 1092 PN6, 10, 16, 25, 40 and BS 10 Table D, E, F, and H.

Pressure/temperature limits

Body design conditions	PN40
Maximum body design temperature	400°C
Minimum allowable temperature	-10°C
Maximum boiler pressure	32 bar g
Maximum feedpump pressure	40 bar g
Maximum feedwater temperature	120°C
Maximum feedwater head	6 m
Approximate opening pressure	0.8 bar g
Designed for a maximum cold hydraulic test pressure of 60 bar g	

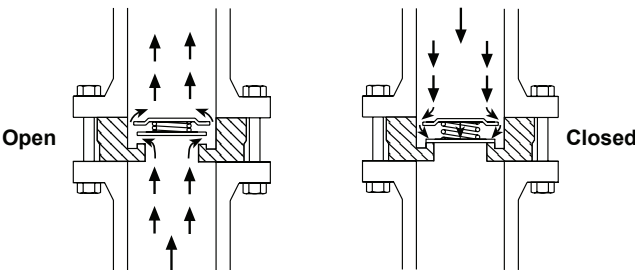


Materials

No.	Part	Material	
1	Body	Austenitic stainless steel	WS 1.4581
2	Disc	Austenitic stainless steel	BS 1449 316 S11
3	Spring retainer	Austenitic stainless steel	BS 1449 316 S11
4	Spring	Austenitic stainless steel	BS 2056 316 S42
5	Seat	EPDM	

Operation

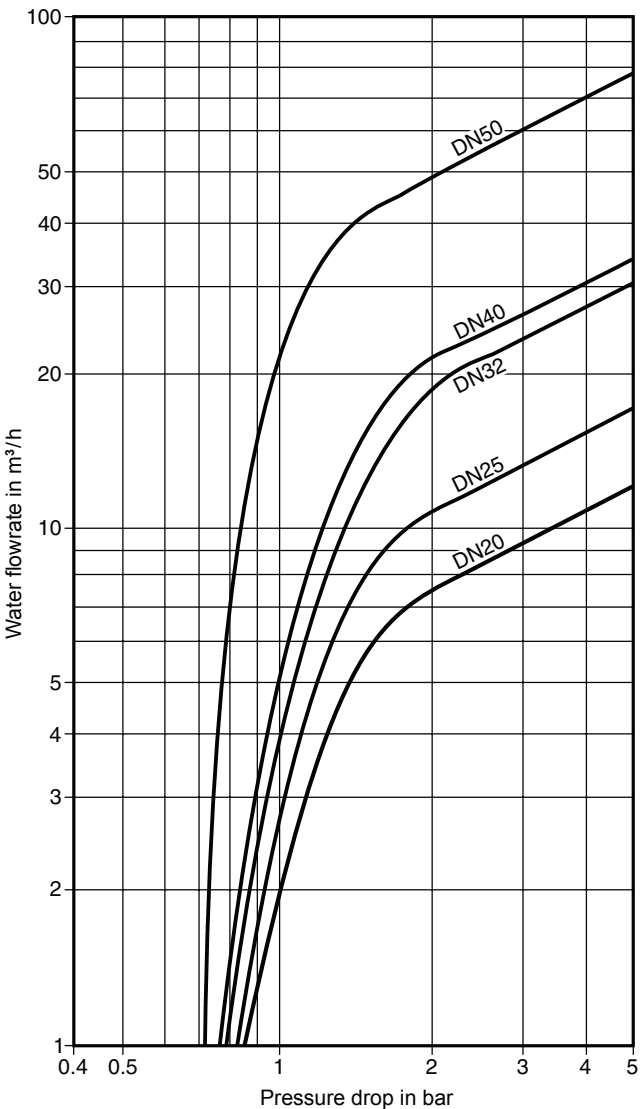
The DCV3/B is opened by the boiler feedwater pressure and is closed by its spring as soon as the flow ceases, preventing reverse flow. The strong spring supports the head of water in an elevated feedtank when there is no pressure in the boiler, preventing the boiler flooding. A vacuum breaker is recommended on the boiler to prevent the valve being drawn off its seat as the boiler cools.



K<sub>v</sub> values

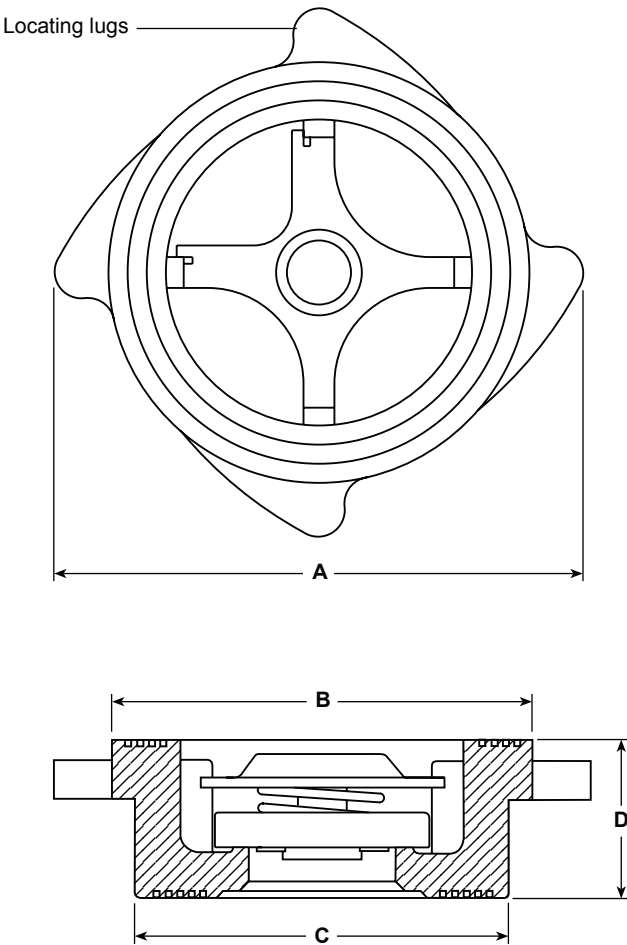
Size	DN20	DN25	DN32	DN40	DN50
K <sub>v</sub>	6.8	10.8	17	26	43
For conversion: C <sub>v</sub> (UK) = K <sub>v</sub> x 0.963    C <sub>v</sub> (US) = K <sub>v</sub> x 1.156					

Pressure drop (approximate) through the DCV3/B



Dimensions/weights (approximate) in mm and kg

Size	A	B	C	D	Weight
DN20	69.5	53	45	19.0	0.19
DN25	80.5	63	55	22.0	0.32
DN32	90.5	75	68	28.0	0.55
DN40	101.0	85	79	31.5	0.74
DN50	115.0	95	93	40.0	1.25



2.3

95

Safety information, installation and maintenance

Warning

This document does not contain enough information to install the DCV3/B safely.

For full details see the Installation and Maintenance Instructions supplied with the product.

**Note:** Flanges, bolts (or studs), nuts and joint gaskets are to be provided by the installer. Disc check valves are non-maintainable (no spares are available). Disc check valves are not suitable for use where heavily pulsating flow exists.

Installation note:

The DCV3/B is installed in the feedwater line with the flow in the direction of the arrow on the valve body. It may be installed in any plane, and is sandwiched between flanges using suitable gaskets. The valve is centralised by rotating it until the lugs on the body contact the flange joint bolts. The valve must be installed at least 1 metre from the feedpump.

It is essential that there is water on both sides of the valve at all times – steam temperatures above 120°C will cause damage to the EPDM seal.

How to order

**Example:** 1 off Spirax Sarco DN40 DCV3/B boiler feed check valve.

