

Disc Check Valves

DCV 1, 2, 3

Description :

DCV 1, 2 and 3 Disc Check Valves are designed to be sandwiched between flanges i.e. wafer type. They are suitable for use on a wide range of fluids for applications in process lines, hot water systems, steam and condensate systems etc.

Limiting Conditions :

DCV 1

Maximum body design PN 16
 PMO - Maximum operating pressure 16 barg
 TMO - Maximum operating temperature 260°C.
 Maximum cold hydraulic test 24 barg
 Minimum operating temperature -50°C.

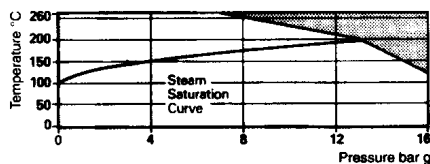
DCV 2 and DCV 3

Maximum body design PN40
 PMO - maximum operating pressure 40 barg
 TMO - Maximum operating temperature :-
 300°C with standard spring
 300°C with heavy duty spring
 400°C with high temperature nimonic spring
 400°C without spring

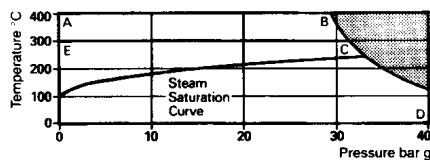
Maximum cold hydraulic test 60 barg
 Minimum operating temperature -50°C

Operating Range :

DCV1



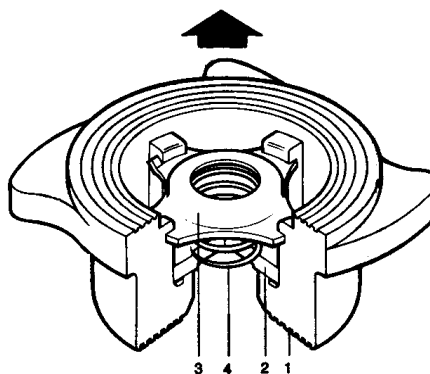
DCV2 and DCV3



A-B-C-D- DCV2 and 3 without spring or
 DCV3 with Nimonic spring
 E-C-D- DCV2 and 3 with standard spring
 This product must not be used in this region.

Sizes and pipe connections :

DN 15, 20, 25, 32, 40, 50, 65, 80, 100
 DCV1,2&3 can be fitted between BS10 tables 'E' & 'H'
 BS 4504 / DIN PN6, 10,16, 25,40, JIS 5,10,16, 20
 flanges with the following exception :-
 DN 40, 50, 80, and 100 -will not fit between JIS 5
 flanges
 DN 65 and 80-will not fit between BS10 'E' flanges.



Spring options available:

Heavy duty springs for boiler feed check applications
 For sizes up to DN65 in DCV1 and DCV2 models
 Nimonic springs for temperatures up to 400°C
 For all sizes for DCV3 models only.

Soft seated options available :

Viton (for oils and gases) - temperature limits-
 15°C to +250°C
 EPDM (for water) - temperature limits -
 50°C to +150°C

Materials :

No.	Part	Material	
1	Body	DCV1 Bronze DIN 1705 W/S2.1050	
		DCV2 Ferritic (Martensitic) Stainless Steel DIN 17445 WS 1.4313	
		DCV3 Austenitic Stainless Steel Din 17445 WS 1.4581	
2	Disc	Stainless Steel BS 1449 316 S 11	
3	Spring Retainer	Stainless Steel BS 1449 316 S 11	
4	Standard Spring	Stainless Steel BS 2056 316 S 42	
		Heavy Duty Spring	Stainless Steel BS 2056 316 S 42
		High Temp. Spring	Stainless Steel Nimonic 90

Opening Pressure : in mbar

Differential Pressures with Zero Flow

→	Flow direction									
DN	15	20	25	32	40	50	65	80	100	
↑	25	25	25	27	28	29	30	31	33	
→	22.5	22.5	22.5	23.5	24.5	24.5	25	25.5	26.5	
↓	20	20	20	20	20	20	20	20	20	

Where lowest opening pressures are required, valves without springs can be installed in vertical pipes with bottom-to-top flow.

Without spring	↑	2.5	2.5	2.5	3.5	4	4.5	5	5.5	6.5
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Standard of shut off :

Standard valves conform to DIN 3230 Part 3, BN 2. Valves conforming to DIN 3230 part 3, BO3 available on request. Soft seated versions give zero leakage provided a differential pressure exists.

Note : Disc Check valves are not suitable for use where heavily pulsating flow exists, such as close to a compressor.

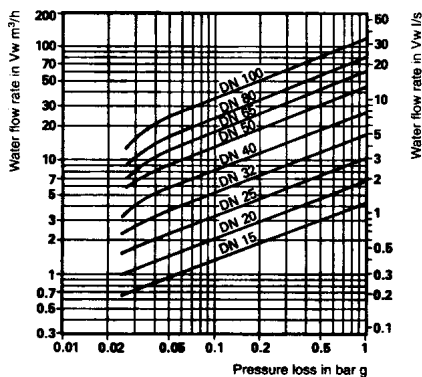
Standards :

Designed and manufactured in accordance with BS 7438.

Dimensions : (approx.) mm

DN	A	B	C	D	Weight kg	
					DCV1	DCV2 &3
15	60	43	38	16	0.13	0.11
20	69.5	53	45	19	0.16	0.17
25	80.5	63	55	22	0.32	0.28
32	90.5	75	68	28	0.55	0.47
40	101	85	79	31.5	0.74	0.64
50	115	95	93	40	1.25	1.11
65	142	115	113	546	1.87	1.64
80	154	133	128	50	2.42	2.21
100	184	154	148	60	3.81	3.31

Pressure Loss Diagram :



Pressure loss diagram with open valve at 20 °C. The values indicated are applicable to spring loaded valves with horizontal flow. With vertical flow., insignificant deviations occur only within the range of partial opening.

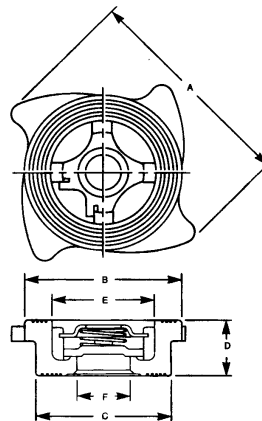
The curves given in the chart are valid for water at 20°C. To determine the pressure drop for other fluids the equivalent water volume flowrate must be calculated and used in the graph.

$$V_w = \frac{\sqrt{Q}}{1000 \times V}$$

Vw = Equivalent water volume flow in l/s or m³/h

Q = Density of fluid kg/m³

V = Volume of fluid l/s or m³/h



How to specify :

Spirax Sarco DCV 3 Disc Check Valve for fitting between BS4504 PN 25 Flanges.

Valve bodies that are marked with :-

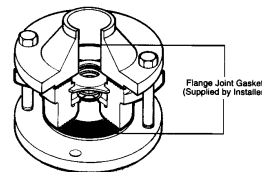
- 'N' -Nimonic spring - Standard metal disc
- 'W' -Without Spring - Standard metal disc
- 'H' -Heavy Duty Spring - Standard metal disc
- 'V' Standard Spring - Viton soft faced disc
- 'E' -Standard Spring - EPDM soft faced disc
- 'WV'-Without spring - Viton soft faced disc
- 'WE'-without spring - EPDM soft faced disc
- 'HV' -heavy duty spring - Viton soft faced disc
- 'HE' - heavy duty spring - EPDM soft faced disc
- 'T' - Valves tested to DIN 3230 part 3, BO3

No identification indicates a standard spring with a metal disc.

How to order :

1-DN 40 Spirax Sarco DCV 3 disc check valve, austenitic stainless steel body to fit between BS 10 Table E flanges

Installation :



Disc Check Valves must be fitted in accordance with the direction of flow arrow indicating correct flow direction.

When fitted with a spring they can be installed in any plane. When supplied without a spring these must be fitted in a vertical flow line with the flow from bottom to top.

The 'cam' design of the body allows the various flange types to be accommodated. The body is rotated to touch the flange joint bolts ensuring that a good joint is obtained. This is fully detailed in the Installation Instructions supplied with each DCV