



TI-P601-43
 ST Issue 2

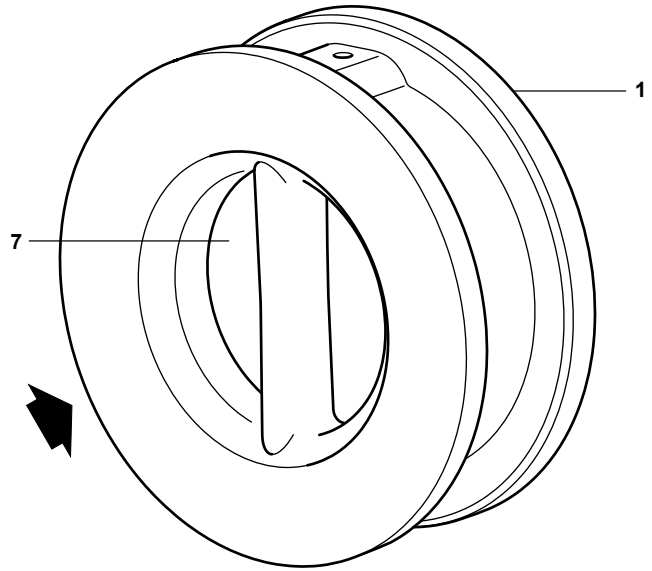
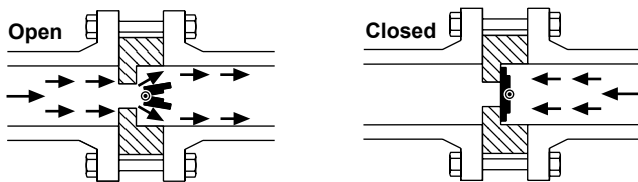
SDCV3, SDCV4, SDCV7 and SDCV8 Split Disc Check Valves

Description

The Spirax Sarco SDCV range of split disc check valves are manufactured following a wafer pattern design that is suitable for fitting between PN16, PN40, ASME Class 150 and 300 flanges. Their function is to prevent reverse flow on a wide variety of fluids for applications in process lines, hot water systems, steam and condensate systems. The face-to-face dimension of the SDCV conforms to API 594 and seat leakage to API 598. As standard the SDCV range have a metal-to-metal seat - Alternatively, if requested, there is an option of a Fluoroelastomer soft seat.

Operation

A split disc check valve is opened by the pressure of the fluid and closed by the spring as soon as the flow ceases and before the reverse flow occurs.



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.

Standard shut-off

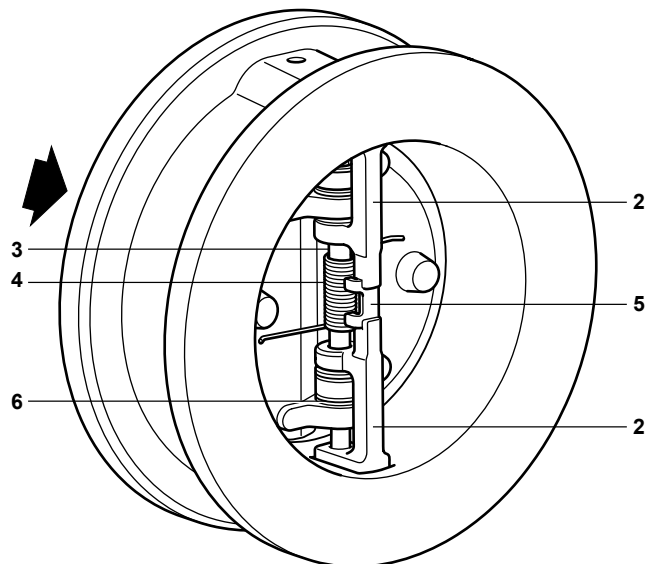
Metal-to-metal seat leakage is tested to API 598.

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.

Size and pipe connections

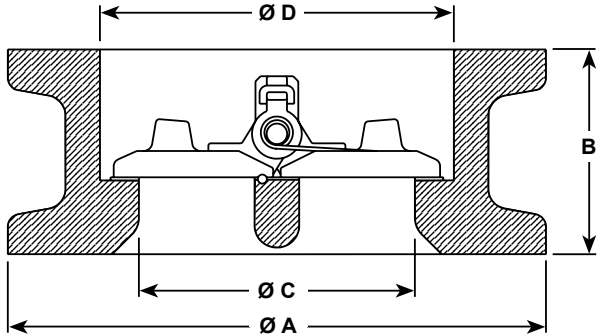
Body material	Type	Suitable for installation between flanges	Size range
Carbon steel	SDCV3	ASME B16.5 Class 150 and Class 300	DN50 2"
Austenitic stainless steel	SDCV4		DN80 3"
			DN100 4"
Carbon steel	SDCV7	EN 1092 PN16 and PN40	DN150 6"
Austenitic stainless steel	SDCV8		DN250 10" and DN300 12"



Materials

No.	Part	Type	Material	Valve bodies that are marked with a:
1	Body	SDCV3 and SDCV7	Carbon steel	ASTM A352 LCC
		SDCV4 and SDCV8	Austenitic stainless steel	ASTM A351 CF8M
2	Retainer		Austenitic stainless steel	ASTM A351 CF8M
3	Pin		Austenitic stainless steel	AISI 316
4	Spring		Nickel alloy	INCONEL X750
5	Retainer clip		Austenitic stainless steel	AISI 316
6	Spacer washer		Austenitic stainless steel	AISI316
7	Plate		Austenitic stainless steel	ASTM A351 CF8M

Dimensions approximate in mm



Weights approximate in kg

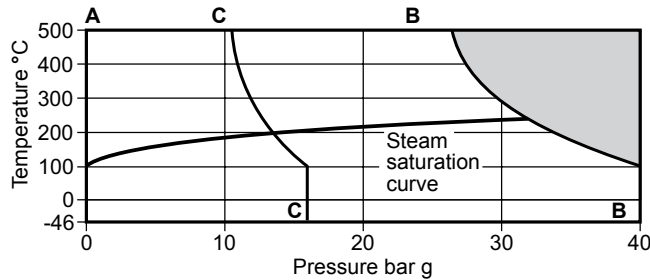
Size	SDCV3 and SDCV4		SDCV7 and SDCV8	
	ASME 150	ASME 300	PN16	PN40
DN50	2.50	2.75	2.50	2.75
DN80	5.50	6.00	5.50	6.00
DN100	6.80	7.50	6.80	7.50
DN150	15.00	17.50	15.00	17.50
DN200	29.50	32.00	29.50	32.00
DN250	47.00	52.00	47.00	52.00
DN300	85.00	87.00	85.00	87.00

Size	SDCV3 and SDCV4		SDCV7 and SDCV8		B	Ø C	Ø D
	ASME 150	ASME 300	PN16	PN40			
DN50	105	111	109	109	60	42	60
DN80	137	149	144	144	73	67.5	89.5
DN100	175	181	164	170	73	90	115
DN150	222	251	220	226	98	132	169
DN200	279	308	275	293	127	176	220
DN250	339	362	331	355	146	238	275
DN300	409	422	386	420	181	266	326

Pressure / temperature limits (ISO 6552) - Flanged EN 1092

SDCV7
Carbon steel

SDCV8
Stainless steel



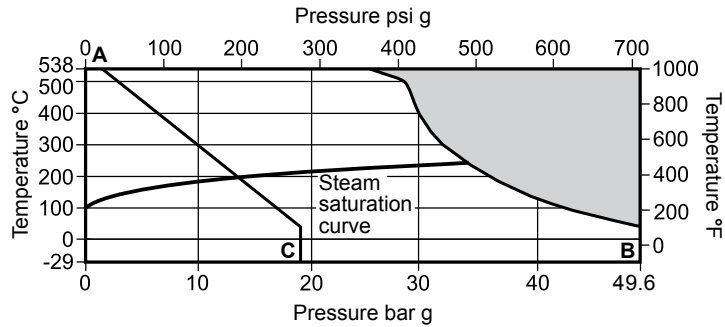
The product **must not** be used in this region or beyond the parameter of the PMA or TMA of the relative end connection.

Body design condition		PN40
PMA	Maximum allowable pressure	40 bar g @ 100°C
TMA	Maximum allowable temperature	500°C @ 26.4 bar g
Minimum allowable temperature	Metal seat	-196°C
	Fluoroelastomer soft seat	-10°C
A - B - B PN40		
PMO	Maximum operating pressure	40 bar g @ 100°C
TMO	Maximum operating temperature	Metal seat 500°C @ 26.4 bar g Fluoroelastomer soft seat 200°C @ 40 bar g
	Minimum operating temperature	Metal seat -196°C Fluoroelastomer soft seat -10°C
Designed for a maximum cold hydraulic test pressure of:		76 bar g
Body design condition		PN16
PMA	Maximum allowable pressure	16 bar g @ 100°C
TMA	Maximum allowable temperature	500°C @ 10.5 bar g
Minimum allowable temperature	Metal seat	-196°C
	Fluoroelastomer soft seat	-10°C
A - C - C PN16		
PMO	Maximum operating pressure	16 bar g @ 100°C
TMO	Maximum operating temperature	Metal seat 500°C @ 10.5 bar g Fluoroelastomer soft seat 200°C @ 13.4 bar g
	Minimum operating temperature	Metal seat -196°C Fluoroelastomer soft seat -10°C
Designed for a maximum cold hydraulic test pressure of:		24 bar g

Pressure / temperature limits (ISO 6552) - Flanged ASME

SDCV3
Carbon steel

SDCV4
Stainless steel



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

		Body design condition	ASME 300	
A - B	ASME 300	PMA Maximum allowable pressure	49.6 bar g @ 38°C / 719 psi g @ 100°F	
		TMA Maximum allowable temperature	538°C @ 25.2 bar g / 1000°F @ 365.5 psi g	
		Minimum allowable temperature	Metal seat	-21°C / -5.8°F
			Fluoroelastomer soft seat	-10°C / 14°F
		PMO Maximum operating pressure		49.6 bar g @ 38°C / 719 psi g @ 100°F
			TMO Maximum operating temperature	Metal seat
				Fluoroelastomer soft seat
		Minimum operating temperature	Metal seat	-21°C / -5.8°F
			Fluoroelastomer soft seat	-10°C / 14°F
				Designed for a maximum cold hydraulic test pressure of:
		Body design condition	ASME 150	
A - C	ASME 150	PMA Maximum allowable pressure	19 bar g @ 38°C / 275.5 psi g @ 100°F	
		TMA Maximum allowable temperature	538°C @ 1.4 bar g / 1000°F @ 20.3 psi g	
		Minimum allowable temperature	Metal seat	-21°C / -5.8°F
			Fluoroelastomer soft seat	-10°C / 14°F
		PMO Maximum operating pressure		19 bar g @ 38°C / 275.5 psi g @ 100°F
			TMO Maximum operating temperature	Metal seat
				Fluoroelastomer soft seat
		Minimum operating temperature	Metal seat	-21°C / -5.8°F
			Fluoroelastomer soft seat	-10°C / 14°F
				Designed for a maximum cold hydraulic test pressure of:

Pressure loss diagram

Pressure loss diagram with the valve open 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.

Where:

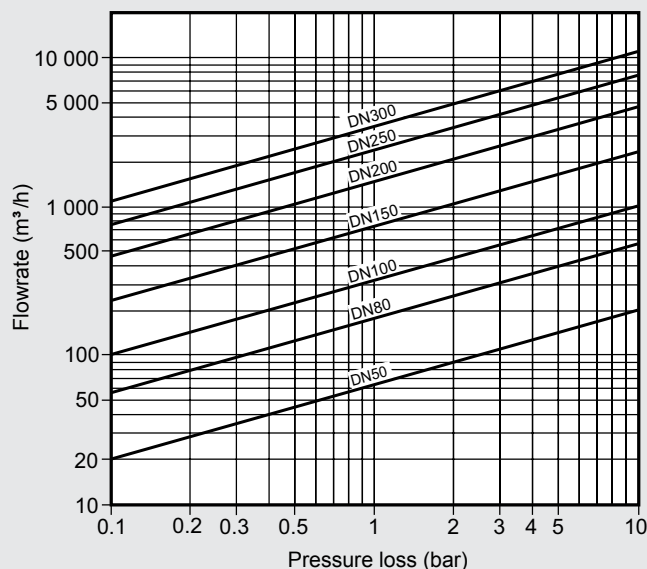
$$\dot{V}_w = \sqrt{\frac{\rho}{1000}} \times \dot{V}$$

\dot{V}_w = Equivalent water volume flow in l/s or m³/h

ρ = Density of fluid kg/m³

\dot{V} = Volume of fluid l/s or m³/h

Pressure loss information for steam, compressed air and gases is available from Spirax Sarco.



K_v values

DN	50	80	100	150	200	250	300
K _v	48	118	325	747	1361	2 274	3 349

For conversion: C_v (UK) = K_v x 0.963 C_v (US) = K_v x 1.156

Opening pressures in mbar

Differential pressures with zero flow.

→ Flow direction

Flow	DN50	DN80	DN100	DN150	DN200	DN250	DN300
→	13.8	13.8	13.8	13.8	13.8	13.8	13.8
↑	36.0	36.0	36.0	40.0	47.0	48.0	51.0

How to order

Example: 1 off Spirax Sarco SDCV3 having a carbon steel body (LCC) for installation between DN150, PN40 flanges. Complete with EN 10204 3.1 certification for the body.

Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P601-03) supplied with the product.

Note: The SDCV split disc check valve range is not suitable for heavy pulsating flows (compressors) or vertical down flows. Flanges, bolts (or studs), nuts and joint gaskets are to be provided by the installer.

Spare parts

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

Available spares

Overhaul kit 4, 5, 6 (4 off) and 7 (2 off)

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 check valve.

Example: 1 - Overhaul kit for a DN200 SDCV8 split disc check valve.

