

spirax/sarco

SDCV8

TI-P601-07
ST Issue 6

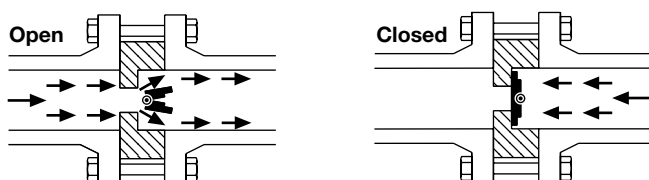
Austenitic Stainless Steel Split Disc Check Valve - DIN/PN Flanges

Description

A range of austenitic stainless steel split disc check valves in a wafer pattern suitable for fitting between PN16 and PN40 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 SDCV8 conforms to API 594 and seat leakage to API 598. As standard valves have a metal-to-metal seat. A Fluoroelastomer soft seat and heavy spring are also available.

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.

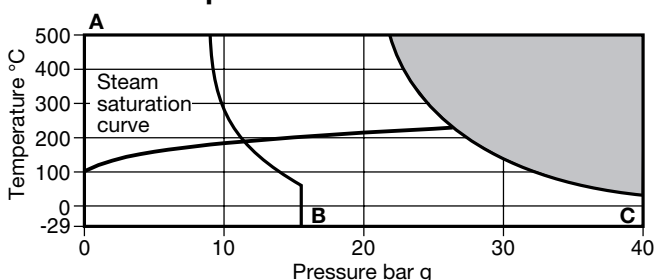
Certification

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

DN50, DN80, DN100, DN150, DN200, DN250 and DN300. Suitable for installation between PN16 and PN40 flanges.

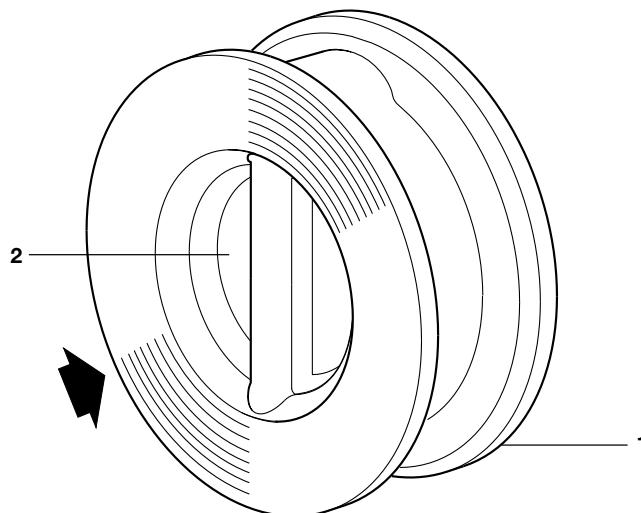
Pressure/temperature limits



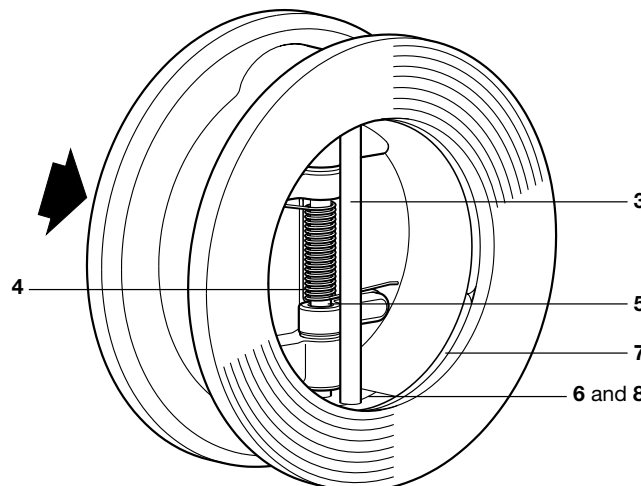
The product must not be used in this region.

A - B EN 1092 PN16 flanges **A - C** EN 1092 PN40 flanges

| Body design conditions | | | |
|---|-------------------------------|---------------------------|------------------|
| PN40 | | | |
| PMA | Maximum allowable pressure | 40 bar g @ 50°C | |
| TMA | Maximum allowable temperature | 500°C @ 21 bar g | |
| Minimum allowable temperature | Metal seat | -29°C | |
| | Fluoroelastomer soft seat | -29°C | |
| PMO | Maximum operating pressure | 40 bar g @ 50°C | |
| TMO | Maximum operating temperature | Metal seat | 500°C @ 21 bar g |
| | | Fluoroelastomer soft seat | 200°C @ 28 bar g |
| Minimum operating temperature | Metal seat | -29°C | |
| | Fluoroelastomer soft seat | -29°C | |
| Designed for a maximum cold hydraulic test pressure of 60 bar g | | | |



Note: Item 10 is not shown and item 9 cannot be illustrated.



Materials

| No. Part | Material | |
|----------|----------------|--|
| * 1 | Body | Austenitic stainless steel ASTM A351 CF8M |
| 2 | Plate | Austenitic stainless steel ASTM A351 CF8M |
| 3 | Hinge/stop pin | Austenitic stainless steel AISI 316 |
| 4 | Coil spring | Nickel alloy Inconel-X |
| 5 | Pin | Austenitic stainless steel 316 |
| 6 | Clips | Austenitic stainless steel 316 |
| 7 | Ring | Austenitic stainless steel 316 |
| 8 | Pin Fixture | Austenitic stainless steel 316 |
| * 9 | Soft seat | Fluoroelastomer (optional) Fluoroelastomer |
| 10 | Eye bolt | Carbon steel (DN150 to DN300, ASME 300 only) |

* Valve bodies that are marked with a 'V' - have a Fluoroelastomer seating face. Valve bodies that are marked with a 'H' - have heavy springs 0.45 bar g (450 mb).

Note: A range of alternative body, plate and component materials are available to satisfy special applications. Please contact Spirax Sarco for further information on availability and how to order.

Dimensions approximate in mm

| | PN16 Ø A | PN40 Ø A | B | Ø C | Ø D |
|-------|-------------|-------------|-----|-----|-------|
| DN50 | 109 | 109 | 60 | 40 | 57.0 |
| DN80 | 144 | 144 | 73 | 51 | 87.0 |
| DN100 | 164 | 170 | 73 | 89 | 113.0 |
| DN150 | 220 | 226 | 98 | 140 | 166.0 |
| DN200 | 275 | 293 | 127 | 171 | 206.5 |
| DN250 | 331 | 355 | 146 | 235 | 260.0 |
| DN300 | 386 | 420 | 181 | 260 | 300.0 |

Weights approximate kg

| | PN16 | PN40 |
|-------|------|------|
| DN50 | 2.7 | 2.7 |
| DN80 | 6.8 | 6.8 |
| DN100 | 8.6 | 8.6 |
| DN150 | 17.0 | 25.0 |
| DN200 | 31.0 | 36.0 |
| DN250 | 52.0 | 64.0 |
| DN300 | 97.0 | 98.0 |

K_V values

| DN | 50 | 80 | 100 | 150 | 200 | 250 | 300 |
|----------------|----|-----|-----|-----|-------|-------|-------|
| K _V | 40 | 111 | 226 | 611 | 1 188 | 2 205 | 3 299 |

For conversion: C_V (UK) = K_V x 0.963 C_V (US) = K_V x 1.156

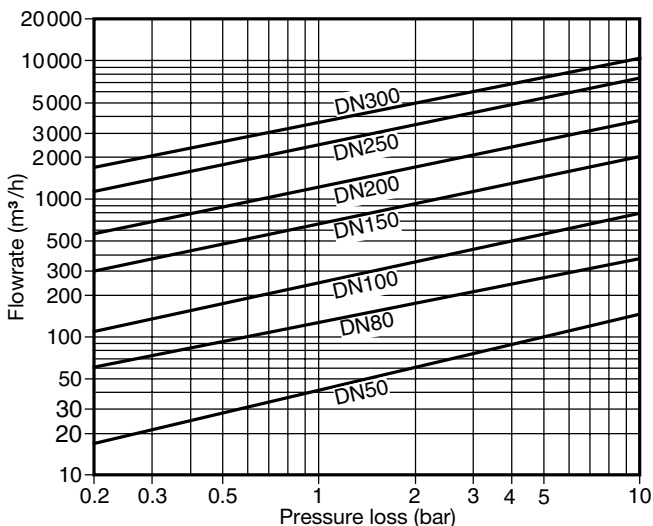
Opening pressures in mbar

Differential pressures with zero flow. → Flow direction

| | DN50 | DN80 | DN100 | DN150 | DN200 | DN250 | DN300 |
|---|------|------|-------|-------|-------|-------|-------|
| → | 30 | 30.0 | 26 | 27 | 16 | 16 | 17 |
| ↑ | 48 | 45.5 | 43 | 43 | 39 | 40 | 46 |

Note: with a heavy spring fitted the opening pressure is 0.45 bar g (450 mb).

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.

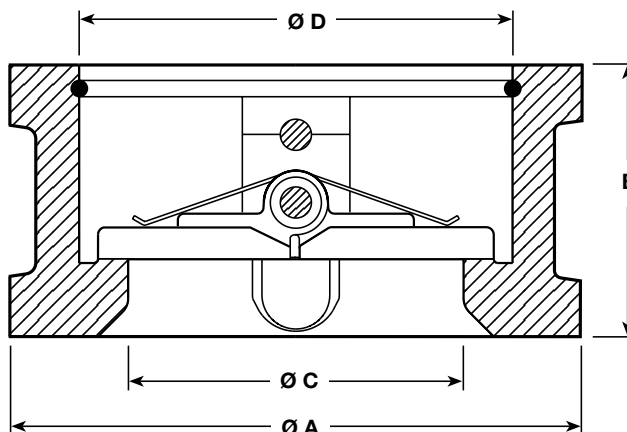
$$\dot{V}_w = \sqrt{\frac{\rho}{1000}} \times \dot{V}$$

Where: \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.



How to order

Example: 1 off Spirax Sarco SDCV8 having an austenitic stainless steel body 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 SDCV8 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 | 2 (2 off), 4 |
|--------------|--------------|

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.

