Check valves overview
Reverse flow protection

Spirax Sarco offers a comprehensive range of check valves designed to protect equipment that can be affected by reverse flow.

An awareness of the problems associated with reverse flow and related pressure surges is essential, particularly when using flowmeters, as reverse flow reduces accuracy. Reverse flow can also cause problems in manufacturing processes affecting product quality.

There are a number of reasons for using check valves, which include:

- Protection of any item of equipment that can be affected by reverse flow, such as flowmeters and control valves
- Prevention of unwanted pressure surges associated with hydraulic forces, for example waterhammer
- Prevention of flooding which may occur under gravity or on system shutdown
- Relief of vacuum conditions
- Reduced risk of cross contamination in processes.

Our check valves can be used across a wide range of industries including:

- Oil and petrochemical
- Pharmaceuticals
- Shipbuilding
- Power generation
- Institutions
- Food and beverage production
- Pulp and paper
- Textiles.

Typical applications include:

- Steam and condensate lines
- Process lines
- Hot and cold water systems
- Heating systems
- Thermal oil systems.

Our check valves are available in a comprehensive range of designs, materials and sizes to suit a wide variety of applications and processes. With our expertise in steam systems and other related industrial fluids we are always on-hand to help you select the best solutions for your requirements.

First for Steam Solutions

EXPERTISE | SOLUTIONS | SUSTAINABILITY
Disc check valve

Designed to fit between two pipeline flanges, the Spirax Sarco DCV provides a compact installation when compared size-for-size with conventional lift type check valves. The DCV is available in a wide range of materials and suitable for use across a variety of processes and industries.

For applications which require heavy or pulsating flows, such as after a pump installation, the DCV10 is available. The 'centrally guided' design of the DCV10 offers improved reliability when compared to traditional unguided disc check valves.
How the disc check valve works

The valve is opened by the flow pressure of the fluid, and closed by the spring when flow ceases and before reverse flow can occur.

For full range see pages 10-11
Split disc check valve

Like the DCV, the Spirax Sarco SDCV provides a compact installation. The design of the SDCV resolves the size and pressure drop limitations of other check valve types. The split disc design is not limited in size which means it can be produced in much larger sizes than other disc check valve types.

How the split disc valve works

The valve is opened by the flow pressure of the fluid, and closed by the spring when flow ceases and before reverse flow can occur.

For full range see pages 10-11
Swing-type wafer check valve

The swing-type wafer check valve (WCV), has the most compact and light-weight design of all the check valve types making it ideal for use in larger pipeline sizes, typically above DN125, with reduced requirement for additional support to pipelines.

Its unobstructed flow-path design ensures the WCV can be used in applications where fluids carry solid elements such as sludge and pulp.

How the swing-type wafer check valve works

The wafer check valve is opened by the flow pressure of the fluid forcing the disc to hinge upwards allowing flow through the valve. Reverse flow will cause the disc to shut against the seat. In the absence of flow the weight of the disc forces closure of the valve.

For full range see pages 10-11
Lift check valve

The Spirax Sarco LCV range offers robust solutions for prevention of reverse flow with options for use in horizontal and vertical pipelines. With only a single moving part the LCV design is virtually maintenance free. The majority of the valves within the LCV range also offer a replaceable seat arrangement for simple and quick maintenance. This range is also ideal for low differential pressure applications.

For full range see pages 10-11
Sanitary check valve

The CVS10 sanitary check valve has been designed specifically for use in the pharmaceutical industry for the prevention of reverse flow and cross contamination and is manufactured to the latest version of ASME BPE.

- Available with metal seat for clean and pure steam/condensate applications or with soft seat for high purity fluid applications such as WFI (Water For Injection) systems
- All elastomers are compliant with the applicable FDA CFR 21 para 177 and USP class VI standards
- Full traceability of wetted materials throughout
- Choice of surface finish to maintain sterility and reduce risk of microbial growth
- Part of a dedicated high purity product range from Spirax Sarco.

For full range see pages 10-11
# Check Valves Overview

## Type of Check Valve

### Disc

<table>
<thead>
<tr>
<th>Material</th>
<th>Bronze</th>
<th>Stainless steel</th>
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</thead>
<tbody>
<tr>
<td>Disc</td>
<td></td>
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<tr>
<td>Split Disc</td>
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<tr>
<td>Swing Lift Sanitary</td>
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</tbody>
</table>

## Material

- Bronze
- Stainless steel
- Carbon steel
- Cast iron
- Stainless steel SG iron

## Model

- DCV1
- DCV3
- DCV3/B
- DCV4
- DCV6
- DCV8
- DCV10
- DCV10C*
- DCV41
- SDCV3
- SDCV7
- SDCV4
- SDCV8
- WCV1
- WCV2/
- WCV3
- LCV1
- LCV3
- LCV4
- LCV6
- LCV7
- CVS10

## Size

- DN15
- DN20
- DN25
- DN32
- DN40
- DN50
- DN65
- DN80
- DN100
- DN125
- DN150
- DN200
- DN250
- DN300
- DN350
- DN400
- DN450
- DN500

### Body Design Rating

<table>
<thead>
<tr>
<th>Model</th>
<th>DCV1</th>
<th>DCV3</th>
<th>DCV3/B</th>
<th>DCV4</th>
<th>DCV6</th>
<th>DCV8</th>
<th>DCV10</th>
<th>DCV10C*</th>
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</tbody>
</table>

## Pipeline Connections

- Screwed
- Socket weld
- Flanged
  - EN
  - ASME
  - JIS/KS
  - BS 10
- Sanitary clamp

## Seat Options

- Metal-to-metal
- EPDM
- Fluoroplastic elastomer (Viton)
- PTFE
- FEP/Silicone
- NBR

## Spring Options

- Without spring
- Standard
- Heavy duty
- High temperature

* DCV10C features carbon steel body with stainless steel disc and seat.
<table>
<thead>
<tr>
<th>Split disc</th>
<th>Swing</th>
<th>Lift</th>
<th>Sanitary</th>
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<td>Bronze</td>
<td>Stainless steel</td>
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