



## CVS10 Sanitary Check Valve with Soft Seat

### Description

The CVS10 sanitary in-line spring assisted check valve is manufactured from 316L stainless steel and prevents reverse flow in fluid lines. The soft-seated versions are available with either EPDM, FEP-Silicone or Viton seats for tight shut-off and are intended for use in water, process fluid and gas applications within the food, medical and pharmaceutical industries.

For steam applications a metal-seated version is available - See Technical Information sheet TI-P029-21 for further data.

The soft seat versions are suitable for SIP (Sterilisation-In-Place), where steam is used for sterilisation for short periods of time.

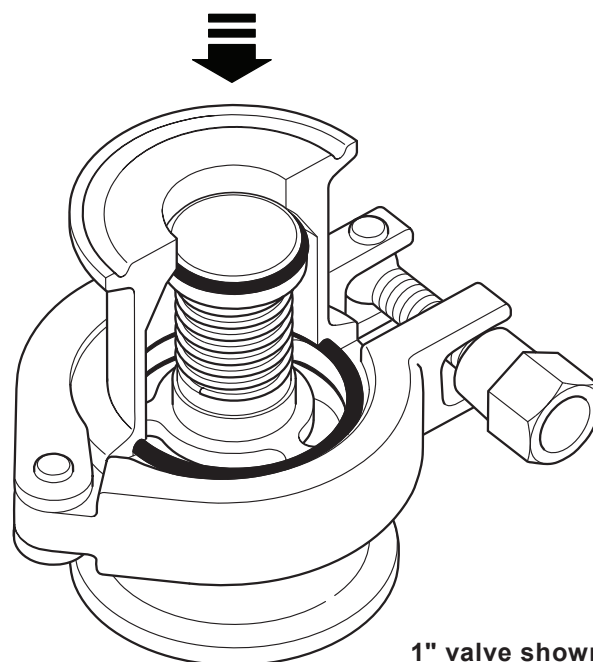
### Available types and surface finish

**CVS10-1** has an internal surface finish of 0.5 micron Ra (within ASME BPE SF1), and external surface finish of 0.8 micron Ra. **CVS10-2** has an electropolished internal surface finish of 0.38 micron RA (within ASME BPE SF4), and external surface finish of 0.8 micron Ra.

**In addition** both the **CVS10-1** and **CVS10-2** are available with either EPDM, Viton or FEP-Silicone soft seats.

The model references have a suffix to denote which soft seat is fitted: 'E' for EPDM, 'V' for Viton or 'F' for FEP-Silicone

**For example**, the model reference **CVS10-2E** denotes a **CVS10** with electropolished internal finish and EPDM soft seat.



### Standards:

- The CVS10 fully complies with the European Pressure Equipment Directive 2014/68/EU.
- The CVS10 is designed in accordance with ASME-BPE.
- All wetted elastomers/polymers comply with FDA regulation CFR 21, paragraph 177, section 2600 for EPDM and Viton, and section 1550 for FEP-Silicone and TFM PTFE.
- All elastomers/polymers are also USP Class VI compliant, and Animal Derived Ingredient (ADI) free.

### Standard shut-off

The standard shut-off of the CVS10 check valve with soft seat conforms to EN 12266-1: 2003 Rate A.

### Certification:

- EN 10204 3.1 material certification as standard.
- Typical surface finish certificates.
- FDA approval certificates for elastomers.
- USP class VI approval certificates.
- ADI free certificate.

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

### Packaging

Packaging for this product is conducted in a clean environment segregated from other non stainless steel products, and in accordance with ASME BPE. Inlet and outlet connections are capped and the product is sealed in a plastic bag prior to boxing.

## Sizes and pipe connections

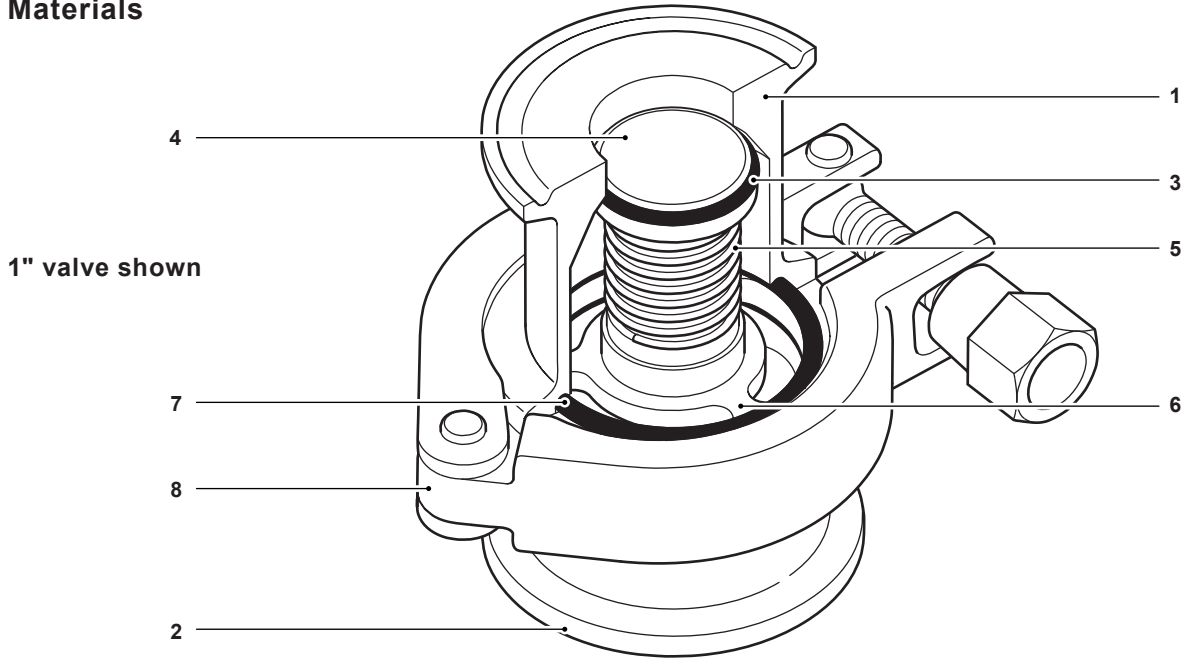
½", ¾", 1", 1½" and 2" to ASME BPE available as standard.

DN15 to DN50 to DIN 32676 available as standard.

- Sanitary clamp: - ASME BPE clamp.  
 - Sanitary clamp to DIN 32676.

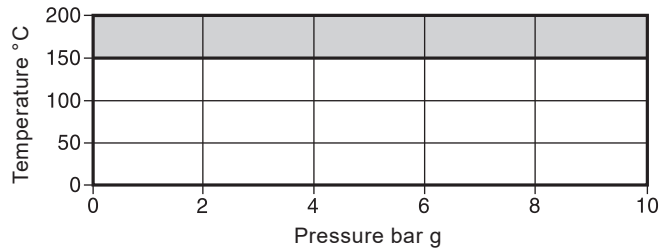
**Note:** Alternative connections and sizes are available on request.

## Materials



No.	Part	Material
1	Body (inlet)	Stainless steel 316L
2	Body (outlet)	Stainless steel 316L
3	Valve head	Stainless steel 316L
4	Valve seat	EPDM, Viton or FEP-Silicone
5	Spring	Stainless steel 316
6	Valve guide and Bush	Stainless steel 316L and TFM-PTFE
7	Body seal (2 off)	EPDM, Viton or FEP-Silicone
8	Body clamp	Stainless steel 316L

## Pressure/temperature limits



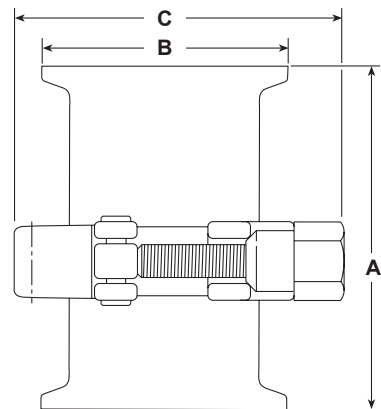
The CVS10 with EPDM seats **must not** be used in this region.

Body design conditions		PN10
PMA	Maximum allowable pressure	Viton 10 bar g @ 200 °C
		FEP-Silicone 10 bar g @ 200 °C
		EPDM 10 bar g @ 150 °C
TMA	Maximum allowable temperature	Viton 200 °C @ 10 bar g
		FEP-Silicone 200 °C @ 10 bar g
		EPDM 150 °C @ 10 bar g
Minimum allowable temperature		-20 °C
PMO	Maximum operating pressure for saturated steam service	10 bar g
TMO	Maximum operating temperature	Viton 200 °C @ 10 bar g
		FEP-Silicone 200 °C @ 10 bar g
		EPDM 150 °C @ 10 bar g
Minimum operating temperature		0 °C
Designed for a maximum cold hydraulic test pressure of:		15 bar g

## Dimensions/weights (approximate) in mm and kg

### Sanitary clamp

Size	A	B		C	Weight
		ASME	DIN		
1/2"	80	25.0	34.0	60	0.5
3/4"	80	25.0	34.0	60	0.5
1"	70	50.5	50.5	60	0.6
1 1/2"	80	50.5	50.5	78	0.9
2"	80	64.0	64.0	90	1.2



## Kv values

Size	1/2"	3/4"	1"	1 1/2"	2"
Kv	8.2	8.2	17.3	27.3	40.5

### For conversion:

$C_v$  (UK) =  $K_v \times 0.963$

$C_v$  (US) =  $K_v \times 1.156$

## Opening pressures

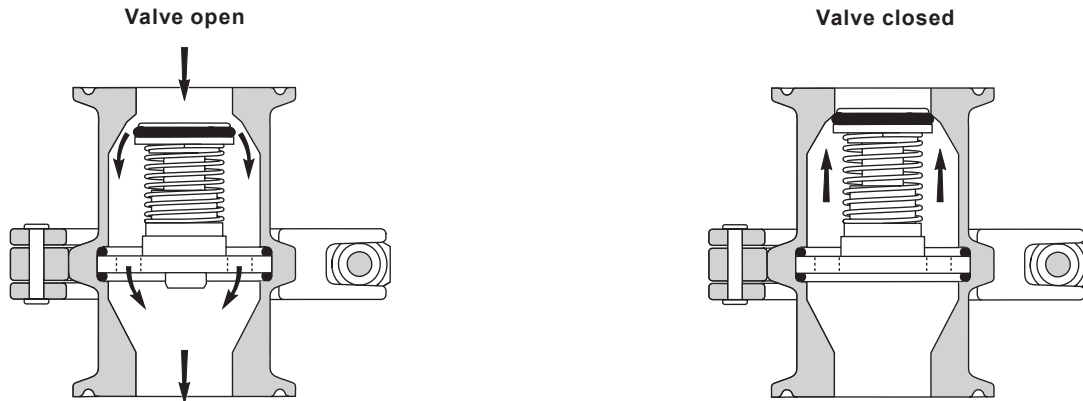
Differential pressure with zero flow in mbar.

→ Flow direction

Size	1/2"	3/4"	1"	1 1/2"	2"
→	35	35	35	35	35
↑	39	39	41	43	43
↓	31	31	29	27	27

## Operation

The valve is opened by the pressure of the fluid. When fluid flow stops the spring closes the valve before reverse flow can occur.



## Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P029-11) supplied with the product.

### Installation note

The standard soft seat versions of the CVS10 are intended for use in a vertical position, as they will not be self-draining in a horizontal line.

Self-draining versions are available to special order. They are dimensionally different with an offset outlet.

### How to order

**Example:** 1 off Spirax Sarco 1" CVS10-1E sanitary check valve with EPDM seat, ASME BPE sanitary clamp connections, and having an internal surface finish of 0.5 micron Ra (20 micro inch). Complete with certification dossier.

## Spare parts

The spare parts available are shown in solid outline.  
Parts drawn in a grey line are not supplied as spares.

### Available spares

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Seal kit	4 and 7
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### 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 off Seal kit for a 1" Spirax Sarco CVS10-1E sanitary check valve with EPDM seat having ASME BPE clamp ends.

