



# Sanitary check valves



Sanitary  
flow  
equipment

# Sanitary Check Valves

## A solution for the prevent reverse flow and cross contamination.

### DESCRIPTION

VR is a fully drainable sanitary in-line spring assisted check valve, which allows the flow into one direction only, preventing reverse flow and cross contamination. Versions suitable for horizontal or vertical installation. All Pharmaceutical Certificates are available.

### STANDARD DESIGN

The valve body is machined from solid round bar in stainless steel AISI 316L. It is made in two pieces assembled together with a standard clamp ring. The valve can be easily and quickly dismantled and reassembled without any tool. A disc, sealed with two O-rings, guides the spring loaded shutter in the valve body seat.

### HOW IT WORKS

The fluid pressure opens the valve. When the inlet pressure, generated by the fluid, exceeds the load of the spring then the shutter lifts and the valve opens. When the differential pressure across the valve drops the shutter returns to his seat and the valve is closing.

### KEY FEATURES

- SIP / CIP Sterilizable – Autoclavable
- Full traceability of wetted materials throughout
- High Cv value
- Meets to FDA standards

### SURFACE FINISH

Product wetted parts :  
Ra<0,5 um – ASME-BPE  
designation SF1  
Electro-polishing  
available on request

### CONNECTIONS

ASME-BPE Clamp Ends or Weld  
Ends matching tubes and fittings.  
ISO and DIN connections are available on request.  
Extended tube connections for orbital welding  
machine are available on request.

### OPERATING CONDITIONS

Max. product pressure: 10 bar  
Working temperature: 0°C to 150°C  
Minimum Differential Pressure to open the valve:  
0,03 bar (30 mbar) approx

### IN COMPLIANCE WITH

Pressure Equipment Directive PED 97/23/CE under the  
SEP article 3 -paragraph 3  
European Directive ATEX 94/9/CE - Ex II 2 GD-T4



# Type VR-NS No Spring

## NON RETURN VALVE, SPRING OPERATED, BIO

The valve body is made in two pieces machined from solid round bar in stainless steel AISI 316L, assembled together with a standard clamp ring and can be easily and quickly dismantled and reassembled without any tools. Since no spring, mechanical return mechanism, stem or shutter is used, this check valves are crevice free, have no areas for particle entrapment, minimize bacteria traps and are fully drainable. Suitable for vertical installation only

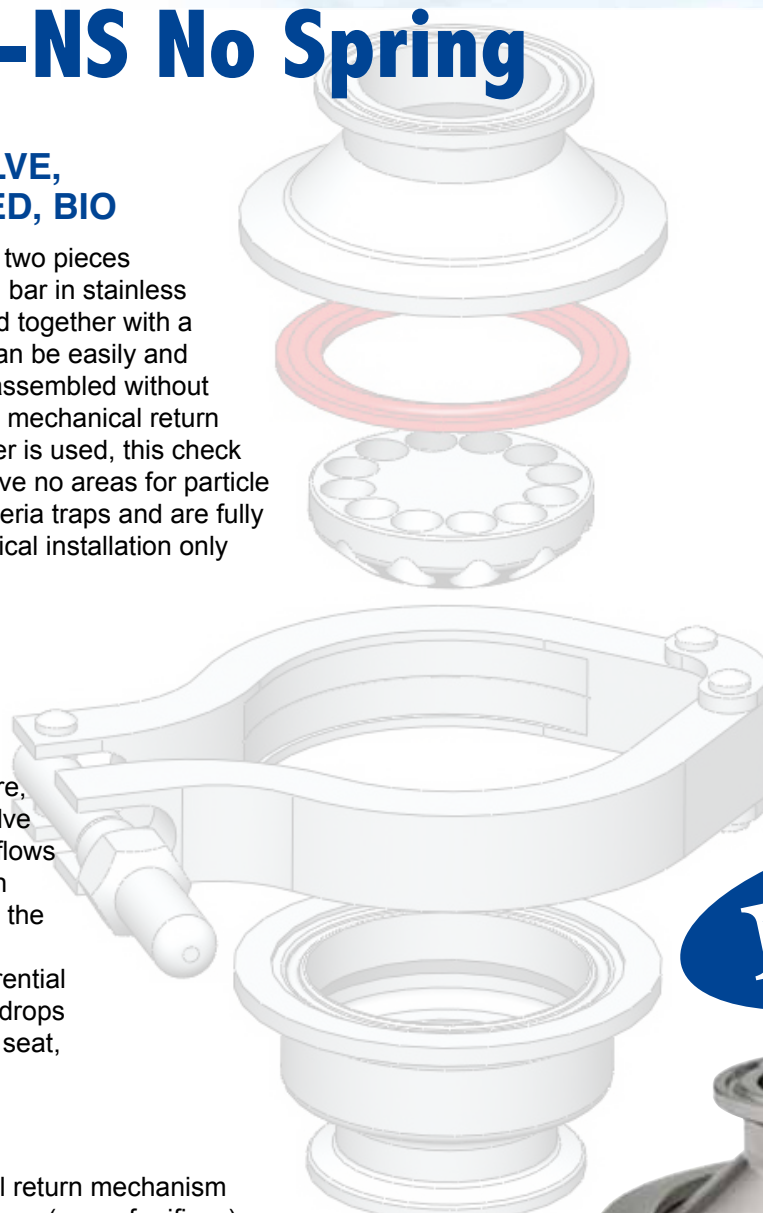
## HOW IT WORKS

The valve is opened by the pressure of the fluid. As soon as inlet pressure exceed the weight of the disc plus the outlet pressure, the disc will lift and the valve open. The process media flows under the seat and through the disc perimeter holes to the outlet side of the valve.

When fluid stops, the differential pressure across the valve drops and the disc returns to the seat, closing the valve.

## KEY FEATURES

- Elimination of mechanical return mechanism
- Full tube flow, total flow area (sum of orifices) is equivalent to tube bore
- Speeds opening time over conventional valves
- Full traceability of wetted materials throughout
- Engineered flow path minimizes pressure loss



**NEW**



## VRN.CC–VR.BIO Ordering information

To specify the part completely, start with the product description and select the additional options as shown below:

		Valve size To suit ASME-BPE clamp fittings or tubing for VRN from 1½" to 3" for VR-BIO from ½" to 6"		Surface finish Ra 0,5 micron as standard EP electro-polished on request		
Valve type VRN-CC Horizontal VRNH-CC VR-BIO	<b>VRN-CC</b>	<b>TC</b>	<b>¾"</b>	<b>1.4404</b>	<b>Ra</b>	<b>Ex</b> Atex Ex II 2 GD T4
	Process connection clamp <b>TC</b> butt weld std. <b>SD</b> butt weld extended <b>SDE</b>			material <b>1.4404</b> as standard at stock <b>1.4435</b> on request		

# Type VRN-CC-TC

The valve body is made in two pieces machined from solid round bar in stainless steel AISI 316L, assembled together with a standard clamp ring and can be easily and quickly dismantled and reassembled without any tools a disc, sealed between two o-rings, guides the spring loaded shutter in the valve body seat. Suitable for horizontal or vertical installation, both fully drainable.

## PRODUCT SPECIFICATIONS

Sizes	1/2", 3/4", 1", 1 1/2", 2", 2 1/2", 3"
Connections	Clamp ASME-BPE or weld ends longer extensions also available
Standard opening pressure	0,03 barg
Maximum working pressure	10 barg
<b>NOTE</b> - pressure rating may exceed that of clamp connections	
Maximum allowable temperature with:	
- EPDM seals	135°C
- Viton and Silicone seals	200°C
<b>NOTE</b> – the applied o-rings seals may have a different design temperature the weakest part in the assembled product set the final, permitted design temperature limits	
Surface finish	
- Internal	0,5 microns Ra
- External	0,8 microns Ra mirror polished
Optional	Electropolished finish or cleaned for oxygen service according to ASTM G93-88 and CGA G4.1

## MATERIAL

Inlet valve body	AISI 316L stainless steel
outlet valve body	AISI 316L stainless steel
guide plate	AISI 316L stainless steel
shutter	TFM
spring	AISI 316L stainless steel
clamp	AISI 304 stainless steel
body seals	VITON (other materials on request)

## MARKING

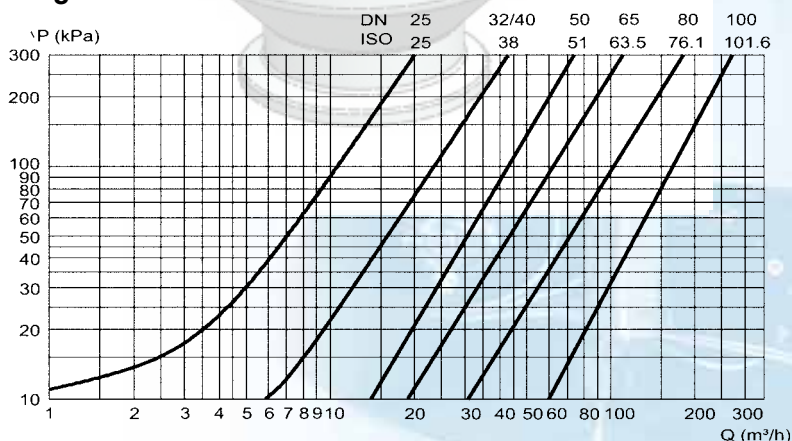
To guarantee full traceability, following information will permanently be marked on the valve body:

- brand name (identif. constructor)
- material grade
- indication of the flow direction
- heat number or lot number

## CAUTION

When welding valves in-line care should be taken to protect internal seals. We recommended that valves are disassembled prior to welding.

## Pressure drop/capacity diagram



For the diagram the following medium applies: Water (20°C)

# Type VR-BIO

## NON RETURN VALVE, SPRING OPERATED, BIO

The sanitary spring operated non return valve BIO is constructed from forged stainless steel AISI 316 in 2 pieces assembled by bolts. The guide plate is machined in the top body parts and the sealing is guaranteed by one o-ring only (unique o-ring seal design minimizes bacteria traps). Can be used in horizontal and vertical position (fully drainable in vertical position).

### PRODUCT SPECIFICATIONS

Sizes	1/2", 3/4", 1", 1 1/2", 2", 2 1/2", 3", 4", 6"
Connections	Clamp ASME-BPE or weld ends longer extensions also available
Standard opening pressure	0,03 barg
Maximum working pressure	10 barg
Maximum allowable temperature with :	
- EPDM seals	135°C
- Viton and Silicone seal	200°C
Surface finish	
- Internal	0,5 microns Ra
- External	0,8 microns Ra mirror polished
Optional	Electropolished finish

### MATERIAL

Inlet valve body	AISI 316L stainless steel
outlet valve body	AISI 316L stainless steel
shutter	TFM
spring	AISI 316L stainless steel
body seal	VITON (other materials on request)
bolts	AISI 304 stainless steel

### MARKING

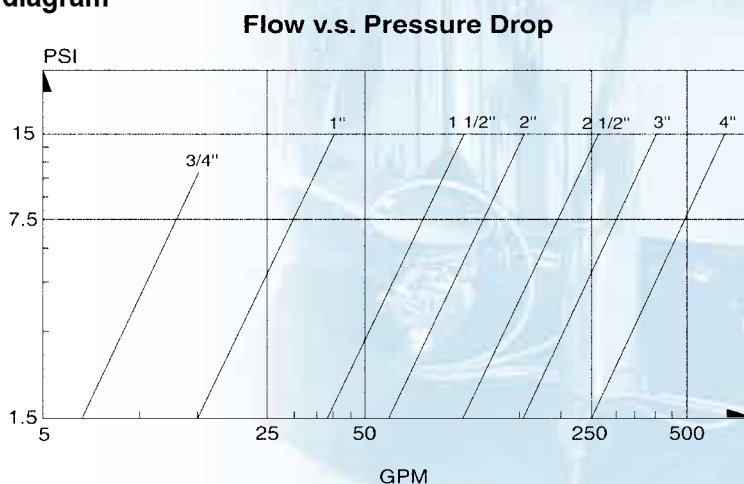
To guarantee full traceability, following information will permanently be marked on the valve body:

- brand name (identif. constructor)
- material grade
- indication of the flow direction
- heat number or lot number

### CAUTION

When welding valves in-line care should be taken to protect internal seals. We recommended that valves are disassembled prior to welding.

### Pressure drop/capacity diagram



For the diagram the following medium applies: Water (20°C)

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К-ТЕП — Обратные пружинные клапаны

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### Замечания

*Условия поставки DDP склад г. Киев*

#### Заметки

Время поставки рассчитано согласно дате предложения и изменяется в зависимости от даты подтверждения заказа.

Помещая заказ, Покупатель принимает предложение и все спецификации, характеристики и условия, указанные в данном документе.

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