



# Sanitary check valves



Sanitary  
flow  
equipment

# Sanitary Check Valves

## The solution to prevent reverse flow.

### 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 assuring process integrity. 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.



# Type VRN-VRH

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

VRN	Vertical installation
VRH	Horizontal installation
Sizes	1/2", 3/4", 1", 1 1/2", 2", 2 1/2", 3"
Standard opening pressure	Clamp ASME-BPE or weld ends
Maximum working pressure	longer extensions also available
Connections	0,03 barg
	6 barg

**NOTE** - pressure rating may exceed that of clamp connections

Maximum allowable temperature with:

- EPDM seals 135°C
- FKM and Silicone seals 150°C

**NOTE** – 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
- 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	SILICONE (other materials on request)

## MARKING

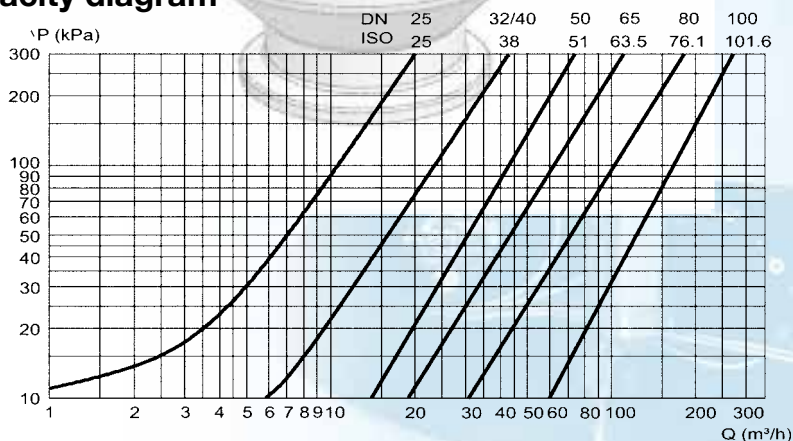
To guarantee full traceability, following information will permanently be marked on the valve body:

- 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 recommend that valves are disassembled prior to welding.

## Pressure drop/capacity diagram



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

# Type VRO

## NON RETURN VALVE, SPRING OPERATED, BIO

The sanitary spring operated non return valve BIO is constructed from forged stainless steel AISI 316L 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	6 barg
Maximum allowable temperature with :	
- EPDM seals	135°C
- FKM and Silicone seal	150°C
Surface finish	
- Internal	0,4 microns Ra
- External	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	FKM (other materials on request)
bolts	AISI 304 stainless steel

### MARKING

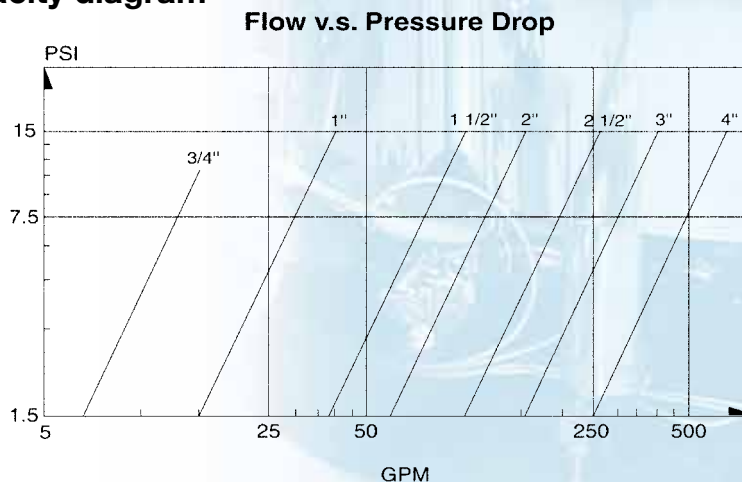
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- brand name (identif. constructor)
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### CAUTION

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### Pressure drop/capacity diagram



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## KEY FEATURES

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

## SURFACE FINISH

Product wetted parts :

$Ra \leq 0,5 \mu m$

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: 6 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 2014/68/EU under the

SEP article 4 -paragraph 3

European Directive ATEX 2016/34/EU



## Ordering information

Valve	Option	Size Valve	Inlet Connection	Size Connection	Outlet Connection	Size Connection	Seals	Shutter	Finish	Material
VRN	-	150	A	M	A	M	-X	T1	-14	A

Check Valve	Size Valve		Size Connection						Surface Finish VRN/H	Materials			
	VRN	VRH	050	075	100	150	200	250			300	400	600
VRN	body clamped		1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	6"	14 $\leq 0,5 \mu m$	A AISI 316L-1.4404
VRH	body bolted		(*)not available VRO		(#)not available VRNH		(*)		#		#	54 $\leq 0,5 \mu m$ + Electropolish	B 1.4435
VRO	body bolted		G	H	J	M	N	O	P	R	V	71 $\leq 0,4 \mu m$	C C22 Hastelloy
VRY / VRD on request, not standard codification			1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	6"	41 $\leq 0,4 \mu m$ + Electropolish	D C276 Hastelloy
Option			In/Out Connection		Seals		Shutter		on request				
- Standard Safe Supply			ASME / BS	Clamp	ButtWeld	X Silicone	T1	TFM PTFE					
A ATEX execution			DIN (*)	A	B	E Epdm	T4	TFM + drain hole					
			ISO (*)	C	F	V Fkm	T2	only VRO 6"					
			SMS (*)	H	I	other materials on request		other on request					
			(*) on request	J	K								



ASEPTIC SAMPLING VALVES



SANITARY SAMPLING VALVES



SANITARY SAMPLING BOTTLE



TANK BOTTOM ASEPTIC VALVE



SPRING CHECK VALVES



HIGH PURITY BALL VALVES



BUTTERFLY VALVES



DTS HEAT EXCHANGERS



SIGHT GLASS-FLOW INDICATOR



CLAMP FITTINGS



TANK CONNECTIONS



SILICONE HOSE & FITTINGS



MAGNETIC MIXER



ITT DIAPHRAGM VALVES



WASHING DEVICES



Sanitary flow equipment

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