ELEPHANT

Manufacturer of shut-off and control valves

TECHNICAL DATA SHEET

Spring check valve ELEPHANT VCS3232-Fb DN20-100 40 bar stainless steel, compact flanged, WDVF

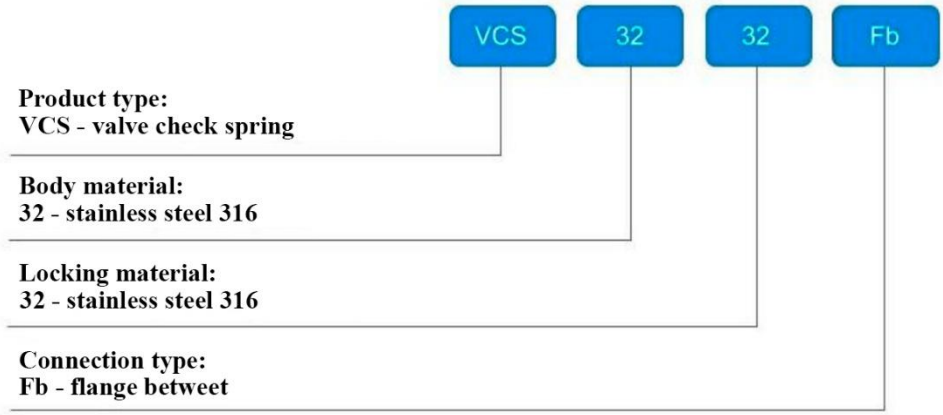
+34 900 433 073, sales@valveelephant.com
Carrer d'Aragó,264,3-1,08007 Barcelona, Spain

1. GENERAL PRODUCT INFORMATION

1.1. Product name: Spring check valve ELEPHANT VCS3232-Fb DN20-100 40 bar stainless steel, compact flanged, WDVF.
1.2 Purpose. The spring check valve is designed to prevent the flow direction of the working medium in the pipeline from changing in the opposite direction.
1.3. Operating principle. The backflow of the medium is blocked by pressing the valve shutter disk against its seat under the action of the spring and the backflow pressure. The valve is opened by the pressure difference of the medium flow in the desired direction, the valve shutter moves, compressing the spring.

*image may differ from original

1.4. Explanation of the designation:



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2. MAIN TECHNICAL DATA AND CHARACTERISTICS

Table 1. Main parameters

Nominal diameter DN, mm	20 - 100
Nominal pressure PN, bar	40
Device type	axial
Working medium temperature t, ºC	from -29 to +425
Working medium	hot and cold water, waste water, mineral and synthetic oils, unleaded gasoline, methane, propane, vegetable and animal oils and fats, refrigerants of the HFA, HFB, HFC groups, aqueous solutions of ethylene and propylene glycol of any concentration, diesel fuel with an aromatic hydrocarbon content of no more than 40%, aviation kerosene, natural gas up to 12 bar working pressure, compressed air up to 12 bar working pressure
Direction of medium flow	arrow on the valve body
Connection to the pipeline	compact flanged
Tightness class	«B» - EN-12266-1
Mating flange standard	PN40, DIN 2501, EN 1092
Body material	stainless steel AISI 316
Disk material	stainless steel AISI 316
Scope of application	pumping systems, water supply and distribution systems, industrial processes
Service life, years	10

Table 2. Hydraulic characteristics

DN	Conditional flow capacity Kv (for water with density 1000 kg/m3), m3/h	Local resistance coefficient
20	6,4	5,1
25	12,6	4,1
32	19,7	4,1
40	29,5	3,8
50	54,6	3,5
100	244,0	2,8

Table 3. Minimum valve opening pressure, mbar

DN	Direction of flow		
	↑	↓	←→
20	30	20	25
25			
32			
40			
50			
100			

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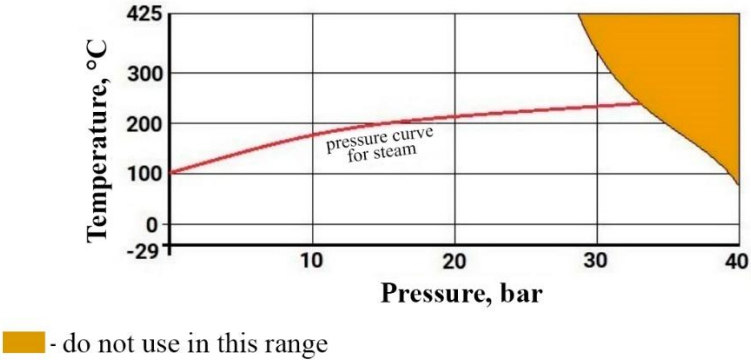

Figure 1 – «Temperature-Pressure» Chart

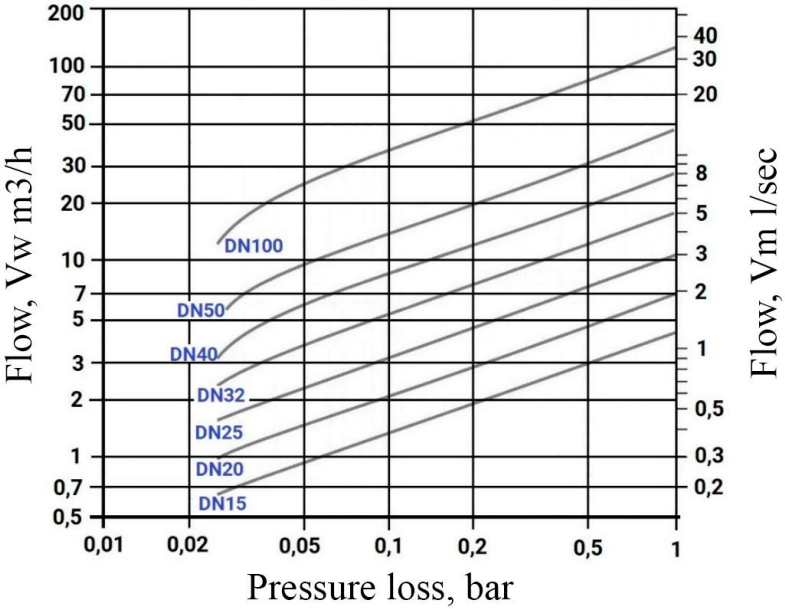

Figure 2 - Head Loss Diagram

3. MAIN MATERIALS OF PARTS

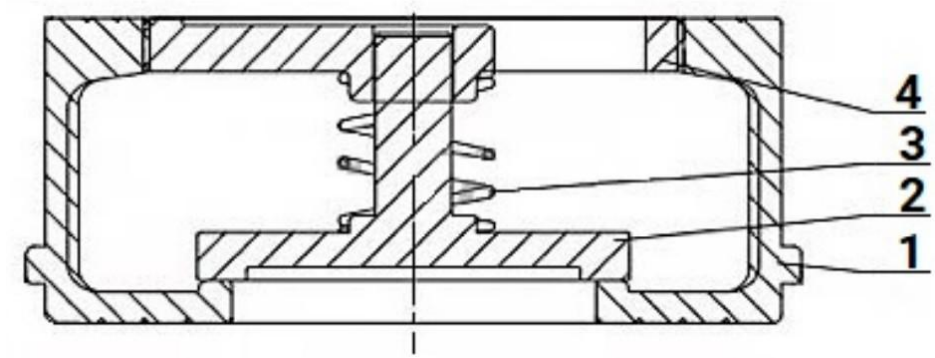

Figure 3 - Detailing

Table 3. Parts specification

№	Part name	Material
1	Body	stainless steel AISI 316
2	Disc	stainless steel AISI 316
3	Spring	stainless steel AISI 316
4	Back cover	stainless steel AISI 316

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4. WEIGHT AND DIMENSIONAL PARAMETERS

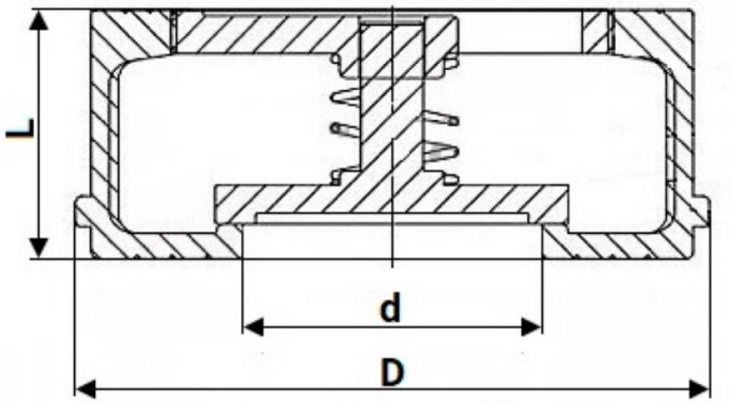

Figure 4 - Dimensions

Table 4. Dimensional characteristics

	d, mm	D, mm	L, mm	Weight, kg
DN20	19	58	28	0,25
DN25	24	68	28	0,36
DN32	31	78	30	0,47
DN40	38	88	36	0,61
DN50	48	102	40	0,94
DN100	91	158	68	3,00

5. INSTALLATION AND OPERATING INSTRUCTIONS

5.1. Safety precautions during installation and operation of check valves must be observed in accordance with the procedure established by the company.
5.2 The installation, operation and maintenance of valves shall be allowed to personnel who have studied the design of valves, safety rules and requirements of this passport.
5.3 Before installation the valves are subjected to inspection and testing, it is necessary to pay attention to the condition of the internal cavities of valves, accessible for visual inspection, check the ease and smoothness of the stroke of the stem.
5.4 The check valve can be installed on vertical, inclined and horizontal sections of the pipeline, according to the instructions on the permitted and prohibited positions in the installation. It is not recommended to install it on vertical and inclined pipeline section with the flow direction “from top to bottom”.
5.5 The installation location of the check spring valves must provide free access to it for installation and dismantling. Before installation, it is necessary to thoroughly clean the sealing surfaces of the check spring valves and connecting flanges.
5.6 The valve shall be installed on the pipeline so that the arrow on its body coincides with the direction of medium flow and, to ensure uniform wear during operation, not closer than 3-5 diameters before or after the pipeline constriction.

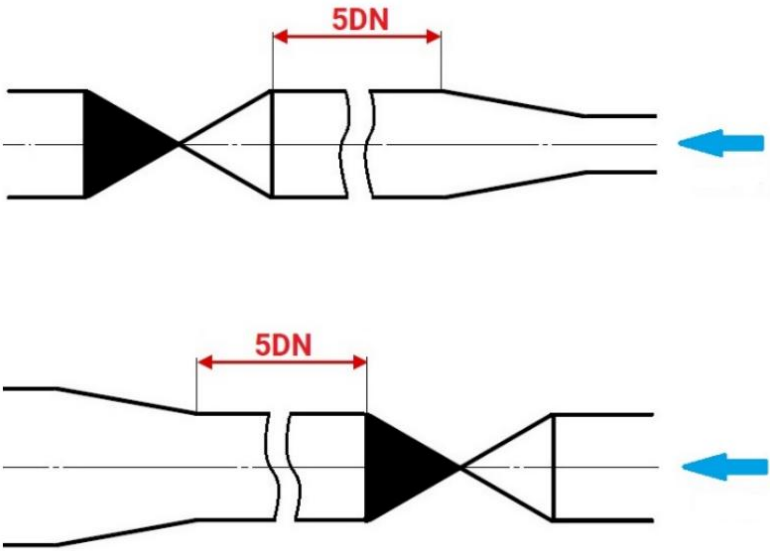

Figure 5 - Installation diagrams before and after pipeline narrowing

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5.7 The minimum distance between the check valve and other pipeline components should be 6 diameters upstream of the valve and 2 diameters downstream of the valve.

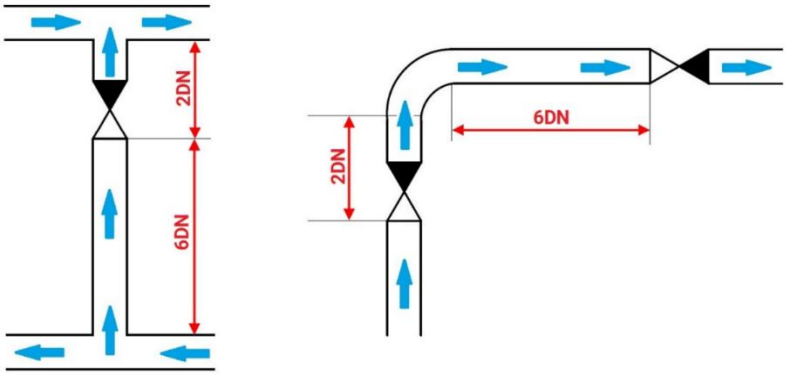

Figure 6 - Installation diagrams before and after pipeline elements

5.8. Installing the valve just outside a pipeline bend is not recommended. Turbulent flow can lead to rapid spring wear, resulting in shorter valve life and contributing to early valve failure.

5.9 After starting up the system, make sure that there are no leaks at the connection points.

5.10. The following conditions must be observed during operation:

5.10.1. use the valve for its intended purpose and within the temperature and pressure limits specified in the technical data;

5.10.2. perform periodic inspections within the time limits established by the norms and rules of the organization operating the pipeline;

5.10.3. do not perform works on defect elimination in the presence of overpressure in the pipeline.

6. TRANSPORTATION AND STORAGE CONDITIONS

6.1. Transportation and storage conditions - in the manufacturer's packaging in accordance with the procedure established at the enterprise.
6.2 The valves may be transported without packaging, provided that the manufacturer or supplier provides reliable installation and mounting of valves on the vehicle and protection from environmental influences
6.3 Mechanical damage and contamination of internal surfaces of valves during transportation are not allowed.
6.4 Valves in long-term storage are subject to periodic inspection at least once a year. In case of violation of preservation make preservation again. Apply preservation lubricant on degreased clean and dry surface of parts. Degreasing should be performed with a clean rag soaked in gasoline.

7. UTILIZATION

7.1. The product is disposed of in accordance with the procedure established at the enterprise (remelting, burial, resale).
7.2. Before sending the valve for disposal, the residual working medium shall be removed from the valve. Methods of removal of the working medium and decontamination of the valve must be approved in accordance with the established procedure at the company operating the valve.

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8. WARRANTY OBLIGATIONS

8.1. Warranty period - 12 months from the date of commissioning, but not more than 18 months from the date of sale.
8.2. The warranty applies to equipment installed and used in accordance with the installation instructions and product specifications described in this data sheet.
8.3. The manufacturer guarantees compliance of the product with safety requirements, provided that the consumer complies with the rules of transport, storage, installation and operation.
8.4. The warranty covers all defects caused by the fault of the manufacturer.
8.5. The warranty does not apply:

- parts and materials of the product subject to wear and tear;
- for cases of damage caused by:
    - modifications to the original design of the product;
    - violation of general installation recommendations;
    - faults caused by improper maintenance and storage; improper operation and use of the equipment.

9. WARRANTY TERMS

9.1. Claims to the quality of the goods may be made during the warranty period.
9.2. Defective products are repaired or exchanged for new ones free of charge during the warranty period. ELEPHANT decides whether to replace or repair the product. The replaced product or its parts resulting from the repair shall become the property of 'ELEPHANT'.
9.3. Costs related to dismantling, installation and transport of the defective product during the warranty period shall not be reimbursed to the Buyer.
9.4. If the claim is unfounded, the Buyer shall pay the costs of diagnostics and expertise of the product.
9.5. Products are accepted for warranty repair (as well as for return) fully assembled.

WARRANTY CARD №____

№	Product Name	Packs

Name and address of the trading organisation

_____

Date of sale _____ Seller's signature _____

Stamp or seal of the trading organisation Acceptance stamp

I agree with the terms and conditions of the warranty:
Buyer _____ (signature)

Warranty period - 12 months from the date of commissioning, but not more than 18 months from the date of sale.

For warranty repairs, complaints and product quality claims, please contact ELEPHANT at: Carrer d'Aragó,264,3-1,08007 Barcelona, Spain E-mail address: sales@valveelephant.com.

When making a complaint about the quality of goods, the buyer shall present the following documents:

1. A free-form application, which shall specify:
   - name of the organisation or full name of the buyer, actual address, contact telephone numbers;
   - name and address of the organisation that carried out the installation;
   - basic parameters of the system in which the product was used;
   - a brief description of the defect.
2. Document confirming the purchase of the product (delivery note, receipt)..
3. Act of hydraulic test of the system in which the product was installed.
4. This completed warranty card.

A note on the return or exchange of goods _____

Date: «___»_____202__yr. Caption _____

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