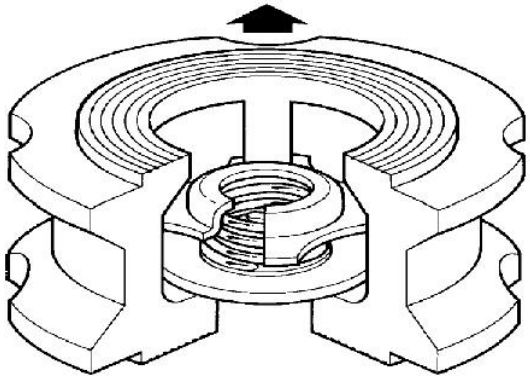
MICROFINISH DISC CHECK VALVES

INSTALLATION OPERATION AND MAINTENANCE MANUAL



MICROFINISH VALVES PVT. LTD.

Block no.23B, Plot no.1 to 6, Hubballi-Dharwad Bypass Road, Itigatti Village,
Dharwad-580 114, Karnataka state, India. Phone: +91 836 2310015 / 16 / 19
Email: sales@microfinishgroup.com Website: www.microfinishgroup.com

THE AMERICAS

MICROFINISH VALVES, INC.

7505 Bluff Point Drive, Suite 100 Houston, Texas 77086, United States.
Phone: +1 281-885-4250 / +1 281-885-4259 Fax: +1 281-866-0996
Email: usasales@microfinishgroup.com Website: www.microfinishvalvesinc.com

1. SAFETY INFORMATION.

1.1 Safety Information

Safe operation of the unit can only be guaranteed if it is properly installed, commissioned and maintained by a qualified person (see Section 11 of the attached Supplementary Safety Information) in compliance with the operating instructions. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment must also be complied with.

Isolation

Consider whether closing isolating valves will put any other part of the system or personnel at risk. Dangers might include; isolation of vents and protective devices or alarms. Ensure isolation valves are turned off in a gradual way to avoid system shocks.

Pressure

Before attempting any maintenance consider what is or may have been in the pipeline. Ensure that any pressure is isolated and safely vented to atmospheric pressure before attempting to maintain the product, this is easily achieved by fitting Expert depressurization valves type DV (see separate literature for details). do not assume that the system is depressurized even when a pressure gauge indicates zero.

Temperature

Allow time for temperature to normalize after isolation to avoid the danger of burns and consider whether protective clothing (including safety glasses) is required.

Viton seat:

If the Viton seat has been subjected to a temperature approaching 315°C (599°F) or higher it may have decomposed and formed hydrofluoric acid. Avoid skin contact and inhalation of any fumes as the acid will cause deep skin burns and damage the respiratory system.

Disposal

These products are recyclable. No ecological hazard is anticipated with the disposal of these products providing due care is taken, EXCEPT:

Viton seat:

- Waste parts can be land filled, when in compliance with National and Local regulations.
- Parts can be incinerated, but a scrubber must be used to remove Hydrogen Fluoride, which is evolved from the product and with compliance to National and Local regulations.
- Parts are insoluble in aquatic media

2. GENERAL PRODUCT INFORMATION.

2.1 General description.

The NSCV3 stainless steel disc check valve is of the wafer pattern designed to be sandwiched between ANSI flanges. It is suitable for use on a wide range of fluids for applications in process lines, hot water systems, steam and condensate systems etc. Face-to-face dimensions conform to EN 558 part 2, series 52. As standard the valves have a metal-to-metal seat. See Sector 2.5 for other options which are available on request.

2.2 Sizes and pipe connections.

DN25, 40, 50, 80 and 100
Suitable for installation between ANSI 150 or ANSI 300 flanges.

2.3 Optional extras.

High temperature springs for temperatures up to 400°C (752°F).Viton soft seats for oils and gas applications. EPDM soft seats for water applications.

2.4 Materials.

Part	Material
Body	ASTM A351 Gr.CF8M
Disc	SS 316
Spring retainer	SS 316
Standard spring	SS 316

2.5 Limiting conditions.

NSCV - 3			
Maximum body design conditions			ANSI 300
PMO - Maximum operating		bar g	50
TMO - Maximum operating temperature	with standard spring	degree c	300
	with high temperature spring	degree c	400
	temperature limits with viton	degree c	-15 to +250
	temperature limits with EPDM	degree c	-15 to +250
	cold hydraulic test pressure	bar g	76

3. INSTALLATION.

Note: Before actioning any installation observes the 'Safety information' in Section 1.

Referring to the Installation and Maintenance Instructions, name-plate and Technical Information Sheet, check that the product is suitable for the intended installation:

3.1 Check materials, pressure and temperature and their maximum values. If the maximum operating limit of the product is lower than that of the system, in which it is being fitted, ensure that a safety device is included in the system to prevent over pressurization.

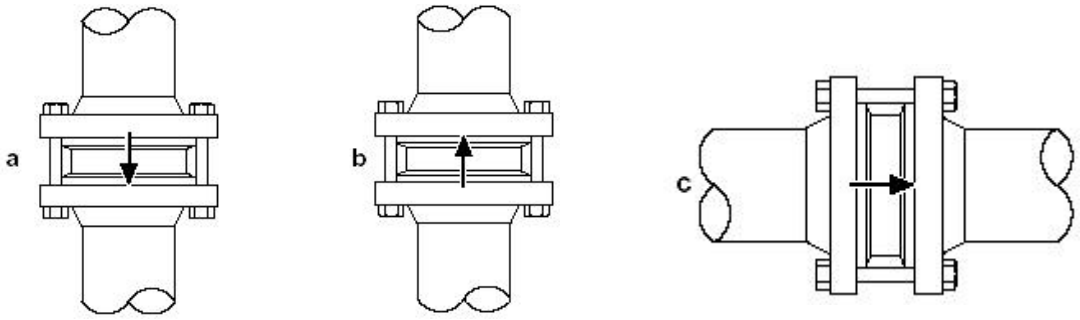
3.2 Determine the correct installation situation and the direction of fluid flow.

3.3 Remove protective covers from all connections.

3.4 Valves must only be installed where 'weld neck' flanges are used. Other flange types may restrict operation.

3.5 Disc check valves simply fit between two pipe flanges (see Fig 2) Standard gaskets are used either side of the valve together with longer bolts or studs. Note: flanges, bolts (or studs), nuts and joint gaskets to be provided by the installer. opposite sequence. Normal sensible flange bolting practice should be followed e.g. torque tightening the bolts in opposite sequence.

3.6 The NSCV3 can be fitted between ANSI 150 or ANSI 300 flanges. They can be installed in any plane with the exception of NSCV's supplied without an internal spring. These must be fitted in a vertical flow line with the flow from bottom-to-top i.e. upward flow (see Fig. 2b). Disc check valves must be fitted in accordance with the direction of the flow arrow on the body,
indicating correct fluid flow direction.



4. COMMISSIONING.

After installation or maintenance ensure that the system is fully functional. Carry out tests on any alarms or protective devices.

5. OPERATION.

Disc check valves are opened by the pressure of the fluid and closed by the spring as soon as the flow ceases and before the reverse flow occurs.

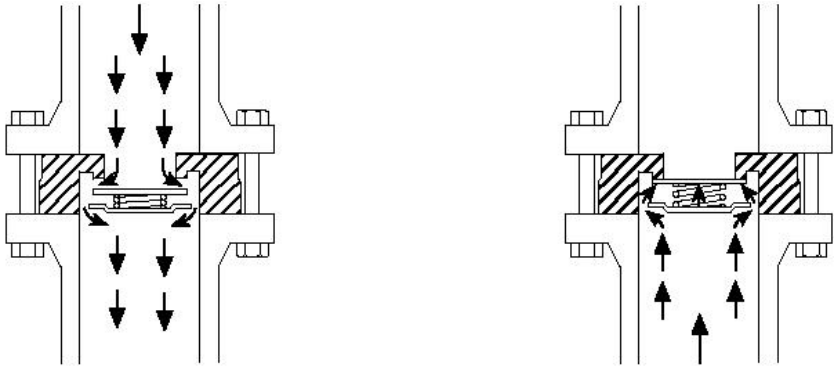


Fig. 3 Open Closed

Opening pressure in mbar

Differential pressures with zero flow for standard and high temperature springs.

➔ Flow direction

Direction	DN25	DN40	DN50	DN80	DN100
A	20	20	20	20	20
B	25	28	29	31	33
C	22.5	24	24.5	25.5	26.5

6. MAINTENANCE.

Note: Before actioning any maintenance programmed observe the'Safety information' in Section 1.

This product is non-maintainable.

Note: Great care must be taken if a NSCV3 with a heavy duty spring is taken apart since the strength of the spring can cause the retainer to spring out of the body.

7. SPAREPART.

There are no spare parts available for this product.