

DISCO® Swing-Check Valves CB und WB

Valve types

Swing-Check Valves CB DN 50-300 mm (2-12"), PN 6-40

- Wafer-type valves for sandwiching between flanges
- Metal-to-metal or soft seat
- DIN materials



CB 24S, CB 26, CB 26A

Body

Wafer-type valve with short overall length. Valve centered by body. Eyebolt for ease of installation.

Shut-off

Circular flap with metal-to-metal or soft seat (recessed O-ring).

Springs

The flap is provided with two bow springs.

Opening angle

The opening angle of the flap is limited to 60° by stop lugs.

Special Variant CB 14 DN 50-300 mm (2-12"), PN 6-16

- With integral synthetic rubber hinge, without springs



CB 14

Body

Wafer-type valve with short overall length. Valve centered by body. Eyebolt for ease of installation.

Shut off

Circular flap with soft seat and integral synthetic rubber hinge. Particularly suitable for dirty media.

Opening angle

The opening angle is limited to 70° by the pipe wall.

Swing-Check Valves WB DN 50-300 mm (2-12"), PN 10/16

- Wafer-type valve
- Soft seat (O-ring)
- DIN materials
- With top-hinged flap, without springs



WB 24S, WB 26, WB 26A

Body

Wafer-type valve with short overall length. Valve centered by body. Eyebolt for ease of installation.

Shut-off

Circular flap with soft seat (O-ring).

Opening angle

The opening angle is limited to 70° by the pipe wall.

All CB valves can be sandwiched between pipe flanges to DIN, BS and ANSI.
The WB valves are available either with body diameter to suit DIN flanges PN 10/16.

Synopsis

Type	Nominal pressure ratings	Nominal sizes DN mm (in)									
		50 (2)	65 (2½)	80 (3)	100 (4)	125 (5)	150 (6)	200 (8)	250 (10)	300 (12)	
CB 24S	PN 6/10/16	Body cast bronze/internals bronze: -200 to +90°C, or without springs: -200 to +250°C. Without springs and with soft seat of NBR: -30 to +110°C									
CB 26	PN 6/10/16/25/40	Body steel/flap austenitic s.s., from DN 100 mm (4") S.G: iron (ductile iron): -10 to +300°C									
CB 26A	PN 6/10/16/25/40	Body and flap austenitic stainless steel: -10 to +450°C									
CB 14	PN 6/10/16	Body steel/flap NBR: -10 to +80°C									
WB 24S	PN 10/16	Bronze/bronze: -10 to +110°C									
WB 26	PN 10/16	Steel/steel: -10 to + 110°C									
WB 26A	PN 10/16	Austenitic steel/austenitic s.s. -10 to + 110°C									

Sizing of Check Valves

A check valve provided with a spring or counterweight commences to open when a certain static pressure differential – pressure upstream minus pressure downstream of valve – has been established. This produces an opening force (pressure differential x cross-sectional area of valve) acting against the closing force. When the opening force outbalances the closing force the valve is opened (opening pressure). The opening pressure depends on the spring tension or the weight of the counterweight, the position of installation and the size of the check valve.

Depending on the volume flow, the check valve opens either completely or only partly. During partial opening, i.e. at a reduced volume flow, clatter may occur. At start-up of a plant, first a static pressure will build up between pressure generator and check valve. On reaching the opening pressure and surmounting the closing force the volume flow starts. As a consequence the pressure upstream of the check valve drops, so that the closing force again outbalances the opening force. The valve closes.

This process will repeat itself until the volume flow is large enough so that, because of the additional dynamic

pressure differential, the closing force is no longer great enough to close the valve.

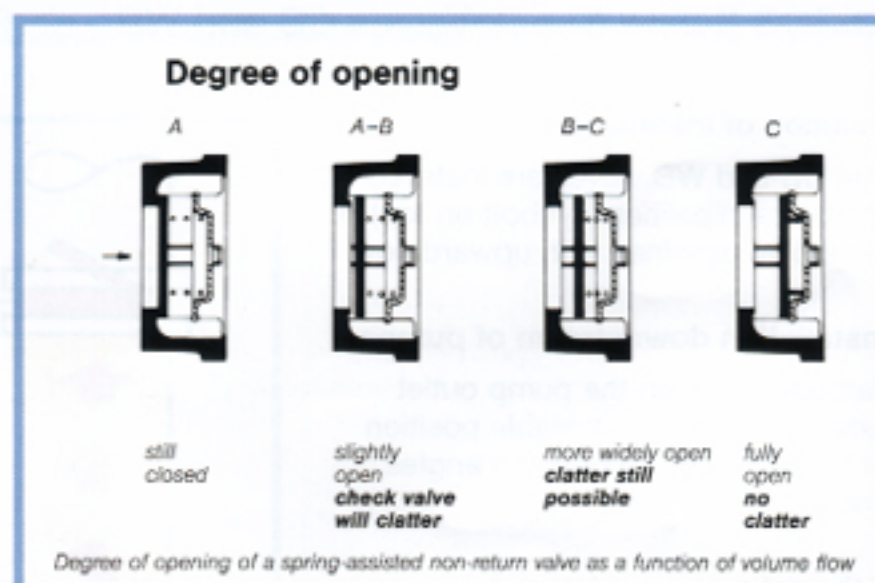
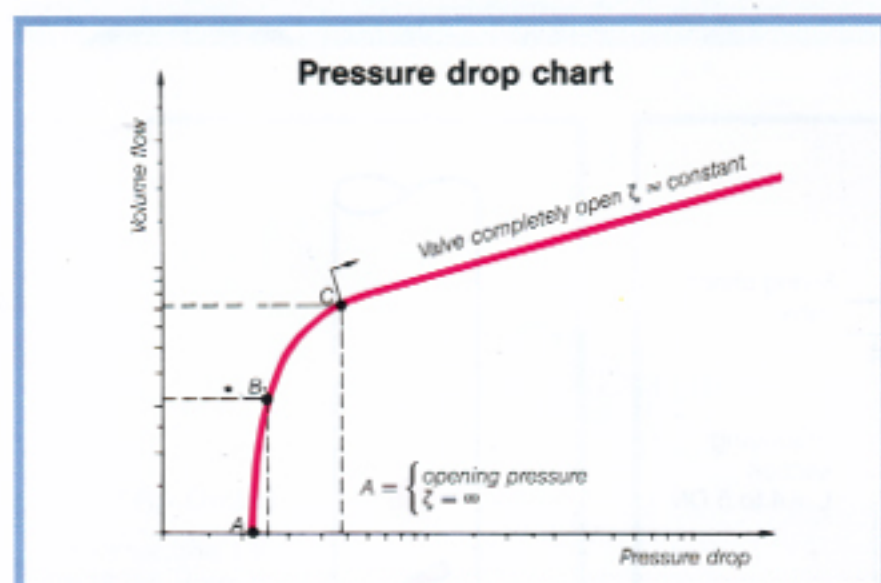
The clatter is produced by the impact of the valve cone, disc or flap onto the seat. It is possible that instead of the clatter, a high-frequency humming tone can be heard. An incessant noise is a sure sign of too largely sized check valves, viz. the result of wrong sizing. The surest means of stopping the noise is to change the check valve for a smaller one. The possibility of using a valve with a smaller nominal size is no longer there if the pressure drop at full load becomes too high.

Sometimes the noise can only be heard during start-up or shut-down or at partial load, i.e. only during the operating stages for which the valve is oversized. In this case it might be possible to solve the problem by reducing the closing force, for example, by using a weaker spring or a reduced counterweight. It may even be possible to use the valve without spring altogether – in vertical pipelines with upward flow.

GESTRA DISCO non-return valves can be installed in vertical pipelines with upward flow without spring.

Noise is the most frequently noticed in hot-water heating installations, since here it is the most annoying.

In this case check valves with plastic valve disc/cone can be applied. In the GESTRA DISCO non-return valve range the RK 70 is supplied with plastic valve disc/cone.



Technical information sheets

A 2.1

Chemical resistance of DISCO check valves

A 2.2

DISCO non-return valves – examples of application

A 2.3

Energy saving through correct selection of check valve

A 2.4

Sizing of vacuum breakers

A 2.5

Sizing and installation of check (non-return) valves

All our information sheets are freely available.