

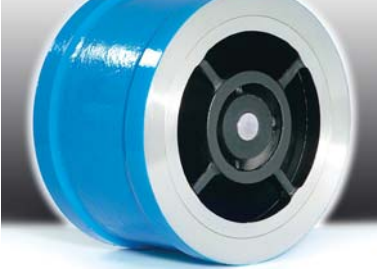
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Goodwin - The International Company

N-ZK



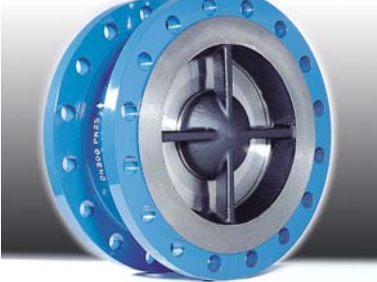
N-ZSK



N-B



N-BK



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Goodwin International, the established market leader in the manufacture, design and supply of Dual Plate Check Valves for use in the world's hydrocarbon, energy and process industries, now includes within its range of check valve solutions the Goodwin-Noreva Nozzle Check Valve.

With the acquisition by Goodwin PLC of Noreva GmbH, the addition of axially operated non-slam valves into the Goodwin portfolio, sitting along side the Goodwin range of Dual Plate Check Valves, enhances Goodwin International's position to provide cost effective technical solutions for those critical / severe pump and compressor applications where reliability and high performance is an absolute necessity. By integration with Noreva, an internationally recognised company in its own right, the Goodwin-Noreva Nozzle Check Valve is founded on some 70 years of proven and established design, technology and experience.

Based in the United Kingdom, Goodwin sells internationally exporting to over 50 countries. Goodwin offers outstanding support to its customers listed amongst whom are many of the world's end users, oil majors and international engineering contractors.

The Goodwin-Noreva range of Nozzle Check Valves:

4 Valve types: N-ZK; N-ZSK; N-B; N-BK

6 different body styles: Wafer (N-ZSK, N-BK)
 Flanged (N-ZK, N-B, N-BK)
 Solid Lug (N-ZSK, N-BK)
 Hub-ended (N-ZK, N-B)
 Butt-weld end (N-ZK, N-B, N-BK)
 Threaded end (N-ZK)

Sizes: 1" - 88" (DN 25 - DN 2200)

Pressure Classes: ANSI 150 - 2500lb, API 2000 - 15000,
 PN 10 - PN 400, JIS 10K & 20K.

Materials: Cast and Ductile Irons; Carbon Steels; Stainless Steels;
 Aluminium Bronzes; High Nickel Alloys; Titanium.

Features: Designed, manufactured, assembled and tested in
 accordance with Quality Assurance System accredited
 by BSI to BS EN ISO 9001:2000.

Certifiable in compliance with European Pressure Directive
 (PED) 97/23/EC to meet customer requirements when
 either or both specified.

All bodies certified to BS EN 10204 3.1 as a minimum

No leakpath to atmosphere - no fugitive emissions

Firesafe design

Nozzle Check Valve Specifications

N-ZK



N-ZK

Size range: 1" - 10" (DN 25 - DN 250)

Pressure Class: ANSI 150# - ANSI 2500#, API 2000 - API 10000

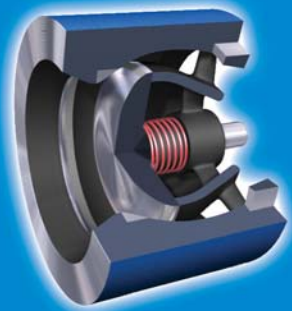
- Non-slam closure
- Very low pressure loss
- Short face-to-face length
- Low weight
- Metal sealing
- Maintenance free

The N-ZK is the standard valve for sizes 1" to 10" in pressure classes ANSI 150# to ANSI 2500#

With its optimum designed aerodynamic flowpath through the valve the N-ZK produces very low pressure losses.

The N-ZK is suitable for all fluids and all installation positions.

N-ZSK



N-ZSK

Size range: 1" - 10" (DN 25 - DN 250)

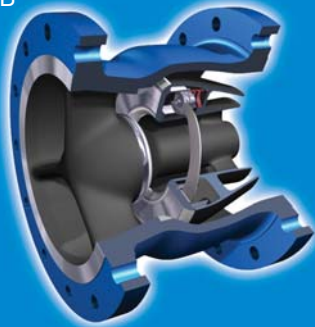
Pressure Class: ANSI 150# - ANSI 2500#, API 2000 - API 10000

- Non-slam closure
- Low pressure loss
- Very short face-to-face length
- Very low weight
- Metal sealing
- Maintenance free

With a shorter face-to-face than the N-ZK and where pressure loss across the valve is not a significant consideration, the N-ZSK is installed where space is at a premium.

The N-ZSK is suitable for all fluids and all installation positions.

N-B



N-B

Size range: 12" - 88" (DN 300 - DN 2200)

Pressure Class: ANSI 150# - ANSI 2500#, API 2000 - API 10000

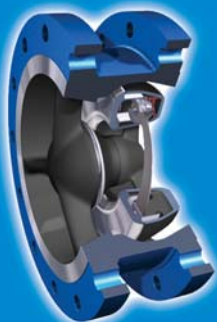
- Non-slam closure
- Very low pressure loss
- Friction-free valve disc guiding
- Metal sealing
- Maintenance free

The N-B is the standard valve for 12" and larger in pressure classed ANSI 150# to ANSI 2500#.

Utilising a valve disc ring guided by springs and friction-free radial guides, the N-B is unique amongst nozzle check valves. With the ring shaped flow ports and low critical velocity required to fully open the valve, the N-B provides the following distinct advantages:

1. Very low pressure losses due to the two ring-shaped annular flow paths
2. Rapid non-slam closure of the disc
3. Excellent dynamic behaviour due to low moving masses and friction-free guiding of the disc.

N-BK



N-BK

Size range: 12" - 88" (DN 300 - DN 2200)

Pressure Class: ANSI 150# - ANSI 2500#, API 2000 - API 10000

- Non-slam closure
- Low pressure loss
- Friction-free valve disc guiding
- Metal sealing
- Low weight
- Short face-to-face length
- Maintenance free

The N-BK combines the worldwide proven ring shaped valve disc / radial guide concept of the N-B whilst providing shorter face-to-face and reduced weight. The N-BK is a lower cost solution where marginally higher pressure drops can be accepted.

The N-BK is suitable for all kind of liquid and gaseous fluids and all installation positions.

