

NOZ-CHEK[®]

brands you trust.



NOZ-CHEK[®] Cryogenic Valves



Crane ChemPharma & Energy

www.cranecpe.com

NOZ-CHEK® Cryogenic Valves

SCOPE OF LINE

- Sizes 1" – 48" (Test capability 1" to 72" and pressures of 22,500 PSI)
- ASME B16.34 & API 6D, pressure classes 150 – 4500
- API 6A pressure classes 2000 – 15,000
- Flanged, butt-weld ends, hubs ends and specials
- Standard and short pattern

STANDARD FEATURES

Extensive research and development, coupled with valid design procedures, have resulted in these unique NOZ-CHEK® features:

- **Few moving parts - Disc is the only moving part, minimizing wear.**
- **Axial movement of disc - Disc and seating configuration give streamlined flow path with venturi effect, resulting in low pressure drop.**
- **Short stroke of spring-assisted disc - Inlet flow velocity moves disc axially with short stroke. In response to flow velocity reduction, a compressed spring initiates valve closure and provides quick response.**
- **Spring options - Choice of spring affects critical velocity and valve response. Selection is made on engineering evaluation of specific applications. In absence of this data, a standard spring will be provided.**

CHARACTERISTICS

NOZ-CHEK® valves deliver an effective dynamic response under various flow deceleration conditions. The dynamic performance characteristics of NOZ-CHEK® valves are compared to swing check and dual plate spring-assisted check valves in Figure 1.

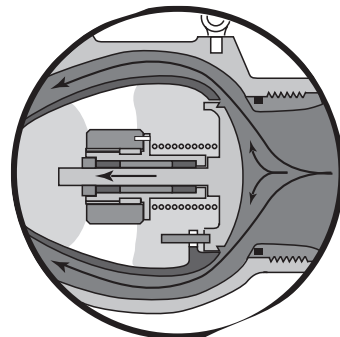
NOZ-CHEK®'s unique design features result in superior performance, fast response and lower pressure loss in piping systems.

OPENING

Reduced pressure, generated by increased velocity in the minimal flow area, results in additional force to assist the disc to open and allows for extra spring loading that facilitates a faster closing time.

This spring force is balanced in the fully open position.

The NOZ-CHEK® geometry is established by considering the design velocity required to ensure that the disc is stabilized open against its stop even if moderate flow oscillation occurs.



CLOSING

When a noticeable reduction in flow occurs, the disc reacts immediately, limiting backflow and valve slamming.

The spring load, low mass disc, and short displacement ensures a rapid self-dampening response.

For certain applications, the internal geometry can be modified to suit the service conditions.

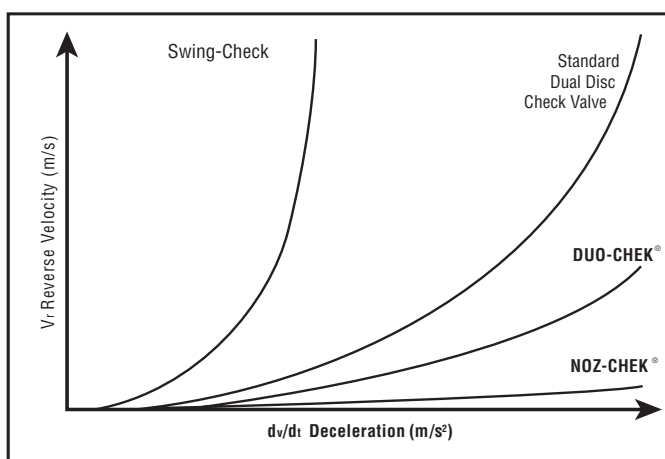
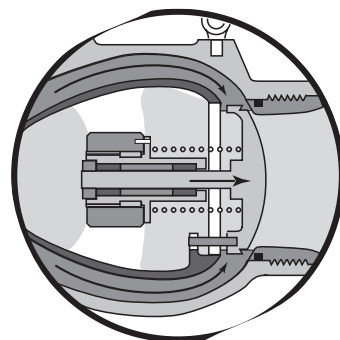


Figure 1

NOZ-CHEK® Cryogenic Capabilities, Features & Benefits

HIGH PERFORMANCE NON-SLAM CHECK VALVE

One of the most significant elements of piping system design is integrating the means to protect mechanical equipment and prevent damage caused by backflow.

NOZ-CHEK® valves are specifically designed for fast-reversing systems where backflow is a constant concern. In such critical service applications, NOZ-CHEK® Non-Slam Check Valves offer the following benefits.

- **Minimizes the damaging effects of water hammer in fluid systems**
- **Removal of chatter associated with conventional valves in reciprocating compressor service**
- **Protects rotating equipment from damage due to flow reversal**
- **Minimizes pressure loss in piping systems**
- **Provides quick dynamic response reducing reverse velocity**

NOZ-CHEK® is designed and manufactured to the highest quality standards including ISO-9001, Stoomwezen and TUV.

LOW CRYOGENIC LEAK RATE PER BS 6364 INDUSTRY STANDARD

NOZ-CHEK® Cryogenic Valves meet the requirements of Shell 77/200, MSS SP-134, ISO 28921-1 and BS 6364. Now, this product line can also be offered to meet the rigorous requirements of BS 6364 (300 CC/MIN at -196 °C/ -320°F) with tighter leak rates, as standard.

ZERO FUGITIVE EMISSIONS

NOZ-CHEK® products feature a single piece solid body (no penetrations or external leak paths), reflecting our commitment to environmental responsibility and critically ensuring zero fugitive emissions.

IN-HOUSE CRYOGENIC TESTING

The low temperature and Cryogenic High-Pressure gas testing is carried out on-site in our state of the art testing facilities. Test capability 1" to 72" and pressures of 22,500 PSI.

INNOVATION OF PROVEN TECHNOLOGY

Dedication to solving our Customers' challenges, longstanding commitment to safety and quality continue to drive our product innovation.

Industry Standards*	
API 598	Valve Pressure Testing and Inspection
ASME B16.34	Pressure/Temperature Ratings
API 6D	Pipeline Valves
API 6A	Production Valves
2014/68/EU	Pressure Equipment Directive
ISO 28921 – 1	International Standards Organisation Cryogenic testing
BS 6364	British Valve Standard Cryogenic testing
MSS SP-134	Manufacturing Standards Society

*Consult factory for other specification requirements.

NOZ-CHEK® Cryogenic Applications



Key processes within the LNG liquefaction plant with cryogenic requirements are within the Compression Trains, where treated natural gas is compressed over several reducing stages to a liquid state. In larger LNG plants, this process is furthered during Mixed Refrigerant Cycle which also requires gasses to be compressed and cooled to cryogenic temperatures. NOZ-CHEK® ideally suited to prevent backflow during this process.

NOZ-CHEK® Cryogenic Valves prevent cryogenic liquid from leaking back into parts of the system that are not made of cryogenic suitable material, minimizing the risk of material cracking and potential leakage to atmosphere.

TYPICAL CRYOGENIC APPLICATIONS

- LNG
- Liquefaction Compression Train
- Mixed Refrigerant
- Ethylene Production
- Ethylene Refrigeration
- Air Separation Units
- General Cryogenic compressor protection



NOZ-CHEK® Cryogenic Valves Design Features

1 DISC

Standard disc is high strength with minimized weight to provide fast dynamic response. Design minimizes bearing loads, thus lengthens life of bearings and shaft. Offered in a variety of trim materials, with metal or resilient seating.

2 FLOW OUTLET ZONE

Designed for pressure recovery to minimize pressure loss and fluid turbulence. Results in smooth flow.

3 SEAT

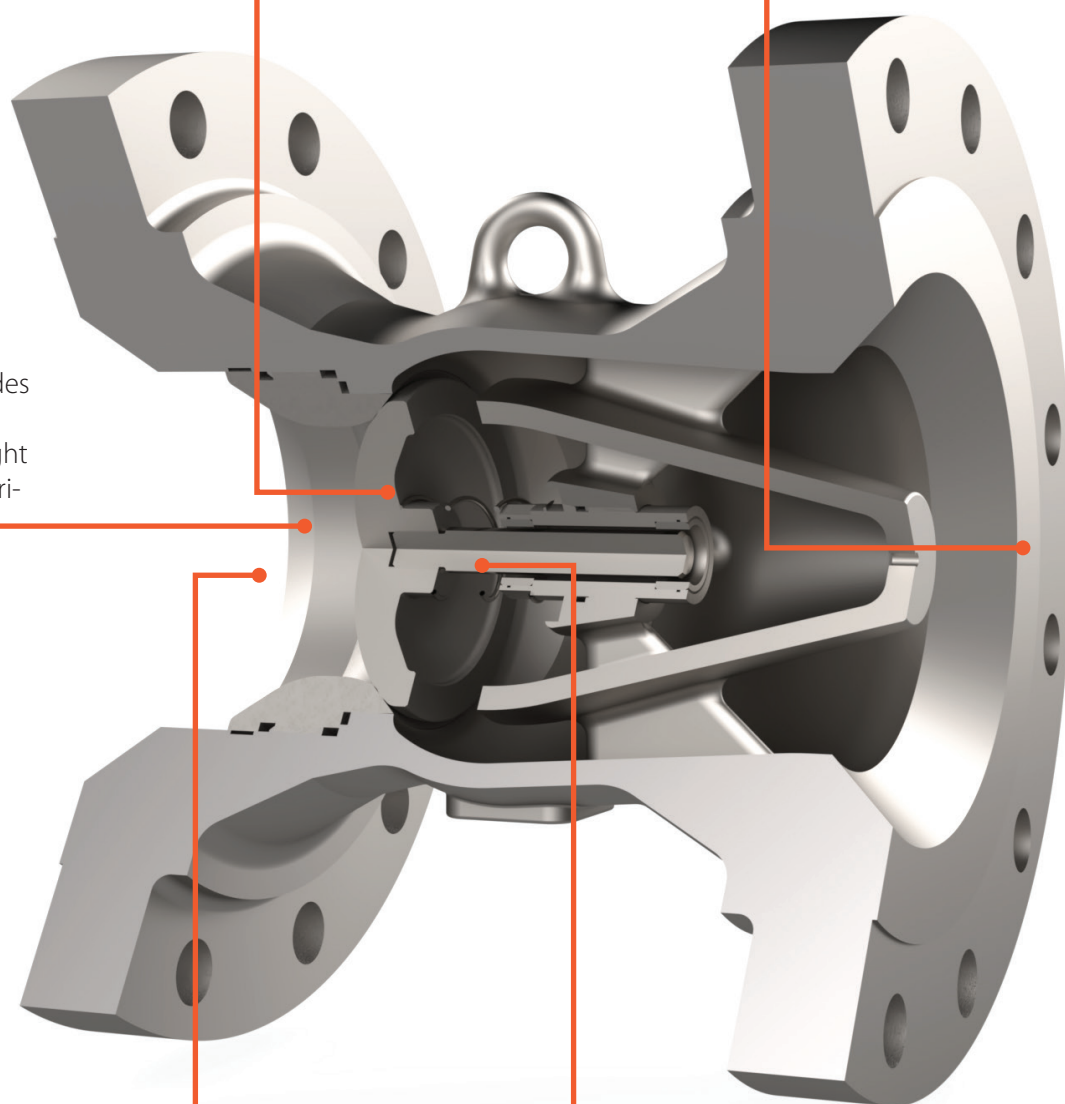
Assures venturi flow by its configuration. Provides seating surface for disc and enables bubble-tight seal with resilient materials.

4 FLOW INLET ZONE

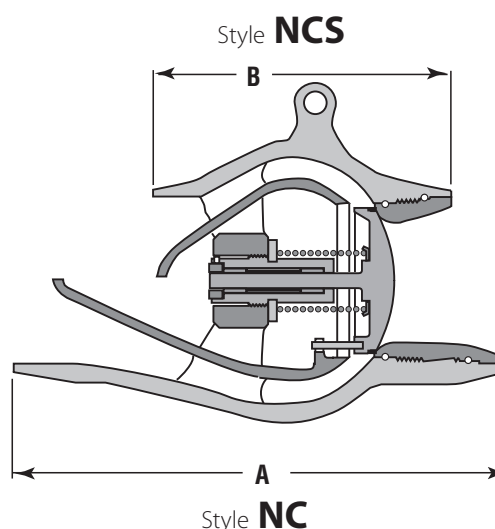
Venturi design maximizes flow impact on disc. Provides streamlined flow when valve is fully open to minimize pressure loss.

5 SPRING

As the most strategic component, the spring is designed to meet specific service conditions – a customized approach.



NOZ-CHEK® Cryogenic Valves Dimensional Data



NC: Integral Body, Standard Pattern
NCS: Integral Body, Short Body Pattern

Class 150 RF

Nominal Size	Standard Pattern	Short Pattern	Weight	
	A in (mm)	B in (mm)	A lbs. (kg)	B lbs. (kg)
2	8.00 (203)	-	22 (10)	-
3	9.50 (241)	-	66 (30)	-
4	11.50 (292)	-	106 (48)	-
6	14.00 (356)	-	168 (76)	-
8	19.50 (495)	-	428 (194)	-
10	24.50 (622)	14.37 (365)	536 (243)	485 (220)
12	27.50 (699)	17.25 (438)	628 (285)	622 (282)
14	31.00 (787)	18.70 (475)	944 (428)	765 (347)
16	34.00 (864)	21.45 (545)	1,078 (489)	915 (415)
18	38.50 (978)	24.00 (610)	1,795 (814)	1,186 (538)
20	38.50 (978)	33.47 (850)	3,177 (1,441)	2,370 (1,075)
24	51.00 (1,295)	31.88 (810)	2,540 (1,152)	2,888 (1,310)
28	57.00 (1,448)	37.22 (945)	4,422 (2,006)	3,439 (1,560)
30	60.00 (1,524)	39.77 (1,010)	5,417 (2,457)	4,332 (1,965)
36	77.00 (1,956)	39.37 (1,000)	5,983 (2,714)	5,743 (2,605)
42	-	55.72 (1,415)	-	9,039 (4,100)
48	-	57.50 (1,461)	-	11,629 (5,275)

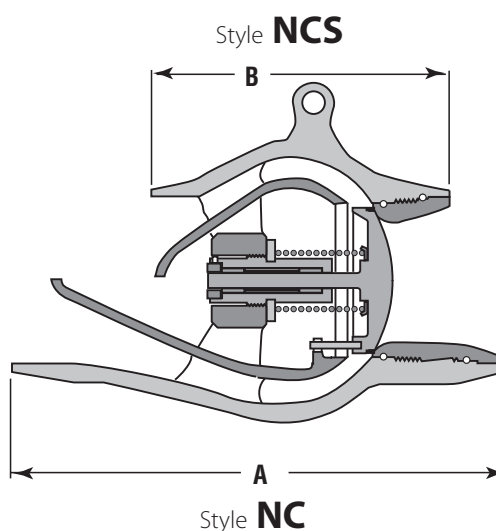
Class 300 RF

Nominal Size	Standard Pattern	Short Pattern	Weight	
	A in (mm)	B in (mm)	A lbs. (kg)	B lbs. (kg)
2	10.50 (267)	-	29 (13)	-
3	12.50 (318)	-	66 (30)	-
4	14.00 (356)	-	106 (48)	-
6	17.50 (445)	10.00 (254)	209 (95)	194 (88)
8	21.00 (533)	12.25 (311)	450 (204)	419 (190)
10	24.50 (622)	14.37 (365)	613 (278)	547 (248)
12	28.00 (711)	17.25 (438)	730 (331)	672 (305)
14	33.00 (838)	18.70 (475)	1,186 (538)	981 (445)
16	34.00 (864)	21.45 (545)	1,426 (647)	1,168 (530)
18	38.50 (978)	24.00 (610)	1,808 (820)	1,521 (690)
20	40.00 (1,016)	31.88 (810)	2,586 (1,173)	2,403 (1,090)
24	53.00 (1,346)	31.88 (810)	3,338 (1,514)	3,020 (1,370)
28	59.00 (1,499)	40.75 (1,035)	5,262 (2,387)	4,850 (2,200)
30	60.00 (1,524)	39.77 (1,010)	5,831 (2,645)	5,278 (2,394)
36	82.00 (2,083)	39.37 (1,000)	9,608 (4,358)	8,091 (3,670)
42	-	55.72 (1,415)	-	12,390 (5,620)
48	-	57.50 (1,461)	-	11,740 (5,325)

Class 600 RF

Nominal Size	Standard Pattern	Short Pattern	Weight	
	A in (mm)	B in (mm)	A lbs. (kg)	B lbs. (kg)
2	11.50 (292)	-	37 (17)	-
3	14.00 (356)	-	66 (30)	-
4	17.00 (432)	-	163 (74)	-
6	22.00 (559)	15.37 (390)	425 (193)	373 (169)
8	26.00 (660)	12.25 (311)	551 (250)	448 (203)
10	31.00 (787)	14.38 (365)	880 (399)	739 (335)
12	33.00 (838)	17.25 (438)	1,138 (516)	939 (426)
14	35.00 (889)	18.69 (475)	1,437 (652)	1,186 (538)
16	39.00 (991)	21.50 (546)	2,110 (957)	1,742 (790)
18	43.00 (1,092)	31.88 (810)	3,411 (1,547)	2,987 (1,355)
20	47.00 (1,194)	31.88 (810)	3,389 (1,537)	3,042 (1,380)
24	55.00 (1,397)	31.88 (810)	5,315 (2,411)	4,266 (1,935)
28	63.00 (1,600)	34.25 (870)	8,673 (3,934)	5,864 (2,660)
30	65.00 (1,651)	39.75 (1,010)	8,675 (3,935)	6,614 (3,000)
36	82.00 (2,083)	47.82 (1,215)	19,354 (8,779)	9,921 (4,500)
42	-	57.50 (1,461)	-	14,515 (6,584)
48	-	63.58 (1,615)	-	22,597 (10,250)

NOZ-CHEK® Cryogenic Valves Dimensional Data



NC: Integral Body, Standard Pattern
NCS: Integral Body, Short Body Pattern

Class **900 RF**

Nominal Size	Standard Pattern	Short Pattern	Weight	
	A in (mm)	B in (mm)	A lbs. (kg)	B lbs. (kg)
2	14.50 (368)	- -	79 (36)	- -
3	15.00 (381)	- -	121 (55)	- -
4	18.00 (457)	- -	220 (100)	- -
6	24.00 (610)	15.38 (391)	567 (257)	425 (193)
8	29.00 (737)	13.63 (346)	739 (335)	639 (290)
10	33.00 (838)	15.50 (394)	1,508 (684)	1,065 (483)
12	38.00 (965)	18.00 (457)	1,951 (885)	1,488 (675)
14	40.50 (1,029)	18.62 (473)	2,928 (1,328)	1,532 (695)
16	44.50 (1,130)	29.51 (750)	3,225 (1,463)	2,690 (1,220)
18	48.00 (1,219)	30.50 (775)	4,456 (2,021)	3,175 (1,440)
20	52.00 (1,321)	34.22 (869)	6,484 (2,941)	4,674 (2,120)
24	61.00 (1,549)	40.00 (1,016)	8,126 (3,686)	7,015 (3,182)
28	- -	40.00 (1,016)	- -	10,251 (4,650)
30	- -	40.41 (1,026)	- -	10,472 (4,750)
36	- -	46.84 (1,190)	- -	15,984 (7,250)
42	- -	60.00 (1,524)	- -	21,870 (9,920)
48	- -	64.00 (1,626)	- -	31,747 (14,400)

Class **1500 RF**

Nominal Size	Standard Pattern	Short Pattern	Weight	
	A in (mm)	B in (mm)	A lbs. (kg)	B lbs. (kg)
2	14.50 (368)	- -	79 (36)	- -
3	18.50 (470)	- -	172 (78)	- -
4	21.50 (546)	- -	271 (123)	- -
6	27.75 (705)	15.88 (403)	805 (365)	595 (270)
8	32.75 (832)	13.63 (346)	1,008 (457)	805 (365)
10	39.00 (991)	15.50 (394)	1,978 (897)	1,385 (628)
12	44.50 (1,130)	18.00 (457)	2,650 (1,202)	1,984 (900)
14	49.50 (1,257)	25.53 (648)	4,932 (2,237)	3,527 (1,600)
16	54.50 (1,384)	29.53 (750)	5,485 (2,488)	4,057 (1,840)
18	60.50 (1,537)	32.00 (813)	8,106 (3,677)	5,952 (2,700)
20	65.50 (1,664)	34.22 (869)	9,207 (4,176)	6,504 (2,950)
24	76.50 (1,943)	34.22 (869)	13,329 (6,046)	11,442 (5,190)

Class **2500 RF**

Nominal Size	Standard Pattern	Short Pattern	Weight	
	A in (mm)	B in (mm)	A lbs. (kg)	B lbs. (kg)
2	17.75 (451)	- -	115 (52)	- -
3	22.75 (578)	- -	262 (119)	- -
4	26.50 (673)	- -	370 (168)	- -
6	36.00 (914)	15.88 (403)	1,307 (593)	1,069 (485)
8	40.25 (1,022)	17.69 (449)	1,925 (873)	1,543 (700)
10	50.00 (1,270)	22.13 (562)	3,638 (1,650)	2,705 (1,227)
12	56.00 (1,422)	36.00 (914)	5,604 (2,542)	4,570 (2,073)

High Pressure Gas and Cryogenic In-House Testing

Improved Leak Rates for Low Temperature Service

Crane's NOZ-CHEK® Cryogenic Valves can now be offered to meet industry standard leak rate specifications for low temperature and Cryogenic service down to -196°C.

The extensive product line can now be offered to meet the stringent requirements of BS 6364, and other standards such as ISO 28921, MSS SP-134 and Shell 77/200.

The NOZ-CHEK® product is available in standard cryogenic materials such as 316SS, and in 1" - 48" sizes. Pressure classes are available per ASME standard.

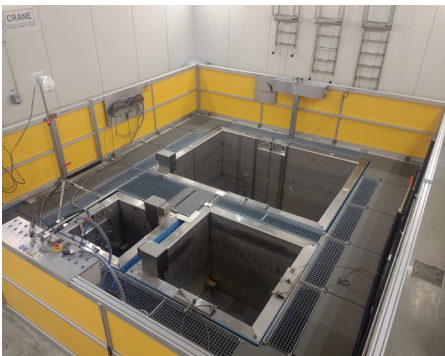
The low temperature and Cryogenic testing is carried out on site in our new state-of-the-art testing facility.

TESTING – Our testing facility is capable of testing multiple specifications for HPGT and Cryogenics due to its intelligent programming system. The programming software is run using a barcode system, removing all manual inputs and, therefore, the potential for human error. Multiple procedures are stored on the control system. These comply with industry standards, ensuring a lean and efficient testing process. The system also has the flexibility to be customized to specific customer needs. For example, specific temperature or pressure requirements. On completion of testing, a certificate of conformance is generated by the system detailing leak rates, pressures and temperatures, as well as a graphical representation of the testing cycle.

SAFETY is paramount. The test enclosure has been designed and implemented around this philosophy for all who interact with the facility. Key safety features include:

- Automatic interlock and lock-out personnel access door.
- Enclosure designed and tested to UL752 level 1 impact.
- 4 HD dome cameras with 10x optical zoom and 360° horizontal and 90° vertical rotation, coupled with remote monitoring via Internet access.
- Oxygen deficiency sensing connected directly to a high speed exhaust system for air quality

****The test enclosure is able to test valves up to 72" and to pressures of 22,500 PSI, ensuring extensive coverage of the Crane Engineered Check product range.***

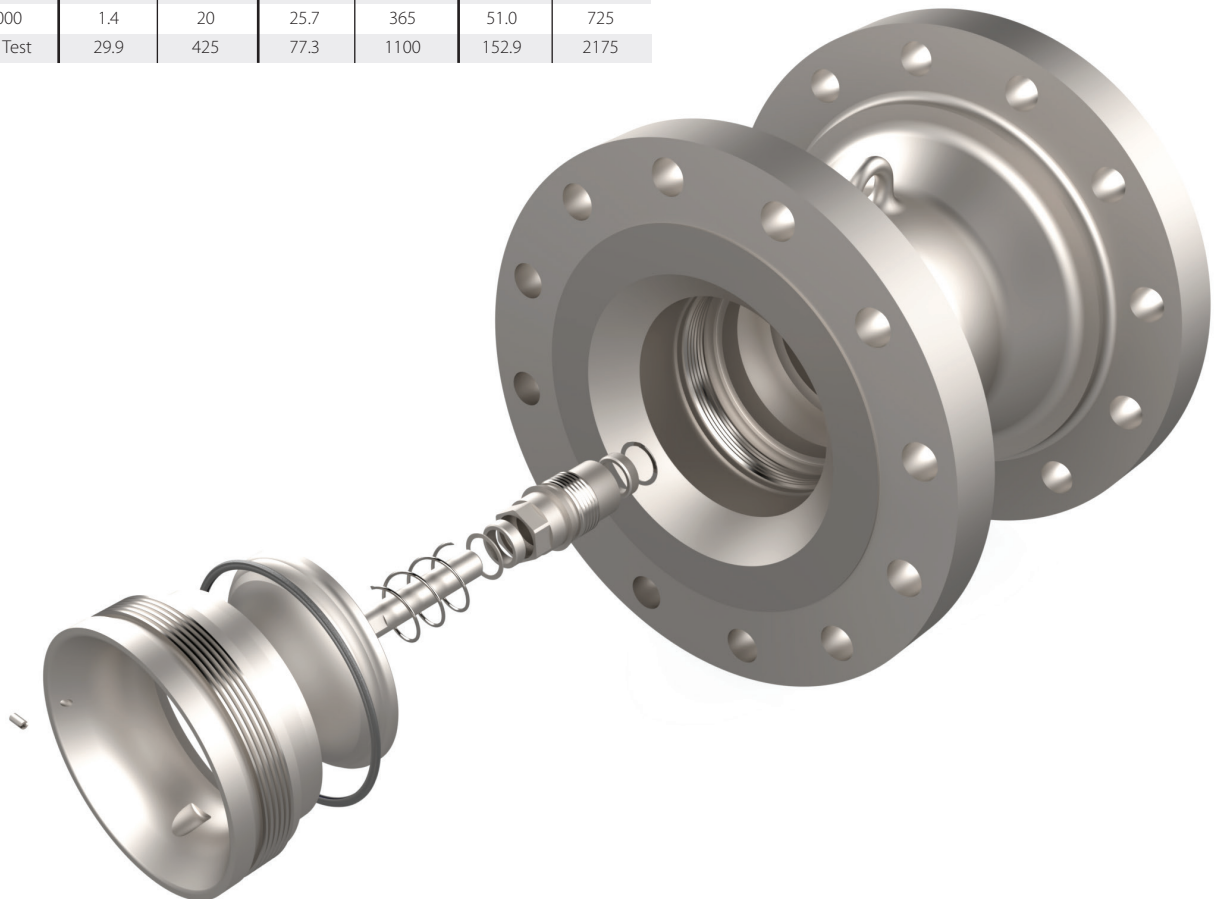


Pressure	Service Temperature	Test Temperature	End Connections	Typical Applications				
				LNG	Air Separation	Ethylene	Gas Compression	Gasoline
CLASS 150 – 4500 API 6A 2000 – 15,000	-321°F – 932°F -196°C – 500°C	-321°F – AMBIENT -196°C – AMBIENT	FLANGED, BUTT-WELD ENDS, HUBS ENDS AND SPECIALS	•	•	•	•	•

NOZ-CHEK® Cryogenic Pressure-Temperature Ratings

ASME B16.34 for Steel and 316 Stainless Steel Materials

Temperature		Maximum Non-Shock Service Pressure, psi and kg/cm ² (ASME B16.34)					
°C	°F	Series 150		Series 300		Series 600	
		316SS		316SS		316SS	
		kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi
-29 to 38	-20 to 100	19.3	275	50.6	720	101.2	1440
66	150	17.9	255	47.1	670	94.2	1340
93	200	16.9	240	43.6	620	87.2	1240
121	250	15.8	225	41.5	590	83.0	1180
149	300	15.1	215	39.4	560	78.7	1120
177	350	14.4	205	37.6	535	75.6	1075
204	400	13.7	195	36.2	515	72.4	1030
232	450	12.7	180	34.8	495	69.6	990
260	500	12.0	170	33.7	480	67.1	955
288	550	10.9	155	32.7	465	65.4	930
316	600	9.8	140	31.6	450	63.6	905
343	650	8.8	125	31.3	445	62.6	890
371	700	7.7	110	30.2	430	60.8	865
399	750	6.7	95	29.9	425	59.4	845
427	800	5.6	80	29.2	415	58.3	830
454	850	4.6	65	28.5	405	56.9	810
468	875	3.9	55	28.1	400	56.2	800
482	900	3.5	50	27.8	395	55.5	790
496	925	2.8	40	27.4	390	54.8	780
510	950	2.5	35	27.1	385	54.5	775
524	975	1.8	25	26.4	375	52.7	750
538	1000	1.4	20	25.7	365	51.0	725
Hydrostatic Shell Test		29.9	425	77.3	1100	152.9	2175



NOZ-CHEK® Cryogenic Valves Ordering Information

24"

Valve Size

NC

Style

30

Pressure
Class

C

Body & Trim

P

Seal

F

End
Connection

Description: 24" Style NC, ASME Class 300, Stainless Steel Body, Metal to Metal Seal, Raised Face Flanges (No Modifications)

Valve Size

Nominal valve sizes are expressed in inches, for ASME, API and BS flange standards or millimeters for DIN, AS and JIS flange standards. (Size preceded by "M" for DIN, "A" for AS or "J" for JIS)

Seal

Operating temperature for general guidance only

Code Letter	Seal Material	Operating Temp.	
		°C	°F
P	Metal	-257 to 537	-450 to 1000

Body Seal

Operating temperature for general guidance only

Body Seal Type	Material	Temperature Range	
Spring Energised Cryogenic Seal	PTFE, spring energised Elgiloy	-196°C to 150°C	-320°F to 302°F
O-Ring	Various Materials	-60°C to 260°C	-76°F to 500°F
Metal C Seal	INC 718	-150°C to 550 °C	-238°F to 1022°F

Style

Ordering Letter	Body Style	Size Range
NC	Integral Body, Standard Pattern	2" through 84" (50 mm through 2134 mm)
NCS	Integral Body, Short Body Pattern	8" through 84" (200 mm through 2134 mm)

Flange Series

(ASME B16.42 Series "A" or "B" to be specified over 24")

ASME		API		DIN/JIS		BS/AS	
Ordering No.	Pressure Class	Ordering No.	Rating	Ordering No.	PN Rating	Ordering No.	Table
15	150	21	2000	Flange Standard: M-DIN J-JIS	6	B-BS	A
30	300	31	3000		thru	A-AS	thru
60	600	51	5000		320		T
90	900	101	10,000				
150	1500	151	15,000				
250	2500						
450	4500						

NOZ-CHEK® Cryogenic Valves Ordering Information

24"	NC	30	C	P	F
Valve Size	Style	Pressure Class	Body & Trim	Seal	End Connection

Description: 24" Style NC, ASME Class 300, Stainless Steel Body, Metal to Metal Seal, Raised Face Flanges (No Modifications)

Standard Body & Disc Materials

Code	Body	Disc
C	ASTM A 351 GR CF8M 316 stainless steel	stainless steel

Spring Material

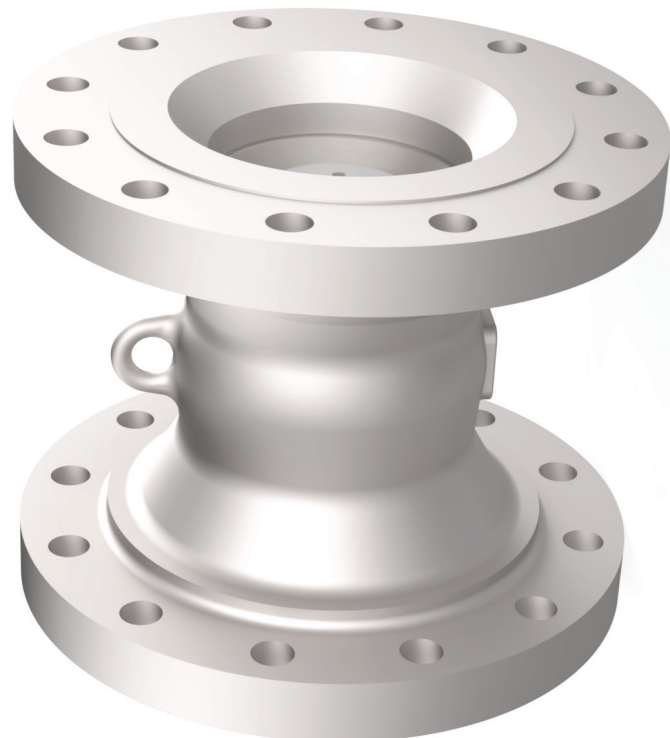
Spring Material	Maximum Recommended Operating Temperatures	
	°C	°F
316 Stainless Steel	-200 to 300	-328 to 572
Inconel® X-750	-200 to 537	-328 to 1000

Inconel® is a registered trademark of Special Metals Corporation.
For temperatures up to 600°F (315°C), Inconel will be furnished as standard.
Other alloy spring materials are available to meet specific service requirements.

End Connections

Ordering Letter	Connections
F	Flanged-Raised Faced
X	Flanged Flat Faced
G	Grayloc® End
P	Flanged Smooth Finish
R	Flanged Ring Joint
W	Butt Weld

Grayloc® is a registered trademark of Océaneering International, Inc.



Modifications

A modification number is assigned when non-standard features, material mixes or documentation are ordered.

NOZ-CHEK®

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COMPAC-NOZ®



DEPA®

ELRO® Duo-CHEK®



NOZ-CHEK®



RESISTOFLEX®



Saunders®
the science inside

STOCKHAM

triangle

UNI-CHEK®

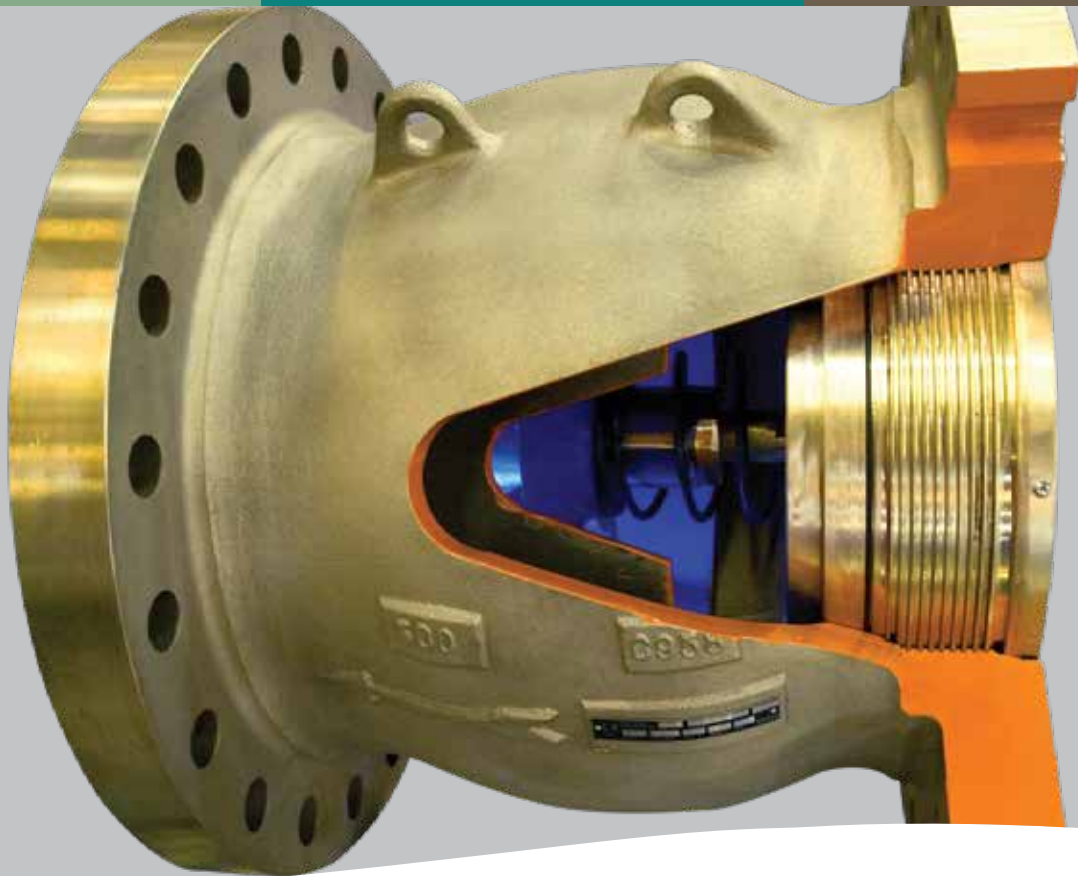
W.T.A.®

XOMOX®

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NOZ-CHEK[®]

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NOZ-CHEK[®] - High Performance Nozzle-Type
Non-Slam Check Valve

CRANE[®]

Crane ChemPharma & Energy

www.cranecpe.com

NOZ-CHEK® Non-Slam Chek Valve

SCOPE OF LINE

- Sizes 1" – 84"
- ASME B16.34 & API 6D, pressure classes 150 – 4500
- API 6A pressure ratings 2000 – 15,000
- Flanged, butt-weld ends, hubs ends and specials
- Standard and short pattern
- Wide range of materials of construction available, consult factory for special application requirements

STANDARD FEATURES

Extensive research and development, coupled with valid design procedures, have resulted in these unique NOZ-CHEK® features:

- **Few moving parts - Disc is the only moving part, minimizing wear.**
- **Axial movement of disc - Disc and seating configuration give streamlined flow path with venturi effect, resulting in low pressure drop.**
- **Short stroke of spring-assisted disc - Inlet flow velocity moves disc axially with short stroke. In response to flow velocity reduction, a compressed spring initiates valve closure and provides quick response.**
- **Spring options - Choice of spring affects critical velocity and valve response. Selection is made on engineering evaluation of specific applications. In absence of this data, a standard spring will be provided.**

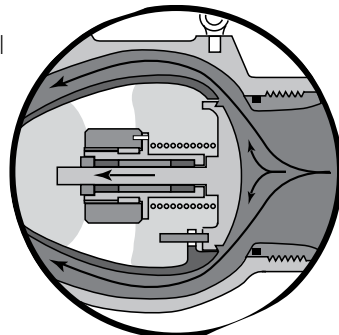
CHARACTERISTICS

NOZ-CHEK® valves deliver an effective dynamic response under various flow deceleration conditions. The dynamic performance characteristics of NOZ-CHEK® valves are compared to swing check and dual plate spring-assisted check valves in Figure 1.

NOZ-CHEK®'s unique design features result in superior performance, fast response and lower pressure loss in piping systems.

OPENING

Reduced pressure, generated by increased velocity in the minimal flow area, results in additional force to assist the disc to open and allows for extra spring loading that facilitates a faster closing time.

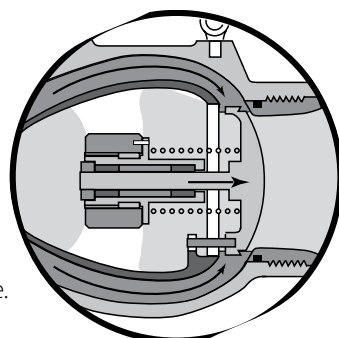


This spring force is balanced in the fully open position.

The NOZ-CHEK® geometry is established by considering the design velocity required to ensure that the disc is stabilized open against its stop even if moderate flow oscillation occurs.

CLOSING

When a noticeable reduction in flow occurs, the disc reacts immediately, limiting backflow and valve slamming.



The spring load, low mass disc, and short displacement ensures a rapid self-dampening response.

For certain applications, the internal geometry can be modified to suit the service conditions.

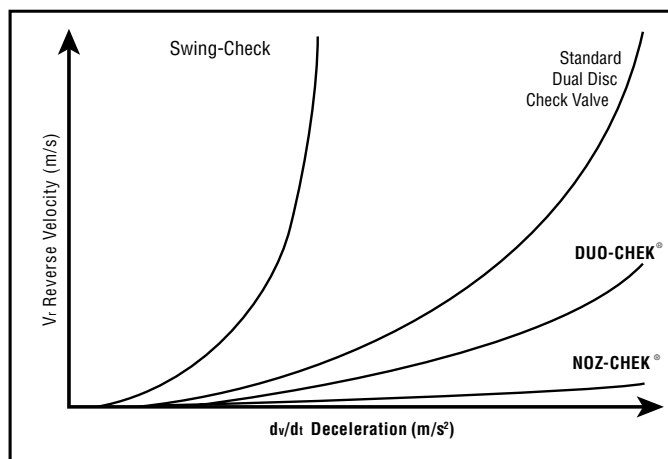


Figure 1

NOZ-CHEK® Capabilities, Features & Benefits

HIGH PERFORMANCE NON-SLAM CHECK VALVE

One of the most significant elements of piping system design is integrating the means to protect mechanical equipment and prevent damage caused by backflow. Backflow prevention is routinely achieved through the use of swing check valves or dual-plate check valves.

NOZ-CHEK® valves are specifically designed for fast-reversing systems where backflow is a constant concern. In such critical service applications, NOZ-CHEK® Non-Slam Check Valves offer the following benefits.

- **Minimizes the damaging effects of water hammer in fluid systems**
- **Removal of chatter associated with conventional valves in reciprocating compressor service**
- **Protects rotating equipment from damage due to flow reversal**
- **Minimizes pressure loss in piping systems**
- **Provides quick dynamic response reducing reverse velocity**

NOZ-CHEK® is designed and manufactured to the highest quality standards including ISO-9001, PED.

LOW CRYOGENIC LEAK RATE PER BS 6364 INDUSTRY STANDARD

NOZ-CHEK® valves meet the standard requirements of ASME B16.34, API 6D and API 598. Now, with expansion of this product line, the NOZ-CHEK® Cryogenic valve can meet the rigorous requirements of BS 6364 (300CC/MIN at -196°C/ -320°F), Shell 77/200, MSS SP-134, ISO 28921-1.

ZERO FUGITIVE EMISSIONS

NOZ-CHEK® products feature a single piece solid body (no penetrations or external leak paths), reflecting our commitment to environmental responsibility and critically ensuring zero fugitive emissions.

IN-HOUSE CRYOGENIC TESTING

The low temperature and Cryogenic High-Pressure gas testing is carried out on-site in our state of the art testing facilities. Test capability 1" to 72" and test pressures of 22,500 PSI.

INNOVATION OF PROVEN TECHNOLOGY

Dedication to solving our Customers' challenges, longstanding commitment to safety and quality continue to drive our product innovation.

Industry Standards*	
API 598	Valve Pressure Testing and Inspection
ASME B16.34	Pressure/Temperature Ratings
API 6D	Pipeline Valves
API 6A	Production Valves
2014/68/EU	Pressure Equipment Directive
ISO 28921 – 1	International Standards Organisation Cryogenic testing
BS 6364	British Valve Standard Cryogenic testing
MSS SP-134	Manufacturing Standards Society

*Consult factory for other specification requirements.

NOZ-CHEK® Applications



Oil and Gas Production

- Centrifugal Compressor Discharge
- Fire Water Lines
- Oil/Steam Separation
- Steam and CO2 Injection
- Gas/Oil Gathering Systems
- Flowlines
- Wellheads
- Regasification
- Liquidfaction

Power Generation

- Steam
- Condensate
- Boiler Feed Pumps
- Cooling Towers
- Service Water Recirculators
- River Water Intake
- Nuclear Energy

Petroleum Refining

- Hydrogen
- Cracking
- Steam
- Crude Oil
- Gasoline
- Visbreakers
- Naphtha
- Sulfur

Petrochemicals

- Ethylene
- Propylene
- Steam
- Reboilers
- Gases
- EO/EG

Chemicals

- Chlorine
- Phosgene
- Aromatics
- Polymers
- Acids
- Air Separation
- Caustics

Water and Wastewater

- Distribution Lines
- Pumping Stations
- Sewage Plant Blower Discharge
- Chemical Treatment
- Fire Protection Systems
- HVAC Systems
- Desalination

Steel/Primary Metals

- Quench Lines
- De-Scaling
- Continuous Casters
- Steam
- Condensate
- Strippers
- Electro-Galvanizing

Pulp and Paper

- Bleaching Lines
- Black Liquor
- Green Liquor
- White Water
- Steam
- Chemical Recovery

Marine

- FPSO
- Oil Tankers
- Tanker Loading Terminals
- Offshore Platforms
- Sub-Sea Manifolds
- Terminal Transfer Lines
- Barge Unloading Lines
- Shipboard Services

Renewables

- Solar Power
- Wave Power
- Green Hydrogen
- Carbon Capture

Gas Transmission

- Compressor Suction/Discharge/Bypass

Typical Cryogenic Applications

- LNG
- Liquefaction Compression Train
- Mixed Refrigerant
- Ethylene Production
- Ethylene Refrigeration
- Air Separation Units
- General Cryogenic compressor protection

NOZ-CHEK® Cryogenic Valves Design Features

1 DISC

Standard disc is high strength with minimized weight to provide fast dynamic response. Design minimizes bearing loads, thus lengthens life of bearings and shaft. Offered in a variety of trim materials, with metal or resilient seating.

2 FLOW OUTLET ZONE

Designed for pressure recovery to minimize pressure loss and fluid turbulence. Results in smooth flow.

3 SEAT

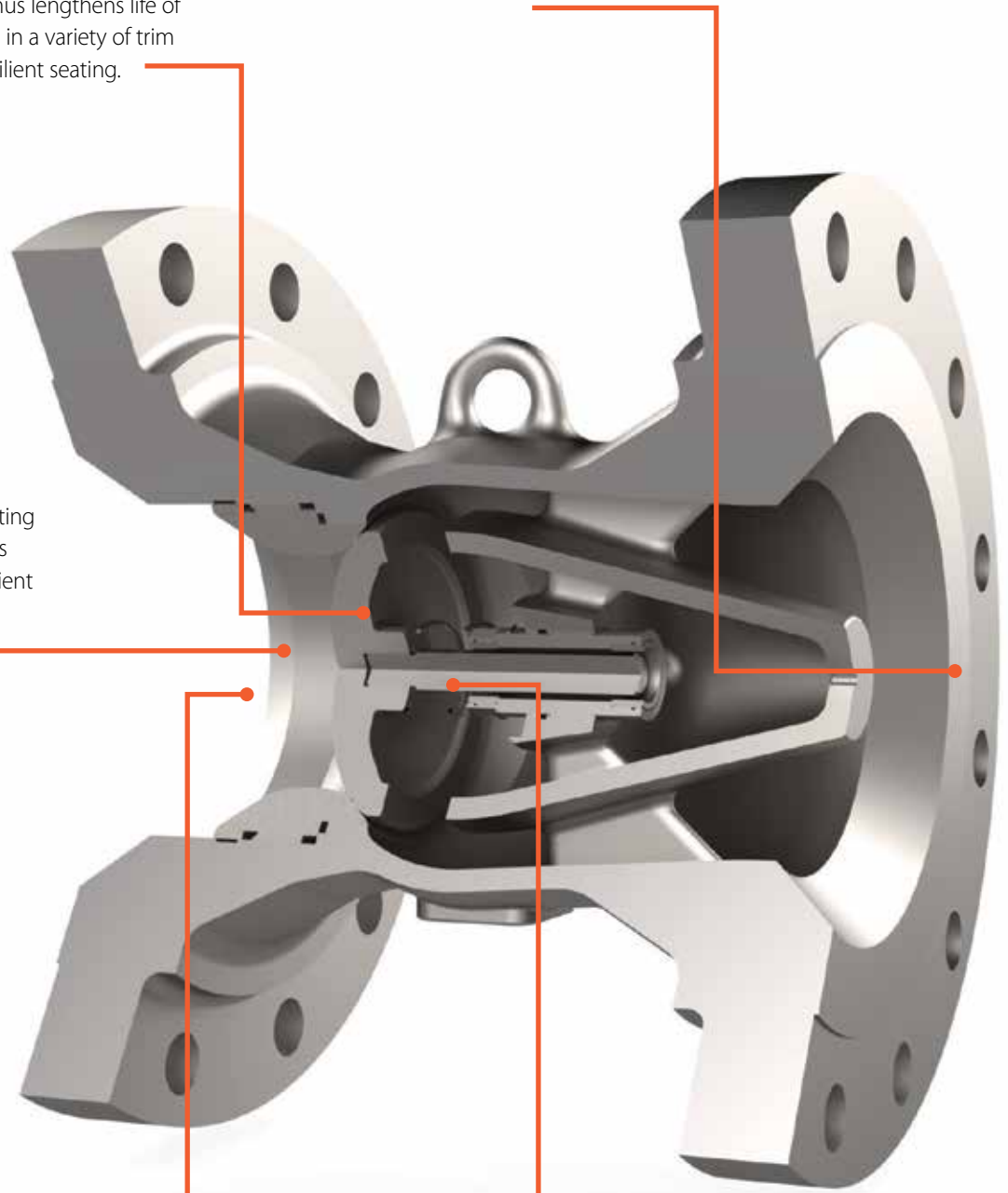
Assures venturi flow by its configuration. Provides seating surface for disc and enables bubble-tight seal with resilient materials.

4 FLOW INLET ZONE

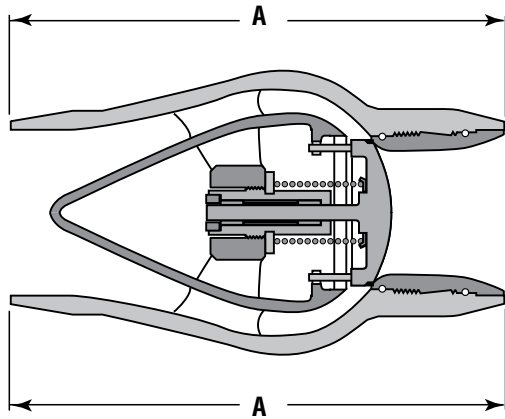
Venturi design maximizes flow impact on disc. Provides streamlined flow when valve is fully open to minimize pressure loss.

5 SPRING

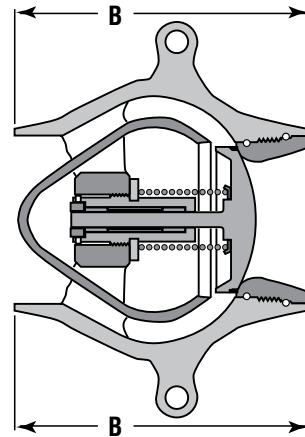
As the most strategic component, the spring is designed to meet specific service conditions – a customized approach.



Flanged End Non-Slam Dimensional Data



Style **NC**



Style **NCS**

Class **150 RF**

Nominal Size	Standard Pattern	Short Pattern	Weight	
	A in (mm)	B in (mm)	A lbs. (kg)	B lbs. (kg)
2	8.00 (203)	-	22 (10)	-
3	9.50 (241)	-	66 (30)	-
4	11.50 (292)	-	106 (48)	-
6	14.00 (356)	-	168 (76)	-
8	19.50 (495)	-	428 (194)	-
10	24.50 (622)	14.37 (365)	536 (243)	485 (220)
12	27.50 (699)	17.25 (438)	628 (285)	622 (282)
14	31.00 (787)	18.70 (475)	944 (428)	765 (347)
16	34.00 (864)	21.45 (545)	1,078 (489)	915 (415)
18	38.50 (978)	24.00 (610)	1,795 (814)	1,186 (538)
20	38.50 (978)	33.47 (850)	3,177 (1,441)	2,370 (1,075)
24	51.00 (1,295)	31.88 (810)	2,540 (1,152)	2,888 (1,310)
28	57.00 (1,448)	37.22 (945)	4,422 (2,006)	3,439 (1,560)
30	60.00 (1,524)	39.77 (1,010)	5,417 (2,457)	4,332 (1,965)
36	77.00 (1,956)	39.37 (1,000)	5,983 (2,714)	5,743 (2,605)
42	-	55.72 (1,415)	-	9,039 (4,100)
48	-	57.50 (1,461)	-	11,629 (5,275)
54	-	72.84 (1,850)	-	20,834 (9,450)
60	-	80.12 (2,035)	-	23,810 (10,800)

Class **300 RF**

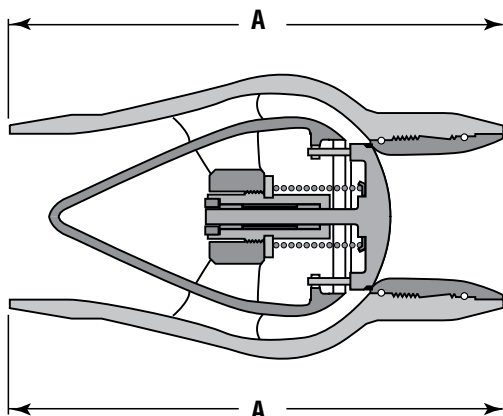
Nominal Size	Standard Pattern	Short Pattern	Weight	
	A in (mm)	B in (mm)	A lbs. (kg)	B lbs. (kg)
2	10.50 (267)	-	29 (13)	-
3	12.50 (318)	-	66 (30)	-
4	14.00 (356)	-	106 (48)	-
6	17.50 (445)	10.00 (254)	209 (95)	194 (88)
8	21.00 (533)	12.25 (311)	450 (204)	419 (190)
10	24.50 (622)	14.37 (365)	613 (278)	547 (248)
12	28.00 (711)	17.25 (438)	730 (331)	672 (305)
14	33.00 (838)	18.70 (475)	1,186 (538)	981 (445)
16	34.00 (864)	21.45 (545)	1,426 (647)	1,168 (530)
18	38.50 (978)	24.00 (610)	1,808 (820)	1,521 (690)
20	40.00 (1,016)	31.88 (810)	2,586 (1,173)	2,403 (1,090)
24	53.00 (1,346)	31.88 (810)	3,338 (1,514)	3,020 (1,370)
28	59.00 (1,499)	40.75 (1,035)	5,262 (2,387)	4,850 (2,200)
30	60.00 (1,524)	39.77 (1,010)	5,831 (2,645)	5,278 (2,394)
36	82.00 (2,083)	39.37 (1,000)	9,608 (4,358)	8,091 (3,670)
42	-	55.72 (1,415)	-	12,390 (5,620)
48	-	57.50 (1,461)	-	11,740 (5,325)
54	-	72.84 (1,850)	-	22,355 (10,140)
60	-	80.12 (2,035)	-	24,471 (11,100)

Class **600 RF**

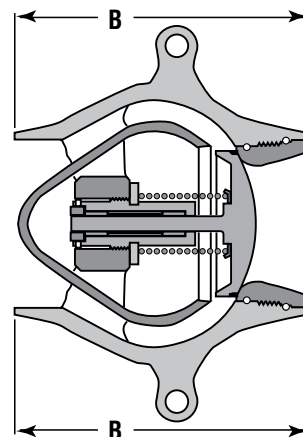
Nominal Size	Standard Pattern	Short Pattern	Weight	
	A in (mm)	B in (mm)	A lbs. (kg)	B lbs. (kg)
2	11.50 (292)	-	37 (17)	-
3	14.00 (356)	-	66 (30)	-
4	17.00 (432)	-	163 (74)	-
6	22.00 (559)	15.37 (390)	425 (193)	373 (169)
8	26.00 (660)	12.25 (311)	551 (250)	448 (203)
10	31.00 (787)	14.38 (365)	880 (399)	739 (335)
12	33.00 (838)	17.25 (438)	1,138 (516)	939 (426)
14	35.00 (889)	18.69 (475)	1,437 (652)	1,186 (538)
16	39.00 (991)	21.50 (546)	2,110 (957)	1,742 (790)
18	43.00 (1,092)	31.88 (810)	3,417 (1,547)	2,987 (1,355)
20	47.00 (1,194)	31.88 (810)	3,389 (1,537)	3,042 (1,380)
24	55.00 (1,397)	31.88 (810)	5,315 (2,411)	4,266 (1,935)
28	63.00 (1,600)	34.25 (870)	8,673 (3,934)	5,864 (2,660)
30	65.00 (1,651)	39.75 (1,010)	8,675 (3,935)	6,614 (3,000)
36	82.00 (2,083)	47.82 (1,215)	19,354 (8,779)	9,921 (4,500)
42	-	57.50 (1,461)	-	14,515 (6,584)
48	-	63.58 (1,615)	-	22,597 (10,250)
54	-	72.00 (1,829)	-	27,337 (12,400)
60	-	85.00 (2,159)	-	40,786

(18,500)

Flanged End Non-Slam Dimensional Data



Style **NC**



Style **NCS**

Class **900 RF**

Nominal Size	Standard Pattern	Short Pattern	Weight	
	A in (mm)	B in (mm)	A lbs. (kg)	B lbs. (kg)
2	14.50 (368)	- -	79 (36)	- -
3	15.00 (381)	- -	121 (55)	- -
4	18.00 (457)	- -	220 (100)	- -
6	24.00 (610)	15.38 (391)	567 (257)	425 (193)
8	29.00 (737)	13.63 (335)	739 (335)	639 (290)
10	33.00 (838)	15.50 (394)	1,508 (684)	1,065 (483)
12	38.00 (965)	18.00 (457)	1,951 (885)	1,488 (675)
14	40.50 (1,029)	18.62 (473)	2,928 (1,328)	1,532 (695)
16	44.50 (1,130)	29.51 (750)	3,225 (1,463)	2,690 (1,220)
18	48.00 (1,219)	30.50 (775)	4,456 (2,021)	3,175 (1,440)
20	52.00 (1,321)	34.22 (869)	6,484 (2,941)	4,674 (2,120)
24	61.00 (1,549)	40.00 (1,016)	8,126 (3,686)	7,015 (3,182)
28	- -	40.00 (1,016)	- -	10,251 (4,650)
30	- -	40.41 (1,026)	- -	10,472 (4,750)
36	- -	46.84 (1,190)	- -	15,984 (7,250)
42	- -	60.00 (1,524)	- -	21,870 (9,920)
48	- -	64.00 (1,626)	- -	31,747 (14,400)

Class **1500 RF**

Nominal Size	Standard Pattern	Short Pattern	Weight	
	A in (mm)	B in (mm)	A lbs. (kg)	B lbs. (kg)
2	14.50 (368)	- -	79 (36)	- -
3	18.50 (470)	- -	172 (78)	- -
4	21.50 (546)	- -	271 (123)	- -
6	27.75 (705)	15.88 (403)	805 (365)	595 (270)
8	32.75 (832)	13.63 (346)	1,008 (457)	805 (365)
10	39.00 (991)	15.50 (394)	1,978 (897)	1,385 (628)
12	44.50 (1,130)	18.00 (457)	2,650 (1,202)	1,984 (900)
14	49.50 (1,257)	25.53 (648)	4,932 (2,237)	3,527 (1,600)
16	54.50 (1,384)	29.53 (750)	5,485 (2,488)	4,057 (1,840)
18	60.50 (1,537)	32.00 (813)	8,106 (3,677)	5,952 (2,700)
20	65.50 (1,664)	34.22 (869)	9,207 (4,176)	6,504 (2,950)
24	76.50 (1,943)	34.22 (869)	13,329 (6,046)	11,442 (5,190)

Class **2500 RF**

Nominal Size	Standard Pattern	Short Pattern	Weight	
	A in (mm)	B in (mm)	A lbs. (kg)	B lbs. (kg)
2	17.75 (451)	- -	115 (52)	- -
3	22.75 (578)	- -	262 (119)	- -
4	26.50 (673)	- -	370 (168)	- -
6	36.00 (914)	15.88 (403)	1,307 (593)	1,069 (485)
8	40.25 (1,022)	17.69 (449)	1,925 (873)	1,543 (700)
10	50.00 (1,270)	22.13 (562)	3,638 (1,650)	2,705 (1,227)
12	56.00 (1,422)	36.00 (914)	5,604 (2,542)	4,570 (2,073)

NOZ-CHEK® Quality Management and Testing



TOTAL QUALITY MANAGEMENT

CRANE is guided by a commitment to total quality management with a focus in customer satisfaction. Design, manufacturing and testing procedures are certified to ISO 9001, EN 29001 and ASME/ASQC Q91 Quality Assurance. This quality management system is also approved by Stoomwezen and TUV.

DESIGN

Computer-aided design (CAD) systems at CRANE are helpful in developing sound designs. Finite element analysis is utilized to conduct simulated stress analyses for various valve structures to prove design integrity. Flow modeling is applied to optimize pressure drop characteristics. Computer-generated spring designs and disc weight studies have improved the NOZ-CHEK® valve response times.

MANUFACTURING CAPABILITIES

NOZ-CHEK® valves can be furnished in sizes from 2" - 84" (50 - 2134 mm), and in pressure classes from ASME Class 150 - 4500 and API ratings from 2000 - 15,000 psi CWP.

A variety of body and trim material is offered, including carbon steel, ductile iron, alloy steels, stainless steel and duplex steel. Coatings may be provided for added corrosion or wear resistance. Hard-facing and weld overlays may also be supplied. Seats may be metal-to-metal or bubble-tight resilient.

TESTING

Inspection and testing are applied throughout the manufacturing process.

- Special nondestructive testing is often specified, which may include radiography, magnetic particle and liquid penetrant.
- Cryogenic and fire tests can be conducted to satisfy customer requirements. The test enclosure is able to test valves up to 72" and to pressures of 22,500 PSI, ensuring extensive coverage of the Crane Engineered Check product range.
- Each valve is hydrostatically tested to API Standard 598. These tests apply to the body shell and seat, with test duration and leakage rates pertaining to customer requirements. Other test standards are also specified in some cases.



Additional Engineered Check Products

Certificates

- ISO 9001
- ISO 14000
- ISO 45000
- API 6D
- PED
- FPAL
- ASME 6FD/6FA
- ABS
- CRN
- TR032
- Shell DVT



NOZ-CHEK® Full Body Nozzle Check Valves

- Sizes 2" – 84"
- ASME Classes 150 – 4500
- Flanged, Hub-End, Weld-End
- Iron, Steel, and Stainless Steel
- ASME, DIN, JIS Standards



NOZ-CHEK® Internally CRA Clad Flanged / Hubbed / Weld end

- Sizes: 2" – 84"
- ASME Classes 150 - 2500
- API 6A Pressure Rating up to 15000
- Non-Integral Diffuser



UNI-CHEK® Single-Disc Check Valves

- Sizes 2" – 36"
- ASME Classes 125 – 300
- Flanged, Plain, or Serrated Ends
- Cast Iron, Carbon Steel, and Stainless Steel
- Variety of external shaft options available



NOZ-CHEK® NOZ-CHEK® Cryogenic

- Sizes: 1" – 48"
- ASME B16.34 & API 6D
- ASME Classes 150-4500
- API 6A Pressure Rating 2000-15,000



COMPAC-NOZ® Compact Body Nozzle Check Valves

- Sizes 12" – 48"
- ASME Classes 150 – 2500
- Flanged
- Iron, Steel, and Stainless Steel
- ASME, DIN, JIS Standards



NOZ-CHEK® Forged Flanged / Hubbed / Weld end

- Sizes: 2" – 84"
- ASME Classes 150 - 2500
- API 6A Pressure Rating up to 15000
- Non-Integral Diffuser

Pressure-Temperature Ratings

ASME B16.34 for Steel and 316 Stainless Steel Materials

Temperature		Maximum Non-Shock Service Pressure, psi and kg/cm ² (ASME B16.34)											
°C	°F	Series 150				Series 300				Series 600			
		Steel*		316SS		Steel*		316SS		Steel*		316SS	
		kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi
-29 to 38	-20 to 100	20.0	285	19.3	275	52.0	740	50.6	720	104.0	1480	101.2	1440
66	150	19.0	270	17.9	255	49.6	705	47.1	670	99.1	1410	94.2	1340
93	200	18.3	260	16.9	240	47.5	675	43.6	620	94.9	1350	87.2	1240
121	250	17.2	245	15.8	225	46.7	665	41.5	590	93.5	1330	83.0	1180
149	300	16.2	230	15.1	215	46.0	655	39.4	560	92.4	1315	78.7	1120
177	350	15.1	215	14.4	205	45.3	645	37.6	535	90.7	1290	75.6	1075
204	400	14.1	200	13.7	195	44.6	635	36.2	515	89.3	1270	72.4	1030
232	450	13.0	185	12.7	180	43.2	615	34.8	495	86.8	1235	69.6	990
260	500	12.0	170	12.0	170	42.2	600	33.7	480	84.4	1200	67.1	955
288	550	10.9	155	10.9	155	40.4	575	32.7	465	80.5	1145	65.4	930
316	600	9.8	140	9.8	140	38.7	550	31.6	450	77.0	1095	63.6	905
343	650	8.8	125	8.8	125	37.6	535	31.3	445	75.6	1075	62.6	890
371	700	7.7	110	7.7	110	37.6	535	30.2	430	74.9	1065	60.8	865
399	750	6.7	95	6.7	95	35.5	505	29.9	425	71.0	1010	59.4	845
427	800	5.6	80	5.6	80	28.8	410	29.2	415	58.0	825	58.3	830
454	850	4.4	65	4.6	65	19.0	270	28.5	405	37.6	535	56.9	810
468	875	3.9	55	3.9	55	15.5	220	28.1	400	30.9	440	56.2	800
482	900	3.5	50	3.5	50	12.0	170	27.8	395	24.3	345	55.5	790
496	925	2.8	40	2.8	40	9.5	135	27.4	390	19.3	275	54.8	780
510	950	2.5	35	2.5	35	7.4	105	27.1	385	14.4	205	54.5	775
524	975	1.8	25	1.8	25	5.3	75	26.4	375	10.9	155	52.7	750
538	1000	1.4	20	1.4	20	3.5	50	25.7	365	7.4	105	51.0	725
Hydrostatic Shell Test		31.6	450	29.9	425	79.1	1125	77.3	1100	156.4	2225	152.9	2175

Temperature		Maximum Non-Shock Service Pressure, psi and kg/cm ² (ASME B16.34)											
°C	°F	Series 900				Series 1500				Series 2500			
		Steel*		316SS		Steel*		316SS		Steel*		316SS	
		kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi	kg/cm ²	psi
-29 to 38	-20 to 100	156.1	2220	151.8	2160	260.5	3705	253.1	3600	433.8	6170	421.8	6000
66	150	149.0	2120	141.3	2010	248.9	3540	235.2	3345	414.4	5895	392.3	5580
93	200	142.4	2025	130.8	1860	237.3	3375	217.6	3095	395.4	5625	362.7	5160
121	250	140.2	1995	124.4	1770	233.7	3325	207.0	2945	398.8	5545	345.2	4910
149	300	138.5	1970	118.1	1680	230.6	3280	196.5	2795	384.5	5470	327.6	4660
177	350	136.0	1935	113.2	1610	226.7	3225	188.4	2680	377.9	5375	314.2	4470
204	400	133.6	1900	108.3	1540	222.9	3170	180.7	2570	371.2	5280	300.9	4280
232	450	129.7	1845	104.4	1485	216.5	3080	174.3	2480	361.0	5135	290.3	4130
260	500	126.2	1795	100.9	1435	210.5	2995	168.0	2390	350.8	4990	279.8	3980
288	550	120.6	1715	98.1	1395	201.4	2865	163.1	2320	346.2	4925	272.1	3870
316	600	115.3	1640	95.3	1355	192.3	2735	158.5	2255	320.6	4560	264.3	3760
343	650	113.2	1610	93.5	1330	188.8	2685	156.1	2220	314.6	4475	260.1	3700
371	700	112.5	1600	91.0	1295	187.3	2665	151.8	2160	312.1	4440	253.1	3600
399	750	106.2	1510	89.3	1270	177.2	2520	148.3	2110	295.3	4200	247.5	3520
427	800	86.8	1235	87.5	1245	144.8	2060	145.9	2075	241.1	3430	243.2	3460
454	850	56.6	805	85.4	1215	94.2	1340	142.7	2030	156.8	2230	233.4	3320
468	875	46.4	660	84.0	1195	77.3	1100	140.6	2000	128.6	1830	232.0	3300
482	900	36.2	515	83.0	1180	60.5	860	138.5	1970	100.5	1430	230.6	3280
496	925	28.8	410	82.3	1170	48.2	685	137.1	1950	80.5	1145	228.5	3250
510	950	21.8	310	81.5	1160	36.2	515	135.7	1930	60.5	860	226.4	3220
524	975	16.2	230	79.1	1125	27.1	385	131.8	1875	45.3	645	219.7	3125
538	1000	10.9	155	76.6	1090	18.3	260	127.9	1820	30.2	430	213.0	3030
Hydrostatic Shell Test		235.5	3350	228.5	3250	391.9	5575	379.6	5400	652.0	9275	632.7	9000

*Permissible, but not recommended for prolonged use above 800°F (427°C)

NOZ-CHEK® Ordering Information

24"	NC	30	S	M	F	
Valve Size	Style	Pressure Class	Body & Trim	Seal	End Connection	Modification Number

Description: 24" Style NC, ASME Class 300, Carbon Steel Body, Buna-N Seal, Raised Face Flanges (No Modifications)

VALVE SIZE

Nominal valve sizes are expressed in inches, for ASME, API and BS flange standards or millimeters for DIN, AS and JIS flange standards. (Size preceded by "M" for DIN, "A" for AS or "J" for JIS)

SEAL Operating temperature for general guidance only

Code Letter	Seal Material	Maximum Recommended Operating Temperatures	
		°C	°F
M	Buna-N	-57 to 120	-70 to 250
V	FKM-B	-40 to 204	-40 to 400
P	Metal	-257 to 537	-450 to 1000
Z	EPDM*	-57 to 120	-70 to 250

Viton® is a registered trademark of DuPont Performance Elastomers L.L.C. Metal seats may be furnished as integral or special overlay materials are available.

STYLE

Ordering Letter	Body Style	Size Range
NC	Integral Body, Standard Pattern	2" through 36" (50 mm through 914 mm)
NCS	Integral Body, Short Body Pattern	6" through 84" (152mm through 2134mm)
TC	Non-Integrated Diffuser Standard Pattern	1" through 36" (25mm through 914mm)
TCS	Non-Integrated Diffuser Short Body Pattern	1" through 36" (25mm through 914mm)

FLANGE SERIES (ASME B16.42 Series "A" or "B" to be specified over 24") guidance only

ASME		API		DIN/JIS		BS/AS	
Ordering No.	Pressure Class	Ordering No.	Rating	Ordering No.	PN Rating	Ordering No.	Table
15	150	21	2000	M-DIN	6	B-BS	A
30	300	31	3000	J-JIS	thru 320	A-AS	thru T
60	600	51	5000				
90	900	101	10,000				
150	1500	151	15,000				
250	2500						
450	4500						

NOZ-CHEK® Ordering Information

24"

Valve Size

NC

Style

30

Pressure
Class

S

Body & Trim

M

Seal

F

End
Connection

Modification
Number

Description: 24" Style NC, ASME Class 300, Carbon Steel Body, Buna-N Seal, Raised Face Flanges (No Modifications)

STANDARD BODY & DISC MATERIALS

Code	Body	Disc
S	ASTM A 216 GR WCB carbon steel	alloy steel
C	ASTM A 351 GR CF8M 316 stainless steel	stainless steel
DD	BS EN 1563 GR EN-GJS-450-10** ductile iron	stainless steel
GC	ASTM A 352 GR LCC low temp. carbon steel	alloy steel
DZ	ASTM A995 GR 4A duplex stainless steel	Duplex SS

**also available in ASTM A 395a

SPRING MATERIAL

Spring Material	Maximum Recommended Operating Temperatures	
	°C	°F
316 Stainless Steel	120	250
Inconel® X-750	537	1000

Inconel® is a registered trademark of Special Metals Corporation.

For temperatures up to 600°F (315°C), Inconel will be furnished as standard. Other alloy spring materials are available to meet specific service requirements.

END CONNECTIONS

Ordering Letter	Connections
F	Flanged-Raised Faced
X	Flanged-Flat Faced
G	Hubbed End
P	Flanged Smooth Finish
R	Flanged Ring Joint
W	Butt Weld

MODIFICATIONS

A modification number is assigned when non-standard features, material mixes or documentation are ordered.

Notes

[illegible]

NOZ-CHEK®

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COMPAC-NOZ®



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ELRO® **Duo-CHEK**®



NOZ-CHEK®



RESISTOFLEX®



Saunders®
the science inside

STOCKHAM



UNI-CHEK®

W.T.A.®

XOMOX®

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NOZ-CHEK[®]

Noz-Chek[®] Forged Axial Non-Slam Check Valve

www.cranecpe.com

Noz-Chek[®] Forged Axial Non-Slam Check Valves are now available in forged materials for high pressure services.

Key features include:

- 1 **API 6A Design:** Valve type approved to API 6A PR2
- 2 **High Pressure Class:** Available for up to API 15,000 Pressure classes, and ANSI 2500
- 3 **Threaded Diffuser Assembly:** Threaded diffuser base eliminates sealing area misalignment and ensures valve integrity over full lifetime of valve
- 4 **Locking Snap ring:** Threaded diffuser additionally secured with snap ring to prevent diffuser unscrewing over long term operation



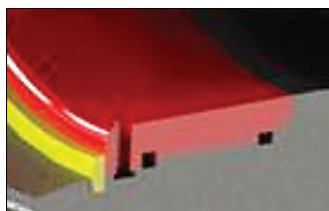
CRANE[®]

www.cranecpe.com

Noz-Chek® Forged Axial Non-Slam Check Valve

Technical Data

- Forged material body and disc assembly
- Threaded diffuser base
- Locking snap ring
- Zero Body Penetrations – No Fugitive emissions



Typical Applications

- FPSO
- Sub-sea oil and gas
- High pressure fluid injection
- High Pressure Gas applications

Size Range*

- 2" up to 24" / DN 50 up to DN 100

Pressure Rating

- API 6A Pressure Class
13.8 MPa–138.0 Mpa (2.000 to 20.000 psi)
- ASME class 150 - 2500 / PN 10, 16, 25, 40, 63, 100

* For other sizes, materials or special requirements please contact your local Sales Representative.

Temperature Range

Standard	Unit	Temp.	Material	Description
ASME	°C	-29 °C to 310 °C	A694 Grade F65	Low Alloy High Yield Carbon Steel
		-51 °C to 315 °C	A182 Grade F51	Duplex Stainless Steel
	°F	-20 °F to 590 °F	A694 Grade F65	Low Alloy High Yield Carbon Steel
		-60 °F to 599 °F	A182 Grade F51	Duplex Stainless Steel

Equivalent materials to DIN standards also available in these ranges.

Materials of Construction

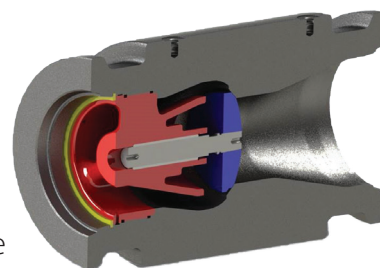
- ASTM A694 Grade F65-Low Alloy High Yield Carbon Steel
- ASTM A240 Grade 316-Stainless Steel
- ASTM A182 Grade F51-Duplex Stainless Steel
- EN 10222-4 P420QH (similar)
- EN 10222-5 X5CrNiMo17-12-2
- EN 10222-5 X2CrNiMoN22-5-
- Other standard forged grades upon request*

Body Configurations

- Manufacturer's standard face to face
- API 6D face to face
- Flanged

End Connections

- Hub End
- Weld End
- RTJ
- Raised Face / Flat Face



Compliance

- API 6A PR2 Type approved
- API 598
- ASME B16:34
- API 6FD
- PED (CE Marking)

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Crane ChemPharma & Energy, Noz-Chek®

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