

Vonk Choke Valve

Model ICV (In-line Type Body)



Vonk choke valves provide superior performance in abrasive environments, precise flow control and ease of maintenance, delivering operational reliability in the most challenging applications.



Features and benefits

- Extended service life, delivered by a robust but simple rotating disc and bean design.
- Low life cycle costs resulting from improved resistance to erosive production fluids.
- Ease of maintenance and inspection, facilitated by removal of limited internals while valve remains in service.
- Operational confidence and safety, guaranteed by 100% shut-off to Class V ANSI FCI-70.
- Operational reliability with the capability of handling high pressure drops and delivering fixed C_v values.
- Controlled environmental impact governed by reduced effects of noise and vibration.
- Improved pressure recovery performance factor delivered by the unique bean and disk design.

Product overview

Vonk choke valves provide superior performance in abrasive environments, precise flow control and ease of maintenance, delivering operational reliability in the most challenging oil and gas applications as the industry copes with extreme operating conditions and remote operating environments. The ICV model is designed as an in-line type body configuration and is available from 1 to 2" body sizes, incorporating technologically differentiating rotating disc trim design which minimizes wear while maximizing controllability and guaranteeing positive shut-off service. The ICV model range is designed for streamlined flow capacity with minimum turbulence and provides ISO flange arrangement to support easy automation. The ICV model also features three different internals depending on your flow conditions which are optimized for severe and abrasive applications (liner, long bean and long liner).

General applications

Vonk unique rotating disc choke valves have been designed for the upstream segment of the oil and gas market, excelling in applications with high differential pressure and abrasive fluids, including production, high pressure separators and well injection and fracturing applications.

Technical data

Body materials: Cast and forged stainless steel, carbon steel and CRA are available

Connections: Flange, hub, thread and butt weld

Pressure range: ANSI 150/2500, API 2000/10000

Temperature range: -148°F to +572°F [-100°C to 300°C]

Body sizes: 1" and 2"

End connections: 1" to 3"

C_v values: up to 45



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Materials

Standard			
Pos. no.	Parts	Standard service	Wet CO ₂ service
1	Body	A182-F316 1.4401	A182-F51 Duplex 1.4462
16	Bolts/Nuts	A320-L7M/A194-7M	
5	Front disc	Tungsten Carbide	
7	Bean	Tungsten Carbide	
4	Bean carrier	AISI 410	
17	Rotating shaft	AISI 316	
11	Spring	Inconel® X750	
6	Soft seals	Viton®/Mod. PTFE	
	temp. range	-4°F to 250°F [-20°C to 121°C]	
3000-10000 Lbs			
1	Body	A182-F51/Duplex 1.4462	

Materials are to NACE MR-01.75 latest edition. All other materials on request. Flange connection up 4", threaded, hub, and butt weld connections are available.

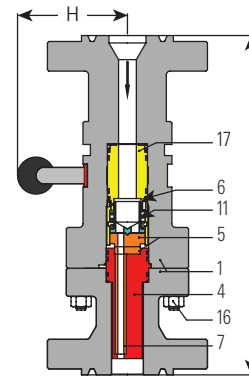
Low temperature			
Pos. no.	Parts	Low temp service	Wet CO ₂ service
1	Body	A182-F316 1.4401	A182-F51 Duplex 1.4462
16	Bolts/Nuts	A320-L7M/A194-7M	
5	Front disc	Tungsten Carbide	
7	Bean	Tungsten Carbide	
4	Bean carrier	AISI 410	
17	Rotating shaft	AISI 316	
11	Spring	Inconel® X750	
6	Soft seal	Mod. PTFE	
	temp.range	-148°F to 250°F [-100°C to 121°C]	
3000-10000 Lbs			
1	Body	A182-F51/Duplex 1.4462	

Materials are to NACE MR-01.75 latest edition. All other materials on request. Flange connection up 4", threaded, hub, butt weld and hammer union connections are available.

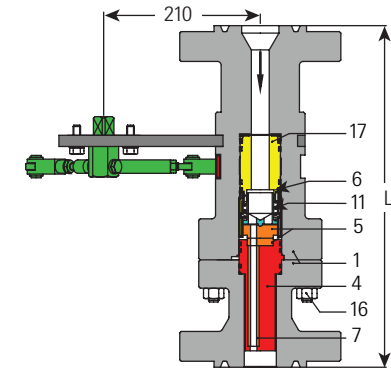
High temperature			
Pos. no.	Parts	High temp service	Wet CO ₂ service
1	Body	A182-F316 1.4401	A182-F51 Duplex 1.4462
16	Bolts/Nuts	A320-L7M/A194-7M	
5	Front disc	Tungsten Carbide	
7	Bean	Tungsten Carbide	
17	Rotating shaft	AISI 316	
11	Spring	Inconel® X750	
6	Soft seal	Mod. PTFE	
	temp.range	-4°F to 572°F [-20°C to 300°C]	
3000-10000 Lbs			
1	Body	A182-F51/Duplex 1.4462	

Materials are to NACE MR-01.75 latest edition. All other materials on request. Flange connection up 4", threaded, hub, butt weld and hammer union connections are available.

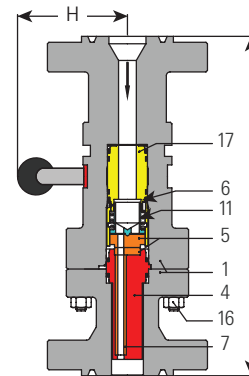
Manual operated



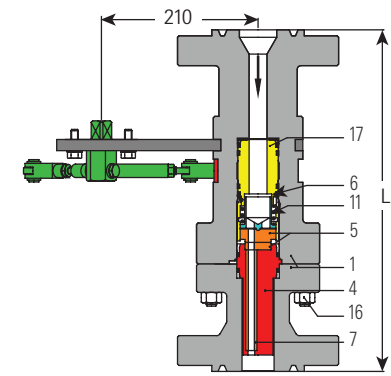
Suitable for actuation



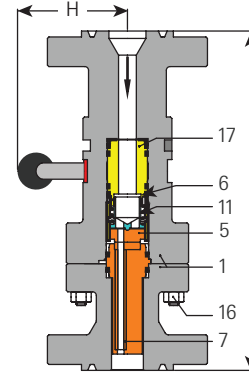
Manual operated



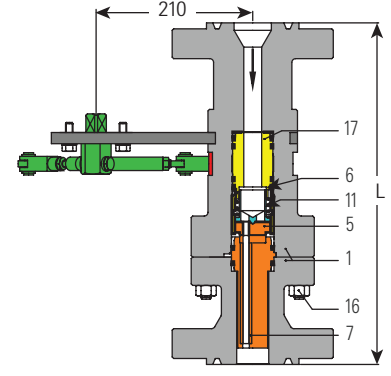
Suitable for actuation



Manual operated



Suitable for actuation



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Model ICV (In-line Type Body)

End-to-end dimensions

1" to 2" body size (ANSI-flanged)							
Type of Connection	Size	Length		Approx. weight			
		mm	in	Hand operated		Actuated*	
				Kgs	Lbs	Kgs	Lbs
Female Threaded	1"	300	11 ³ / ₁₆	30	66	35	77
	1.5"	300	11 ³ / ₁₆	30	66	35	77
	2"	300	11 ³ / ₁₆	30	66	35	77
ANSI 150 lbs	1"	410	16 ¹ / ₈	27	60	32	71
	1.5"	415	16 ⁵ / ₁₆	34	75	39	86
	2"	420	16 ⁹ / ₁₆	36	79	41	90
	3"	420	16 ⁹ / ₁₆	41	90	46	101
ANSI 300 lbs	1"	415	16 ⁵ / ₁₆	28	62	33	73
	1.5"	420	16 ⁹ / ₁₆	36	79	41	90
	2"	425	16 ³ / ₄	37	82	42	93
ANSI 600 lbs	1"	415	16 ⁵ / ₁₆	28	62	33	73
	1.5"	425	16 ³ / ₄	38	84	43	95
	2"	435	17 ¹ / ₄	39	86	44	97
ANSI 900 lbs	1"	440	17 ⁵ / ₁₆	32	71	37	82
	1.5"	445	17 ¹ / ₂	42	93	47	104
	2"	460	18 ¹ / ₈	52	115	57	126
ANSI 1500 lbs	1"	440	17 ⁵ / ₁₆	32	71	37	82
	1.5"	445	17 ¹ / ₂	42	93	47	104
	2"	460	18 ¹ / ₈	52	115	57	126
ANSI 2500 lbs	1"	450	17 ¹¹ / ₁₆	35	77	40	88
	1.5"	465	18 ⁵ / ₁₆	52	115	57	126
	2"	485	19 ¹ / ₈	63	139	68	150
	3"	505	19 ⁷ / ₈	103	227	108	238

* This value is without actuator, but including actuator arrangement.
Materials are to NACE MR-01.75 latest edition. All other materials on request.
Flange connection up 4", threaded, hub, butt weld and hammer union connections are available.

1" to 2" body size (API-flanged)								
Type of Connection	Size	Length		Approx. weight				
		mm	in	Hand operated		Actuated*		
				Kgs	Lbs	Kgs	Lbs	
API	2000 lbs	2 ¹ / ₁₆ "	435	17 ¹ / ₈	43	95	48	106
ANSI	3000 lbs	2 ¹ / ₁₆ "	460	18 ¹ / ₈	52	115	57	126
ANSI	5000 lbs	2 ¹ / ₁₆ "	460	18 ¹ / ₈	52	115	57	126
API	10000 lbs	1 ¹¹ / ₁₆ "	460	18 ¹ / ₈	51	112	56	123
API	10000 lbs	1 ¹³ / ₁₆ "	460	18 ¹ / ₈	52	115	57	126
API	10000 lbs	2 ¹ / ₁₆ "	465	18 ⁵ / ₁₆	63	139	68	150
API	10000 lbs	2 ⁹ / ₁₆ "	485	19 ¹ / ₈	69	152	74	163
API	5000 lbs	3 ¹ / ₈ "	485	19 ¹ / ₈	69	152	77	170
API	10000 lbs	3 ¹ / ₁₆ "	485	19 ¹ / ₈	69	152	79	174

* This value is without actuator, but including actuator arrangement.
Materials are to NACE MR-01.75 latest edition. All other materials on request.
Flange connection up 4", threaded, hub, butt weld and hammer union connections are available.

Flanges

Flanges can be delivered with:

- Raised face, stock finish
- Raised face, smooth finish
- RTJ grooves

Standard end-to-end dimensions are available. On request, the build-in dimensions can be modified to customer specification.

Orifice diameters – C_v values

ICV with liner or long liner				
Orifice Diameter [mm]	Bean size in 64th of an inch	C _v Value	C _v Range with	
			Circ. Orifice	DV-trim
2	5	0.13	0.07 - 0.29	0.01 - 0.13
3	8	0.3	0.10 - 0.30	0.03 - 0.30
4.5	11	0.68	0.17 - 0.68	0.04 - 0.68
6	15	1.21	0.12 - 1.21	N/A
8	20	2.17	0.22 - 2.17	N/A
10	25	3.53	0.35 - 3.53	N/A
12	30	5.22	0.52 - 5.22	N/A
2x10	2x25	7.06	0.71 - 7.06	N/A
2x12	2x30	10.44	1.04 - 10.44	N/A
2x16	2x40	18.5	4.6 - 18.5	N/A
2x19	2x48	26	6.5 - 26	N/A
2x22	2x55	35	8.7 - 35	N/A
2x25	2x64	45	11.2 - 45	N/A

ICV with long bean				
Orifice Diameter [mm]	Bean size in 64th of an inch	C _v Value	C _v Range with	
			Circ. Orifice	DV-trim
3	8	0.29	0.07 - 0.29	0.01 - 0.29
4	10	0.53	0.13 - 0.53	0.03 - 0.53
5	13	0.83	0.20 - 0.83	0.04 - 0.83
6	15	1.19	0.29 - 1.19	0.05 - 1.19
7	18	1.62	0.40 - 1.62	0.08 - 1.62
8	20	2.11	0.52 - 2.11	0.10 - 2.11
9	23	3.01	0.75 - 3.01	0.15 - 3.01
2x8*	2x20*	4.22	1.055 - 4.22	**
2x9*	2x23*	6.03	1.50 - 6.03	**

* Not possible for 1" body size
** On request

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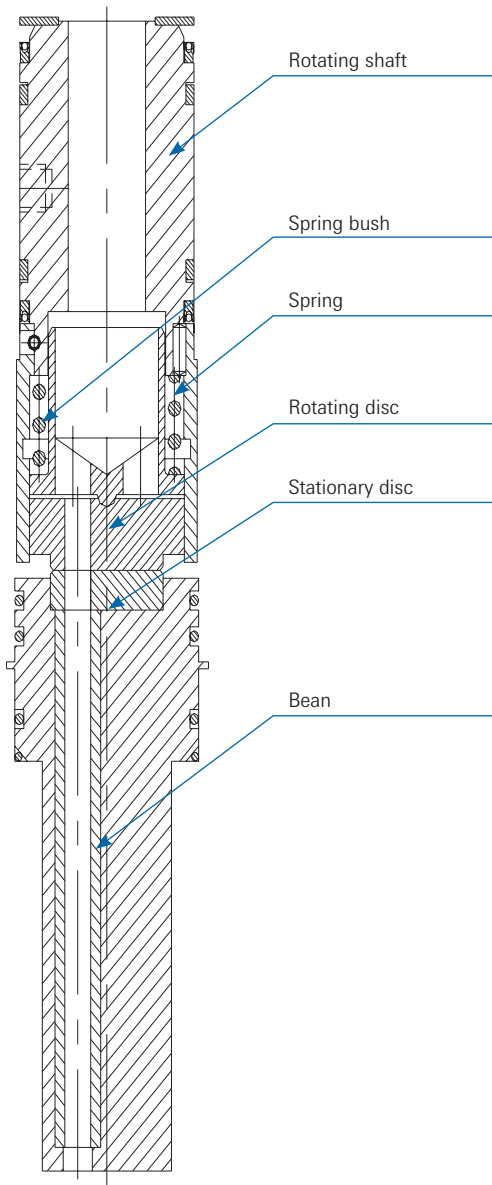
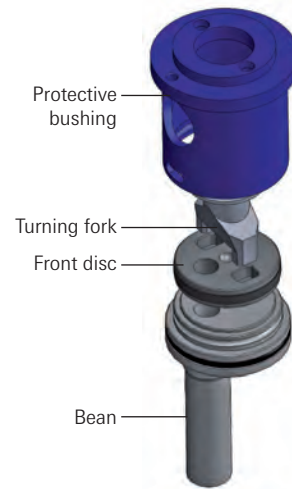
Model ICV (In-line Type Body)

Internal

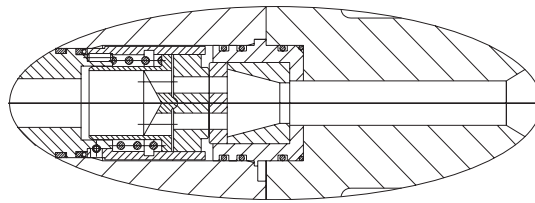
The ICV valve features three different internals:

- Internal with liner
- Internal with long bean
- Internal with long liner

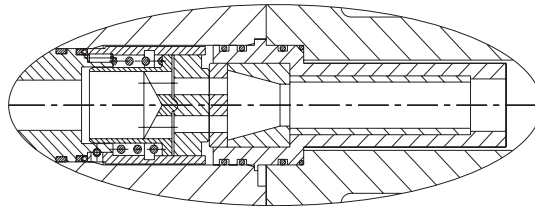
For severe service conditions a bean is fitted below the fixed orifice. For less abrasive conditions this bean is omitted.



Internal with liner



Internal with long liner



Internal with long bean

