

Vonk Choke Valve

Model YCV (Y-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.



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 YCV model is designed as an in-line Y-type body configuration and is available from 1 to 8" body sizes, incorporating technologically differentiating rotating disc trim design which minimizes wear while maximizing controllability and guaranteeing positive shut-off service. The YCV model range is designed for ease of installation in constricted spaces and provides an ISO top flange to support easy automation, standard.

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 150/4500, API 2000/15000

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

Body Sizes: 1" to 8"

End Connections: 1" to 12"

C_v values: 0.01 to 1030

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.



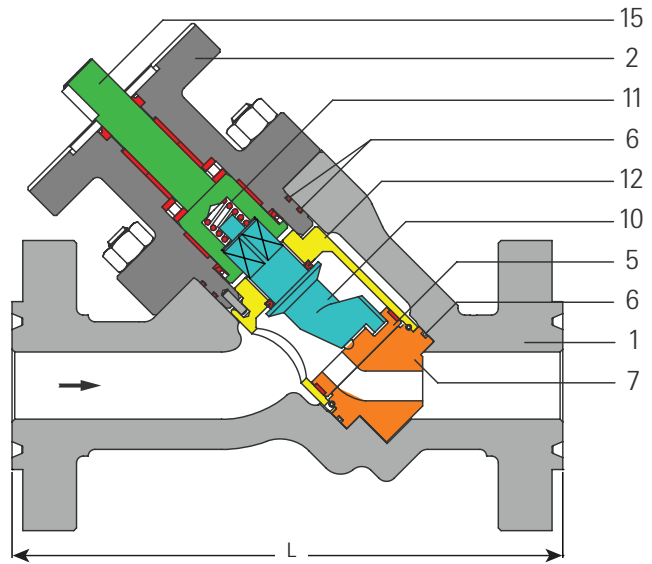
Vonk Choke Valve

Model YCV (Y-Type body)

Materials

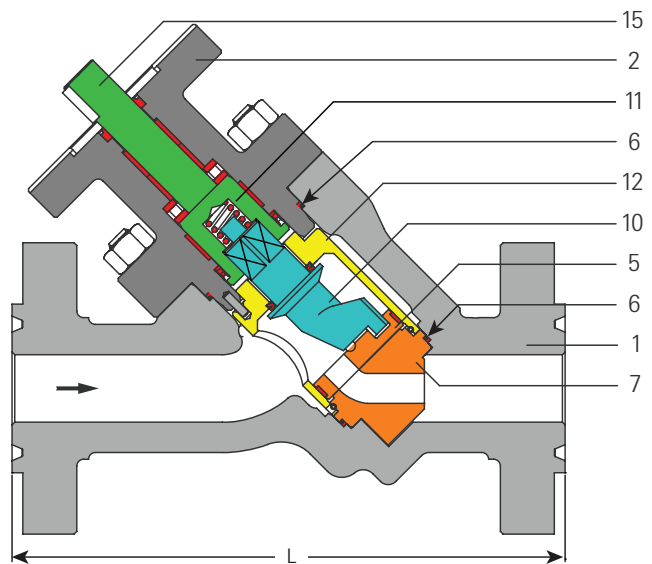
Standard					
Pos. no.	Parts	Body size	Standard service	Low temp. service	Wet CO ₂ service
1	Body	All	A216-WCB	A352-LCC	A487-CA6NM
2	Bonnet	3"-6"	A216-WCB	A352-LCC	A487-CA6NM
		2"		1.4313	
2	Bonnet	1"		1.4313	
		1"		1.4313	
16	Bolts/Nuts	All	A320-L7M/A194-7M		
4	Bean carrier	2"-6"	AISI 410		
		1"	No bean carrier		
5	Front disc	All	Tungsten Carbide		
7	Bean	All	Tungsten Carbide		
10	Turning fork	4"-6"	A487-CA6NM		
		1"-3"	AISI 410		
11	Spring	All	Inconel® X750		
12	Protective bushing	All	AISI 316		
15	Bonnet shaft	All	Duplex 1.4462		
6	Soft seals temp. range	All	Viton®/PTFE		
			32°F to 250°F [0°C to 121°C]	-4°F to 250°F [-20°C to 121°C]	-4°F to 250°F [-20°C to 121°C]
6	Soft seals temp. range	All	NBR/PTFE		
			32°F to 212°F [0°C to 100°C]	-4°F to 212°F [-20°C to 100°C]	-40°F to 212°F [-40°C to 100°C]
			3000-10000 Lbs	15000 Lbs	
1	Body	All	A487-1C		A487-CA6NM
2	Bonnet	3"-6"	A487-1C		A487-CA6NM
		1"-2"		1.4313	

Materials are to NACE MR-01.75 latest edition. All other materials on request. Flange connection up 12", threaded, hub, butt weld and hammer union connections are available.



Low temperature					
Pos. no.	Parts	Body size	Low temp. service	Wet CO ₂ service	
1	Body	All	A352-LCC	A487-CA6NM	
2	Bonnet	1"-2"	1.4313		
		3"-6"	A487-CA6NM		
16	Bolts/Nuts	All	A320-L7M/A194-7M		
5	Front disc	All	Tungsten Carbide		
7	Bean	All	Tungsten Carbide		
10	Turning fork	1"-3"	AISI 410		
		4"-6"	A487-CA6NM		
11	Spring	All	Inconel® X750		
12	Protective bushing	All	AISI 316		
15	Bonnet shaft	All	Duplex 1.4462		
6	Soft seals temp.range	All	Mod. PTFE		
			-148°F to 250°F [-100°C to 121°C]		
			3000-10000 Lbs	15000 Lbs	
1	Body	All	A487-1C		A487-CA6NM
2	Bonnet	3"-6"	A487-1C		A487-CA6NM
		1"-2"	1.4313		A487-CA6NM

Materials are to NACE MR-01.75 latest edition. All other materials on request. Flange connection up 12", threaded, hub, butt weld and hammer union connections are available.



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Model YCV (Y-Type body)

Materials

High temperature				
Pos. no.	Parts	Body size	Standard service	Wet CO ₂ service
1	Body	All	A216-WCB	A487-CA6NM
2	Bonnet	1-2" 3-6"	1.4313 A487-CA6NM	
16	Bolts/Nuts	All	A320-L7M/A194-7M	
5	Front disc	All	Tungsten Carbide	
7	Bean	All	Tungsten Carbide	
10	Turning fork	1-3" 4-6"	AISI 410 A487-CA6NM	
11	Spring	All	Inconel® X750	
12	Protective bushing	All	AISI 316	
15	Bonnet shaft	All	Duplex 1.4462	
6	Soft seals	All	Mod. PTFE	
			-4°F to 572°F [-20°C to 300°C]	
			3000-10000 Lbs	15000 Lbs
1	Body	All	A487-1C	A487-CA6NM
2	Bonnet	3-6" 1-2"	A487-1C 1.4313	A487-CA6NM A487-CA6NM

Materials are to NACE MR-01.75 latest edition. All other materials on request. Flange connection up 12", threaded, hub, butt weld and hammer union connections are available.

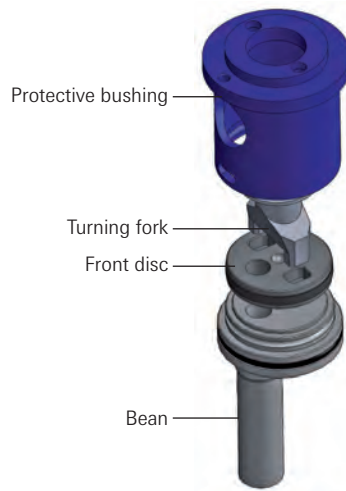
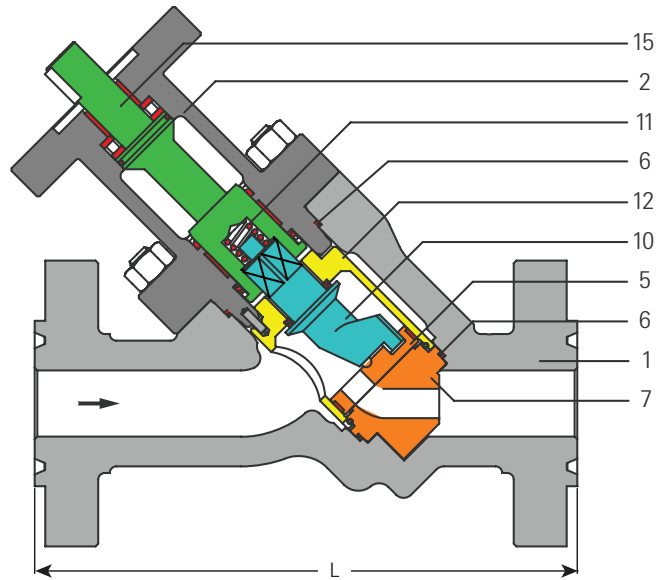
Flanges

ANSI flanges can be delivered with:

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

Dimensions are given in mm, weights are approximate in kgs of bare valve. Other sizes are available on request.

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



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Model YCV (Y-Type body)

End-to-end dimensions

1" Body size														
Flange Size	Class	Length			Weight		Flange Size	Class	Length			Weight		
		mm	inches		Kg	Lbs			mm	inches		Kg	Lbs	
1"	ANSI	150	270	10 ⁵ / ₈	36	79	2 ¹ / ₁₆ "	API	2000	320	12 ⁵ / ₈	45	99	
	ANSI	300	270	10 ⁵ / ₈	37	82		API	3000	360	14 ³ / ₁₆	60	132	
	ANSI	600	275	10 ¹³ / ₁₆	38	84		API	5000	360	14 ³ / ₁₆	60	132	
	ANSI	900	320	12 ⁵ / ₈	42	93		API	10000	425	16 ³ / ₄	64	141	
	ANSI	1500	320	12 ⁵ / ₈	42	93		2 ⁹ / ₁₆ "	API	10000	425	16 ³ / ₄	73	161
	ANSI	2500	335	13 ³ / ₁₆	45	99			API	15000	450	17 ¹ / ₁₆	79	174
1.5"	ANSI	150	300	11 ¹³ / ₁₆	37	82	3"	ANSI	150	340	13 ³ / ₈	47	104	
	ANSI	300	300	11 ¹³ / ₁₆	38	84		ANSI	300	340	13 ³ / ₈	48	106	
	ANSI	600	325	12 ¹³ / ₁₆	39	86		ANSI	600	360	14 ³ / ₁₆	51	112	
	ANSI	900	360	14 ³ / ₁₆	43	95		ANSI	900	390	15 ⁵ / ₈	74	163	
	ANSI	1500	360	14 ³ / ₁₆	43	95		ANSI	1500	390	15 ⁵ / ₈	81	179	
	ANSI	2500	425	16 ³ / ₄	46	101		ANSI	2500	410	16 ¹ / ₈	107	236	
1 ¹³ / ₁₆ "	API	10000	300	11 ³ / ₁₆	41	90	3 ¹ / ₁₆ "	API	15000	500	19 ¹ / ₁₆	97	214	
	API	15000	325	12 ³ / ₁₆	46	101		3 ¹ / ₈ "	API	2000	425	16 ³ / ₄	55	121
2"	ANSI	150	300	11 ¹³ / ₁₆	40	88	API		3000	450	17 ¹ / ₁₆	65	143	
	ANSI	300	300	11 ¹³ / ₁₆	41	90	API		10000	475	18 ¹ / ₁₆	80	176	
	ANSI	600	320	12 ⁵ / ₈	43	95								
	ANSI	900	360	14 ³ / ₁₆	56	123								
	ANSI	1500	360	14 ³ / ₁₆	56	123								
	ANSI	2500	425	16 ³ / ₄	67	148								

2" Body size													
Flange Size	Class	Length			Weight		Flange Size	Class	Length			Weight	
		mm	inches		Kg	Lbs			mm	inches		Kg	Lbs
2"	ANSI	150	330	13	53	117	3 ¹ / ₁₆ "	API	10000	600	23 ⁵ / ₈	105	231
	ANSI	300	330	13	54	119		API	15000	610	24	121	267
	ANSI	600	350	13 ³ / ₄	56	123	3 ¹ / ₈ "	API	2000	550	21 ⁵ / ₈	68	150
	ANSI	900	410	16 ¹ / ₈	69	152		API	3000	580	22 ³ / ₁₆	78	172
	ANSI	1500	410	16 ¹ / ₈	69	152		API	5000	600	23 ³ / ₈	91	201
	ANSI	2500	480	18 ⁷ / ₈	80	176	4"	ANSI	150	435	17 ¹ / ₈	68	150
2 ¹ / ₁₆ "	API	2000	380	14 ¹⁵ / ₁₆	60	132		ANSI	300	435	17 ¹ / ₈	69	152
	API	3000	380	14 ¹⁵ / ₁₆	73	161		ANSI	600	435	17 ¹ / ₈	82	181
	API	5000	400	15 ³ / ₄	73	161		ANSI	900	460	18 ¹ / ₈	92	203
	API	10000	410	16 ¹ / ₈	78	172		ANSI	1500	480	18 ⁷ / ₈	107	236
	API	15000	480	18 ⁷ / ₈	100	220		ANSI	2500	500	19 ¹¹ / ₁₆	158	348
2 ⁹ / ₁₆ "	API	10000	500	19 ⁹ / ₁₆	109	240	4 ¹ / ₁₆ "	API	2000	600	23 ⁵ / ₈	86	190
	API	15000	530	20 ⁷ / ₈	115	254		API	3000	610	24	96	212
3"	ANSI	150	380	14 ¹⁵ / ₁₆	60	132		API	5000	610	24	111	245
	ANSI	300	380	14 ¹⁵ / ₁₆	61	134		API	10000	630	24 ¹³ / ₁₆	130	287
	ANSI	600	400	15 ³ / ₄	64	141		API	15000	650	25 ⁵ / ₁₆	152	335
	ANSI	900	410	16 ¹ / ₈	74	163							
	ANSI	1500	480	18 ⁷ / ₈	87	192							
	ANSI	2500	500	19 ¹¹ / ₁₆	120	265							

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Model YCV (Y-Type body)

End-to-end dimensions

3" Body size													
Flange Size	Class	Length			Weight		Flange Size	Class	Length			Weight	
		mm	inches		Kg	Lbs			mm	inches		Kg	Lbs
3"	ANSI	150	500	19 ¹¹ / ₁₆	126	278	4 ¹ / ₁₆ "	API	2000	610	24	153	337
	ANSI	300	510	20 ¹ / ₁₆	128	282		API	3000	625	24 ⁵ / ₈	163	359
	ANSI	600	520	20 ¹ / ₂	132	291		API	5000	625	24 ⁵ / ₈	186	410
	ANSI	900	540	21 ¹ / ₄	142	313		API	10000	650	25 ⁹ / ₁₆	197	434
	ANSI	1500	540	21 ¹ / ₄	175	386		API	15000	700	27 ⁹ / ₁₆	209	461
	ANSI	2500	620	24 ⁷ / ₁₆	187	412		6"	ANSI	150	610	24	150
3 ¹ / ₁₆ "	API	10000	630	24 ³ / ₁₆	184	406	ANSI		300	625	24 ⁵ / ₈	153	337
	API	15000	650	25 ⁹ / ₁₆	210	463	ANSI		600	625	24 ⁵ / ₈	184	406
3 ¹ / ₈ "	API	2000	610	24	136	300	ANSI		900	650	25 ⁹ / ₁₆	210	463
	API	3000	610	24	146	322	ANSI		1500	700	27 ⁹ / ₁₆	251	553
	API	5000	650	25 ⁹ / ₁₆	178	392	ANSI		2500	730	28 ³ / ₄	400	882
4"	ANSI	150	600	23 ⁵ / ₈	137	302	7 ¹ / ₁₆ "	API	2000	625	24 ⁵ / ₈	190	419
	ANSI	300	610	24	137	302		API	3000	625	24 ⁵ / ₈	216	476
	ANSI	600	610	24	149	328		API	5000	650	25 ⁹ / ₁₆	257	567
	ANSI	900	625	24 ⁵ / ₈	159	351		API	10000	700	27 ⁹ / ₁₆	400	882
	ANSI	1500	625	24 ⁵ / ₈	195	430		API	15000	730	28 ³ / ₄	622	1371
	ANSI	2500	650	25 ⁹ / ₁₆	225	496							

4" Body size													
Flange Size	Class	Length			Weight		Flange Size	Class	Length			Weight	
		mm	inches		Kg	Lbs			mm	inches		Kg	Lbs
4"	ANSI	150	675	26 ⁹ / ₁₆	503	1109	7 ¹ / ₁₆ "	API	2000	785	30 ⁷ / ₈	558	1230
	ANSI	300	685	26 ¹⁵ / ₁₆	505	1113		API	3000	800	31 ¹ / ₂	584	1287
	ANSI	600	695	27 ³ / ₈	517	1140		API	5000	800	31 ¹ / ₂	625	1378
	ANSI	900	715	28 ¹ / ₈	527	1162		API	10000	825	32 ¹ / ₂	769	1695
	ANSI	1500	715	28 ¹ / ₈	542	1195		API	15000	875	34 ⁷ / ₁₆	946	2086
	ANSI	2500	795	31 ⁵ / ₁₆	593	1307		8"	ANSI	150	785	30 ⁷ / ₈	540
4 ¹ / ₁₆ "	API	2000	785	30 ⁷ / ₈	521	1149	ANSI		300	800	31 ¹ / ₂	542	1195
	API	3000	785	30 ⁷ / ₈	531	1171	ANSI		600	800	31 ¹ / ₂	590	1301
	API	5000	825	32 ¹ / ₂	548	1208	ANSI		900	825	32 ¹ / ₂	645	1422
	API	10000	805	31 ¹¹ / ₁₆	573	1263	ANSI		1500	875	34 ⁷ / ₁₆	716	1579
	API	15000	825	32 ¹ / ₂	602	1327	ANSI		2500	905	35 ⁵ / ₈	913	2013
6"	ANSI	150	775	30 ¹ / ₂	519	1144	9"	API	2000	800	31 ¹ / ₂	596	1314
	ANSI	300	785	30 ⁷ / ₈	521	1149		API	3000	800	31 ¹ / ₂	651	1435
	ANSI	600	785	30 ⁷ / ₈	552	1217		API	5000	825	32 ¹ / ₂	722	1592
	ANSI	900	800	31 ¹ / ₂	578	1274		API	10000	875	34 ⁷ / ₁₆	913	2013
	ANSI	1500	800	31 ¹ / ₂	619	1365		API	15000	905	35 ⁵ / ₈	1155	2546
	ANSI	2500	825	32 ¹ / ₂	769	1695							

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Model YCV (Y-Type body)

End-to-end dimensions

6" Body size													
Flange Size	Class		Length		Weight		Flange Size	Class		Length		Weight	
			mm	inches	Kg	Lbs				mm	inches	Kg	Lbs
6"	ANSI	150	925	36 ⁷ / ₁₆	1146	2526	12"	ANSI	150	1035	40 ³ / ₄	1295	2855
	ANSI	300	935	36 ¹³ / ₁₆	1148	2531		ANSI	300	1050	41 ⁵ / ₁₆	1325	2921
	ANSI	600	935	36 ¹³ / ₁₆	1179	2599		ANSI	600	1050	45 ⁵ / ₁₆	1398	3082
	ANSI	900	950	37 ³ / ₈	1205	2657		ANSI	900	1075	42 ⁵ / ₁₆	1467	3234
	ANSI	1500	950	37 ³ / ₈	1246	2747		ANSI	1500	1125	44 ⁵ / ₁₆	1605	3538
	ANSI	2500	975	38 ³ / ₈	1396	3078		7 ¹ / ₁₆ "	API	2000	935	36 ¹³ / ₁₆	1167
8"	ANSI	150	935	36 ¹³ / ₁₆	1167	2573	API		3000	950	37 ³ / ₈	1169	2577
	ANSI	300	950	37 ³ / ₈	1169	2577	API		5000	950	37 ³ / ₈	1217	2683
	ANSI	600	950	37 ³ / ₈	1217	2683	API		10000	975	38 ³ / ₈	1272	2804
	ANSI	900	975	38 ³ / ₈	1272	2804	9"	API	2000	1000	39 ³ / ₈	1193	2630
	ANSI	1500	1025	40 ³ / ₈	1343	2961		API	3000	1000	39 ³ / ₈	1235	2723
	ANSI	2500	1080	42 ¹ / ₂	1540	3395		API	5000	1025	40 ³ / ₈	1283	2829
10"	ANSI	150	985	38 ³ / ₄	1193	2630	API	10000	1075	42 ⁵ / ₁₆	1348	2972	
	ANSI	300	1000	39 ³ / ₈	1235	2723	11"	API	2000	1050	41 ⁵ / ₁₆	1295	2855
	ANSI	600	1000	39 ³ / ₈	1283	2829		API	3000	1050	41 ⁵ / ₁₆	1325	2921
	ANSI	900	1025	40 ³ / ₈	1348	2972		API	5000	1075	42 ⁵ / ₁₆	1398	3082
	ANSI	1500	1075	42 ⁵ / ₁₆	1497	3300		API	10000	1125	44 ⁵ / ₁₆	1467	3234
	ANSI	2500	1130	44 ¹ / ₂	1922	4237							

8" Body size													
Flange Size	Class		Length		Weight		Flange Size	Class		Length		Weight	
			mm	inches	Kg	Lbs				mm	inches	Kg	Lbs
8"	ANSI	150	1085	42 ¹¹ / ₁₆	1822	4017	7 ¹ / ₁₆ "	ANSI	2500	1275	50 ³ / ₁₆	2598	5728
	ANSI	300	1100	43 ⁵ / ₁₆	1824	4021		API	2000	1085	42 ¹¹ / ₁₆	1843	4063
	ANSI	600	1100	43 ⁵ / ₁₆	1855	4090		API	3000	1100	43 ⁵ / ₁₆	1845	4068
	ANSI	900	1125	44 ⁵ / ₁₆	1881	4147		API	5000	1100	43 ⁵ / ₁₆	1893	4173
	ANSI	1500	1175	46 ¹ / ₄	1922	4237		API	10000	1125	44 ⁵ / ₁₆	1948	4295
	ANSI	2500	1230	48 ⁷ / ₁₆	2072	4568		9"	API	2000	1150	45 ¹ / ₄	1869
10"	ANSI	150	1135	44 ¹¹ / ₁₆	1843	4063	API		3000	1150	45 ¹ / ₄	1911	4213
	ANSI	300	1150	45 ¹ / ₄	1845	4068	API		5000	1175	46 ¹ / ₄	1959	4319
	ANSI	600	1150	45 ¹ / ₄	1893	4173	API		10000	1275	50 ³ / ₁₆	2024	4462
	ANSI	900	1175	46 ¹ / ₄	1948	4295	11"	API	2000	1200	47 ¹ / ₄	1971	4345
	ANSI	1500	1225	48 ¹ / ₄	2019	4451		API	3000	1200	47 ¹ / ₄	2001	4411
	ANSI	2500	1280	50 ³ / ₈	2216	4885		API	5000	1225	48 ¹ / ₄	2074	4572
12"	ANSI	150	1185	46 ⁵ / ₈	1869	4120		API	10000	1275	50 ³ / ₁₆	2143	4725
	ANSI	300	1200	47 ¹ / ₄	1911	4213							
	ANSI	600	1200	47 ¹ / ₄	1959	4319							
	ANSI	900	1225	48 ¹ / ₄	2024	4462							
	ANSI	1500	1275	50 ³ / ₁₆	2173	4791							

Vonk Choke Valve

Model YCV (Y-Type body)

Orifice diameters and C_v values

1" Body size

Orifice Diameter [mm]	Bean size in 64th of an inch	C _v Value	C _v Range with	
			Circ. Orifice	DV-trim
3	8	0.36	0.07 - 0.36	0.01 - 0.36
4	10	0.66	0.13 - 0.66	0.03 - 0.66
5	13	1	0.21 - 1	0.04 - 1
6	15	1.5	0.30 - 1.5	0.06 - 1.5
7	18	2	0.38 - 2	0.08 - 2
8	20	2.6	0.56 - 2.6	0.11 - 2.6
10	25	4.3	0.88 - 4.3	0.18 - 4.3
12.5	32	6.5	1.30 - 6.5	0.26 - 6.5

2" Body size

Orifice Diameter [mm]	Bean size in 64th of an inch	C _v Value	C _v Range with	
			Circ. Orifice	DV-trim
15	38	9	1.8 - 9	0.3 - 9
18	45	13	2.7 - 13	0.5 - 13
21	53	19	3.7 - 19	0.7 - 19
25	64	27	5.2 - 27	1 - 27

Also orifice diameters mentioned under 1" can be installed in the 2" body size

3" Body size

Orifice [mm]	Bean size in 64th of an inch	C _v Value	C _v Range
35	88	52	2.1 - 52
40	101	70	2.8 - 70
45	113	91	3.7 - 91
50	128	115	4.5 - 115

Also orifice diameters mentioned under 1" and 2" can be installed in the 3" body size

4" Body size

Orifice [mm]	Bean size in 64th of an inch	C _v Value	C _v Range
60	151	162	6 - 162
67	169	202	8 - 102
70	176	225	9 - 225
75	192	255	10 - 255

Also orifice diameters mentioned under 1", 2" and 3" can be installed in the 4" body size

6" Body size

Orifice [mm]	Bean size in 64th of an inch	C _v Value	C _v Range
90	227	365	14 - 365
100	252	458	18 - 458
108	272	534	21 - 534

Also orifice diameters mentioned under 1", 2", 3" and 4" can be installed in the 6" body size

8" Body size

Orifice [mm]	Bean size in 64th of an inch	C _v Value	C _v Range
125	315	708	28 - 708
150	384	1030	41 - 1030

Also orifice diameters mentioned under 1", 2", 3", 4" and 6" can be installed in the 8" body size

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



Vonk Choke Valve

Model YCV (Y-Type body)