

Check Valves

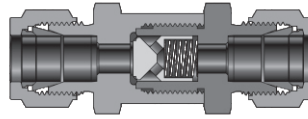
CV Series



Contents

Fixed Cracking Pressures Check Valves (CV1 Series)

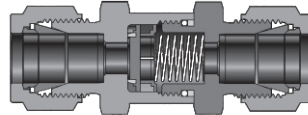
- ❖ Working pressures up to 3000 psig (206 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ Cracking pressure from 1/3 to 25 psig (0.02 to 1.7 bar)
- ❖ Variety of end connections
- ❖ Variety of body materials and seal materials



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Fixed Cracking Pressures Check Valves (CV2 Series)

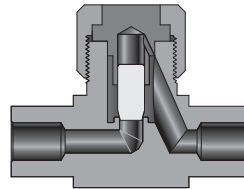
- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ With bonded elastomer seal structure design
- ❖ Liquid or gas service
- ❖ Cracking pressure: 1/3 to 50 psig (0.03 to 3.4 bar)



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Lift Check Valves (CV3 Series)

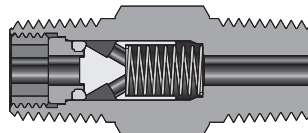
- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 900°F (-53°C to 482°C)
- ❖ Metal to metal seal structure design
- ❖ Liquid or gas service



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One-Piece Body Check Valves (CV4 Series)

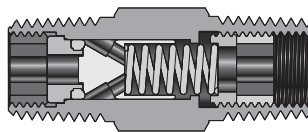
- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ One-piece body design
- ❖ Cracking pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- ❖ 316 stainless steel, brass and alloy 400 body material



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One-Piece Body, Adjustable cracking pressure Check Valves (CV5 Series)

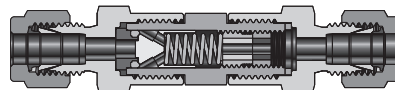
- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ One-piece body design
- ❖ Adjustable spring sets cracking pressure
- ❖ Cracking pressure: 3 to 600 psig (0.21 to 41.3 bar)
- ❖ 316 stainless steel, brass and alloy 400 body material



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Adjustable cracking pressure Check Valves (CV6 Series)

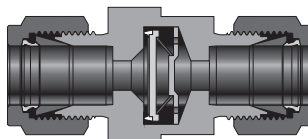
- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ Adjustable spring sets cracking pressure
- ❖ Cracking pressure: 3 to 600 psig (0.21 to 41.3 bar)
- ❖ 316 stainless steel, brass and alloy 400 body material



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All-Welded Check Valves (CV7 Series)

- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ Cracking pressure less than 2 psig (0.14 bar)
- ❖ 316L stainless steel body material



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Check Valves

CV1 Series

Features

- ❖ Maximum working pressure: 3000 psig (206 bar)
- ❖ Working temperature: -10°F to 400°F (-23°C to 204°C)
- ❖ Cracking pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- ❖ Variety of end connections and materials available



Cracking Pressure

Series	Nominal Cracking Pressure psig (bar)	Cracking Pressure Range psig (bar)
CV1	1/3 (0.02)	0 to 3 (0 to 0.21)
	1 (0.06)	0 to 4 (0 to 0.28)
	3 (0.21)	1 to 5 (0.06 to 0.34)
	10 (0.68)	7 to 15 (0.49 to 1.1)
	25 (1.7)	20 to 30 (1.4 to 2.1)

Pressure-Temperature Ratings

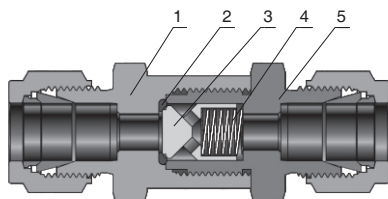
- ❖ Ratings based on fluorocarbon FKM O-rings in 316 stainless steel valves and Buna N O-rings in brass valves.

Material	316 S.S.	Brass
Temperature, °F (°C)	Working Pressure, psig (bar)	
-10 (-23) to 100 (37)	3000 (206)	3000 (206)
200 (93)	2575 (177)	2600 (179)
250 (121)	2450 (168)	2405 (165)
300 (148)	2325 (160)	—
400 (204)	2185 (150)	—

Seal Materials

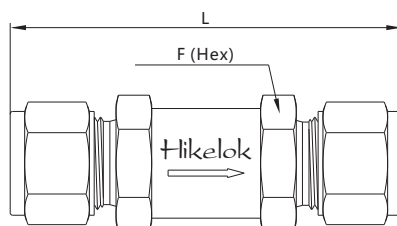
Seal Material	Temperature Range °F (°C)
Buna N	-10 to 250 (-23 to 121)
Ethylene propylene	-50 to 300 (-45 to 148)
Fluorocarbon FKM	-10 to 400 (-23 to 204)
Neoprene	-40 to 250 (-40 to 121)
Kalrez	0 to 525 (-17 to 274)

Standard Materials of Construction



Component	Valve Material Grade/ASTM Specification	
	316 S.S.	Brass
1 Inlet Body	316 S.S./A479	Brass 360/B16
2 O-ring	Fluorocarbon FKM	Buna N
3 Poppet	316 S.S./A479	Brass 360/B16
4 Spring	302 S.S./A313	302 SS/A313
5 Outlet Body	316 S.S./A479	Brass 360/B16

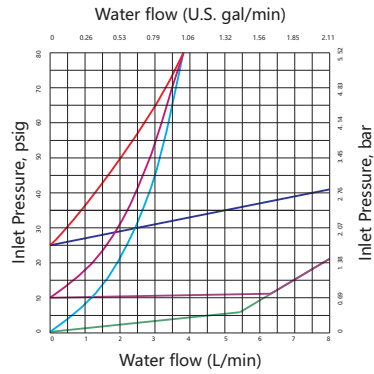
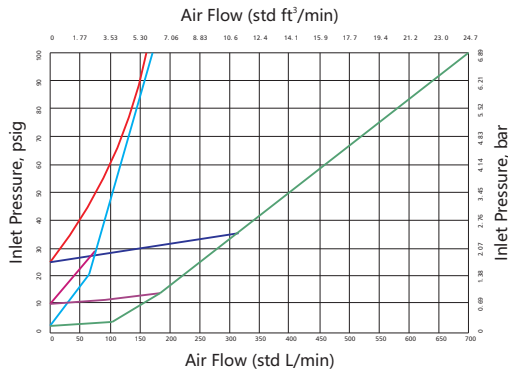
Dimensions



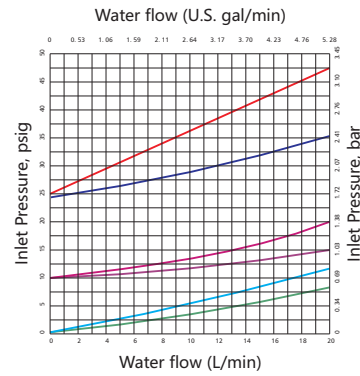
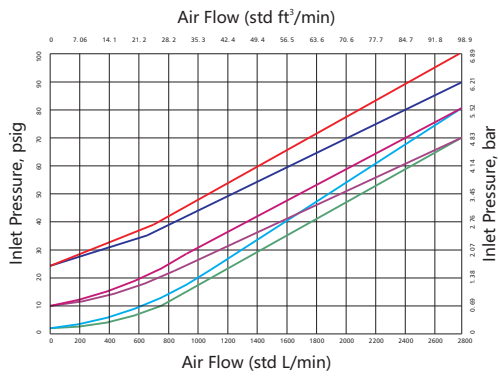
Basic Ordering Number	Connection Type and Size	Series	CV	Dimension, in. (mm)	
				L	F
CV1-F2-	1/8" Hikelok	4	0.16	2.14 (54.3)	5/8 (15.88)
CV1-F4-	1/4" Hikelok		0.47	2.35 (59.7)	
CV1-F6-	3/8" Hikelok	6	1.47	3.17 (80.5)	7/8 (22.23)
CV1-F8-	1/2" Hikelok		1.68	3.42 (86.9)	
CV1-F12-	3/4" Hikelok	12	4.48	4.32 (110)	1 1/4 (31.75)
CV1-F16-	1" Hikelok			4.74 (120)	1 3/8 (34.93)
CV1-M6-	6 mm Hikelok	4	0.47	2.36 (59.9)	5/8 (15.88)
CV1-M10-	10 mm Hikelok	6	1.68	3.32 (84.3)	7/8 (22.23)
CV1-M12-	12 mm Hikelok			3.42 (86.9)	
CV1-FNPT2-	1/8 Female NPT	4	0.16	1.89 (48.0)	5/8 (15.88)
CV1-FNPT4-	1/4 Female NPT		0.47	2.15 (54.6)	3/4 (19.05)
CV1-FNPT6-	3/8 Female NPT	6	1.47	2.98 (75.7)	7/8 (22.23)
CV1-FNPT8-	1/2 Female NPT		1.68	3.58 (90.9)	1 1/16 (26.99)
CV1-FNPT12-	3/4 Female NPT	12	4.48	4.08 (104)	1 1/4 (31.75)
CV1-FNPT16-	1 Female NPT			4.84 (123)	1 5/8 (41.28)
CV1-NPT2-	1/8 Male NPT	4	0.16	1.71 (43.4)	5/8 (15.88)
CV1-NPT4-	1/4 Male NPT		0.47	2.09 (53.1)	
CV1-NPT6-	3/8 Male NPT	6	1.47	2.78 (70.6)	7/8 (22.23)
CV1-NPT8-	1/2 Male NPT		1.68	3.16 (80.3)	
CV1-NPT12-	3/4 Male NPT	12	4.48	4.08 (104)	1 1/4 (31.75)
CV1-NPT16-	1 Male NPT			4.52 (115)	1 5/8 (41.28)

❖ Sizes and types listed does not contain all . Other sizes and types are available.

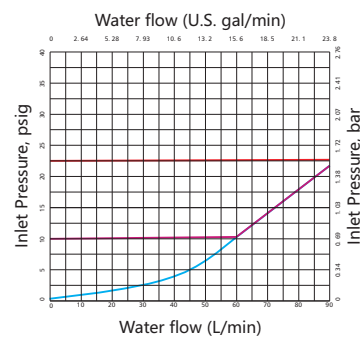
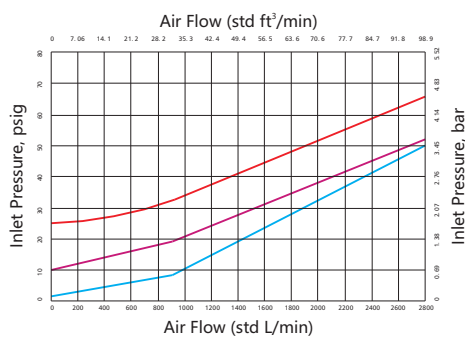
Flow Data at 70°F (20 °C)



- Cv = 0.16
Cracking Pressure=1 psig
- Cv = 0.16
Cracking Pressure=10 psig
- Cv = 0.16
Cracking Pressure=25 psig
- Cv = 0.47
Cracking Pressure=1 psig
- Cv = 0.47
Cracking Pressure=10 psig
- Cv = 0.47
Cracking Pressure=25 psig



- Cv = 1.47
Cracking Pressure=1 psig
- Cv = 1.47
Cracking Pressure=10 psig
- Cv = 1.47
Cracking Pressure=25 psig
- Cv = 1.68
Cracking Pressure=1 psig
- Cv = 1.68
Cracking Pressure=10 psig
- Cv = 1.68
Cracking Pressure=25 psig



- Cv = 4.48
Cracking Pressure=1 psig
- Cv = 4.48
Cracking Pressure=10 psig
- Cv = 4.48
Cracking Pressure=25 psig

Options and Accessories

❖ The use scenario of seal kit and spring kit is replacement or repair.

Seal Kits

❖ Composition of seal Kit:
-4 and-8 series only with
O-rings, And -12



O-ring Material	Series	Ordering Number
Buna N	4	CV1-SK-4-B
	6	CV1-SK-6-B
	12	CV1-SK-12-B
Ethylene Propylene	4	CV1-SK-4-E
	6	CV1-SK-6-E
	12	CV1-SK-12-E
Fluorocarbon FKM	4	CV1-SK-4-V
	6	CV1-SK-6-V
	12	CV1-SK-12-V
Neoprene	4	CV1-SK-4-N
	6	CV1-SK-6-N
	12	CV1-SK-12-N
Kalrez	4	CV1-SK-4-Z
	6	CV1-SK-6-Z
	12	CV1-SK-12-Z

Spring Kits

❖ Please select the order number
of the spring kit according to
the working pressure.

Examples: CV2-MK-4-2



Cracking Pressure psig (bar)	Series	Ordering Number
1/3 (0.02)	4	CV1-MK-4-2
	6	CV1-MK-6-2
	12	CV1-MK-12-2
1 (0.06)	4	CV1-MK-4-1
	6	CV1-MK-6-1
	12	CV1-MK-12-1
3 (0.21)	4	CV1-MK-4-3
	6	CV1-MK-6-3
	12	CV1-MK-12-3
10 (0.68)	4	CV1-MK-4-10
	6	CV1-MK-6-10
	12	CV1-MK-12-10
25 (1.70)	4	CV1-MK-4-25
	6	CV1-MK-6-25
	12	CV1-MK-12-25

How to Order

CV1 — F8 — M10 — N — 1 — 316							
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seal Material	Cracking Pressure	Body Material
CV1	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		V Fluorocarbon FKM	1 1 psig	316 316 S.S.
	NPT Male NPT	4 1/4 in.				2 1/3 psig	316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6 mm			B Buna N	3 3 psig	304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8 mm	If outlet and inlet are the same, eliminate the outlet designator		E Ethylene propylene	10 10 psig	304L 304L S.S.
	FMS Female ISO 261	10 10 mm			N Neoprene	25 25 psig	A400 Alloy 400
	MS Male ISO 261	12 3/4 in. or 12 mm			Z Kalrez		A20 Alloy 20
	FBP Female BSPP	14 14 mm					A600 Alloy 600
	MBP Male BSPP	16 1 in. or 16 mm					A825 Alloy 825
	F Fractional Tube Fitting	18 18 mm					A276 Alloy C276
	M Metric Tube Fitting	20 1 1/4 in. or 20 mm					DU7 Duplex 2507
	UGF Nut + Gasket+ Fractional Bulge Nipple	22 22 mm					BR Brass
	UGM Nut + Gasket+ Metric Bulge Nipple	25 25 mm					

Check Valves

CV2 Series

Features

- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ With bonded elastomer seal structure design
- ❖ Liquid or gas service
- ❖ Cracking pressure: 1/3 to 50psig (0.03 to 3.4bar)
- ❖ Variety of end connections and materials available



Cracking Pressure

Series	Nominal Cracking Pressure psig (bar)	Cracking Pressure Range psig (bar)
CV2	1/3 (0.02)	0 to 3 (0 to 0.21)
	1 (0.06)	0 to 4 (0 to 0.28)
	3 (0.21)	1 to 5 (0.06 to 0.34)
	10 (0.68)	7 to 15 (0.49 to 1.1)
	25 (1.7)	20 to 30 (1.4 to 2.1)
	50 (3.4)	45 to 55 (3.1 to 3.8)

Pressure-Temperature Ratings

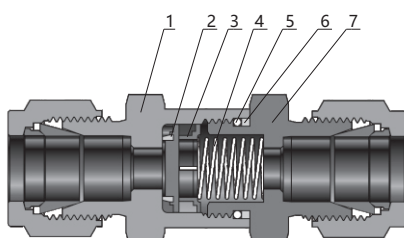
- ❖ Ratings based on fluorocarbon FKM O-rings in 316 stainless steel valves and Buna N O-rings in brass valves.

Material	316 S.S.	
Temperature, °F(°C)	Working Pressure, psig(bar)	
-10 (-23) to 100 (37)	6000 (413)	5000 (344)
200 (93)	5160 (355)	4290 (295)
250 (121)	4910 (338)	4080 (281)
300 (148)	4660 (321)	3875 (266)
400 (204)	4280 (294)	3560 (245)

Seal Materials

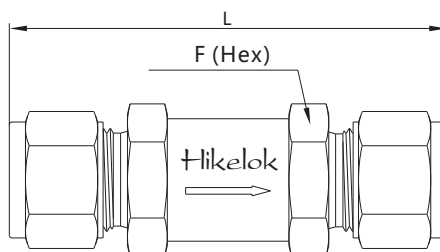
Seal Material	Temperature Range °F (°C)
Buna N	-10 to 250 (-23 to 121)
Ethylene propylene	-50 to 300 (-45 to 148)
Fluorocarbon FKM	-10 to 400 (-23 to 204)
Neoprene	-40 to 250 (-40 to 121)

Standard Materials of Construction



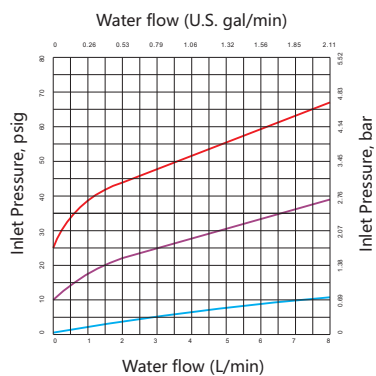
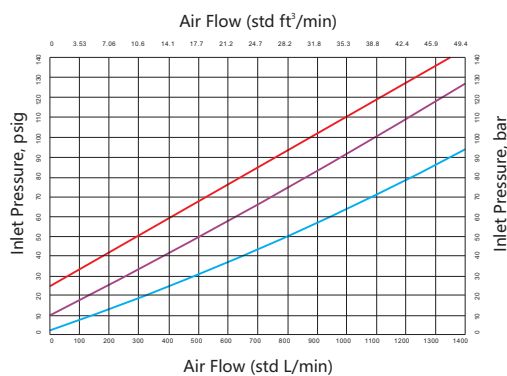
Component	Valve Material Grade/ASTM Specification	
1	Inlet Body	316 S.S./A479
2	Poppet	Fluorocarbon FKM - bonded 316 S.S./A479
3	Poppet Stop	316 S.S./A240
4	Spring	302 S.S./A313
5	O-ring	Fluorocarbon FKM
6	Backup Ring	PTFE/D1710
7	Outlet Body	316 S.S./A479

Dimensions

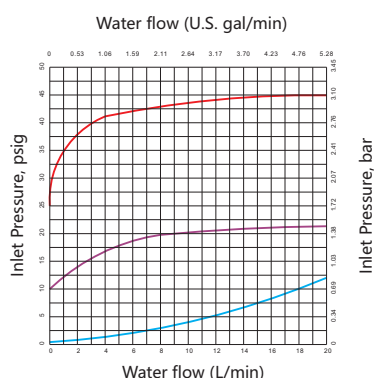
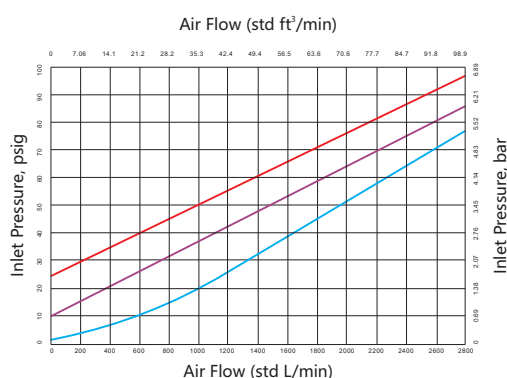


Basic Ordering Number	Connection Type and Size	Series	CV	Dimension, in. (mm)	
				L	F
CV2-F2-	1/8" Hikelok	4	0.67	2.27 (57.7)	11/16 (17.46)
CV2-F4-	1/4" Hikelok			2.43 (61.7)	
CV2-F6-	3/8" Hikelok	8	1.8	2.75 (69.9)	1 (25.4)
CV2-F8-	1/2" Hikelok			2.96 (75.2)	
CV2-F12-	3/4" Hikelok	16	4.7	3.52 (89.4)	1 5/8 (41.28)
CV2-F16-	1" Hikelok			3.88 (98.6)	
CV2-M6-	6 mm Hikelok	4	0.67	2.43 (61.7)	11/16 (17.46)
CV2-M8-	8 mm Hikelok	8	1.8	2.70 (68.6)	1 (25.4)
CV2-M10-	10 mm Hikelok			2.80 (71.1)	
CV2-M12-	12 mm Hikelok			2.96 (75.2)	
CV2-M22-	22 mm Hikelok	16	4.7	3.48 (88.4)	1 5/8 (41.28)
CV2-M25-	25 mm Hikelok			3.88 (98.6)	
CV2-FNPT4-	1/4 Female NPT	4	0.67	2.13 (54.1)	11/16 (17.46)
CV2-FNPT6-	3/8 Female NPT	8	1.8	2.55 (64.8)	1 (25.4)
CV2-FNPT8-	1/2 Female NPT			3.03 (77.0)	1 1/16 (26.99)
CV2-FNPT12-	3/4 Female NPT	16	4.7	3.23 (82.0)	1 5/8 (41.28)
CV2-FNPT16-	1 Female NPT			3.83 (97.3)	
CV2-NPT2-	1/8 Male NPT	4	0.67	1.79 (45.4)	11/16 (17.46)
CV2-NPT4-	1/4 Male NPT			2.17 (55.1)	
CV2-NPT6-	3/8 Male NPT	8	1.8	2.36 (59.9)	1 (25.4)
CV2-NPT8-	1/2 Male NPT			2.73 (69.3)	
CV2-NPT12-	3/4 Male NPT	16	4.7	3.29 (83.6)	1 5/8 (41.28)
CV2-NPT16-	1 Male NPT			3.67 (93.2)	
CV2-FBT4-	1/4 Female BSPT	4	0.67	2.28 (57.9)	11/16 (17.46)
CV2-FBT8-	1/2 Female BSPT	8	1.8	3.29 (83.6)	1 1/16 (26.99)
CV2-FBT12-	3/4 Female BSPT	16	4.7	3.55 (90.2)	1 5/8 (41.28)
CV2-FBT16-	1 Female BSPT			3.83 (97.3)	
CV2-MBT4-	1/4 Male BSPT	4	0.67	2.17 (55.1)	11/16 (17.46)
CV2-MBT8-	1/2 Male BSPT	8	1.8	2.73 (69.3)	1 (25.4)
CV2-MBT12-	3/4 Male BSPT	16	4.7	3.35 (85.1)	1 5/8 (41.28)
CV2-MBT16-	1 Male BSPT			3.67 (93.2)	

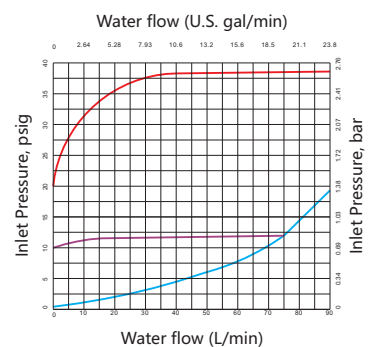
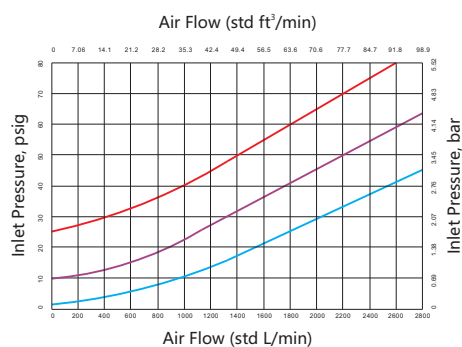
Flow Data at 70°F (20 °C)



- Cv = 0.67
Cracking Pressure=1 psig
- Cv = 0.67
Cracking Pressure=10 psig
- Cv = 0.67
Cracking Pressure=25 psig



- Cv = 1.8
Cracking Pressure=1 psig
- Cv = 1.8
Cracking Pressure=10 psig
- Cv = 1.8
Cracking Pressure=25 psig



- Cv = 4.7
Cracking Pressure=1 psig
- Cv = 4.7
Cracking Pressure=10 psig
- Cv = 4.7
Cracking Pressure=25 psig

Options and Accessories

❖ The use scenario of seal kit and spring kit is replacement or repair.

Seal Kits

❖ Composition of seal Kit:
O-rings, bonded disc and
PTFE retaining ring.



O-ring Material	Series	Ordering Number
Buna N	4	CV2-SK-4-B
	8	CV2-SK-8-B
	16	CV2-SK-16-B
Ethylene Propylene	4	CV2-SK-4-E
	8	CV2-SK-8-E
	16	CV2-SK-16-E
Fluorocarbon FKM	4	CV2-SK-4-V
	8	CV2-SK-8-V
	16	CV2-SK-16-V
Neoprene	4	CV2-SK-4-N
	8	CV2-SK-8-N
	16	CV2-SK-16-N

Spring Kits

❖ Please select the order number of the spring kit according to the working pressure.

Examples: CV2-MK-4-2

Cracking Pressure psig (bar)	Series	Ordering Number
1/3 (0.02)	4	CV2-MK-4-2
	8	CV2-MK-8-2
	16	CV2-MK-16-2
1 (0.06)	4	CV2-MK-4-1
	8	CV2-MK-8-1
	16	CV2-MK-16-1
3 (0.21)	4	CV2-MK-4-3
	8	CV2-MK-8-3
	16	CV2-MK-16-3
10 (0.68)	4	CV2-MK-4-10
	8	CV2-MK-8-10
	16	CV2-MK-16-10
25 (1.70)	4	CV2-MK-4-25
	8	CV2-MK-8-25
	16	CV2-MK-16-25
50 (3.4)	4	CV2-MK-4-50
	8	CV2-MK-8-50
	16	CV2-MK-16-50

How to Order

CV2 — F8 — M10 — N — 1 — 316

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seal Material	Cracking Pressure	Body Material
CV2	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size If outlet and inlet are the same, eliminate the outlet designator		V Fluorocarbon FKM	1 1 psig	316 316 S.S.
	NPT Male NPT	4 1/4 in.			B Buna N	2 1/3 psig	316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6 mm			E Ethylene propylene	3 3 psig	304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8 mm			N Neoprene	10 10 psig	304L 304L S.S.
	FMS Female ISO 261	10 10 mm				25 25 psig	A400 Alloy 400
	MS Male ISO 261	12 3/4 in. or 12 mm				50 50 psig	A20 Alloy 20
	FBP Female BSPP	14 14 mm					A600 Alloy 600
	MBP Male BSPP	16 1 in. or 16 mm					A825 Alloy 825
	F Fractional Tube Fitting	18 18 mm					A276 Alloy C276
	M Metric Tube Fitting	20 1 1/4 in. or 20 mm					DU7 Duplex 2507
	UGF Nut + Gasket+ Fractional Bulge Nipple	22 22 mm					BR Brass
	UGM Nut + Gasket+ Metric Bulge Nipple	25 25 mm					
	FGFS Female GFS Fitting						
	GFS Male GFS Fitting						
	RGFS Rotatable Male GFS Fitting						

Check Valves

CV3 Series

Features

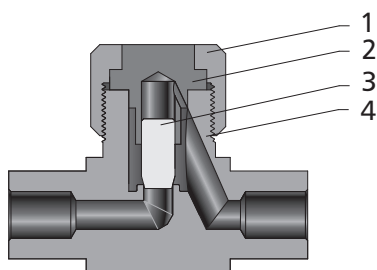
- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 900°F (-53°C to 482°C)
- ❖ Metal to metal seal structure design
- ❖ Reverse flow coefficient less than 0.1% of forward flow coefficient
- ❖ No springs or elastomers
- ❖ Liquid or gas service
- ❖ Variety of end connections and materials



Pressure-Temperature Ratings

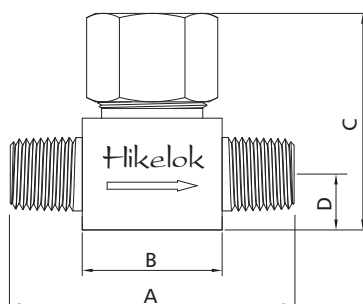
Material	316 S.S.
Temperature, °F(°C)	Working Pressure, psig(bar)
-10 (-23) to 100 (37)	6000 (413)
200 (93)	5160 (355)
250 (121)	4910 (338)
300 (148)	4660 (321)
350 (176)	4470 (307)
400 (204)	4280 (294)
450 (232)	4130 (284)
500 (260)	3980 (274)
600 (315)	3760 (259)
650 (343)	3700 (254)
700 (371)	3600 (248)
750 (398)	3520 (242)
800 (426)	3460 (238)
850 (454)	3380 (232)
900 (482)	3280 (225)

Standard Materials of Construction



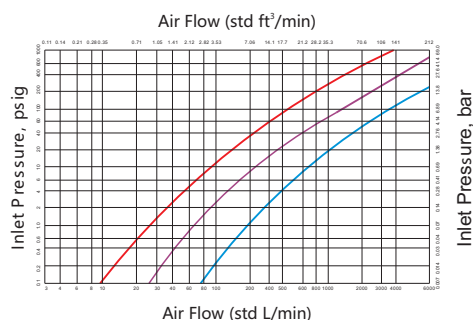
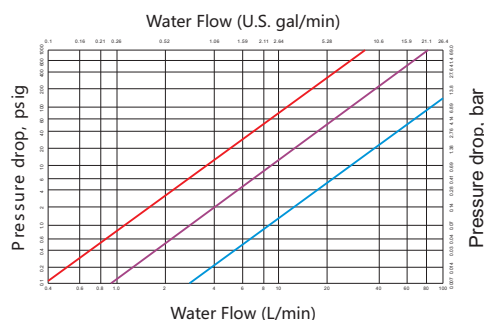
Component	Valve Material Grade / ASTM Specification
1 Bonnet Nut	316 S.S. / A479
2 Bonnet	316 S.S. / A479
3 Poppet	S17400 / A564
4 Body	316 S.S. / A479

Dimensions



Basic Ordering Number	Connection Type and Size	CV	Dimension, in. (mm)			
			A	B	C	D
CV3-F4-	1/4" Hikelok	0.30	2.40 (61.0)	1.01 (25.7)	1.47 (37.3)	0.39 (9.9)
CV3-F6-	3/8" Hikelok	0.64	2.83 (71.9)	1.31 (33.3)	1.85 (47.0)	0.50 (12.7)
CV3-F8-	1/2" Hikelok	2.20	3.92 (99.6)	2.19 (55.6)	2.44 (62.0)	0.62 (15.7)
CV3-F12-	3/4" Hikelok					
CV3-M6-	6 mm Hikelok	0.30	2.40 (61.0)	1.01 (25.7)	1.47 (37.3)	0.39 (9.9)
CV3-FNPT2-	1/8 Female NPT					
CV3-FNPT4-	1/4 Female NPT	0.64	2.25 (57.2)	1.25 (31.8)	1.85 (47.0)	0.50 (12.7)
CV3-FNPT6-	3/8 Female NPT	2.20	3.12 (79.2)	1.86 (47.2)	2.44 (62.0)	0.62 (15.7)
CV3-FNPT8-	1/2 Female NPT					
CV3-FSW4-	1/4" FSW	0.30	1.81 (46.0)	0.9 (22.9)	1.47 (37.3)	0.39 (9.9)
CV3-FSW6-	3/8" FSW	0.64	2.25 (57.2)	1.25 (31.8)	1.85 (47.0)	0.50 (12.7)
CV3-FSW8-	1/2" FSW	2.20	3.13 (79.5)	1.88 (47.8)	2.44 (62.0)	0.62 (15.7)
CV3-FBW4-	1/4" FBW	0.30	1.81 (46.0)	0.9 (22.9)	1.47 (37.3)	0.39 (9.9)
CV3-FBW6-	3/8" FBW	0.64	2.25 (57.2)	1.25 (31.8)	1.85 (47.0)	0.50 (12.7)
CV3-FBW8-	1/2" FBW	2.20	3.13 (79.5)	1.88 (47.8)	2.44 (62.0)	0.62 (15.7)

Flow Data at 70°F (20 °C)



— Cv = 0.30
— Cv = 0.64
— Cv = 2.20

How to Order

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Body Material
CV3—	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		316 316 S.S.
	NPT Male NPT	4 1/4 in.			316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator		304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8 mm			304L 304L S.S.
	FMS Female ISO 261	10 10 mm			A400 Alloy 400
	MS Male ISO 261	12 3/4 in. or 12 mm			A20 Alloy 20
	FBP Female BSPP	14 14 mm			A600 Alloy 600
	MBP Male BSPP	16 1 in. or 16 mm			A825 Alloy 825
	MSW Metric Tube Socket Weld	18 18 mm			A276 Alloy C276
	FBW Fractional Tube Butt Weld	20 1 1/4 in. or 20 mm			DU7 Duplex 2507
	MBW Metric Tube Butt Weld	22 22 mm			CS Steel
	PSW Pipe Socket Weld	25 25 mm			
	PBW Pipe Butt Weld				
	F Fractional Tube Fitting				
	M Metric Tube Fitting				
	UGF Nut + Gasket+ Fractional Bulge Nipple				
	UGM Nut + Gasket+ Metric Bulge Nipple				

One-Piece Body Check Valves

CV4 Series

Features

- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ One-piece body design
- ❖ Fully contained O-ring seal
- ❖ Cracking pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- ❖ 316 stainless steel, brass and alloy body material
- ❖ Variety of end connections



Cracking Pressure

Series	Nominal Cracking Pressure psig (bar)	Cracking Pressure Range psig (bar)
CV4	1/3 (0.03)	0 to 3 (0 to 0.21)
	1 (0.07)	0 to 4 (0 to 0.28)
	10 (0.69)	7 to 13 (0.49 to 0.90)
	25 (1.7)	21 to 29 (1.5 to 2.0)

Pressure-Temperature Ratings

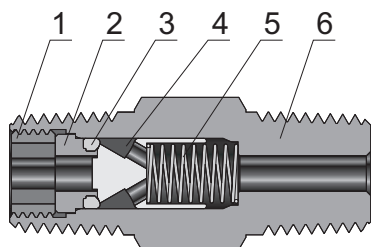
- ❖ Ratings based on fluorocarbon FKM O-rings in 316 stainless steel valves and Buna N O-rings in brass valves.

Material	316 S.S.	Brass
Temperature °F (°C)	Working Pressure, psig (bar)	
-10 (-23) to 100 (37)	3000 (206)	3000 (206)
200 (93)	2575 (177)	2600 (179)
250 (121)	2450 (168)	2405 (165)
300 (148)	2325 (160)	—
400 (204)	2185 (150)	—

Seal Materials

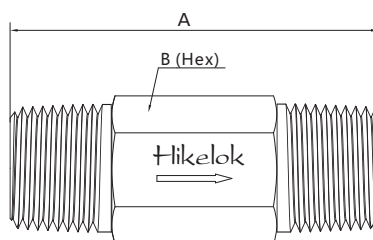
Seal Material	Temperature Range °F (°C)
Buna N	-10 to 250 (-23 to 121)
Ethylene propylene	-50 to 300 (-45 to 148)
Fluorocarbon FKM	-10 to 400 (-23 to 204)
Neoprene	-40 to 250 (-40 to 121)
Kalrez	0 to 525 (-17 to 274)

Standard Materials of Construction



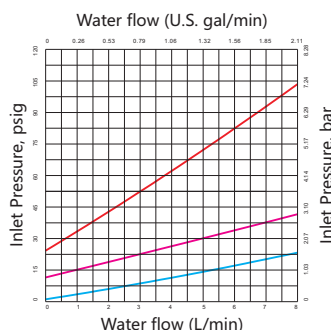
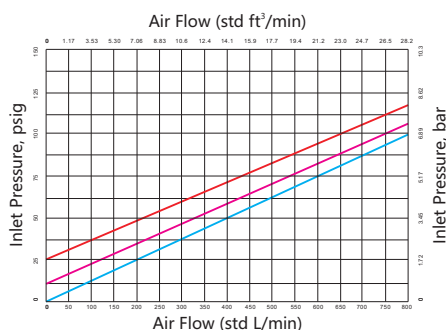
Component		Valve Material Grade/ASTM Specification	
		316 S.S.	Brass
1	Insert Locking Screw	316 S.S./A276 or A479	Brass C36000/B16
2	Insert	316 S.S./A479	Brass C36000/B16
3	O-ring	Fluorocarbon FKM	Buna N
4	Poppet	316 S.S./A479	Brass C36000/B16
5	Spring	302 S.S./A313	
6	Body	316 S.S./A479	Brass C36000/B16

Dimensions

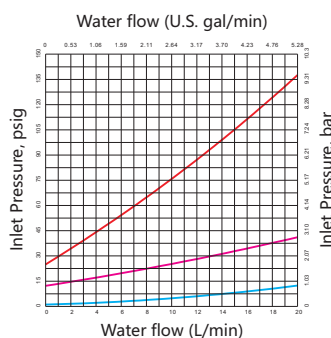
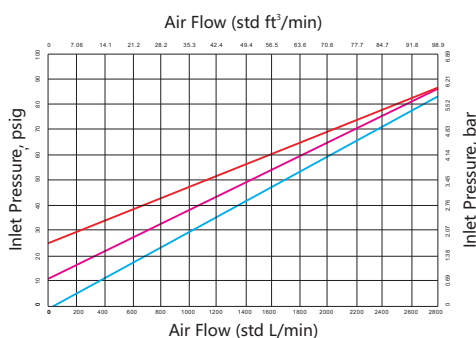


Basic Ordering Number	Connection Type and Size	Series	CV	Dimension, in. (mm)	
				A	B
CV4-FNPT4-	1/4 Female NPT	4	0.35	2.41 (61.2)	3/4 (19.05)
CV4-FNPT8-	1/2 Female NPT	8	1.20	3.71 (94.2)	1 1/16 (26.99)
CV4-NPT4-	1/4 Male NPT	4	0.35	1.62 (41.1)	9/16 (14.29)
CV4-NPT8-	1/2 Male NPT	8	1.20	2.28 (57.9)	7/8 (22.23)
CV4-FBT4-	1/4 Female BSPT	4	0.35	2.54 (64.5)	3/4 (19.05)
CV4-MBT4-	1/4 Male BSPT	4	0.35	1.62 (41.1)	9/16 (14.29)

Flow Data at 70°F (20 °C)



- Cv = 0.35
Cracking Pressure=1 psig
- Cv = 0.35
Cracking Pressure=10 psig
- Cv = 0.35
Cracking Pressure=25 psig



- Cv = 1.2
Cracking Pressure=1 psig
- Cv = 1.2
Cracking Pressure=10 psig
- Cv = 1.2
Cracking Pressure=25 psig

Options and Accessories

❖ The use scenario of seal kit and spring kit is replacement or repair.

Seal Kits

❖ Composition of seal Kit: O-rings.

O-ring Material	Series	Ordering Number
Buna N	4	CV4-SK-4-B
	8	CV4-SK-6-B
Ethylene Propylene	4	CV4-SK-4-E
	8	CV4-SK-6-E
Fluorocarbon FKM	4	CV4-SK-4-V
	8	CV4-SK-6-V
Neoprene	4	CV4-SK-4-N
	8	CV4-SK-6-N
Kalrez	4	CV4-SK-4-Z
	8	CV4-SK-6-Z

Spring Kits

❖ Please select the order number of the spring kit according to the working pressure.

Examples: CV2-MK-4-2

Cracking Pressure psig (bar)	Series	Ordering Number
1/3 (0.02)	4	CV4-MK-4-2
	8	CV4-MK-8-2
1 (0.06)	4	CV4-MK-4-1
	8	CV4-MK-8-1
3 (0.21)	4	CV4-MK-4-3
	8	CV4-MK-8-3
10 (0.68)	4	CV4-MK-4-10
	8	CV4-MK-8-10
25 (1.70)	4	CV4-MK-4-25
	8	CV4-MK-8-25

How to Order

CV4 — NPT8 — MBT8 — V — 1 — 316

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seal Material	Cracking Pressure	Body Material
CV4	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		V Fluorocarbon FKM	1 1 psig	316 316 S.S.
	NPT Male NPT	4 1/4 in.			B Buna N	2 1/3 psig	316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator		E Ethylene propylene	3 3 psig	304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8 mm			N Neoprene	10 10 psig	304L 304L S.S.
	FMS Female ISO 261				Z Kalrez	25 25 psig	A400 Alloy 400
	MS Male ISO 261						A20 Alloy 20
	FBP Female BSPP						A600 Alloy 600
	MBP Male BSPP						A825 Alloy 825
							A276 Alloy C276
							DU7 Duplex 2507
							BR Brass

One-Piece Body, Adjustable cracking pressure Check Valves

CV5 Series

Features

- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ One-piece body design
- ❖ Fully contained O-ring seal
- ❖ Adjustable spring sets cracking pressure
- ❖ Locking screw maintains setting
- ❖ Cracking pressure: 3 to 600 psig (0.21 to 41.3 bar)
- ❖ 316 stainless steel, brass and alloy body material
- ❖ Variety of end connections



Cracking Pressure

Series	Nominal Cracking Pressure psig (bar)
CV5	3 to 50 (0.21 to 3.50)
	50 to 150 (3.50 to 10.4)
	150 to 350 (10.4 to 24.2)
	350 to 600 (2.40 to 41.4)

Pressure-Temperature Ratings

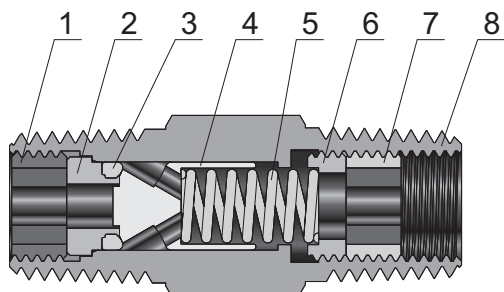
- ❖ Ratings based on fluorocarbon FKM O-rings in 316 stainless steel valves and Buna N O-rings in brass valves.

Material	316S.S.	Brass
Temperature °F (°C)	Working Pressure, psig (bar)	
-10 (-23) to 100 (37)	3000 (206)	3000 (206)
200 (93)	2575 (177)	2600 (179)
250 (121)	2450 (168)	2405 (165)
300 (148)	2325 (160)	—
400 (204)	2185 (150)	—

Seal Materials

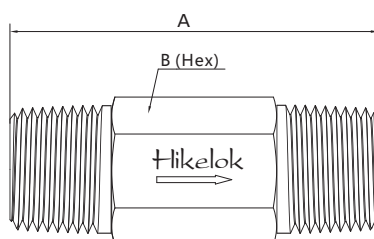
Seal Material	Temperature Range °F (°C)
Buna N	-10 to 250 (-23 to 121)
Ethylene propylene	-50 to 300 (-45 to 148)
Fluorocarbon FKM	-10 to 400 (-23 to 204)
Neoprene	-40 to 250 (-40 to 121)
Kalrez	0 to 525 (-17 to 274)

Standard Materials of Construction



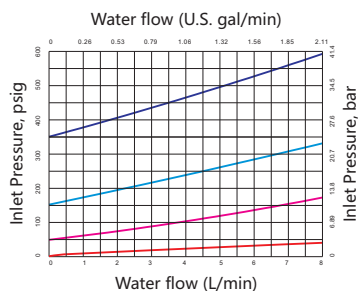
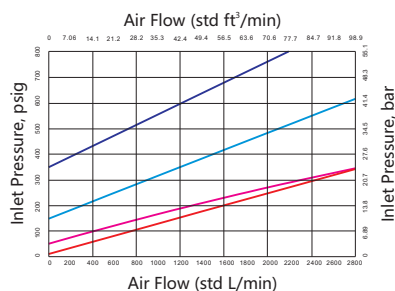
	Component	Valve Material Grade/ASTM Specification	
		316 S.S.	Brass
1	Insert Locking Screw	316 S.S./A479	Brass C36000/B16
2	Insert	316 S.S./A479	Brass C36000/B16
3	O-ring	Fluorocarbon FKM	Buna N
4	Poppet	316 S.S./A479	Brass C36000/B16
5	Spring	302 S.S./A313	
6	Adjusting Screw	316 S.S./A276	
7	Locking Screw	316 S.S./A276	
8	Body	316 S.S./A479	Brass C36000/B16

Dimensions

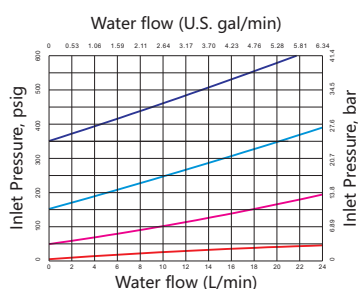
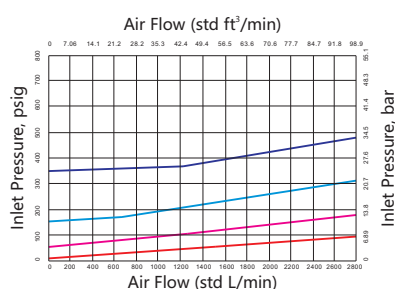


Basic Ordering Number	Connection Type and Size	Series	CV	Dimension, in. (mm)	
				A	B
CV5-FNPT4-	1/4 Female NPT	4	0.35	2.98 (75.7)	3/4 (19.05)
CV5-NPT4-	1/4 Male NPT		0.35	1.62 (41.1)	9/16 (14.29)
CV5-NPT8-	1/2 Male NPT	8	1.20	2.56 (65.0)	7/8 (22.23)
CV5-MBT4-	1/4 Male BSPT	4	0.35	1.62 (41.1)	9/16 (14.29)
CV5-MBT8-	1/2 Male BSPT	8	1.20	2.56 (65.0)	7/8 (22.23)

Flow Data at 70°F (20 °C)



- Cv = 0.35
Cracking Pressure = 3 psig
- Cv = 0.35
Cracking Pressure = 50 psig
- Cv = 0.35
Cracking Pressure = 150 psig
- Cv = 0.35
Cracking Pressure = 350 psig



- Cv = 1.2
Cracking Pressure = 3 psig
- Cv = 1.2
Cracking Pressure = 50 psig
- Cv = 1.2
Cracking Pressure = 150 psig
- Cv = 1.2
Cracking Pressure = 350 psig

Options and Accessories

❖ The use scenario of seal kit and spring kit is replacement or repair.

Seal Kits

❖ Composition of seal Kit: O-rings.

O-ring Material	Series	Ordering Number
Buna N	4	CV5-SK-4-B
	8	CV5-SK-6-B
Ethylene Propylene	4	CV5-SK-4-E
	8	CV5-SK-6-E
Fluorocarbon FKM	4	CV5-SK-4-V
	8	CV5-SK-6-V
Neoprene	4	CV5-SK-4-N
	8	CV5-SK-6-N
Kalrez	4	CV5-SK-4-Z
	8	CV5-SK-6-Z

Spring Kits

❖ Please select the order number of the spring kit according to the working pressure.

Examples: CV5-MK-4-50

Cracking Pressure psig (bar)	Series	Ordering Number
3 to 50 (0.21 to 3.5)	4	CV5-MK-4-50
	8	CV5-MK-8-50
50 to 150 (3.5 to 10.4)	4	CV5-MK-4-150
	8	CV5-MK-8-150
150 to 350 (10.4 to 24.2)	4	CV5-MK-4-350
	8	CV5-MK-8-350
350 to 600 (24.2 to 41.4)	4	CV5-MK-4-600
	8	CV5-MK-8-600

How to Order

CV5 — NPT8 — MBT8 — V — 50 — 316

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seal Material	Cracking Pressure	Body Material
CV5	FNPT Female NPT	2 1/8 in.	Same as inlet type and inlet size		V Fluorocarbon FKM	50 3 to 50 psig	316 316 S.S.
	NPT Male NPT	4 1/4 in.			B Buna N	150 50 to 150 psig	316L 316L S.S.
	FBT Female BSPT	6 3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator		E Ethylene propylene	350 150 to 350 psig	304 304 S.S.
	MBT Male BSPT	8 1/2 in. or 8 mm			N Neoprene	600 350 to 600 psig	304L 304L S.S.
	FMS Female ISO 261				Z Kalrez		A400 Alloy 400
	MS Male ISO 261						A20 Alloy 20
	FBP Female BSPP						A600 Alloy 600
	MBP Male BSPP						A825 Alloy 825
							A276 Alloy C276
							DU7 Duplex 2507
							BR Brass

Adjustable cracking pressure Check Valves

CV6 Series

Features

- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ Fully contained O-ring seal
- ❖ Adjustable spring sets cracking pressure
- ❖ Locking screw maintains setting
- ❖ Cracking pressure: 3 to 600 psig (0.21 to 41.3 bar)
- ❖ 316 stainless steel, brass and alloy body material
- ❖ Variety of end connections



Cracking Pressure

Series	Nominal Cracking Pressure psig (bar)
CV6	3 to 50 (0.21 to 3.50)
	50 to 150 (3.50 to 10.4)
	150 to 350 (10.4 to 24.2)
	350 to 600 (2.40 to 41.4)

Pressure-Temperature Ratings

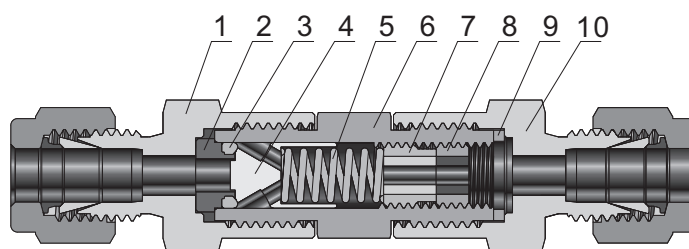
- ❖ Ratings based on fluorocarbon FKM O-rings in 316 stainless steel valves and Buna N O-rings in brass valves.

Material	316 S.S.	Brass
Temperature °F (°C)	Working Pressure, psig (bar)	
-10 (-23) to 100 (37)	3000 (206)	3000 (206)
200 (93)	2575 (177)	2600 (179)
250 (121)	2450 (168)	2405 (165)
300 (148)	2325 (160)	—
375 (190)	2185 (150)	—

Seal Materials

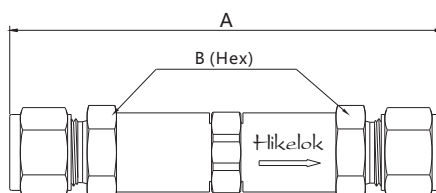
Seal Material	Temperature Range °F (°C)
Buna N	-10 to 250 (-23 to 121)
Ethylene propylene	-50 to 300 (-45 to 148)
Fluorocarbon FKM	-10 to 400 (-23 to 204)
Neoprene	-40 to 250 (-40 to 121)
Kalrez	0 to 525 (-17 to 274)

Standard Materials of Construction



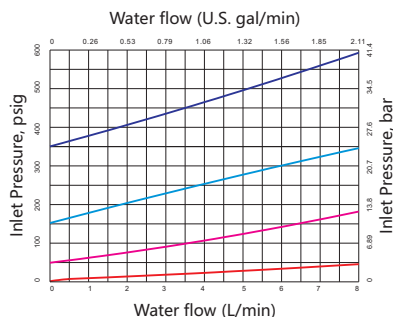
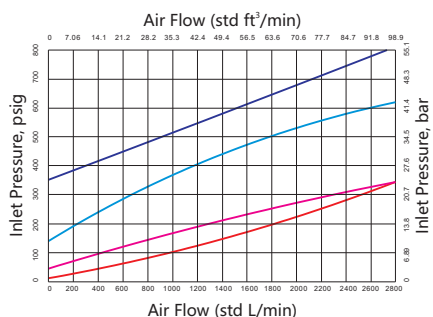
Component	Valve Material Grade/ASTM Specification	
	316 S.S.	Brass
1 Inlet Body	316 S.S./A479	Brass C36000/B16
2 Insert	316 S.S./A479	Brass C36000/B16
3 O-ring	Fluorocarbon FKM	Buna N
4 Poppet	316 S.S./A479	Brass C36000/B16
5 Spring	302 S.S./A313	
6 Center Body	316 S.S./A479	Brass C36000/B16
7 Adjusting Screw	316 S.S./A276	
8 Locking Screw	316 S.S./A276	
9 Gasket	PTFE-coated 316 S.S./A276	
10 Outlet Body	316 S.S./A479	Brass C36000/B16

Dimensions



Basic Ordering Number	Connection Type and Size	Cv	Dimension, in. (mm)	
			A	B
CV6-F4-	1/4" Hikelok	0.37	3.23 (82.0)	5/8 (15.88)
CV6-M6-	6 mm Hikelok		3.32 (84.3)	
CV6-M8-	8 mm Hikelok		3.09 (78.5)	
CV6-GFS4-	1/4" Male GFS			

Flow Data at 70°F (20 °C)



- Cv = 0.37
Cracking Pressure = 3 psig
- Cv = 0.37
Cracking Pressure = 50 psig
- Cv = 0.37
Cracking Pressure = 150 psig
- Cv = 0.37
Cracking Pressure = 350 psig

Options and Accessories

❖ The use scenario of seal kit and spring kit is replacement or repair.

Seal Kits

❖ Composition of seal Kit: O-rings.

O-ring Material	Ordering Number
Buna N	CV6-SK-B
Ethylene Propylene	CV6-SK-E
Fluorocarbon FKM	CV6-SK-V
Neoprene	CV6-SK-N
Kalrez	CV6-SK-Z

Spring Kits

❖ Please select the order number of the spring kit according to the working pressure.

Examples: C6-MK-50

Cracking Pressure psig (bar)	Ordering Number
3 to 50 (0.21 to 3.5)	CV6-MK-50
50 to 150 (3.5 to 10.4)	CV6-MK-150
150 to 350 (10.4 to 24.2)	CV6-MK-350
350 to 600 (24.2 to 41.4)	CV6-MK-600

How to Order

CV6 — F4 — M6 — V — 50 — 316

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seal Material	Cracking Pressure	Body Material
CV6	F Fractional Tube Fitting	2 1/8 in.	Same as inlet type and inlet size		V Fluorocarbon FKM	50 3 to 50 psig	316 316 S.S.
	M Metric Tube Fitting	4 1/4 in.			B Buna N	150 50 to 150 psig	316L 316L S.S.
	GFS Male GFS Fitting	6 3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator		E Ethylene propylene	350 150 to 350 psig	304 304 S.S.
		8 1/2 in. or 8 mm			E Ethylene propylene	600 350 to 600 psig	304L 304L S.S.
		N Neoprene				A400 Alloy 400	
		Z Kalrez				A20 Alloy 20	
						A600 Alloy 600	
						A825 Alloy 825	
					A276 Alloy C276		
					DU7 Duplex 2507		
			BR Brass				

All-Welded Check Valves

CV7 Series

Features

- ❖ Maximum working pressure up to 3000 psig (206 bar)
- ❖ Working temperature from -10°F to 400°F (-23°C to 204°C)
- ❖ All-Welded body design
- ❖ Standard or high-purity wetted surface finishes for choice
- ❖ Cracking pressure less than 2 psig (0.14 bar)
- ❖ 316L stainless steel body material
- ❖ Tube butt weld, female GFS fitting, integral male GFS fitting, rotatable male GFS fitting, and Hikelok tube fitting end connections are available..



Pressure-Temperature Ratings

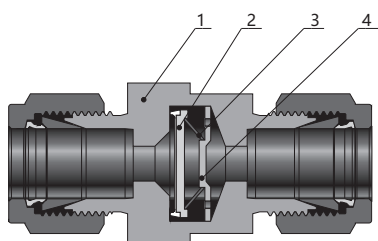
- ❖ Ratings based on fluorocarbon FKM O-rings in 316 stainless steel valves and Buna N O-rings in brass valves.

Material	316 S.S.	Brass
Temperature °F (°C)	Working Pressure, psig (bar)	
-10 (-23) to 100 (37)	3000 (206)	3000 (206)
200 (93)	2575 (177)	2600 (179)
250 (121)	2450 (168)	2405 (165)
300 (148)	2325 (160)	—
400 (204)	2065 (142)	—

Seal Materials

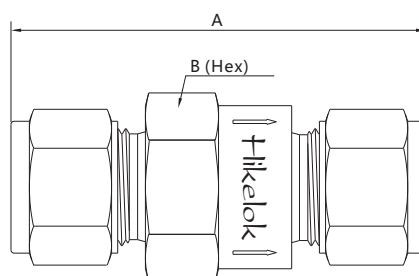
Seal Material	Temperature Range °F (°C)
Buna N	-10 to 250 (-23 to 121)
Ethylene propylene	-50 to 300 (-45 to 148)
Fluorocarbon FKM	-10 to 400 (-23 to 204)
Neoprene	-40 to 250 (-40 to 121)

Standard Materials of Construction



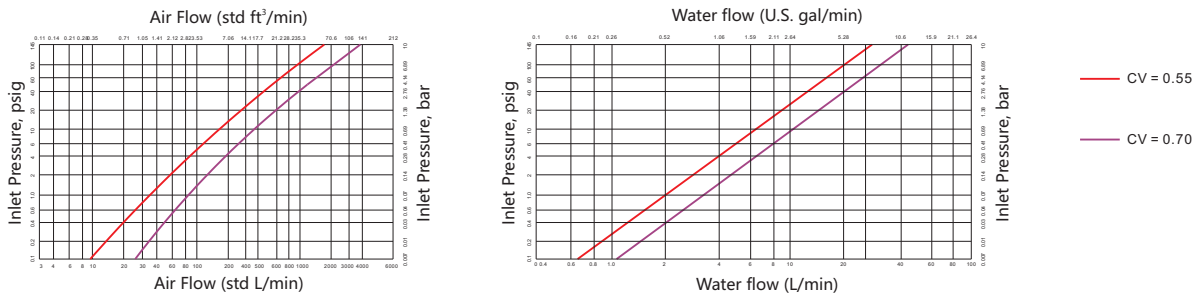
Component		Valve Material Grade/ASTM Specification
1	Body	316L S.S./A479
2	Poppet	Fluorocarbon FKM - bonded 316L S.S./A479
3	Guidance Wafer	Alloy X - 750/B637
4	Poppet Stop	316L S.S./A240

Dimensions



Basic Ordering Number	Connection Type and Size	Cv	Dimension, in. (mm)	
			A	B
CV7-FBW4-	1/4" FBW	0.55	1.24 (31.5)	7/8 (22.23)
CV7-FBW6-	3/8" FBW	0.70		
CV7-FBW8-	1/2" FBW			
CV7-MBW6-	6 mm MBW	0.55		
CV7-GFS4-	1/4" Male GFS			
CV7-GFS8-	1/2" Male GFS	0.70	2.06 (53.8)	1 (25.4)
CV7-F4-	1/4" Hikelok	0.55	1.96 (49.8)	7/8 (22.23)
CV7-M6-	6 mm Hikelok	0.70		

Flow Data at 70°F (20 °C)



How to Order

CV7 — F4 — M6 — V — 316L						
Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seal Material	Body Material
CV7	F Fractional Tube Fitting	2 1/8 in.	Same as inlet type and inlet size		V Fluorocarbon FKM	316 316 S.S.
	M Metric Tube Fitting	4 1/4 in.			B Buna N	316L 316L S.S.
	FBW Fractional Tube Butt Weld	6 3/8 in. or 6 mm	If outlet and inlet are the same, eliminate the outlet designator		E Ethylene propylene	
	MBW Metric Tube Butt Weld	8 1/2 in. or 8 mm			N Neoprene	
	GFS Male GFS Fitting					
	FGFS Female GFS Fitting					
	RGFS Rotatable Male GFS Fitting					

FOR YOUR SAFETY

It is solely the responsibility of the system designer and the user to consider the compatibility of the materials, of the components and system, the function of the component, appropriate ratings and to ensure proper installation, operation and maintenance. Improper selection or use of products described herein can cause personal injury or property damage.