

# 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

## 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)
	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

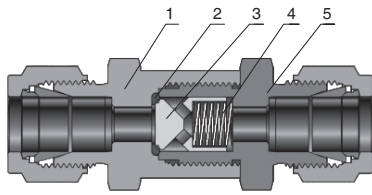
Ratings based on fluorocarbon FKM O-rings in 316 stainless steel valves and Buna N O-rings in brass valves.

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

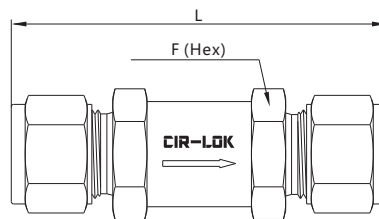
Seal Material	Temperature Range °F (°C)
Buna N	-10 to 250 (-23 to 121)
Ethylene propylene	-50 to 300 (-45 to 148)
Fluorocarbon FKM	-10 to 400 (-23 to 204)
Neoprene	-40 to 250 (-40 to 121)

## 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

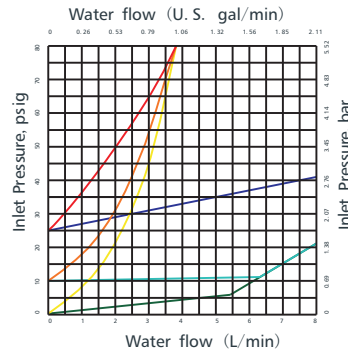
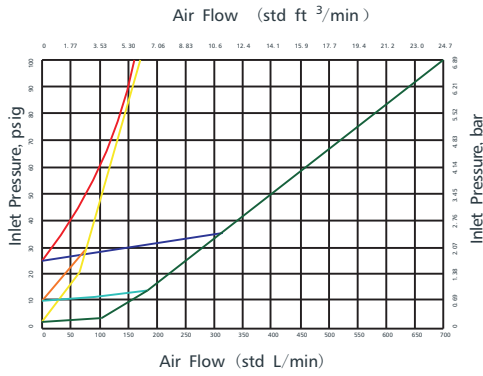
## Dimensions



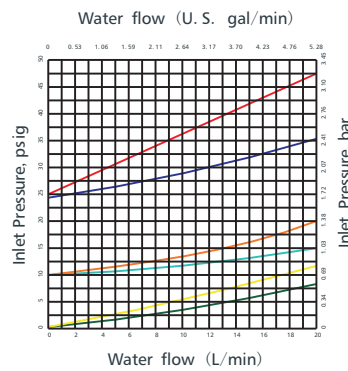
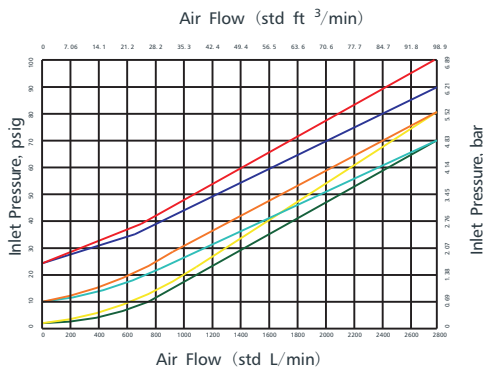
Basic Ordering Number	Connection Type and Size	CV	Dimension, in. (mm)	
			L	F
CV1-F2-	1/8" CIR-LOK	0.16	2.14 (54.3)	5/8 (15.88)
CV1-F4-	1/4" CIR-LOK	0.47	2.35 (59.7)	
CV1-F6-	3/8" CIR-LOK	1.47	3.17 (80.5)	7/8 (22.23)
CV1-F8-	1/2" CIR-LOK	1.68	3.42 (86.9)	
CV1-F12-	3/4" CIR-LOK	4.48	4.32 (110)	1 1/4 (31.75)
CV1-F16-	1" CIR-LOK		4.74 (120)	1 3/8 (34.93)
CV1-M6-	6 mm CIR-LOK	0.47	2.36 (59.9)	5/8 (15.88)
CV1-M10-	10 mm CIR-LOK	1.68	3.32 (84.3)	7/8 (22.23)
CV1-M12-	12 mm CIR-LOK		3.42 (86.9)	
CV1-FNPT2-	1/8 Female NPT	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	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	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	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	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	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.

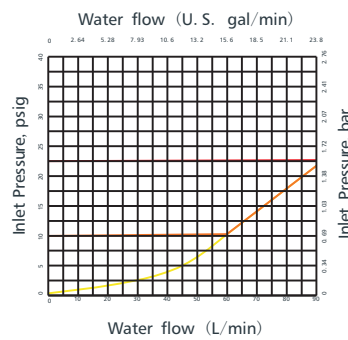
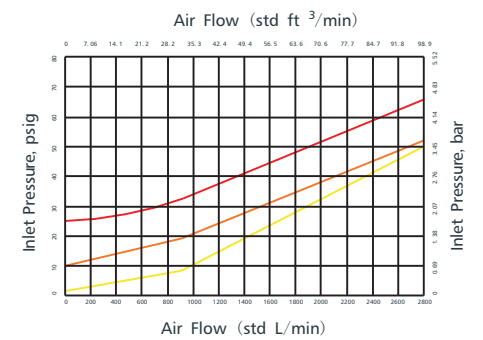
## Flow Data at 70°F(20 °C)



- 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

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