Check Valves (C Series)

Catalog 4130-C
August 2005

Introduction

Parker C Series Check Valves are designed for uni-directional flow control of fluids and gases in industries such as chemical processing, oil and gas production and transmission, pharmaceutical, pulp and paper, power and utilities.

Features

- Resilient, custom molded, blow-out resistant seat design
- Back stopped poppet minimizes spring stress
- 100% factory tested for both crack and reseat
- Cracking pressures include: 1/3, 1, 5, 10, 25, 50, 75, and 100 psi.
- Port connections include male and female NPT, CPI™, A-LOK®, UltraSeal, VacuSeal, BSP, SAE and Seal-Lok®
- Heat code traceability

Materials of Construction

Item #	Part	Stainless Steel Valve	Brass Valve
1	Cap	ASTM A 276, TYPE 316	ASTM B 16 Alloy C36000
2	Seat*	Fluorocarbon Rubber*	
3	**Poppet**	**ASTM A 479, TYPE 316**	**ASTM B 16 Alloy C36000**
4	**Spring**	**316 Stainless Steel**	
5	**Body**	**ASTM A 276, TYPE 316**	**ASTM B 16 Alloy C36000**

* Optional seat materials are available. See How to Order section. Lubrication: Silicone Paste.

Note: PTFE seated valves employ an additional PTFE coated 316 SS gasket between the seat and the body and are distinguishable from elastomeric seated valves by the gap designed between the body and cap.

**See Pressure Rating note on page 4.

Specifications

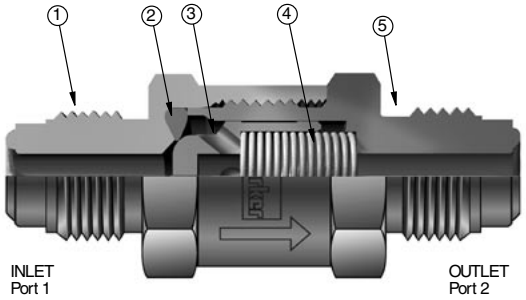
Pressure Rating:**

316 SS – 1/8" to 3/4": .....6000 psig (414 bar) CWP
1": .....5000 psig (345 bar) CWP
All sizes with PTFE Seats: .....4000 psig (276 bar) CWP
Brass – 1/8": to 1": .....3000 psig (207 bar) CWP

Temperature Rating:

Fluorocarbon Rubber.....-15°F to +400°F (-26°C to +204°C)
Nitrile .....-30°F to +275°F (-34°C to +135°C)
Ethylene Propylene Rubber
.....-70°F to +275°F (-57°C to +135°C)
Neoprene Rubber.....-45°F to +250°F (-43°C to +121°C)
PTFE .....-65°F to +400°F (-54°C to +204°C)
Highly Fluorinated Fluorocarbon Rubber
.....-15°F to +200°F (-26°C to +93°C)

Orifice:..... .078" to .656" (2.0 mm to 16.7 mm)
C_v: ..... .18 to 6.56



Model Shown: 4V-C4L-5-SS

Flow Calculations with 1000 psig (69 bar) Inlet Pressure

Valve Series	Maximum C_v	Pressure Drop ΔP		Water @ 60°F (16°C)		Air @ 60°F (16°C)	
		psig	bar	gpm	m³/hr	scfm	m³/hr
C2	0.31	10	0.7	1.0	0.2	30.8	52.1
		50	3.4	2.2	0.5	67.2	112.8
		100	6.9	3.1	0.7	92.0	155.3
C4	0.75	10	0.7	2.4	0.5	74.6	126.1
		50	3.4	5.3	1.2	162.7	273.0
		100	6.9	7.5	1.7	222.8	376.2
C6	2.26	10	0.7	7.1	1.6	225.3	380.9
		50	3.4	16.0	3.6	495.2	831.0
		100	6.9	22.6	5.1	685.1	1157.2
C8	3.53	10	0.7	11.2	2.5	352.0	595.0
		50	3.4	25.0	5.6	774.3	1299.4
		100	6.9	35.3	8.0	1072.4	1811.6
C12	6.01	10	0.7	19.0	4.3	596.6	1008.3
		50	3.4	42.5	9.6	1287.5	2160.4
		100	6.9	60.1	13.7	1738.5	2934.5
C16	6.56	10	0.7	20.7	4.7	648.9	1096.6
		50	3.4	46.4	10.5	1379.4	2314.7
		100	6.9	65.6	14.9	1824.4	3077.6

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Crack and Re-seal Performance

Check Valve Rated Crack Pressure		Minimum Acceptable Crack Pressure		Maximum Acceptable Crack Pressure		Maximum Re-seal Back Pressure	
psig	bar	psig	bar	psig	bar	psig	bar
1/3	0.02	0	0.00	1	0.07	4	0.28
1	0.07	0	0.00	3	0.21	4	0.28
5	0.34	3	0.21	8	0.55	3 BCP	0.21 BCP
10	0.69	7	0.48	13	0.90	3 BCP	0.21 BCP
25	1.72	20	1.38	30	2.07	4 BCP	0.28 BCP
50	3.45	40	2.76	60	4.14	5 BCP	0.34 BCP
75	5.17	60	4.14	90	6.21	7 BCP	0.48 BCP
100	6.89	80	5.52	120	8.27	10 BCP	0.69 BCP

BCP means “Below Cracking Pressure”

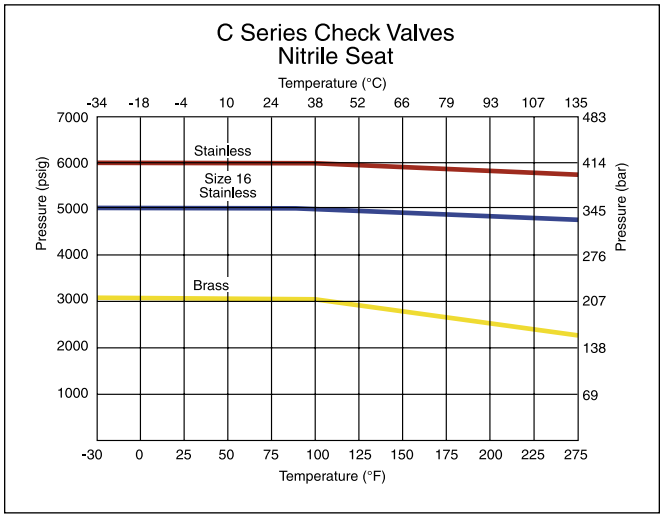
Cracking pressure is defined as the upstream pressure at which a detectable flow is measured.

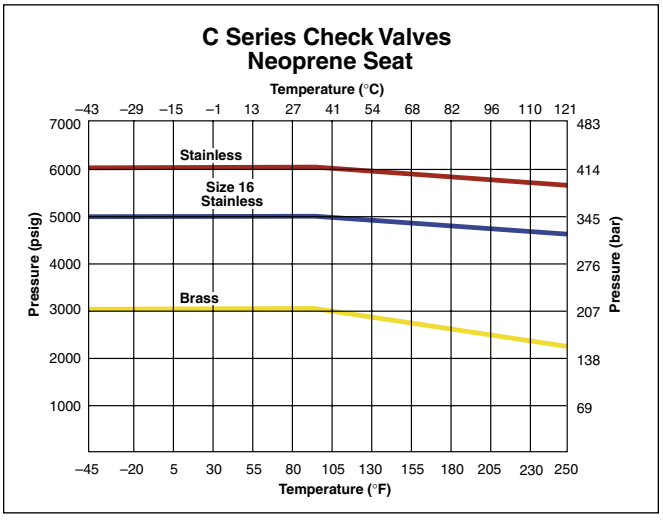
Re-seal pressure is defined as the downstream pressure at which the check valve closes bubble-tight.

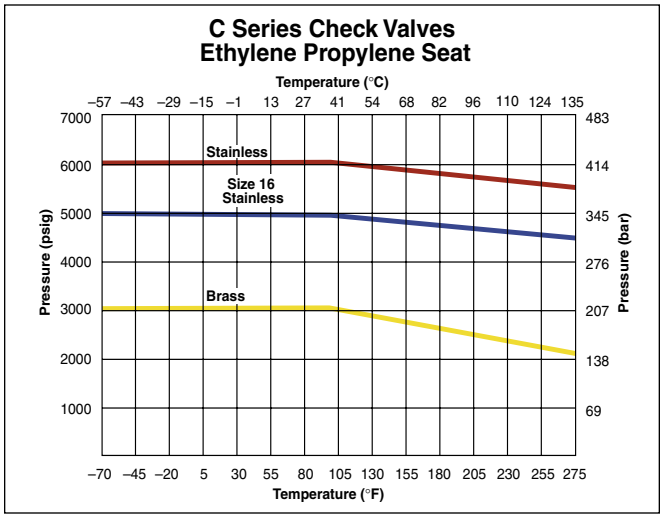
Example: For a valve with a spring having a rated cracking pressure of 25 psig (1.72 bar), the actual cracking pressure ranges between 20 and 30 psig (1.38 and 2.07 bar). The re-seal pressure range would be 16 to 20 psig (1.10 to 1.38 bar). Check valves having springs with rated crack pressures of 3 psig (0.21 bar) or less may require up to 4 psig (0.28 bar) back pressure to re-seal bubble-tight.

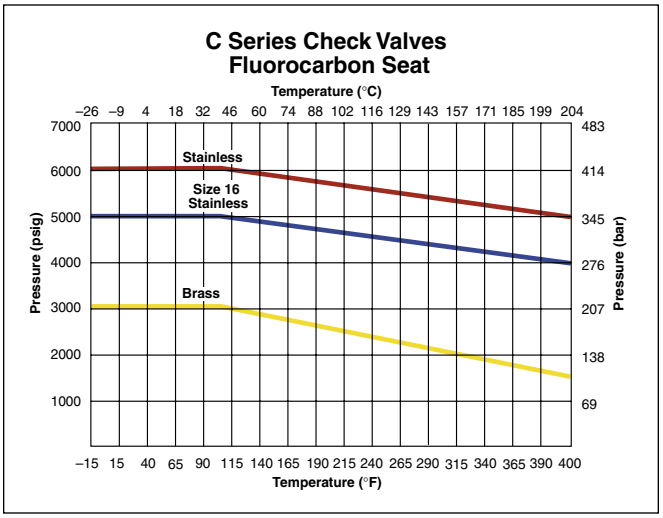
Note: Check valves which are not actuated for a period of time may initially crack at higher than the above crack pressure ranges. PTFE seated valves require a minimum back pressure of 100 psig (6.9 bar) to insure a leak-tight re-seal.

Pressure vs. Temperature









Note: To determine MPa, multiply bar by 0.1

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Flow Data/Dimensions

Basic Part Number	End Connections (Inlet) Port 1	End Connections (Outlet) Port 2	Flow Data Orifice inch	Orifice mm	C_v	x_T‡	Dimensions A† inch	A† mm	B inch	B mm	C inch	C mm	D inch	D mm
2A-C2L	1/8" A-LOK® Compression	1/8" A-LOK® Compression	.093	2.4	.22	0.46	2.29	58.2	1.09	27.7	.625	15.9	.438	11.1
2F-C2L	1/8" Female NPT	1/8" Female NPT	.125	3.2	.31	0.52	1.86	47.2	-	-	.625	15.9	-	-
2F5-C2L	1/8" Male SAE	1/8" Male SAE	.063	1.6	.16	0.42	1.69	42.9	1.09	27.7	.625	15.9	-	-
2G5-C2L	1/8" Female SAE	1/8" Female SAE	.063	1.6	.16	0.42	1.86	47.2	-	-	.625	15.9	-	-
2KF-C2L	1/8" Female BSP/ISO Tapered	1/8" Female BSP/ISO Tapered	.125	3.2	.31	0.52	1.86	47.2	-	-	.625	15.9	-	-
2KM-C2L	1/8" Male BSP/ISO Tapered	1/8" Male BSP/ISO Tapered	.125	3.2	.31	0.52	1.77	45.0	1.00	25.4	.625	15.9	-	-
2M-C2L	1/8" Male NPT	1/8" Male NPT	.125	3.2	.31	0.52	1.77	45.0	1.01	25.7	.625	15.9	-	-
2TA-C2L	1/8" Tube Adapter	1/8" Tube Adapter	.078	2.0	.18	0.43	2.07	52.6	.88	22.4	.625	15.9	-	-
2Z-C2L	1/8" CPI™ Compression	1/8" CPI™ Compression	.093	2.4	.22	0.46	2.29	58.2	1.09	27.7	.625	15.9	.438	11.1
M3A-C2L	3mm A-LOK® Compression	3mm A-LOK® Compression	.086	2.2	.20	0.45	2.30	58.4	1.05	26.7	.625	15.9	.472	12.0
M3Z-C2L	3mm CPI™ Compression	3mm CPI™ Compression	.086	2.2	.20	0.45	2.30	58.4	1.05	26.7	.625	15.9	.472	12.0
2M2A-C2L	1/8" Male NPT	1/8" A-LOK® Compression	.093	2.4	.22	0.46	2.03	51.6	1.05	26.7	.625	15.9	.438	11.1
2M2F-C2L	1/8" Male NPT	1/8" Female NPT	.125	3.2	.31	0.52	1.81	46.0	1.43	36.3	.625	15.9	-	-
2M2Z-C2L	1/8" Male NPT	1/8" CPI™ Compression	.093	2.4	.22	0.46	2.03	51.6	1.05	26.7	.625	15.9	.438	11.1
2F-C4L	1/8" Female NPT	1/8" Female NPT	.187	4.7	.75	0.53	2.01	51.1	-	-	.750	19.1	-	-
2M-C4L	1/8" Male NPT	1/8" Male NPT	.187	4.7	.75	0.53	1.82	46.2	1.06	26.9	.750	19.1	-	-
4A-C4L	1/4" A-LOK® Compression	1/4" A-LOK® Compression	.187	4.7	.75	0.53	2.42	61.5	1.03	26.2	.750	19.1	.563	14.3
4F-C4L	1/4" Female NPT	1/4" Female NPT	.187	4.7	.75	0.53	2.40	61.0	-	-	.750	19.1	-	-
4F5-C4L	1/4" Male SAE	1/4" Male SAE	.172	4.4	.66	0.52	2.02	51.3	1.15	29.2	.750	19.1	-	-
4G5-C4L	1/4" Female SAE	1/4" Female SAE	.172	4.4	.66	0.52	2.20	55.9	-	-	.750	19.1	-	-
4KF-C4L	1/4" Female BSP/ISO Tapered	1/4" Female BSP/ISO Tapered	.187	4.7	.75	0.53	2.40	61.0	-	-	.750	19.1	-	-
4KM-C4L	1/4" Male BSP/ISO Tapered	1/4" Male BSP/ISO Tapered	.281	4.7	.75	0.53	2.18	55.4	1.06	26.9	.750	19.1	-	-
4L-C4L	1/4" Seal-Lok®	1/4" Seal-Lok®	.172	4.4	.66	0.52	1.82	46.2	1.03	26.2	.750	19.1	-	-
4M-C4L	1/4" Male NPT	1/4" Male NPT	.187	4.7	.75	0.53	2.18	55.4	1.04	26.4	.750	19.1	-	-
4Q-C4L	1/4" UltraSeal	1/4" UltraSeal	.180	4.6	.72	0.53	1.97	50.0	1.04	26.4	.750	19.1	-	-
4V-C4L	1/4" VacuSeal	1/4" VacuSeal	.187	4.7	.75	0.53	2.22	56.4	.98	24.9	.750	19.1	-	-
4TA-C4L	1/4" Tube Adapter	1/4" Tube Adapter	.156	4.0	.58	0.52	2.35	59.7	1.07	27.2	.750	19.1	-	-
4Z-C4L	1/4" CPI™ Compression	1/4" CPI™ Compression	.187	4.7	.75	0.53	2.42	61.5	1.03	26.2	.750	19.1	.563	14.3
6A-C4L	3/8" A-LOK® Compression	3/8" A-LOK® Compression	.187	4.7	.75	0.53	2.55	64.8	1.03	26.2	.750	19.1	.688	17.5
6Z-C4L	3/8" CPI™ Compression	3/8" CPI™ Compression	.187	4.7	.75	0.53	2.55	64.8	1.03	26.2	.750	19.1	.688	17.5
M6A-C4L	6mm A-LOK® Compression	6mm A-LOK® Compression	.187	4.7	.75	0.53	2.43	61.7	1.03	26.2	.750	19.1	.551	14.0
M6Z-C4L	6mm CPI™ Compression	6mm CPI™ Compression	.187	4.7	.75	0.53	2.43	61.7	1.03	26.2	.750	19.1	.551	14.0
4M4A-C4L	1/4" Male NPT	1/4" A-LOK® Compression	.187	4.7	.75	0.53	2.29	58.2	1.02	25.9	.750	19.1	.563	14.3
4M4F-C4L	1/4" Male NPT	1/4" Female NPT	.187	4.7	.75	0.53	2.29	58.2	1.72	43.7	.750	19.1	-	-
4M4Z-C4L	1/4" Male NPT	1/4" CPI™ Compression	.187	4.7	.75	0.53	2.29	58.2	1.02	25.9	.750	19.1	.563	14.3
4M6A-C4L	1/4" Male NPT	3/8" A-LOK® Compression	.187	4.7	.75	0.53	2.35	59.7	1.02	25.9	.750	19.1	.688	17.5
4M6Z-C4L	1/4" Male NPT	3/8" CPI™ Compression	.187	4.7	.75	0.53	2.35	59.7	1.02	25.9	.750	19.1	.688	17.5
6A-C6L	3/8" A-LOK® Compression	3/8" A-LOK® Compression	.281	7.1	2.09	0.74	3.27	83.1	1.75	44.5	1.000	25.4	.688	17.5
6F-C6L	3/8" Female NPT	3/8" Female NPT	.359	9.1	2.26	0.77	3.03	77.0	-	-	1.000	25.4	-	-
6F5-C6L	3/8" Male SAE	3/8" Male SAE	.264	6.7	2.05	0.74	2.71	68.8	1.76	44.7	1.000	25.4	-	-
6G5-C6L	3/8" Female SAE	3/8" Female SAE	.264	6.7	2.05	0.74	2.96	75.2	-	-	1.000	25.4	-	-
6KF-C6L	3/8" Female BSP/ISO Tapered	3/8" Female BSP/ISO Tapered	.359	9.1	2.26	0.77	3.03	77.0	-	-	1.000	25.4	-	-
6KM-C6L	3/8" Male BSP/ISO Tapered	3/8" Male BSP/ISO Tapered	.359	9.1	2.26	0.77	2.96	75.2	1.84	46.7	1.000	25.4	-	-
6L-C6L	3/8" Seal-Lok®	3/8" Seal-Lok®	.264	6.7	2.05	0.74	2.65	67.3	1.77	45.0	1.000	25.4	-	-
6M-C6L	3/8" Male NPT	3/8" Male NPT	.359	9.1	2.26	0.77	2.96	75.2	1.82	46.2	1.000	25.4	-	-
6Q-C6L	3/8" UltraSeal	3/8" UltraSeal	.250	6.4	2.02	0.73	2.75	69.9	1.80	45.7	1.000	25.4	-	-
6TA-C6L	3/8" Tube Adapter	3/8" Tube Adapter	.281	7.1	2.09	0.74	3.24	82.3	1.80	45.7	1.000	25.4	-	-
6Z-C6L	3/8" CPI™ Compression	3/8" CPI™ Compression	.281	7.1	2.09	0.74	3.27	83.1	1.75	44.5	1.000	25.4	.688	17.5
8A-C6L	1/2" A-LOK® Compression	1/2" A-LOK® Compression	.359	9.1	2.26	0.77	3.55	90.2	1.81	46.0	1.000	25.4	.875	22.2
8Z-C6L	1/2" CPI™ Compression	1/2" CPI™ Compression	.359	9.1	2.26	0.77	3.55	90.2	1.81	46.0	1.000	25.4	.875	22.2
M8A-C6L	8mm A-LOK® Compression	8mm A-LOK® Compression	.250	6.4	2.02	0.73	3.33	84.6	1.87	47.5	1.000	25.4	.630	16.0
M8Z-C6L	8mm CPI™ Compression	8mm CPI™ Compression	.250	6.4	2.02	0.73	3.33	84.6	1.87	47.5	1.000	25.4	.630	16.0
M10A-C6L	10mm A-LOK® Compression	10mm A-LOK® Compression	.312	7.9	2.16	0.75	3.35	85.1	1.81	46.0	1.000	25.4	.748	19.0
M10Z-C6L	10mm CPI™ Compression	10mm CPI™ Compression	.312	7.9	2.16	0.75	3.35	85.1	1.81	46.0	1.000	25.4	.748	19.0
6M6A-C6L	3/8" Male NPT	3/8" A-LOK® Compression	.281	7.1	2.09	0.74	3.09	78.5	1.76	44.7	1.000	25.4	.688	17.5
6M6F-C6L	3/8" Male NPT	3/8" Female NPT	.359	9.1	2.26	0.77	2.95	74.9	2.38	60.5	1.000	25.4	-	-
6M6Z-C6L	3/8" Male NPT	3/8" CPI™ Compression	.281	7.1	2.09	0.74	3.09	78.5	1.76	44.7	1.000	25.4	.688	17.5
6M8A-C6L	3/8" Male NPT	1/2" A-LOK® Compression	.359	9.1	2.26	0.77	3.26	82.8	1.82	46.2	1.000	25.4	.875	22.2
6M8Z-C6L	3/8" Male NPT	1/2" CPI™ Compression	.359	9.1	2.26	0.77	3.26	82.8	1.82	46.2	1.000	25.4	.875	22.2

Pressure Rating and Tubing Selection: For working pressures of A-LOK® and CPI™ tube connections, please see the Instrument Tubing Selection Guide (Bulletin 4200-TS), found in the Technical Section of the Parker Instrumentation Products Master Binder, or the Parker Instrument Tube Fitting Installation Manual (Bulletin 4200-B4).

For working pressures of valves with external or internal pipe threads, please see Catalog 4260, Instrumentation Pipe Fittings.

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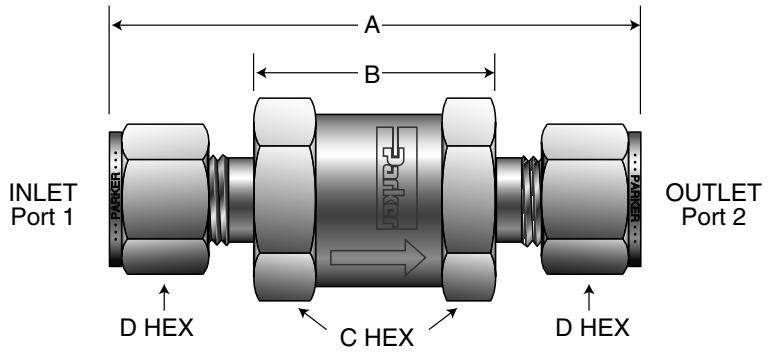

Model Shown: 4Z-C4L-1-SS

Flow Data/Dimensions (continued)

Basic Part Number	End Connections (Inlet) Port 1	End Connections (Outlet) Port 2	Flow Data Orifice inch	Flow Data Orifice mm	C_v	x_T‡	Dimensions A† inch	A† mm	B inch	B mm	C inch	C mm	D inch	D mm
8A-C8L	1/2" A-LOK® Compression	1/2" A-LOK® Compression	.423	10.7	3.30	0.77	4.08	103.6	2.34	59.4	1.250	31.8	.875	22.2
8F-C8L	1/2" Female NPT	1/2" Female NPT	.453	11.5	3.53	0.81	3.56	90.4	-	-	1.250	31.8	-	-
8F5-C8L	1/2" Male SAE	1/2" Male SAE	.378	9.6	2.96	0.71	3.45	87.6	2.34	59.4	1.250	31.8	-	-
8G5-C8L	1/2" Female SAE	1/2" Female SAE	.453	11.5	3.53	0.81	3.56	90.4	-	-	1.250	31.8	-	-
8KF-C8L	1/2" Female BSP/ISO Tapered	1/2" Female BSP/ISO Tapered	.453	11.5	3.53	0.81	3.56	90.4	-	-	1.250	31.8	-	-
8KM-C8L	1/2" Male BSP/ISO Tapered	1/2" Male BSP/ISO Tapered	.453	11.5	3.53	0.81	3.56	90.4	2.06	52.3	1.250	31.8	-	-
8L-C8L	1/2" Seal-Lok®	1/2" Seal-Lok®	.378	9.6	2.96	0.71	3.22	81.8	2.21	56.1	1.250	31.8	-	-
8M-C8L	1/2" Male NPT	1/2" Male NPT	.453	11.5	3.53	0.81	3.56	90.4	2.05	52.1	1.250	31.8	-	-
8Q-C8L	1/2" UltraSeal	1/2" UltraSeal	.375	9.5	2.93	0.71	3.28	83.3	2.33	59.2	1.250	31.8	-	-
8TA-C8L	1/2" Tube Adapter	1/2" Tube Adapter	.375	9.5	2.93	0.71	4.04	102.6	1.78	45.2	1.250	31.8	-	-
8V-C8L	1/2" VacuSeal	1/2" VacuSeal	.406	10.3	3.17	0.75	3.56	90.4	2.05	52.1	1.250	31.8	-	-
8Z-C8L	1/2" CPI™ Compression	1/2" CPI™ Compression	.423	10.7	3.30	0.77	4.08	103.6	2.34	59.4	1.250	31.8	.875	22.2
M12A-C8L	12mm A-LOK® Compression	12mm A-LOK® Compression	.375	9.5	2.93	0.71	4.06	103.1	2.34	59.4	1.250	31.8	.866	22.0
M12Z-C8L	12mm CPI™ Compression	12mm CPI™ Compression	.375	9.5	2.93	0.71	4.06	103.1	2.34	59.4	1.250	31.8	.866	22.0
8M8A-C8L	1/2" Male NPT	1/2" A-LOK® Compression	.423	10.7	3.30	0.77	3.82	97.0	2.19	55.6	1.250	31.8	.875	22.2
8M8F-C8L	1/2" Male NPT	1/2" Female NPT	.453	11.5	3.53	0.81	3.56	90.4	2.80	71.1	1.250	31.8	-	-
8M8Z-C8L	1/2" Male NPT	1/2" CPI™ Compression	.423	10.7	3.30	0.77	3.82	97.0	2.19	55.6	1.250	31.8	.875	22.2
12A-C12L	3/4" A-LOK® Compression	3/4" A-LOK® Compression	.594	15.1	6.01	0.38	4.34	110.2	2.60	66.0	1.375	34.9	1.125	28.6
12F-C12L	3/4" Female NPT	3/4" Female NPT	.594	15.1	6.01	0.38	4.09	103.9	-	-	1.375	34.9	-	-
12F5-C12L	3/4" Male SAE	3/4" Male SAE	.594	15.1	6.01	0.38	4.05	102.9	2.59	65.8	1.375	34.9	-	-
12G5-C12L	3/4" Female SAE	3/4" Female SAE	.594	15.1	6.01	0.38	4.09	103.9	-	-	1.375	34.9	-	-
12KF-C12L	3/4" Female BSP/ISO Tapered	3/4" Female BSP/ISO Tapered	.594	15.1	6.01	0.38	4.09	103.9	-	-	1.375	34.9	-	-
12KM-C12L	3/4" Male BSP/ISO Tapered	3/4" Male BSP/ISO Tapered	.594	15.1	6.01	0.38	4.09	103.9	2.59	65.8	1.375	34.9	-	-
12L-C12L	3/4" Seal-Lok®	3/4" Seal-Lok®	.594	15.1	6.01	0.38	3.78	96.0	2.44	62.0	1.375	34.9	-	-
12M-C12L	3/4" Male NPT	3/4" Male NPT	.594	15.1	6.01	0.38	4.09	103.9	2.58	65.5	1.375	34.9	-	-
12Q-C12L	3/4" UltraSeal	3/4" UltraSeal	.500	12.7	5.63	0.37	3.78	96.0	2.64	67.1	1.375	34.9	-	-
12TA-C12L	3/4" Tube Adapter	3/4" Tube Adapter	.594	15.1	6.01	0.38	4.24	107.7	2.18	55.4	1.375	34.9	-	-
12V-C12L	3/4" VacuSeal	3/4" VacuSeal	.594	15.1	6.01	0.38	4.64	117.9	2.64	67.1	1.375	34.9	-	-
12Z-C12L	3/4" CPI™ Compression	3/4" CPI™ Compression	.594	15.1	6.01	0.38	4.34	110.2	2.60	66.0	1.375	34.9	1.125	28.6
M20A-C12L	20mm A-LOK® Compression	20mm A-LOK® Compression	.594	15.1	6.01	0.38	4.32	109.7	2.56	65.0	1.375	34.9	1.260	32.0
M20Z-C12L	20mm CPI™ Compression	20mm CPI™ Compression	.594	15.1	6.01	0.38	4.32	109.7	2.56	65.0	1.375	34.9	1.260	32.0
M22A-C12L	22mm A-LOK® Compression	22mm A-LOK® Compression	.594	15.1	6.01	0.38	4.30	109.2	2.56	65.0	1.375	34.9	1.260	32.0
M22Z-C12L	22mm CPI™ Compression	22mm CPI™ Compression	.594	15.1	6.01	0.38	4.30	109.2	2.56	65.0	1.375	34.9	1.260	32.0
12M12A-C12L	3/4" Male NPT	3/4" A-LOK® Compression	.594	15.1	6.01	0.38	4.22	107.2	2.59	65.8	1.375	34.9	1.125	28.6
12M12F-C12L	3/4" Male NPT	3/4" Female NPT	.594	15.1	6.01	0.38	4.09	103.9	3.34	84.8	1.375	34.9	-	-
12M12Z-C12L	3/4" Male NPT	3/4" CPI™ Compression	.594	15.1	6.01	0.38	4.22	107.2	2.59	65.8	1.375	34.9	1.125	28.6
16A-C16L	1" A-LOK® Compression	1" A-LOK® Compression	.656	16.7	6.56	0.27	4.63	117.6	2.53	64.3	1.625	41.3	1.500	38.1
16F-C16L	1" Female NPT	1" Female NPT	.656	16.7	6.56	0.27	4.84	122.9	-	-	1.625	41.3	-	-
16F5-C16L	1" Male SAE	1" Male SAE	.656	16.7	6.56	0.27	4.10	104.1	2.64	67.1	1.625	41.3	-	-
16G5-C16L	1" Female SAE	1" Female SAE	.656	16.7	6.56	0.27	4.84	122.9	-	-	1.625	41.3	-	-
16KF-C16L	1" Female BSP/ISO Tapered	1" Female BSP/ISO Tapered	.656	16.7	6.56	0.27	4.84	122.9	-	-	1.625	41.3	-	-
16KM-C16L	1" Male BSP/ISO Tapered	1" Male BSP/ISO Tapered	.656	16.7	6.56	0.27	4.52	114.8	2.64	67.1	1.625	41.3	-	-
16M-C16L	1" Male NPT	1" Male NPT	.656	16.7	6.56	0.27	4.52	114.8	2.63	66.8	1.625	41.3	-	-
16L-C16L	1" Seal-Lok®	1" Seal-Lok®	.656	16.7	6.56	0.27	3.83	97.3	2.45	62.2	1.625	41.3	-	-
16TA-C16L	1" Tube Adapter	1" Tube Adapter	.656	16.7	6.56	0.27	5.11	129.8	2.52	64.0	1.625	41.3	-	-
16Z-C16L	1" CPI™ Compression	1" CPI™ Compression	.656	16.7	6.56	0.27	4.63	117.6	2.53	64.3	1.625	41.3	1.500	38.1
M25A-C16L	25mm A-LOK® Compression	25mm A-LOK® Compression	.656	16.7	6.56	0.27	4.74	120.4	2.64	67.1	1.625	41.3	1.496	38.0
M25Z-C16L	25mm CPI™ Compression	25mm CPI™ Compression	.656	16.7	6.56	0.27	4.74	120.4	2.64	67.1	1.625	41.3	1.496	38.0
16M16A-C16L	1" Male NPT	1" A-LOK® Compression	.656	16.7	6.56	0.27	4.58	116.3	2.59	65.8	1.625	41.3	1.500	38.1
16M16F-C16L	1" Male NPT	1" Female NPT	.656	16.7	6.56	0.27	4.68	118.9	3.73	94.7	1.625	41.3	-	-
16M16Z-C16L	1" Male NPT	1" CPI™ Compression	.656	16.7	6.56	0.27	4.58	116.3	2.59	65.8	1.625	41.3	1.500	38.1

†For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.
‡Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = x_T$.

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How to Order

The correct part number is easily derived from the following sequence. The six product characteristics required are coded as shown below.

***Note:** If the inlet and outlet ports are the same, eliminate the outlet port designator.

Inlet Port	Outlet Port	Body Size	Crack Pressure	Seal Material	Body Material
2A, 2F, 2F5, 2G5, 2KF, 2KM, 2M, 2TA, 2Z, M3A, M3Z	**2A, 2F, 2F5, 2G5, 2KF, 2KM, 2M, 2TA, 2Z, M3A, M3Z**	**C2L**	**1/3** psi **1** psi **5** psi **10** psi **25** psi **50** psi **75** psi **100** psi	**Blank** - Fluorocarbon Rubber **BN** - Nitrile **EPR** - Ethylene Propylene Rubber **NE** - Neoprene Rubber ***T** - PTFE ****KZ** - Highly Fluorinated Fluorocarbon Rubber	**B** - Brass **SS** - 316 Stainless Steel
4A, 4F, 4F5, 4G5, 4KF, 4KM, 4L, 4M, 4Q, 4TA, 4V, 4Z, M6A, M6Z	**4A, 4F, 4F5, 4G5, 4KF, 4KM, 4L, 4M, 4Q, 4TA, 4V, 4Z, M6A, M6Z**	**C4L**			
6A, 6F, 6F5, 6G5, 6KF, 6KM, 6L, 6M, 6Q, 6TA, 6Z, M8A, M8Z, M10A, M10Z	**6A, 6F, 6F5, 6G5, 6KF, 6KM, 6L, 6M, 6Q, 6TA, 6Z, M8A, M8Z, M10A, M10Z**	**C6L**			
8A, 8F, 8F5, 8G5, 8KF, 8KM, 8L, 8M, 8Q, 8TA, 8V, 8Z, M12A, M12Z	**8A, 8F, 8F5, 8G5, 8KF, 8KM, 8L, 8M, 8Q, 8TA, 8V, 8Z, M12A, M12Z**	**C8L**			
12A, 12F, 12F5, 12G5, 12KF, 12KM, 12L, 12M, 12Q, 12TA, 12V, 12Z, M20A, M20Z, M22A, M22Z	**12A, 12F, 12F5, 12G5, 12KF, 12KM, 12L, 12M, 12Q, 12TA, 12V, 12Z, M20A, M20Z, M22A, M22Z**	**C12L**			
16A, 16F, 16F5, 16G5, 16KF, 16KM, 16L, 16M, 16TA, 16Z, M25A, M25Z	**16A, 16F, 16F5, 16G5, 16KF, 16KM, 16L, 16M, 16TA, 16Z, M25A, M25Z**	**C16L**			

* Only available with stainless steel valves. ** Not available on C2 series.

Examples:

12Z – ***** – **C12L** – **5** – **BN** – **B**

Inlet Port – Outlet Port – Body Size – Crack Pressure – Seal Material – Body Material

Describes a C Series Check Valve with 3/4" CPI™ compression inlet and outlet ports, a 5 psi cracking pressure, nitrile seal and brass body construction.

16M – **16A** – **C16L** – **10** – **NE** – **SS**

Inlet Port – Outlet Port – Body Size – Crack Pressure – Seal Material – Body Material

Describes an C Series Check Valve with a 1" male NPT inlet port and a 1" A-LOK® outlet port, a 10 psi cracking pressure, neoprene seal and stainless steel body construction.

Options

Oxygen Cleaning – Add the suffix **-C3** to the end of the part number to receive filters cleaned and assembled for oxygen service in accordance with Parker specification ES8003. **Example:** 4A-C4L-1-BN-SS-**C3**

Laser Weld – Add the suffix **-LW** to the end of the part number to receive tamper-resistant stainless steel filters. **Example:** 2F-C2L-1-SS-**LW**

NGV Certification – To receive valves approved and certified by CSA America, Inc, ECE R110, and ISO 15500 for use on natural gas vehicles, please contact the Instrumentatation Products Division or your local authorized Parker distributor.

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Available End Connections

A -Two ferrule A-LOK® compression port

M -ANSI/ASME B1.20.1 External pipe threads

TA -Tube adapter connection

L -SAE J1453, Fitting – O-ring face seal – External thread with O-ring groove designed to seal with an elastomer against a sleeve

Z -Single ferrule CPI™ compression port

Q -UltraSeal face seal port

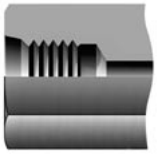
F5 -SAE J1926/2, Part 2: Heavy-duty (S Series) stud ends

KF -British Standard BS 21 (ISO 7-1), Internal pipe threads

F -ANSI/ASME B1.20.1 Internal pipe threads

V -VacuSeal face seal port

G5 -SAE J1926/1, Part 1: Threaded port with O-ring seal in truncated housing



KM -British Standard BS 21 (ISO 7-1), External pipe threads

Kit Information

To order repair kits for the C Series Check Valves simply fill in the designators from the chart below.

Size	Crack Pressure	Seat Material
C2 C4 C6 C8 C12 C16	1/3 1 5 10 25 50 75 100	V - Fluorocarbon Rubber BN - Nitrile EPR - Ethylene Propylene Rubber NE - Neoprene Rubber T - PTFE KZ - Highly Fluorinated Fluorocarbon

Examples: **KIT-C8-10-V**
KIT-C16-100-BN

Check Valve Kits Contain:
Seat
Spring
Instructions

⚠ WARNING

FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

Offer of Sale

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the "Offer of Sale" located in Catalog 4110-U Needle Valves (U Series).

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Catalog 4130-C, 20M, 08/05

Parker
Instrumentation

Check Valves (CO Series)

Catalog 4130-CO
Revised, June 2001

CO Series Check Valves

Introduction

Parker CO Series Check Valves are designed for uni-directional flow control of fluids and gases in industries such as chemical processing, oil and gas production and transmission, pharmaceutical, pulp and paper, power and utilities. The CO Series Check Valve is particularly suitable for applications requiring high integrity leak rates and re-sealing capabilities.

Features

- Seal integrity across the seat and to atmosphere is tested to 4 x 10^{-9} std atm-cc/sec (4 x 10^{-10} kPa – L/sec) for the CO4L with fluorocarbon rubber seals. All other sizes and seal materials are tested to 1 x 10^{-5} std atm-cc/sec (1 x 10^{-6} kPa – L/sec).
- Special seat seal design provides a repeatable high integrity seal and accurate cracking pressures
- 100% factory tested. Cracking pressures include: 1/3, 1, 5, 10, 25, 50, 75, and 100 psi.
- Valves are available with Male and Female NPT, CPI™, A-LOK®, UltraSeal, Male and Female VacuSeal, and Tube Adapter
- Heat code traceability
- Color coded identification labels indicate seal material

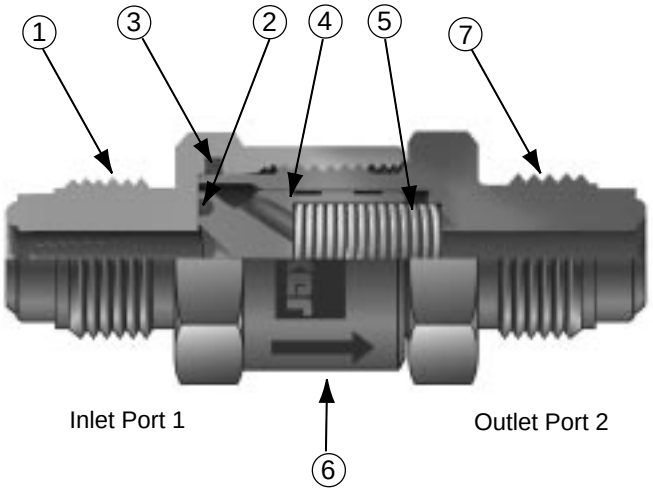
Specifications

- Pressure Rating:
  6000 psig (414 bar) CWP
- Temperature Rating:
  Fluorocarbon Rubber
  -15 °F to 400 °F (-26 °C to 204 °C)
  Buna-N Rubber
  -30 °F to 250 °F (-34 °C to 121 °C)
  Ethylene Propylene Rubber
  -70 °F to 275 °F (-57 °C to 135 °C)
  Highly Fluorinated Fluorocarbon Rubber
  -15 °F to 200 °F (-26 °C to 93 °C)
- Orifice: .156" to .406" (4.0mm to 10.3mm)
- C_v: .43 to 2.65

Materials of Construction

Item#	Part Description	Material
1	Cap[1]	ASTM A 276, TYPE 316
2	Seat Seal	Fluorocarbon Rubber[2]
3	Body Seal	Fluorocarbon Rubber[2]
4	Poppet	ASTM A 479, TYPE 316
5	Spring	316 Stainless Steel
6	Label	Aluminum
7	Body[1]	ASTM A 276, TYPE 316

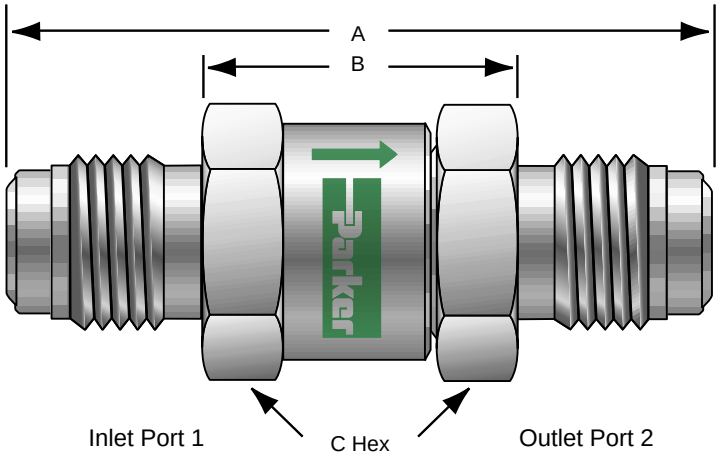
[1]For Female VacuSeal ports, body and cap are manufactured from ASTM A479, TYPE 316L.
[2]Optional seal materials are available. See How to Order section.
Lubrication: Perfluorinated Polyether



Model Shown: 4V-CO4L-5-V-SS

Flow Calculations with 1000 psig (69 bar) Inlet Pressure

Valve Series	Maximum C_v	Pressure Drop ΔP		Water @60 °F (16 °C)		Air @60 °F (16 °C)	
		psig	bar	gpm	m³/hr	scfm	m³/hr
CO4	0.62	10 50 100	0.7 3.4 6.9	2.0 4.4 6.2	0.4 1.0 1.4	61.8 135.7 187.5	104.5 227.7 316.7
CO6	1.85	10 50 100	0.7 3.4 6.9	5.9 13.1 18.5	1.3 3.0 4.2	184.4 404.4 557.9	311.6 678.5 942.3
CO8	2.65	10 50 100	0.7 3.4 6.9	8.4 18.7 26.5	1.9 4.2 6.0	264.2 580.3 802.3	446.5 973.8 1355.3



D = Hex of nuts where applicable
Model Shown: 4V-CO4L-5-KZ-SS

Label Color Cross Reference

Label Color	Seal Material
Brown	Fluorocarbon Rubber
Black	Buna-N Rubber
Purple	Ethylene Propylene Rubber
Green	All others

Testing: All valves are 100% tested for crack, re-seal, and helium leakage.

Flow Data / Dimensions

Basic Part Number	End Connections (Inlet) Port 1	End Connections (Outlet) Port 2	Flow Data Orifice inch	Orifice mm	C_v	x_T‡	Dimensions A† inch	A† mm	B inch	B mm	C inch	C mm	D inch	D mm
4A-CO4L-*-**-SS	1/4" A-LOK® Compression	1/4" A-LOK® Compression	.187	4.7	.62	.73	2.39	60.7	1.00	25.4	.750	19.1	.563	14.3
4F-CO4L-*-**-SS	1/4" Female NPT	1/4" Female NPT	.187	4.7	.62	.73	2.38	60.5	-	-	.750	19.1	-	-
4M-CO4L-*-**-SS	1/4" Male NPT	1/4" Male NPT	.187	4.7	.62	.73	2.09	53.1	.95	24.1	.750	19.1	-	-
4Q-CO4L-*-**-SS	1/4" UltraSeal	1/4" UltraSeal	.180	4.6	.58	.72	1.91	48.5	.98	24.9	.750	19.1	-	-
4TA-CO4L-*-**-SS	1/4" Tube Adapter	1/4" Tube Adapter	.156	4.0	.43	.62	2.35	59.7	1.07	27.2	.750	19.1	-	-
4V-CO4L-*-**-SS	1/4" VacuSeal	1/4" VacuSeal	.187	4.7	.62	.73	2.22	56.4	.98	24.9	.750	19.1	-	-
4V1-CO4L-*-**-SS	1/4" Female VacuSeal	1/4" Female VacuSeal	.182	4.6	.59	.75	2.67	67.8	.98	24.9	.750	19.1	.750	19.1
4Z-CO4L-*-**-SS	1/4" CPI™ Compression	1/4" CPI™ Compression	.187	4.7	.62	.73	2.39	60.7	1.00	25.4	.750	19.1	.563	14.3
M6A-CO4L-*-**-SS	6mm A-LOK® Compression	6mm A-LOK® Compression	.187	4.7	.62	.73	2.41	61.2	1.01	25.7	.750	19.1	.551	14.0
M6Z-CO4L-*-**-SS	6mm CPI™ Compression	6mm CPI™ Compression	.187	4.7	.62	.73	2.41	61.2	1.01	25.7	.750	19.1	.551	14.0
4M4A-CO4L-*-**-SS	1/4" Male NPT	1/4" A-LOK® Compression	.187	4.7	.62	.73	2.25	57.2	.98	24.9	.750	19.1	.563	14.3
4M4F-CO4L-*-**-SS	1/4" Male NPT	1/4" Female NPT	.187	4.7	.62	.73	2.26	57.4	1.69	42.9	.750	19.1	-	-
4M4Z-CO4L-*-**-SS	1/4" Male NPT	1/4" CPI™ Compression	.187	4.7	.62	.73	2.25	57.2	.98	24.9	.750	19.1	.563	14.3
6A-CO6L-*-**-SS	3/8" A-LOK® Compression	3/8" A-LOK® Compression	.281	7.1	1.70	.73	3.17	80.5	1.65	41.9	1.00	25.4	.688	17.5
6F-CO6L-*-**-SS	3/8" Female NPT	3/8" Female NPT	.328	8.3	1.85	.69	3.03	77.0	-	-	1.00	25.4	-	-
6M-CO6L-*-**-SS	3/8" Male NPT	3/8" Male NPT	.328	8.3	1.85	.69	2.78	70.6	1.64	41.7	1.00	25.4	-	-
6TA-CO6L-*-**-SS	3/8" Tube Adapter	3/8" Tube Adapter	.281	7.1	1.70	.73	3.09	78.5	1.65	41.9	1.00	25.4	-	-
6Z-CO6L-*-**-SS	3/8" CPI™ Compression	3/8" CPI™ Compression	.281	7.1	1.70	.73	3.17	80.5	1.65	41.9	1.00	25.4	.688	17.5
8V-CO6L-*-**-SS	1/2" VacuSeal	1/2" VacuSeal	.328	8.3	1.85	.69	3.57	90.7	2.06	52.3	1.00	25.4	-	-
8V1-CO6L-*-**-SS	1/2" Female VacuSeal	1/2" Female VacuSeal	.328	8.3	1.85	.69	3.57	90.7	1.65	41.9	1.00	25.4	1.062	27.0
M8A-CO6L-*-**-SS	8mm A-LOK® Compression	8mm A-LOK® Compression	.250	6.4	1.60	.68	3.15	80.0	1.69	42.9	1.00	25.4	.630	16.0
M8Z-CO6L-*-**-SS	8mm CPI™ Compression	8mm CPI™ Compression	.250	6.4	1.60	.68	3.15	80.0	1.69	42.9	1.00	25.4	.630	16.0
8A-CO8L-*-**-SS	1/2" A-LOK® Compression	1/2" A-LOK® Compression	.406	10.3	2.65	.75	3.37	85.6	1.63	41.4	1.25	31.8	.875	22.2
8F-CO8L-*-**-SS	1/2" Female NPT	1/2" Female NPT	.406	10.3	2.65	.75	3.60	91.4	-	-	1.25	31.8	-	-
8M-CO8L-*-**-SS	1/2" Male NPT	1/2" Male NPT	.406	10.3	2.65	.75	3.16	80.3	1.65	41.9	1.25	31.8	-	-
8Q-CO8L-*-**-SS	1/2" UltraSeal	1/2" UltraSeal	.375	9.5	2.55	.78	3.01	76.5	2.05	52.1	1.25	31.8	-	-
8TA-CO8L-*-**-SS	1/2" Tube Adapter	1/2" Tube Adapter	.375	9.5	2.55	.78	3.64	92.5	1.68	42.7	1.25	31.8	-	-
8V-CO8L-*-**-SS	1/2" VacuSeal	1/2" VacuSeal	.406	10.3	2.65	.75	3.56	90.4	2.05	52.1	1.25	31.8	-	-
8V1-CO8L-*-**-SS	1/2" Female VacuSeal	1/2" Female VacuSeal	.375	9.5	2.55	.78	3.65	92.7	1.73	43.9	1.25	31.8	1.062	27.0
8Z-CO8L-*-**-SS	1/2" CPI™ Compression	1/2" CPI™ Compression	.406	10.3	2.65	.75	3.37	85.6	1.63	41.4	1.25	31.8	.875	22.2
M12A-CO8L-*-**-SS	12mm A-LOK® Compression	12mm A-LOK® Compression	.375	9.5	2.55	.78	3.44	87.4	1.72	43.7	1.25	31.8	.866	22.0
M12Z-CO8L-*-**-SS	12mm CPI™ Compression	12mm CPI™ Compression	.375	9.5	2.55	.78	3.44	87.4	1.72	43.7	1.25	31.8	.866	22.0

*Cracking Pressure **Seal Designator
†For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.
‡Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = x_T$

How to Order

The correct part number is easily derived by following the circled number sequence.The six product characteristics required are coded as shown below. *Note: If both the inlet and outlet ports are the same, eliminate the outlet port designator.

Example: 4M ① Inlet Port - 4F ② Outlet Port - CO4L ③ Body Size - 1 ④ Crack Pressure - V ⑤ Seal Material - SS ⑥ Body Material

Describes a CO Series Check Valve with 1/4" male NPT inlet and a 1/4" female NPT outlet, 1 psig cracking pressure, fluorocarbon rubber seals, and stainless steel body construction.

① Inlet Port	② Outlet Port	③ Body Size	④ Crack Pressure	⑤ Seat & Seal Material	⑥ Body Material
4A, 4F, 4M, 4Q, 4TA 4V, 4V1, 4Z, M6A, M6Z	**4A, 4F, 4M, 4Q, 4TA 4V, 4V1, 4Z, M6A, M6Z**	**CO4L**	**1/3 psi 1 psi 5 psi**	**V** - Fluorocarbon Rubber **BN** - Buna-N Rubber **EPR** - Ethylene Propylene Rubber **KZ** - Highly Fluorinated Fluorocarbon Rubber	**SS** - 316 Stainless Steel
6A, 6F, 6M, 6TA, 6Z, 8V, 8V1, M8A, M8Z	**6A, 6F, 6M, 6TA, 6Z, 8V 8V1, M8A, M8Z**	**CO6L**	**10 psi 25 psi 50 psi**		
8A, 8F, 8M, 8Q, 8TA, 8V1, 8Z, M12A, M12Z	**8V, 8A, 8F, 8M, 8Q, 8TA, 8V, 8V1, 8Z, M12A, M12Z**	**CO8L**	**75 psi 100 psi**		

Options

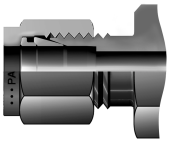
Oxygen Cleaning - Add the suffix **-C3** to the end of the part number to receive valves cleaned and assembled for oxygen service in accordance with Parker specification ES8003. **Example:** 4A-CO4L-1-BN-SS-**C3**

Special Cleaning - All face seal ended valves are cleaned in accordance with Parker Specification ES8001. This is an option for all valves by adding the suffix **-C1** to the end of the part number. **Example:** M6A-CO4L-10-SS-**C1**

Material - Contact the factory for availability of AOD/VAR stainless steel and ID Electropolish.

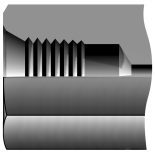
Available End Connections

A-Two ferrule A-LOK® compression port



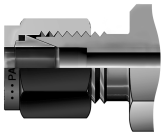
M-ANSI/ASME B1.20.1 External pipe threads

F-ANSI/ASME B1.20.1 Internal pipe threads



Q-UltraSeal face seal port

Z-Single ferrule CPI™ compression port



V1-Internal VacuSeal face seal port

V-VacuSeal face seal port

TA-Tube adapter connection

Crack and Re-seal Performance

Check Valve Rated Crack Pressure		Minimum Acceptable Crack Pressure		Maximum Acceptable Crack Pressure		Maximum Re-seal Back Pressure	
psig	bar	psig	bar	psig	bar	psig	bar
1/3	0.02	0	0.00	1	0.07	4	0.28
1	0.07	0	0.00	3	0.21	4	0.28
5	0.34	3	0.21	8	0.55	3 BCP	0.21 BCP
10	0.69	7	0.48	13	0.90	3 BCP	0.21 BCP
25	1.72	20	1.38	30	2.07	4 BCP	0.28 BCP
50	3.45	40	2.76	60	4.14	5 BCP	0.34 BCP
75	5.17	60	4.14	90	6.21	7 BCP	0.48 BCP
100	6.89	80	5.52	120	8.27	10 BCP	0.69 BCP

BCP means “Below Cracking Pressure”

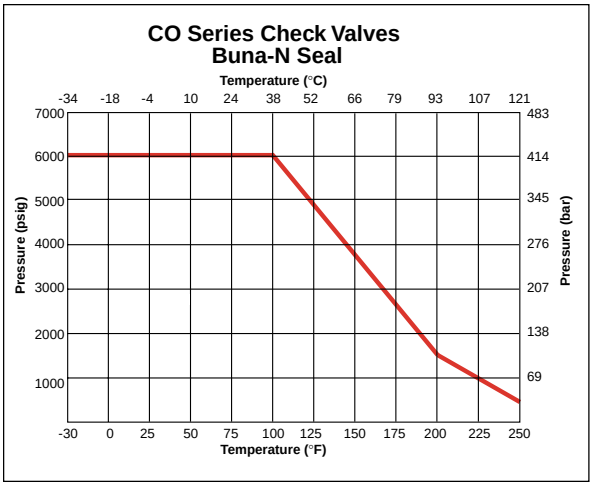
Cracking pressure is defined as the upstream pressure at which a detectable flow is measured.

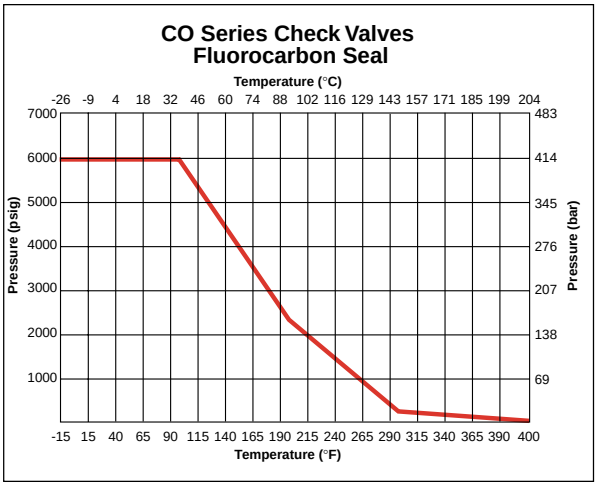
Re-seal pressure is defined as the upstream pressure at which the check valve closes bubble-tight.

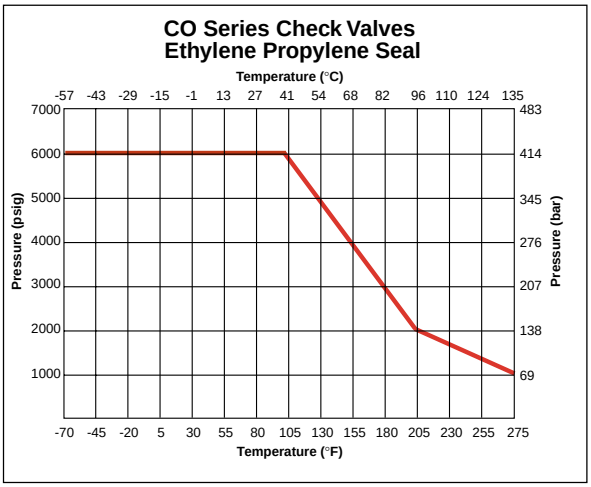
Example: For a valve with a spring having a rated cracking pressure of 25 psig, (1.72 bar) the actual cracking pressure ranges between 20 and 30 psig (1.38 and 2.07 bar). The re-seal pressure range would be 16 to 20 psig (1.10 to 1.38 bar). Check valves having springs with rated crack pressures of 3 psig (0.21 bar) or less may require up to 4 psig (0.28 bar) back pressure to re-seal bubble-tight.

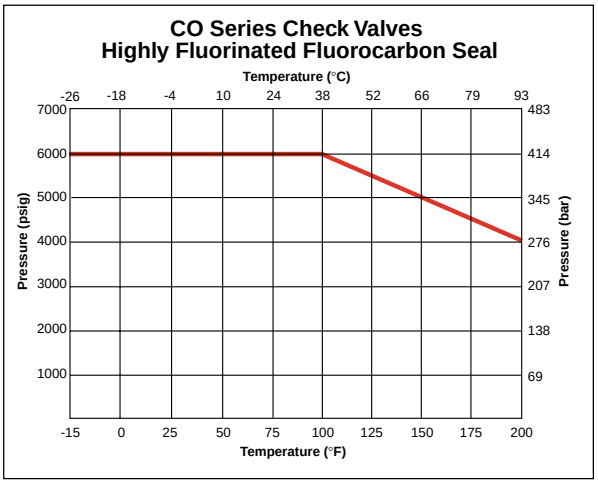
Note: Check valves which are not actuated for a period of time may initially crack at higher than the above crack pressure ranges.

Pressure vs. Temperature









Note: To determine MPa, multiply bar by 0.1

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Instrumentation

Catalog 4130-CO, 30M, 06/01

Hi-Check Non-Return Valve

(316 Stainless steel, Duplex and Monel) 6,000 psi/414 bar 10,000 psi/689 bar (Option)

Product Description

These high performance check valves offer the user two options for cold working pressure ratings of Class 2500 and Class 4500, with an opening pressure of 10 psi max.

By offering a true two piece design, body leakage paths are kept to a minimum.

With the added opportunity to select integral compression ends the user can eliminate the use of taper threads and thread sealant. This avoids system contamination, reduces potential leakage paths, weight, space and, therefore, installation costs.

Features

- Two-piece metal seated body design - minimal leakage paths.
- 4:1 Pressure boundary designed safety factor.
- Designed to meet pressure and temperature requirements of ANSI/ASME B.16.34, as limited by the seat materials.
- Nitrile, Fluorocarbon, EPR and Highly Fluorinated Fluorocarbon Rubber seat materials available.
- Integral compression ends available.
- Factory tested - all units fully hydrostatically tested to 1.5 x max. W.P.
- Connector thread environmentally sealed.
- NACE MR 01 75/ISO 15156 compliant materials available.

Benefits

- Self-centering Seal.
- Low noise.
- Rugged Design - Threads not in contact with media.
- Zero coil bounding check spring.
- Explosive decompression/Extrusion resistance o-rings for High Pressure Applications.
- Optional secured Locking Connector.

Specifications:

Cold Working Pressure Ratings

- 6000 psig (414 barg) & 10,000 psig (689 barg)

Temperature Rating:

Material Temperatures limited to working temperatures of seals below:

6000 psig (414 barg)

- Fluorocarbon -15°F to 400°F (-26°C to 204°C).
- Nitrile -30°F to 275°F (-34°C to 135°C).
- Ethylene Propylene Rubber -70°F to 275°F (-57°C to 135°C).
- Highly Fluorinated Fluorocarbon Rubber -15°F to 200°F (-26°C to 93°C).

10,000 psig (689 barg) Option

- Fluorocarbon V1238-95 -15°F to 400°F (-26°C to 204°C).
- Highly Fluorinated Fluorocarbon Rubber -15°F to 200°F (-26°C to 93°C).

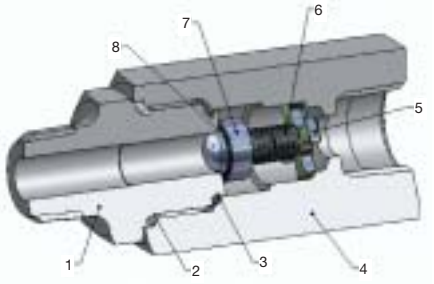
Crack and Re-seal

- Cracking Pressure: <10 psi (0.69 barg).
- Re-seal Pressure: <50 psi (3.45 barg).

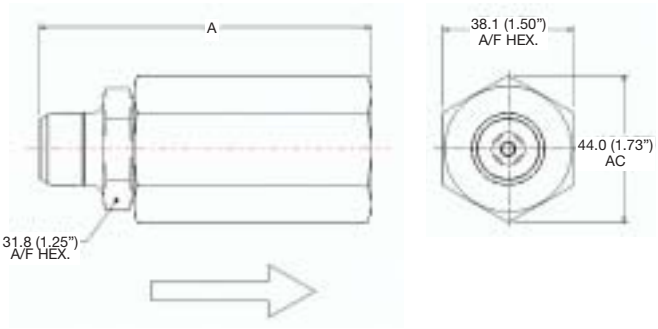
Re-seal pressure is defined as the upstream pressure at which the non-return valve closes bubble-tight.

Note: Hi-check non-return valves which are not actuated for a period of time, may initially crack at a higher pressure than the above cracking pressure listed.

Cv: **1.54**



Item	Description
1	Adaptor
2	E-seal™
3	Joint Seal
4	Body
5	Spring Support
6	Spring
7	Poppet
8	O-ring



Part number 6000 psig (414 barg)	Part number 10,000 psig (689 barg)	Inlet Female	Outlet Female	Dimensions A mm (inch)
HCY*4FF-#	HCY*4FFHP-#	1/4" Female	1/4" Female	74.7 (2.04)
HCY*6FF-#	HCY*6FFHP-#	3/8" Female	3/8" Female	79.7 (3.14)
HCY*8FF-#	HCY*8FFHP-#	1/2" Female	1/2" Female	87.9 (3.46)
6000 psig (414 barg)	10,000 psig (689 barg)	Female	Female	A mm (inch)
HCY*4M4F-#	HCY*4M4FHP-#	1/4" Male	1/4" Female	74.7 (2.94)
HCY*8M8F-#	HCY*8M8FHP-#	1/2" Male	1/2" Female	87.9 (3.46)
6000 psig (414 barg)	10,000 psig (689 barg)	A-LOK®	A-LOK®	A mm (inch)
HCY*4A-#	HCY*4AHP-#	1/4" OD A-LOK	1/4" OD A-LOK	106.8 (4.20)
HCY*6A-#	HCY*6AHP-#	3/8" OD A-LOK	3/8" OD A-LOK	107.3 (4.23)
HCY*8A-#	HCY*8AHP-#	1/2" OD A-LOK	1/2" OD A-LOK	113.7 (4.48)
HCY*M6A-#	HCY*M6AHP-#	6mm OD A-LOK	6mm OD A-LOK	106.8 (4.20)
HCY*M10A-#	HCY*M10AHP-#	10mm OD A-LOK	10mm OD A-LOK	107.8 (4.25)
HCY*M12A-#	HCY*M12AHP-#	12mm OD A-LOK	12mm OD A-LOK	113.7 (4.48)

*Insert material code - select from material matrix (B = Standard 316 Stainless Steel)
O-ring code - select from O-ring compound matrix
For CPI™ change A to Z. "A" Dimensions given for A-LOK® are finger tight.
NACE only available on Pipe Thread Connections.
For Compression ended valve pressures consult tube rating table.

Material	*Insert
316 Stainless Steel	B
Duplex	E
Monel	D

O-Ring Suffix # 6000 psig (414 barg)	Compound Options
FC	Fluorocarbon Rubber FPM 75
BN	Buna-N
EP	Ethylene Propylene Rubber
ED	Fluorocarbon Rubber V1238-95
KZ	Highly Fluorinated Fluorocarbon Seal
O-Ring # Suffix # 10,000 psig (689 barg)	Compound Options
ED	Fluorocarbon Rubber V1238-95
KZ	Highly Fluorinated Fluorocarbon Seal

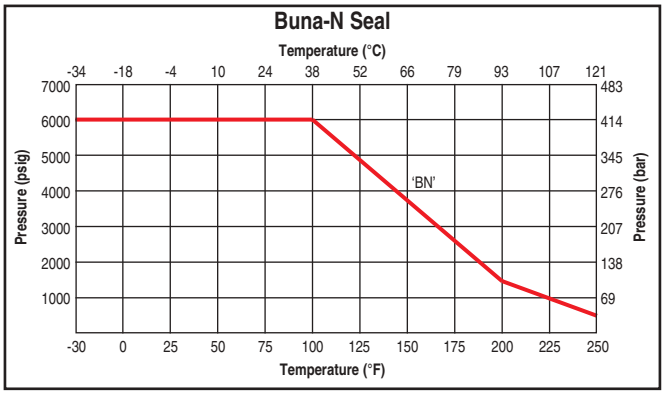
Available Options	Part number suffix
NACE	NC
Secured end connector	LC

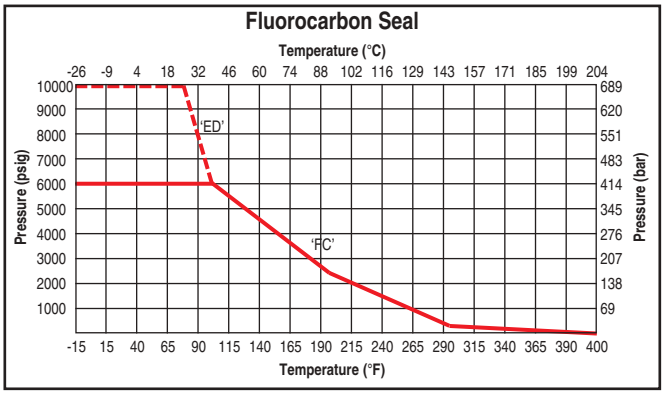
Above options to be inserted prior to O-ring suffix

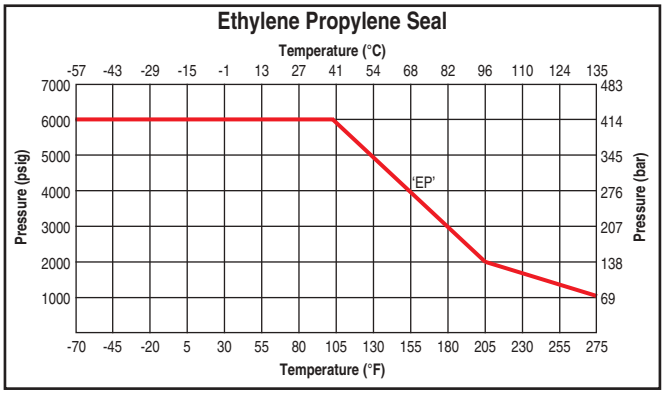
Example 'HCYB8FFHPNC-ED'

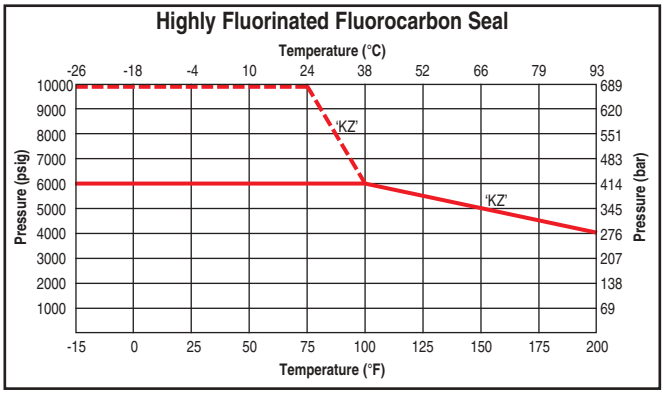
Hi-Check 10mm 316 St.Stl 1/2" NPT (FEM) 10,000 psi NACE with Fluorocarbon V1238-95 rubber

Pressure vs. Temperature









Note: To determine MPa, multiply bar by 0.1 **Key:** —— 6,000 psi - - - - 10,000 psi

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F9 Series

All Welded Check Valve

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Performance and Cost Savings:

Veriflo Division presents the F9 Series Check Valve, a high purity, all welded check valve, featuring a patented asymmetric spring design for a consistently quiet operation.

The F9 Series Check Valve offers high C_v (up to C_v = 0.90) in a small footprint to conserve much needed panel space.

Its two seal materials achieve compatibility with all semiconductor gases, reducing inventory requirements.

Contact Information:

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Veriflo Division
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Richmond, California 94804

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fax 510 232 7396
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Product Features:

- Noise free operation with the patented asymmetric spring design.
- Reduced footprint with welded design.
- Two seal offering to meet all semi gas compatibility requirements.
- Class 100 clean room assembled and packaged.
- Electro polish (EP) version for Ultra High Purity applications available.
- VeriClean™ 316L Stainless Steel enhances electropolishing and corrosion resistance.

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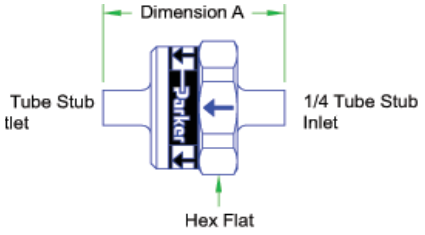
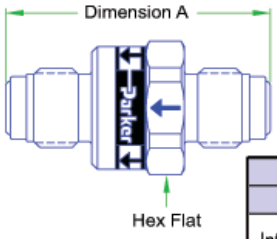
F9 Check Valve Specifications

Materials of Construction		**Functional Performance**	
Body	VeriClean™ 316L Stainless Steel,	***Flow Capacity****	
Spring	Elgiloy® or equivalent	1/4" Tube Stub	C_V = .45 (X_T 0.89)
Seal	Fluorocarbon (FKM),	1/4" & 1/2" Face Seal	C_V = .90 (X_T 0.78)
	Perfluoroelastomer (FFKM)*	3/8" & 1/2" Tube Stub	C_V = .90 (X_T 0.78)
Poppet	316L Stainless Steel	** Flow curves available. Please contact factory.*	
Stop	316L Stainless Steel	***Maximum Leakage:***	
** Contact factory for seat material and bonding agent MSDS[1]*		External	1 x 10^{-9} scc/sec He
Operating Conditions		Across the seat	Bubble Tight
Fluorocarbon Elastomer (FKM) Pressure:		***Standard Connections***	
Maximum Operating	3000 psig (206 barg),		Tube Stub or Face Seal Male
Maximum Back	3000 psig (206 barg)	***Internal Volume***	
Cracking	≤2 psig (0.13 barg)	1/4" Face Seal Male	0.14 cubic inch (2.29 cc)
Reset	≤2 psig (0.13 barg)	***Surface Finish***	
Perfluoroelastomer (FFKM) Pressure:		EP	7 Ra Electropolished (blue label)
Maximum Operating	1000 psig (68 barg),	Omit	10 Ra (gold label)
Maximum Back	1000 psig (68 barg)		
Cracking	≤2 psig (0.13 barg)	***Approx. Weight***	0.07 lbs. (1.2 oz.) - 1/4" Tube Stub
Reset	≤2 psig (0.13 barg)		0.15 lbs. (2.4 oz.) - 1/4" Face Seal
Temperature:	-10°F to 150°F (-23°C to 66°C)		

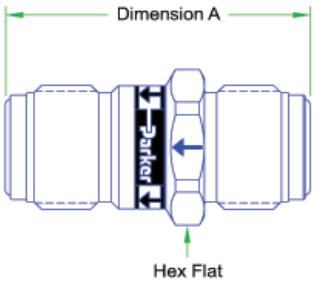
[1]The user is solely responsible for selecting and assuming that the product and materials of constructions are compatible with the process fluid.

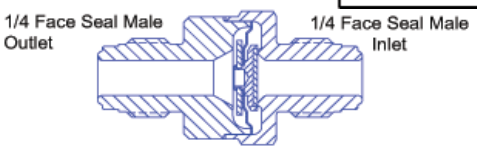
DIMENSIONAL DRAWING





End Conections		Dimensions, in. (mm)	
Type	**Size**	**A**	**Hex**
Integral Face Seal Male Fitting	1/4"	1.80 (45.7)	7/8
	1/2"	2.06 (52.3)	1.0
Tube Stub	1/4"	1.24 (31.5)	7/8
	3/8"	1.24 (31.5)	7/8
	1/2"	1.24 (31.5)	7/8





Safety Guide and Installation and Operating instructions available at
www.parker.com/veriflo

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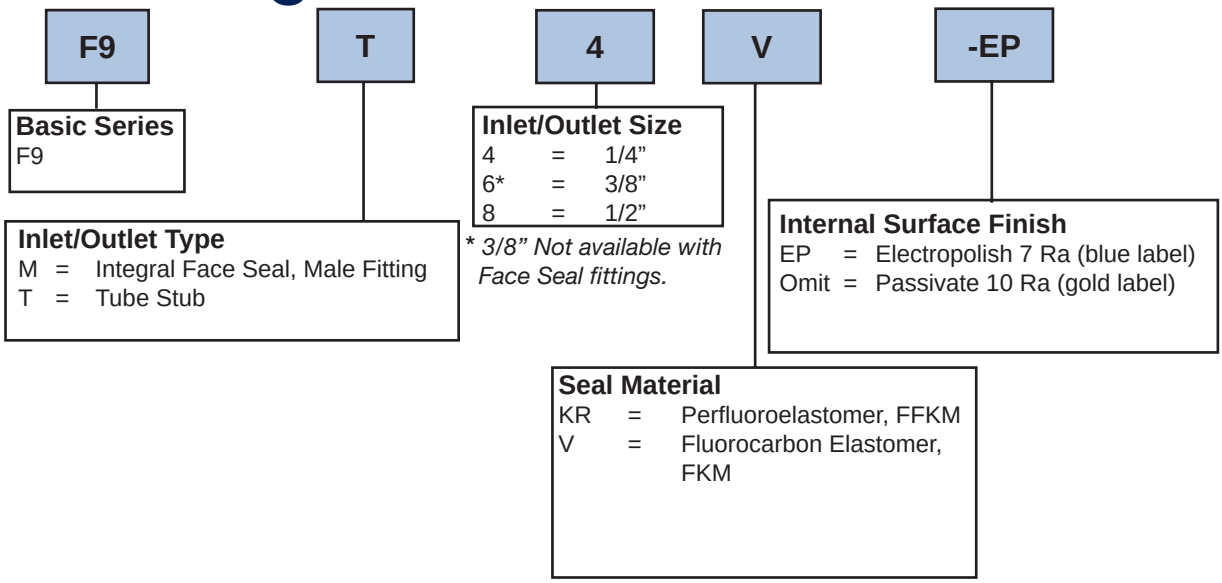
Elgiloy® is a registered trademark of Elgiloy Company

Ordering Information



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