



## Check Valves, Filters and Relief Valves

Catalog 4135-CV

December 2010

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



ENGINEERING YOUR SUCCESS.

## 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 reseal
- ▶ 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

## Specifications

### Pressure Rating:\*\*

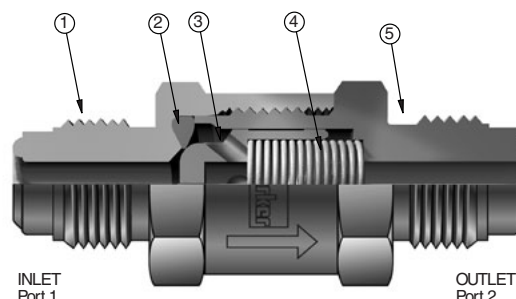
316 SS – 1/8" to 3/4": .....6000 psig (414 bar) CWP  
 1": .....5000 psig (345 bar) CWP  
 PTFE Seats, all sizes: .....4000 psig (276 bar) CWP  
 Brass – 1/8" to 1": .....3000 psig (207 bar) CWP

### 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: .....0.78" to .656" (2.0 mm to 16.7 mm)

C<sub>v</sub>: ..... .18 to 6.56



Model Shown: 4V-C4L-5-SS

## Materials of Construction

| Item # | Part Description | Stainless Steel      | Brass                   |
|--------|------------------|----------------------|-------------------------|
| 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: Perfluorinated Polyether.

**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.

## Flow Calculations with 1000 psig (69 bar) Inlet Pressure

| Valve Series | Maximum C <sub>v</sub> | Pressure Drop ΔP |     | Water @ 60°F (16°C) |                    | Air @ 60°F (16°C) |                    |
|--------------|------------------------|------------------|-----|---------------------|--------------------|-------------------|--------------------|
|              |                        | psig             | bar | gpm                 | m <sup>3</sup> /hr | SCFM              | m <sup>3</sup> /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             |

## Crack and Re-Seal Performance

| Check Valve<br>Rated Crack Pressure |      | Minimum Acceptable<br>Crack Pressure |      | Maximum Acceptable<br>Crack Pressure |      | Maximum Re-seal<br>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.

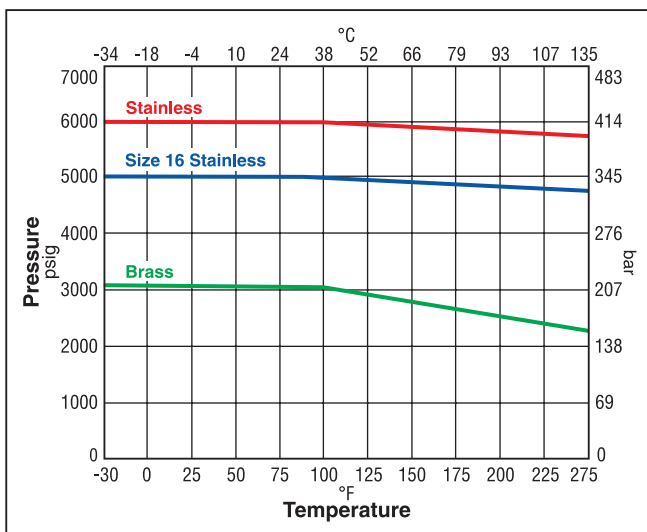
**Example:** For a valve with a spring having a rated cracking pressure of 25 psig (1.72 bar), the actual cracking pressure ranges between 20 and 30 psig (1.38 and 2.07 bar). The re-seal pressure range would be 16 to 20 psig (1.10 to 1.38 bar). Check valves having springs with rated crack pressures of 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.

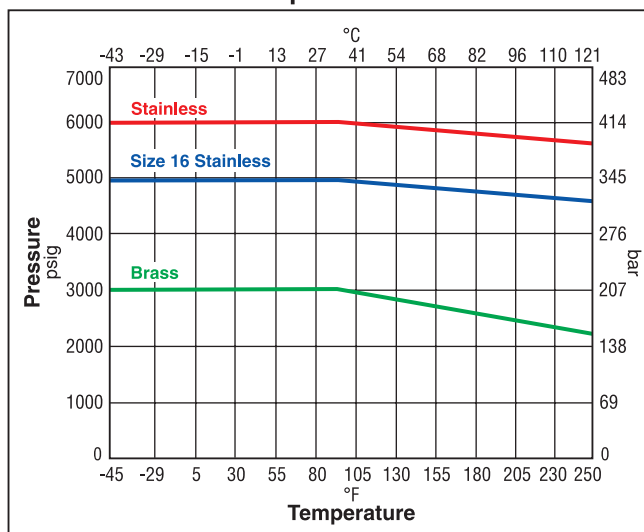
PTFE seated valves require a minimum back pressure of 100 psig (6.9 bar) to insure a leak-tight re-seal.

## Pressure vs. Temperature

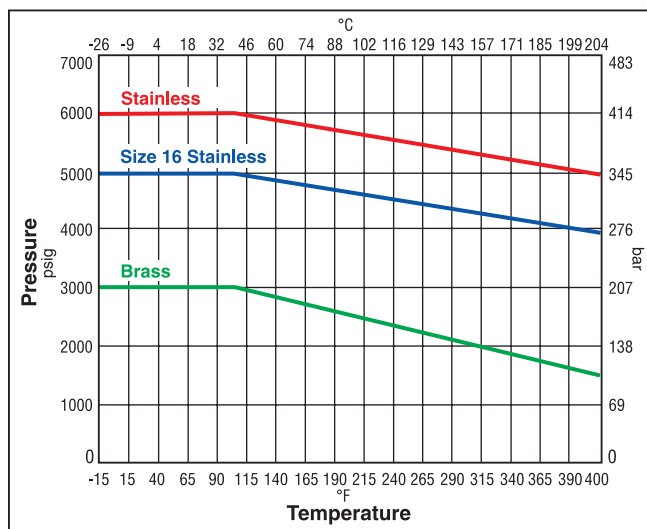
### Nitrile Seat



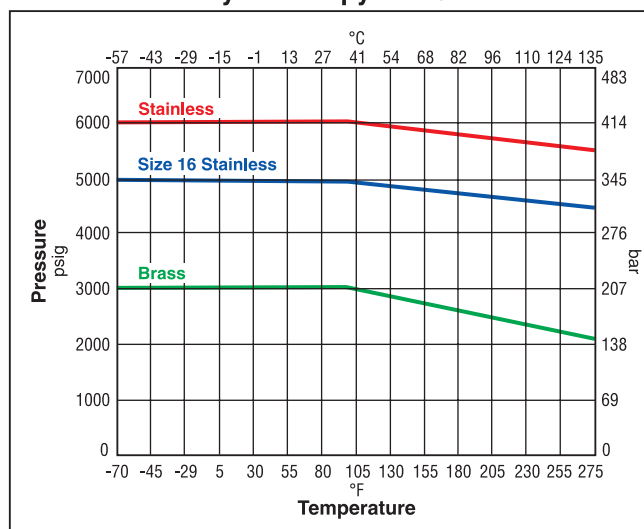
### Neoprene Seat



### Fluorocarbon Seat



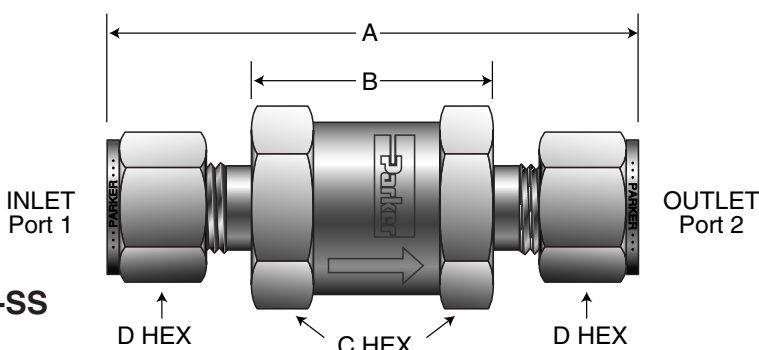
### Ethylene Propylene Seat



**Note:** To determine MPa, multiply bar by 0.1

## Flow Data/Dimensions

C



Model Shown: 4Z-C4L-1-SS

Dimensions in inches (millimeters) are for reference only, subject to change.

| Basic Part Number | End Connections             |                             | Flow Data |     |       |         | Dimensions |      |      |      |       |      |      |      |
|-------------------|-----------------------------|-----------------------------|-----------|-----|-------|---------|------------|------|------|------|-------|------|------|------|
|                   | Inlet Port 1                | Outlet Port 2               | Orifice   |     | $C_v$ | $X_T^*$ | A†         |      | B    |      | C     |      | D    |      |
|                   |                             |                             | Inch      | mm  |       |         | Inch       | mm   | Inch | mm   | Inch  | mm   | Inch | 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    | 1.83       | 46.5 | 1.08 | 27.4 | .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 |

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 Process Control 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.

\* Tested in accordance with ISA S75.02. Gas flow will be choked when  $P_1 - P_2 / P_1 = x_T$ .

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

## Flow Data/Dimensions (Continued)

Dimensions in inches (millimeters) are for reference only, subject to change.

| Basic Part Number | End Connections             |                             | Flow Data |      |       |         | Dimensions |       |      |      |       |      |       |      |
|-------------------|-----------------------------|-----------------------------|-----------|------|-------|---------|------------|-------|------|------|-------|------|-------|------|
|                   | Inlet Port 1                | Outlet Port 2               | Orifice   |      | $C_v$ | $X_T^*$ | A†         |       | B    |      | C     |      | D     |      |
|                   |                             |                             | Inch      | mm   |       |         | Inch       | mm    | Inch | mm   | Inch  | mm   | Inch  | mm   |
| 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 |
| 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 |

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 Process Control 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.

\* Tested in accordance with ISA S75.02. Gas flow will be choked when  $P_1 - P_2 / P_1 = x_T$ .

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.



## How to Order

Dimensions in inches (millimeters) are for reference only, subject to change.

The correct part number is easily derived from the following example and ordering chart. The six product characteristics required are coded as shown in the chart.

**Example 1** below 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.

**Example 2** below describes a 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.

**Example 1:** 12Z-C12L-5-BN-B (shown in the part number blocks below)

**Example 2:** 16M16A-C16L-10-NE-SS

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

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

## 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 Instrumentation Products Division or your local authorized Parker distributor.

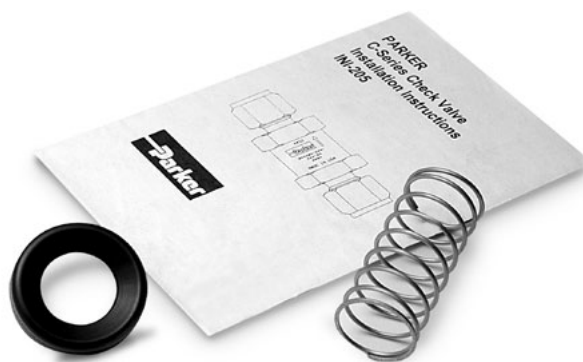
## Kit Information

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

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

\*PTFE kits can only be used to replace factory installed PTFE seats. It cannot be interchanged with seats of any other material.

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



### Check Valve Kits Contain:

Seat  
Spring  
Instructions