



## 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

CB  
CBF

## Introduction

Parker CB and CBF Series Check Valves are designed for uni-directional flow control of fluids and gases. The unique floating ball valve design handles demanding services in power generation, chemical processing, oil/gas production, and other demanding applications. The CB/CBF Series are specifically designed to reduce check valve maintenance and performance requirements on dual fuel turbines. Specific issues include, but are not limited to seat leakage, coking, repair and maintenance. All of these issues directly affect turbine efficiency, impacting operating costs. The advanced seat materials of the CB/CBF Series Check Valves are particularly suited for higher temperature applications requiring high integrity leak rates and re-sealing capabilities.

## Features

- ▶ Rugged and reliable floating ball valve seat design optimizes sealing characteristics while minimizing effects of coking.
- ▶ Optional hard PTFE coated ball cage resists poppet “stick” commonly experienced with fuel oil coking.
- ▶ Fully field serviceable with Parker rebuild kits. Replace seats in minutes without special tools.
- ▶ Advanced reinforced PTFE copolymer seat materials designed by Parker for demanding applications such as air purge and fuel oil.
- ▶ Integral “last chance” filter option for seat and nozzle protection.
- ▶ To even further reduce turbine downtime during repairs, utilize Parker’s metal flexible hoses.

## Specifications

### Shell Pressure Rating:

..... 3000 psi CWP

### Standard Crack Pressures:

..... 1, 5, 10, 15, 50, 100, 120

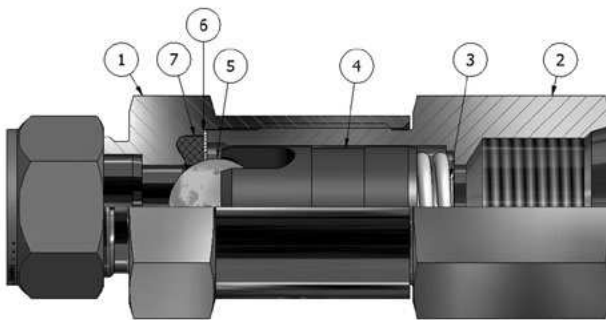
### Seat Materials, Back Pressure and Temperature Ratings:

Parkerfill..... 1000 psi @ 100°F  
 ..... 300 psi @ 450°F  
 Parker Carbon ..... 2500 psi @ 100°F  
 ..... 1250 psi @ 450°F

Parkerfill is a PTFE copolymer reinforced with carbon and graphite.  
 Parker Carbon is a PTFE copolymer reinforced with carbon.

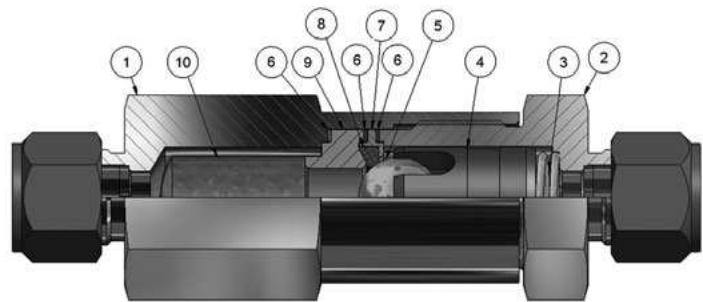
## Materials of Construction

### CB Series Check Valve



Item #	Part	Stainless Valve
1	Body	ASTM A276, Type 316
2	Cap	ASTM A276, Type 316
3	Crack Spring	316 Stainless Steel
4	Ball Cage	ASTM A276, Type 316
5	Ball	440C Stainless Steel
6	Body Washer	316 SS PTFE Coated
7	Seat	Parkerfill, Parker Carbon

### CBF Series Filter Check Valve



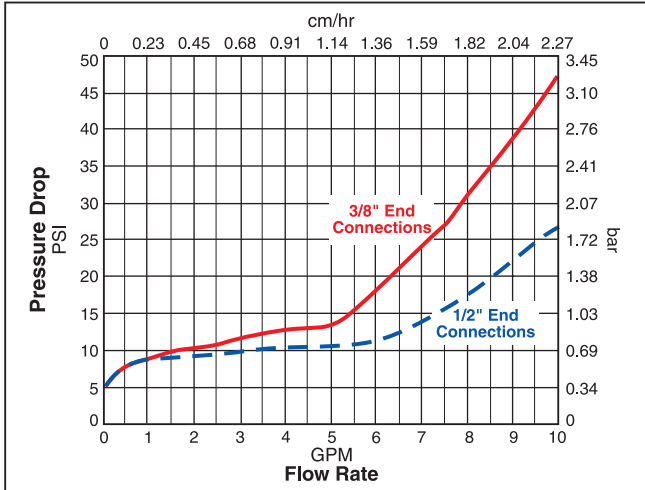
Item #	Part	Stainless Valve
1	Cap	ASTM A276, Type 316
2	Body	ASTM A276, Type 316
3	Crack Spring	316 Stainless Steel
4	Ball Cage	ASTM A276, Type 316 Hard PTFE Coated
5	Ball	440C SS
6	Body Seal	Grafoil®
7	Seat Retainer	316 Stainless Steel
8	Seat	Parkerfill, Parker Carbon
9	Filter Base	316 Stainless Steel
10	Filter Element	Perforated 316 SS Sheet

Grafoil® is a registered trademark of GrafTech International Holdings, Inc.

## Flow Curves

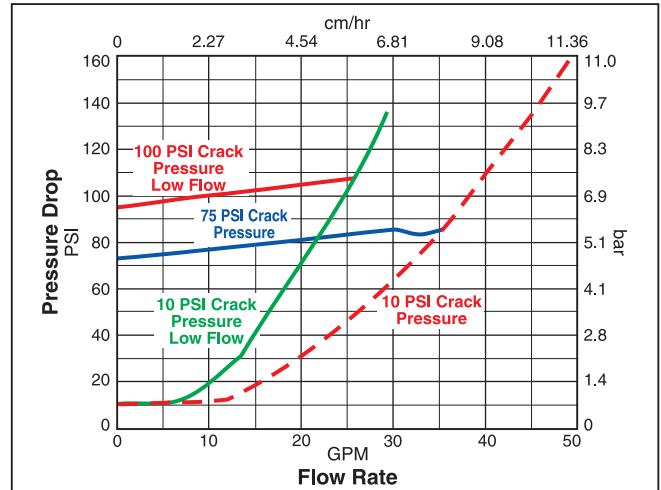
### CB6 Check Valve

Flow Rate vs. Pressure Drop  
CB-Series Check Valve – Size CB6  
5 PSI Crack Pressure



### CB12 Check Valve

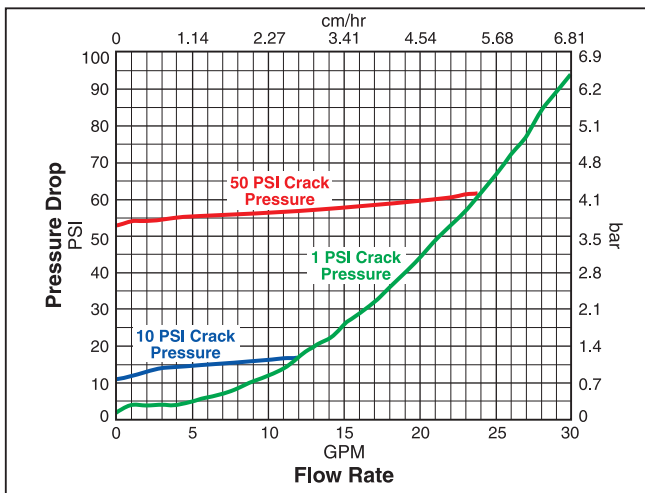
Flow Rate vs. Pressure Drop  
CB-Series Check Valve – Size CB12  
3/4" End Connections



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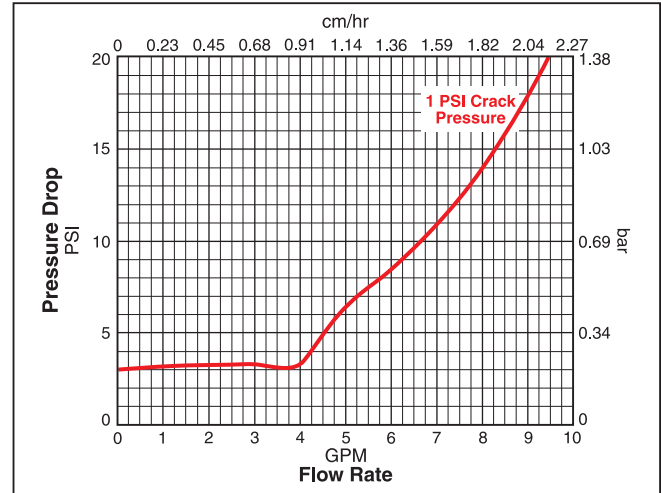
### CB8 Check Valve

Flow Rate vs. Pressure Drop  
CB-Series Check Valve – Size CB8  
1/2" End Connections



### CBF8 Filter Check Valve

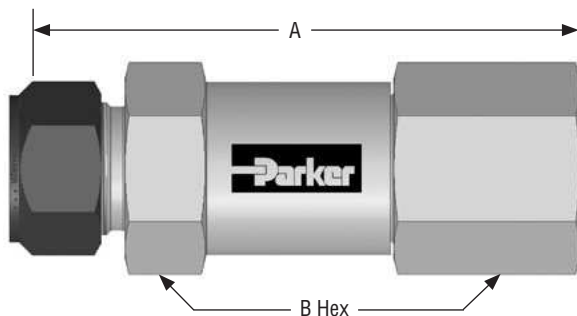
Flow Rate vs. Pressure Drop  
CB-Series Check Valve – Size CBF8  
1/2" End Connections – 380 Micron Filter



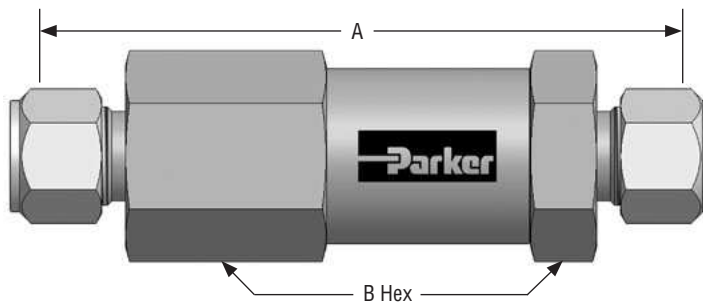
## Dimensions

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

### CB Series Check Valve



### CBF Series Filter Check Valve



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Body Size	End Connections		Dimensions	
	Inlet Port	Outlet Port	A	B Hex
CB6	3/8" A-LOK® (6A) or CPI™ (6Z)	3/8" A-LOK® (6A) or CPI™ (6Z)	2.72	1.00
	3/8" A-LOK® (6A) or CPI™ (6Z)	3/8" Male NPT (6M)	2.88	
	1/2" A-LOK® (8A) or CPI™ (8Z)	1/2" A-LOK® (8A) or CPI™ (8Z)	2.78	
	1/2" A-LOK® (8A) or CPI™ (8Z)	1/2" Female SAE (8G5)	2.98	
	1/2" A-LOK® (8A) or CPI™ (8Z)	1/2" Male NPT (8M)	2.98	
	1/2" Male JIC 37° Flare (8X)	1/2" Female SAE (8G5)	3.16	
CB8	1/2" A-LOK® (8A) or CPI™ (8Z)	1/2" A-LOK® (8A) or CPI™ (8Z)	3.30	1.25
	1/2" A-LOK® (8A) or CPI™ (8Z)	1/2" Female SAE (8G5)	3.44	
	1/2" Male JIC 37° Flare (8X)	1/2" Female SAE (8G5)	3.48	
	1/2" A-LOK® (8A) or CPI™ (8Z)	1/2" Male NPT (8M)	3.44	
	5/8" A-LOK® (10A) or CPI™ (10Z)	5/8" A-LOK® (10A) or CPI™ (10Z)	3.30	
CB12	3/4" A-LOK® (12A) or CPI™ (12Z)	3/4" A-LOK® (12A) or CPI™ (12Z)	3.56	1.375
	3/4" A-LOK® (12A) or CPI™ (12Z)	3/4" Female SAE (12G5)	3.84	
	3/4" A-LOK® (12A) or CPI™ (12Z)	3/4" Male NPT (12M)	3.84	
	3/4" Male JIC 37° Flare (12X)	3/4" Female SAE (12G5)	4.12	

Body Size	End Connections		Dimensions	
	Inlet Port	Outlet Port	A	B Hex
CBF8	1/2" A-LOK® (8A) or CPI™ (8Z)	1/2" A-LOK® (8A) or CPI™ (8Z)	4.50	1.375
	1/2" A-LOK® (8A) or CPI™ (8Z)	1/2" Female SAE (8G5)	4.70	
	1/2" Male JIC 37° Flare (8X)	1/2" Female SAE (8G5)	4.93	
	1/2" A-LOK® (8A) or CPI™ (8Z)	1/2" Male NPT (8M)	4.70	
	5/8" A-LOK® (10A) or CPI™ (10Z)	5/8" A-LOK® (10A) or CPI™ (10Z)	4.75	
	3/4" A-LOK® (12A) or CPI™ (12Z)	3/4" A-LOK® (12A) or CPI™ (12Z)	4.75	
	3/4" A-LOK® (12A) or CPI™ (12Z)	3/4" Female SAE (12G5)	5.14	
	3/4" A-LOK® (12A) or CPI™ (12Z)	3/4" Male NPT (12M)	4.96	
	3/4" Male JIC 37° Flare (12X)	3/4" Female SAE (12G5)	5.37	

## How to Order CB Series Check Valves

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.

The example below describes a CB Series Check Valve with 3/4" CPI™ compression inlet and outlet ports, a 120 psi crack pressure, Parkerfill seat and stainless steel body construction.

**Example:** 12Z-CB12L-120-PF-SS

12Z				-	CB12L	-	120	-	PF	-	SS
Inlet Port*		Outlet Port*			Body Size		Crack Pressure		Seat Material		Body Material
Inlet Port*		Outlet Port*			Body Size		Crack Pressure		Seat Material		Body Material
6A	8A	6A	8M		CB6L		1 psi	PF	Parkerfill	SS	316 Stainless Steel
6Z	8Z	6Z	8Z				5 psi	PC	Parker Carbon		
	8X	8A	8G5				10 psi				
8A	10A	8A	8Z		CB8L		25 psi				
8Z	10Z	8G5	10A				50 psi				
8X		8M	10Z				75 psi				
12A	12Z	12A	12M		CB12L		100 psi				
12X		12G5	12Z				120 psi				

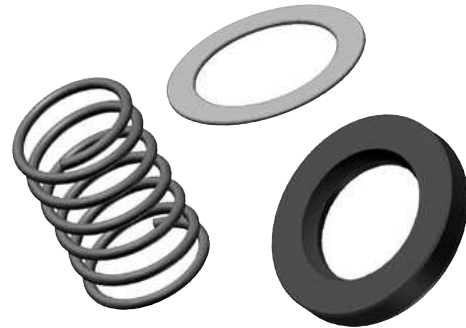
\*If the inlet and outlet ports are the same, eliminate the outlet port designator.

## Repair Kits — CB Series Check Valves

Kits include seat, body gasket and crack spring. To order, fill in the designators from the chart below.

Kit	Size	Crack Pressure	Seat Material
KIT	CB6 CB8 CB12	1 psi	PF Parkerfill
		5 psi	PC Parker Carbon
		10 psi	
		15 psi	
		50 psi	
		100 psi	
		120 psi	

**Example** kit part number: **KIT-CB12-120-PF**



## How to Order CBF Series Check, Filter Valves

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 seven product characteristics required are coded as shown in the chart.

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CBF

The example below describes a CBF Series Check, Filter Valve with a 1/2" CPI™ compression inlet and a 1/2" male NPT outlet, a 1 psi crack pressure, Parkerfill seat material, stainless steel body construction and a 380 Micron filter rating.

**Example: 8Z8M-CBF8L-1-PF-SS-380**

8Z		8M		-	CBF8L	-	1	-	PF	-	SS	-	380
Inlet Port*		Outlet Port*			Body Size		Crack Pressure		Seat Material		Body Material		Filter Rating
Inlet Port*		Outlet Port*			Body Size		Crack Pressure		Seat Material		Body Material		Filter Rating
8A	10Z	8A	10Z		CBF8L		1 psi		PF Parkerfill		SS 316		75 Microns
8X	12A	8G5	12A				5 psi		PC Parker Carbon		Stainless Steel		200 Microns
8Z	12Z	8M	12G5				10 psi						380 Microns
10A	12X	8Z	12M				25 psi						500 Microns
		10A	12Z				50 psi						
							75 psi						
							100 psi						
							120 psi						

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

## Repair Kits — CBF Series Check, Filter Valves

Seal kits (KITS) include seat, body gasket and crack spring. Valve kits (KITV) include seat, body gaskets, crack spring and ball. Optional parts for valve kits include ball cage and filter. To order, fill in the designators from the chart below.

Kit	Size	Crack Pressure	Seat Material	Valve Kit Options	Filter Rating
KITS	CBF8	1 psi	PF Parkerfill	<b>Blank</b> None	<b>75</b> Microns
KITV		5 psi	PC Parker Carbon	<b>1</b> Ball Cage	<b>200</b> Microns
		10 psi		<b>2</b> Filter	<b>380</b> Microns
		25 psi		<b>3</b> Ball Cage & Filter	<b>500</b> Microns
		50 psi			(Include with filter option)
		75 psi			
		100 psi			
		120 psi			

### Examples:

Seal kit part number: **KITS-CBF8-10-PF**

Valve kit part number: **KITV-CBF8-10-3-200** (with Ball Cage and 200 micron filter option)

