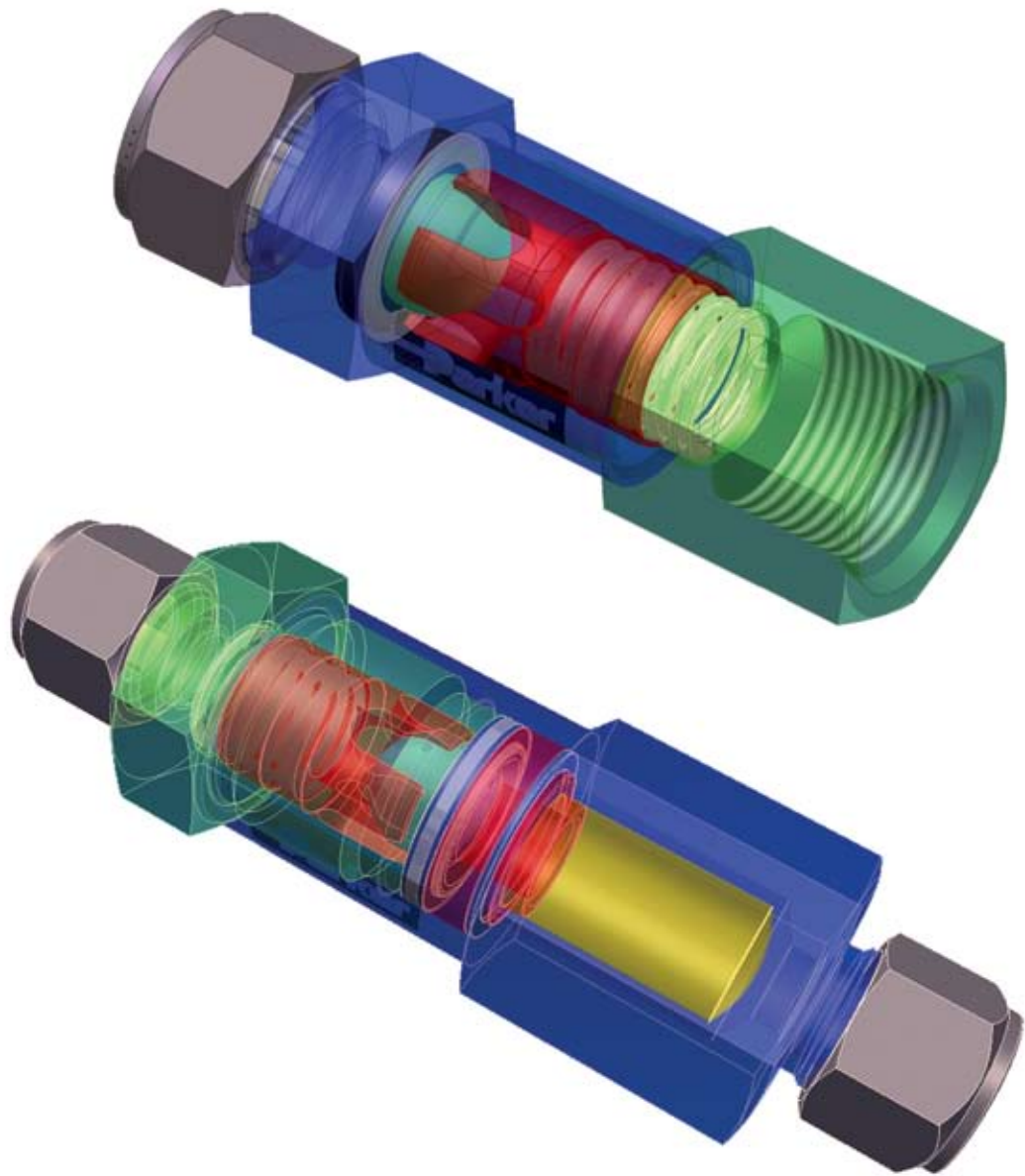




Check Valves

CB and CBF Series

*Catalog 4130-CB
May 2005*



“In the time it takes you to read this bulletin, you can rebuild two Parker CB Series check valves.”

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, and oil/gas production. 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.

- 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.

WARNING

FAILURE OR 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.”

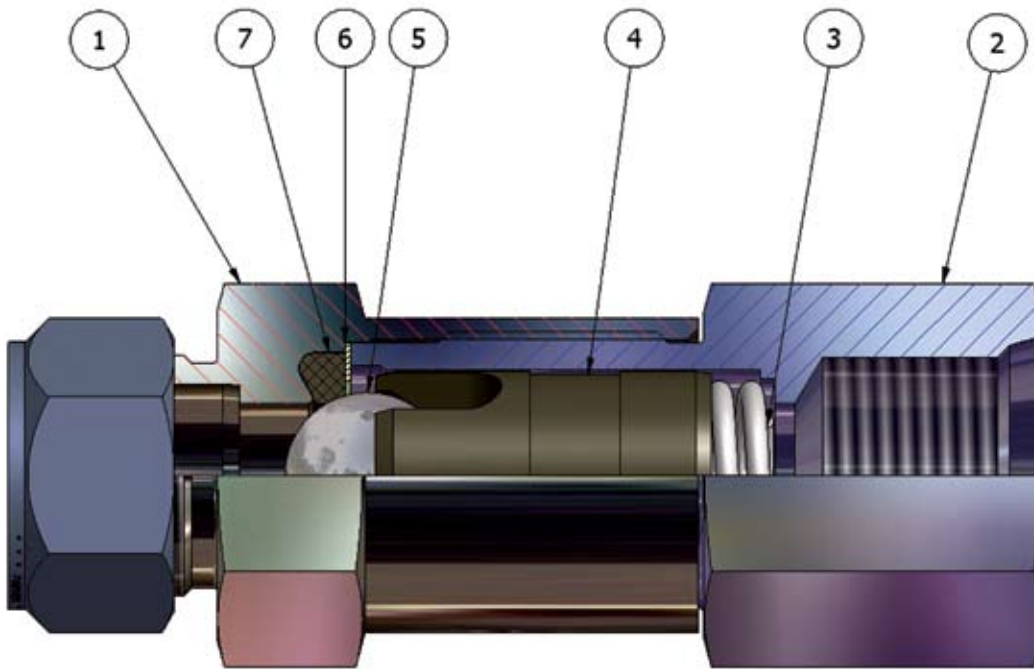
Specifications

- **Shell Pressure Rating:**
3000 psi CWP
- **Standard Crack Pressures:**
1, 5, 10, 25, 50, 75, 100, 120
- **Seat Materials, Back Pressure and Temperature Ratings:**

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

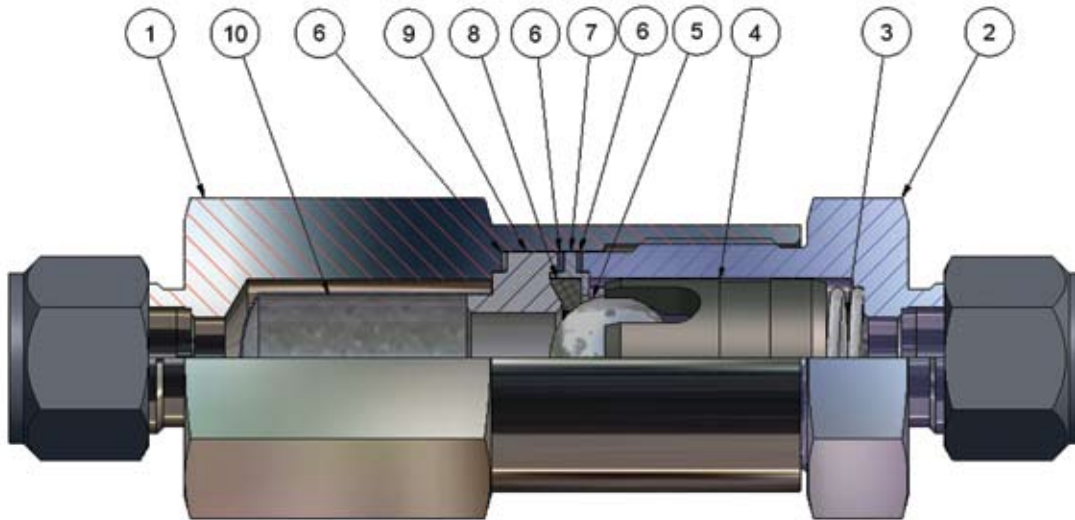
Parkerfill is a PTFE copolymer reinforced with carbon and graphite.
Parker Carbon is a PTFE copolymer reinforced with carbon.

Materials of Construction — CB Series Check Valve



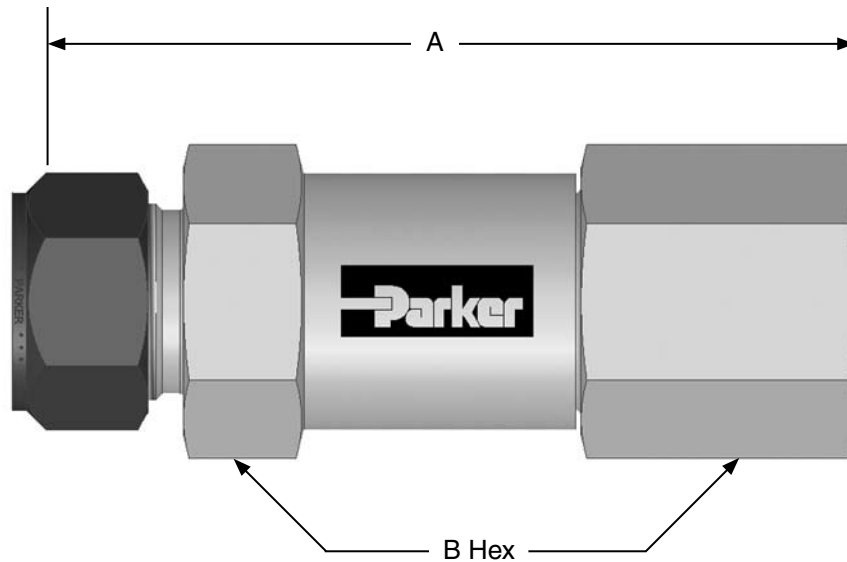
Item #	Part	Stainless Valve
1	Body	ASTM A276 Type 316
2	Cap	ASTM A276 Type 316
3	Crack Spring	316 SS
4	Ball Cage	ASTM A276 Type 316
5	Ball	440C SS
6	Body Washer	316 SS PTFE Coated
7	Seat	Parkerfill, Parker Carbon

Materials of Construction — CBF Series Filter Check Valve



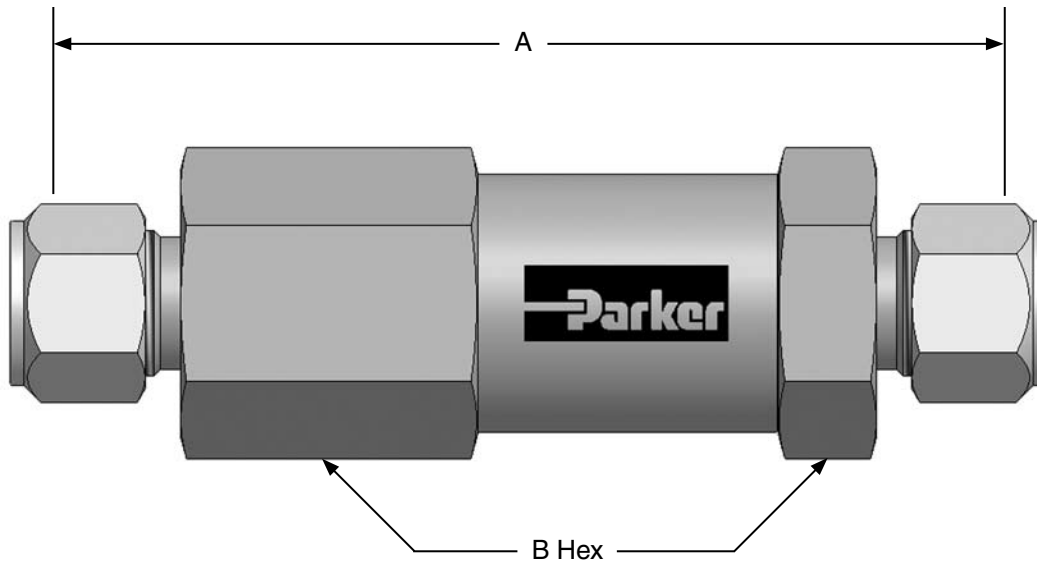
Item #	Part	Stainless Valve
1	Cap	ASTM A276 Type 316
2	Body	ASTM A276 Type 316
3	Crack Spring	316 SS
4	Ball Cage	ASTM A276 Type 316 Hard PTFE Coated
5	Ball	440C SS
6	Body Seal	Grafoil®
7	Seat Retainer	316 SS
8	Seat	Parkerfill, Parker Carbon
9	Filter Base	316 SS
10	Filter Element	Perforated 316 SS Sheet

Dimensions — CB Series Check Valve



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	

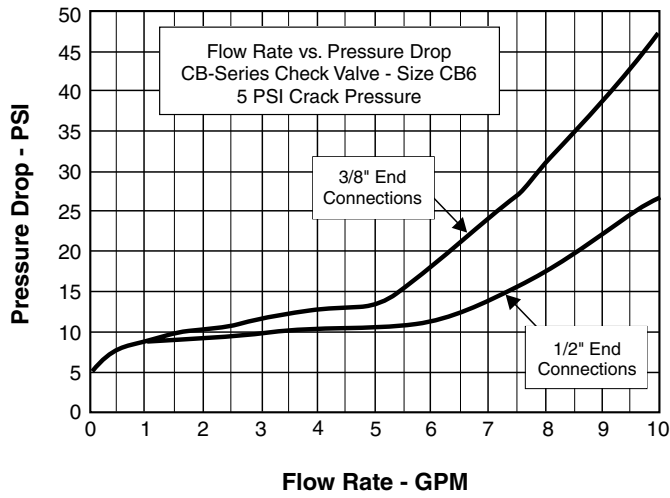
Dimensions — CBF Series Filter Check Valve



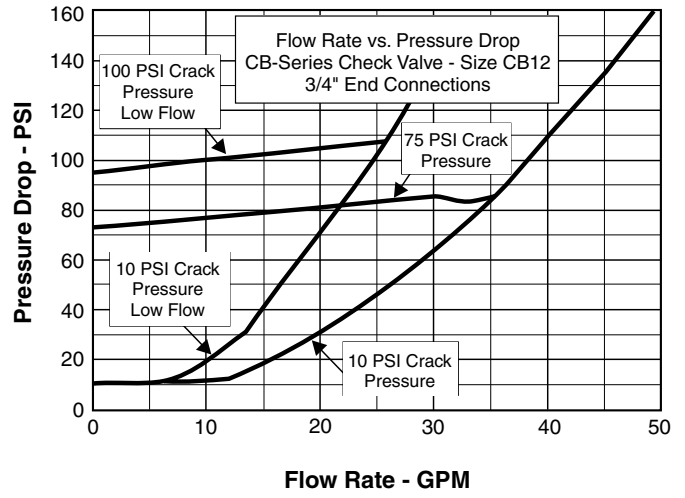
Body Size	End Connections		Dimensions	
	Inlet Port	Outlet Port	A	B Hex
CBF8	1/2" A-Lok (8A) or CPI (8Z)	1/2" A-Lok (8A) or CPI (8Z)	4.50	1.375
	1/2" A-Lok (8A) or CPI (8Z)	1/2" Female SAE (8G5)	4.70	
	1/2" Male JIC 37° Flare (8X)	1/2" Female SAE (8G5)	4.93	
	1/2" A-Lok (8A) or CPI (8Z)	1/2" Male NPT (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	

Flow Curves

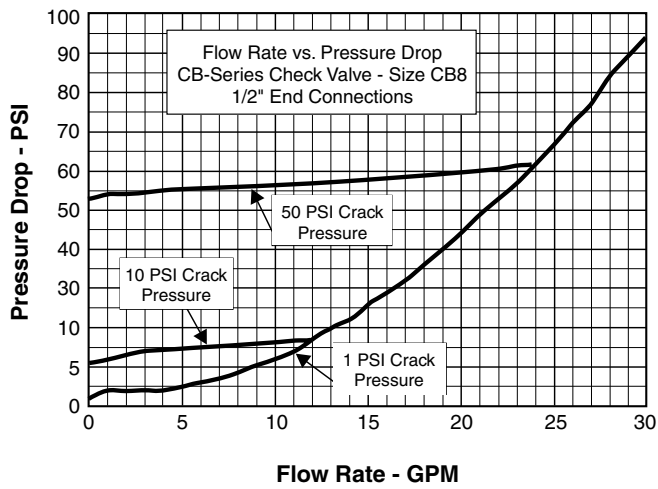
CB6 Check Valve



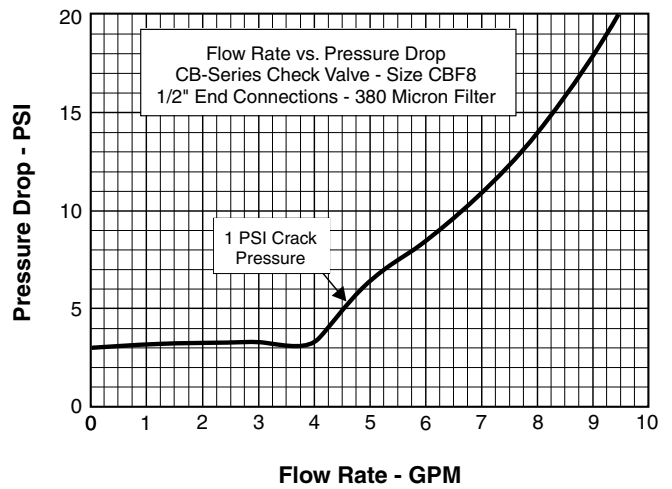
CB12 Check Valve



CB8 Check Valve



CBF8 Filter Check Valve



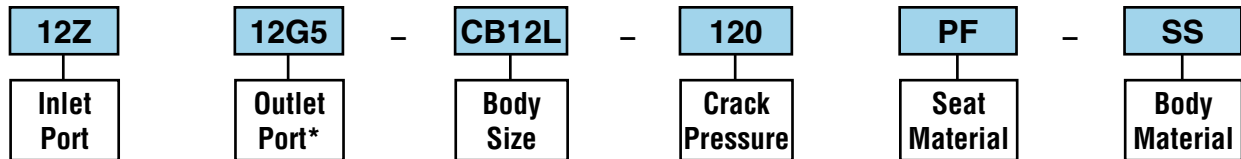
How to Order CB Series Check Valves

The correct part number is easily derived from the following number 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.

1 Inlet Port	2 Outlet Port*	3 Body Size	4 Crack Pressure	5 Seat Material	6 Body Material
6A, 6Z 8A, 8Z 8X	6A, 6Z 8A, 8Z 8M, 8G5	CB6L	1 5 10 25 50 75 100 120	PF – Parkerfill PC – Parker Carbon	SS – 316 Stainless Steel
8A, 8Z 8X 10A, 10Z	8A, 8Z 8M, 8G5 10A, 10Z	CB8L			
12A, 12Z 12X	12A, 12Z 12G5, 12M	CB12L			

Example:



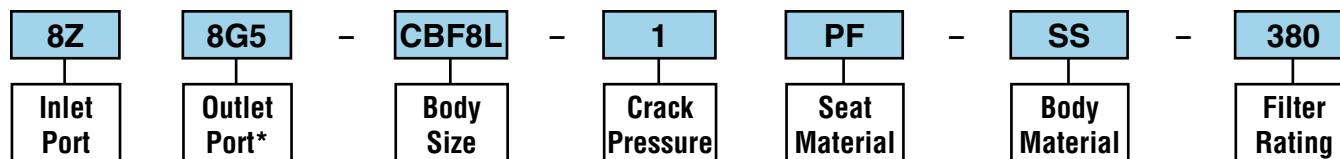
How to Order CBF Series Filter Check Valves

The correct part number is easily derived from the following number sequence. The seven 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	Seat Material	Body Material	Filter Rating
1 Inlet Port	2 Outlet Port	3 Body Size	4 Crack Pressure	5 Seat Material	6 Body Material	7 Filter Rating
8A, 8Z 8X	8A, 8Z 8M, 8G5	CBF8L	1	PF – Parkerfill	SS – 316 Stainless Steel	75 200 380 500 Microns
10A, 10Z	10A, 10Z		5			
12A, 12Z 12X	12A, 12Z 12G5, 12M		10			
			25			
			50			
			75			
100	120	PC – Parker Carbon				
		100				
		120				

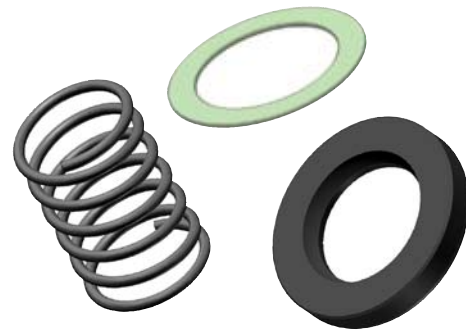
Example:



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	PF – Parkerfill PC – Parker Carbon
		5	
		10	
		25	
		50	
		75	
		100	
		120	



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

Repair Kits — CBF Series Filter Check 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 KITV	CBF8	1	PF – Parkerfill PC – Parker Carbon	Blank – None	75
		5		1 – Ball Cage	200
		10		2 – Filter	380
		25		3 – Ball Cage & Filter	500
		50			Microns
		75			(Include with filter option)
		100			
		120			

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)



The items described in this document and other documents or descriptions provided by Parker Hannifin Corporation, its subsidiaries and its authorized distributors are hereby offered for sale at prices to be established by Parker Hannifin Corporation, its subsidiaries and its authorized distributors. This offer and its acceptance by any customer ("Buyer") shall be governed by all of the following Terms and Conditions. Buyer's order for any such items, when communicated to Parker Hannifin Corporation, its subsidiary or an authorized distributor ("Seller") verbally or in writing, shall constitute acceptance of this offer.

1. **Terms and Conditions of Sale:** All descriptions, quotations, proposals, offers, acknowledgments, acceptances and sales of Seller's products are subject to and shall be governed exclusively by the terms and conditions stated herein. Buyer's acceptance of any offer to sell is limited to these terms and conditions. Any terms or conditions in addition to, or inconsistent with those stated herein, proposed by Buyer in any acceptance of an offer by Seller, are hereby objected to. No such additional, different or inconsistent terms and conditions shall become part of the contract between Buyer and Seller unless expressly accepted in writing by Seller. Seller's acceptance of any offer to purchase by Buyer is expressly conditional upon Buyer's assent to all the terms and conditions stated herein, including any terms in addition to, or inconsistent with those contained in Buyer's offer. Acceptance of Seller's products shall in all events constitute such assent.

2. **Payment:** Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Amounts not timely paid shall bear interest at the maximum rate permitted by law for each month or portion thereof that the Buyer is late in making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.

3. **Delivery:** Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

4. **Warranty:** Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 18 months from date of shipment from Parker Hannifin Corporation. THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED.

NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY, TO BUYER'S DESIGNS OR SPECIFICATIONS.

5. **Limitation Of Remedy:** SELLER'S LIABILITY ARISING FROM OR IN ANY WAY CONNECTED WITH THE ITEMS SOLD OR THIS CONTRACT SHALL BE LIMITED EXCLUSIVELY TO REPAIR OR REPLACEMENT OF THE ITEMS SOLD OR REFUND OF THE PURCHASE PRICE PAID BY BUYER, AT SELLER'S SOLE OPTION. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, INC.

LUDING BUT NOT LIMITED TO LOST PROFITS ARISING FROM OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR ITEMS SOLD HEREUNDER, WHETHER ALLEGED TO ARISE FROM BREACH OF CONTRACT, EXPRESS OR IMPLIED WARRANTY, OR IN TORT, INCLUDING WITHOUT LIMITATION, NEGLIGENCE, FAILURE TO WARN OR STRICT LIABILITY.

6. **Changes, Reschedules and Cancellations:** Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller's discretion, and shall be upon such terms and conditions as Seller may require.

7. **Special Tooling:** A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

8. **Buyer's Property:** Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property, Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

9. **Taxes:** Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

10. **Indemnity For Infringement of Intellectual Property Rights:** Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. Patents, U.S. Trademarks, copyrights, trade dress and trade secrets (hereinafter 'Intellectual Property Rights'). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

11. **Force Majeure:** Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter 'Events of Force Majeure'). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

12. **Entire Agreement/Governing Law:** The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.

9/91-P



Parker Hannifin Corporation
Instrumentation Products Division
2651 Alabama Highway 21 North
Jacksonville, AL 36265-9681
Tel: (256) 435-2130
Fax: (256) 435-7718
www.parker.com/ipdus

Catalog 4130-CB, 06/05