

HX Series



Operating Instructions

Introduction Letter

Dear Customer,

Let us take this opportunity to introduce our company.

Parker is an innovative manufacturer of industrial equipment for compressed air systems.

No effort has been spared to provide a comprehensive instruction manual for the use of the **Parker** HX Series filter. Information is given not only for the user, but also for the technical personnel who may repair the filter in the event that this is ever necessary. It is recommended that all who will have responsibility for the HX Series filter carefully read all sections of this manual before commencing with the installation.

The most important step for you as a customer is to call us first at 1-800-521-4357 if you are experiencing a problem with your filter.

If there is a question regarding this manual or our warranty policies and procedures, please call. We would be happy to speak with you.

Thank you for choosing **Parker** products.

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1. Series HX Compressed Air Filters

Parker's HX-Series filters represent the most advanced coalescing filter technologies of today. Due to the breadth of this series product line, they are very versatile and the types of applications they will work in is nearly limitless.

The filters are offered with five basic types of filter media:

Fine Coalescers: Remove liquid and tiny solid contaminants from compressed air. Types **4C, 6C, XF**

Bulk or Pre-coalescers: Remove large quantities of liquid contaminants / tiny solids. Types **7CP, 8C, 10C**

Water Separator: Remove bulk liquids from compressed air. Type **WS**

Particulate: Remove larger solid contaminants from compressed air. Type **3P**

Adsorber: Remove oil vapor from compressed air. Type **A**

The filters are supplied with either manual drains or auto drains as well as differential pressure gauges or plugged gauge ports. Differential pressure gauges are standard on filters beginning with bowl size "C" and larger. They are optional on "B and BH" sizes. See 2.1 below for part number breakdown.

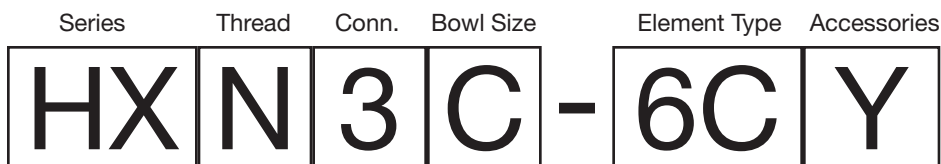
All HX-Series filters are designed to minimize operating differential pressure which will result in low operating costs. A number of innovations in both housing design and filter element design combine to result in low energy consumption and operating costs. They are detailed in the HX-Series general brochure. See Section 9 for accessories.

1.1 Scope of Delivery

These filters are supplied in a ready to operate condition and can be installed directly into the compressed air system. Some of the accessories mentioned later in this manual are supplied in separate packages and should be installed according to their own instruction sheets.

2. Product Identification / Part Number Breakdown

2.1 HX Series Filter Assemblies



| | | | | | |
|----|-------|-------------|---------|-----|-----------------------------------------|
| HX | N-NPT | 1 = 1/4" | A | 4C | N = No Accessories, Manual Drain |
| | | 15 = 3/8" | B | 6C | A = Auto Drain |
| | | 2 = 1/2" | B, BH | 8C | G = Diff. Pressure Gauge |
| | | 3 = 3/4" | BH, C | 10C | Y = Auto Drain and Diff. Pressure Gauge |
| | | 4 = 1" | C, D | 7CP | Note: |
| | | 5 = 1-1/4" | D, E | XF | G and Y options not available |
| | | 6 = 1-1/2" | D, E | WS | on HXN1A versions. |
| | | 8 = 2" | E, F, G | 3P | |
| | | 10 = 2-1/2" | H | A | |
| | | 12 = 3" | H, J | | |

Examples: HXN1A-6CN, HXN2BH-WSA, HXN12J-XFX, HXN8G-6CG

2.2 HX Series Replacement Elements

| Element Type | Series | Bowl Size | Kit |
|--------------|-----------|-----------|----------|
| 6C | HX | C | K |
| 4C | HX | A | K = Kit |
| 6C | | B | |
| 8C | | BH | |
| 10C | | C | |
| 7CP | | D | |
| XF | | E | |
| WS | | F | |
| 3P | | G | |
| A | | H | |
| | | J | |

Examples: 6CHXAK, WSHXBHK, XFHXJK, 6CHXGK

3. Intended Use

The information on the product label must be observed. Non-observance of the data given there is regarded as improper use. The filters are suitable for filtering compressed air and other non-flammable inert gases, such as nitrogen.

3.1 Impermissible Applications

The filtration of liquids is not permitted. HX-Series filters must **NEVER** be used for filtration of explosive, flammable, or noxious gases (including natural gas). Modifications to HX-Series pressure vessels and elements will endanger operational safety and may cause damage or personal injury and are not permitted.

4. Filter Installation and Maintenance Personnel

These operating instructions are intended for specialists charged with the installation, operation, and maintenance of compressed air filters. Such persons must be trained in and have basic working knowledge of handling pressure devices.

5. Safety Instructions

5.1 Hazard due to a sudden release of pressure!



Never remove any parts of the filter, or manipulate the filter in any way, as long as the filter is pressurized. A sudden release of pressure may cause serious injuries. **BE SURE TO DEPRESSURIZE THE FILTER** before carrying out any work on the filter. Verify that the housing has been depressurized using a gauge known to be in good working order.

5.2 Hazard due to hot surfaces!

The gaseous fluid flowing through the filter could have a temperature up to 212°F.
DO NOT TOUCH HOT SURFACES! Wear safety gloves if applicable.

5.3 Contamination Hazard

The filter housing and filter elements might be contaminated by the removed substances. For this reason, make sure to review the safety data sheet of the fluid used. Be sure to wear protective clothing (gloves and breathing protection) if applicable. Dispose of all parts in compliance with applicable disposal regulations after removal or element change.

6. Installation

6.1 Prerequisites

Installation details can be influenced by unique aspects to each application's location. Therefore, please pay attention to the following general directions:

- Check the filter for damage. Do not install or put into use damaged filters.
- Depressurize the pipe before installation.
- Install filter in a vertical direction only, filter head (with gauge or gauge ports) on top.
- Pay attention to the flow direction: The threaded connection at the inlet side of the filter head is marked with a raised step.
- Note the weight of the filter and install a support device if necessary. The device should be designed so that it can bear the weight of the filter completely filled with liquid.
- Make sure that a pressure relief device is installed to prevent the maximum permissible limits (pressure and temperature) from being exceeded.
- Install the filter at a point in the compressed air system where the temperature is lowest, keeping in mind that if there is any water in the system the location's temperature should not be below 35°F.
- Provide sufficient space below the filter for filter element change out. See HX-Series dimensional data listed in its product brochure.

6.2 Filter Installation

- The filter is supplied ready for operation. If additional accessories were ordered, they should be installed before the housing itself is installed in the compressed air system.
- Depressurize the pipe section. Verify that the system has been depressurized using a gauge known to be in good working order.
- Attach the wall mount kit for the specific size (sizes A thru C only) you are installing, if desired.
- If necessary combine up to 3 filters using the wall mount kit as well as modular connectors (See Section 9 Accessories).
- Align the filter: the raised step at the threaded connection indicates the inlet side.
- Integrate the filter into the pipe. Make sure that there are no leaks and that the filter has been installed exactly vertical.
- Pressurize the pipe section again and check the filter for leaks.

7. Maintenance

Always pay attention to the prescribed service intervals. Proper operation of the filter cannot be assured in case of non-compliance.

- **Weekly:** Check the float drain for tightness and proper functioning once a week. You should not hear a permanent flow noise coming from the drain. If so, the drain must be replaced.
- **6 months - 1 Year:** Element replacements are most often determined by the specific application each filter is employed in. As energy costs rise, many customers are balancing the cost of energy with the cost of the replacement element. A new element will contribute less pressure drop than a used element, meaning that less energy need be purchased to overcome pressure drop. Typically a high-efficiency element like those used in the HX-Series will be changed every 6 mos. to 1 year. While changing the filter element, it is a good idea to check the float drain for contamination, and if needed clean it with a soapy water solution.

The following factors can contribute to require a premature element change out: high temperatures, high oil mist concentration, and high relative humidity. Good filter performance is also dependent on the performance of other compressed air system components. Only through analysis of your specific system can element changeout intervals be determined.

7.1 Replacing the Filter Element

Hazard due to a sudden release of pressure!

Depressurize the filter before carrying out any work on the filter! A sudden escape of pressure may cause serious injuries.

- Block compressed air supply to the filter.
- Depressurize the filter. To do so, you may have to open the condensate drain at the filter bottom.
- Give the filter's bowl a full turn in clockwise direction and take it off downwards.
- Take out the filter element and dispose of it according to the operating instructions.
- Replace seal included in replacement element kit.
- Insert the new filter element: The locating tabs fit the recesses in the bowl exactly and ensure the correct seat of the filter element.
- Apply a thin coat of lubricant on the thread of the lower housing. Lubricant also included in kit.
- Align the bowl vertically below the filter's head using the markings and give it a full turn to fasten it.
- If necessary, close the condensate drain and open the pipe to the filter.
- Check the filter for leaks.

7.2 Cleaning the Float Drain

Hazard due to a sudden release of pressure!

Depressurize the filter before carrying out any work on the filter! A sudden escape of pressure may cause serious injuries.

- Block compressed air supply to the filter.
- Open the drain plug of the float drain to depressurize the filter.
- Give the lower housing a full turn in clockwise direction and take it off downwards.
- Replace seal included in the replacement element kit.
- Undo the lock nut and take the float drain out of the bowl.
- Insert a new or the cleaned float drain into the bowl and tighten the lock nut by hand.
- Apply a thin coat of lubricant on the thread of the bowl. Lubricant also included in kit.
- Align the bowl vertically below the filter head using the markings and give it a full turn to fasten it.
- Open the supply line to the filter.
- Check the filter for leaks. A minimum pressure of 15 psig is required to properly close the float drain.

8. Remedy for Malfunctions

8.1 Differential Pressure Gauge

After a pressure peak, e.g. when a valve was opened abruptly, the needle of the differential pressure gauge is locked. The needle is behind the stop in the red area.

Warning!

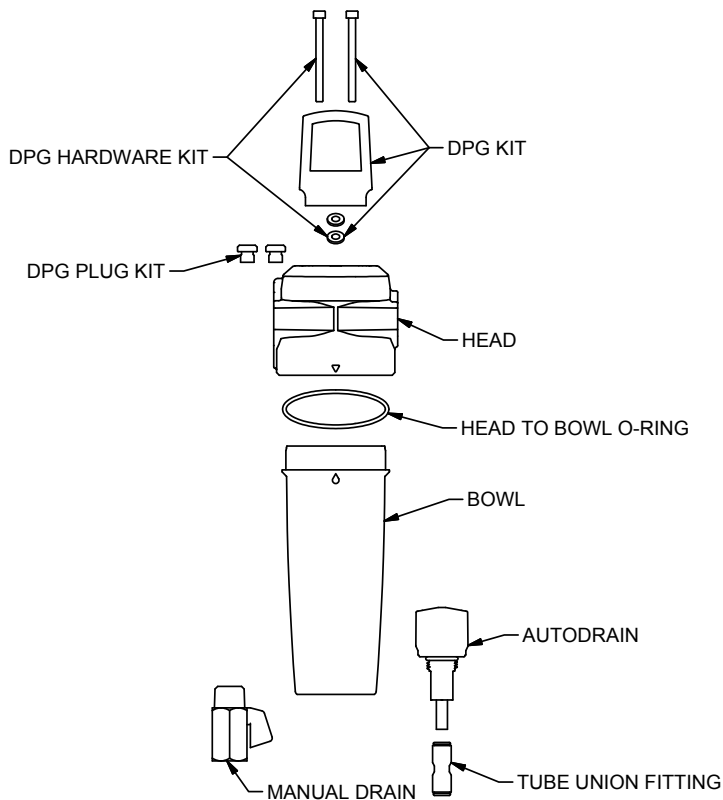
Make sure to check the filter element since it may have been damaged. Replace any damaged element. After testing the filter element you must reset the needle of the differential pressure gauge:

- Carefully pry out the viewing glass on the side of the stop pin with a screwdriver.
- Carefully lift the needle and move it back over the stop.
- Insert the viewing glass again and push it in until it is firmly seated.

8.2 Poor Filtration Performance

When the filtration performance is insufficient even with a new filter element, incorrectly chosen conditions of application or flow rates can be the reason. Contact your sales partner to find a solution in such a case, or phone 1-800-521-4357 for technical assistance.

9. Exploded View



10. Accessories

| Part number | Description |
|-------------|--------------------------------------------------------------------------------------------------------------|
| 2198 | Differential pressure gauge (includes 2 gaskets, 2 screws) |
| 2199 | Hardware for gauge (includes 2 gaskets and 2 screws only) |
| 2205 | Manual drain |
| 2206 | Auto drain kit (includes seal and tube connector) |
| 2216 | Fitting, tube union 5/16" or 8 mm |
| *** | |
| 2207 | Mounting bracket kit size A-1 (includes 2 brackets, 2 threaded rods, 4 flanged lock nuts) |
| 2208 | Modular mounting bracket kit size A-2 (includes 2 brackets, 2 threaded rods, 4 flanged lock nuts, 1 gasket) |
| 2209 | Modular mounting bracket kit size A-3 (includes 2 brackets, 2 threaded rods, 4 flanged lock nuts, 2 gaskets) |
| 2210 | Mounting bracket kit size B-1 (includes 2 brackets, 2 threaded rods, 4 flanged lock nuts) |
| 2211 | Modular mounting bracket kit size B-2 (includes 2 brackets, 2 threaded rods, 4 flanged lock nuts, 1 gasket) |
| 2212 | Modular mounting bracket kit size B-3 (includes 2 brackets, 2 threaded rods, 4 flanged lock nuts, 2 gaskets) |
| 2213 | Mounting bracket kit size C-1 (includes 2 brackets, 2 threaded rods, 4 flanged lock nuts) |
| 2214 | Modular mounting bracket kit size C-2 (includes 2 brackets, 2 threaded rods, 4 flanged lock nuts, 1 gasket) |
| 2215 | Modular mounting bracket kit size C-3 (includes 2 brackets, 2 threaded rods, 4 flanged lock nuts, 2 gaskets) |

11. Spare Parts

| Part Name / Housing Part Number | | Head (painted) | Head-to-Bowl O-Ring Kit | Bowl (No Drain Installed) (painted) | Manual Drain Valve | Automatic Drain Valve | Fitting, Tube Union, 5/16" or 8 mm | Differential Pressure Gauge (DPG) Kit | DPG Hardware Kit | DPG Plug Kit (2 Req.) | Mounting Bracket Kit - 1 Housing | Mounting Bracket Kit - 2 Housings | Mounting Bracket Kit - 3 Housings |
|---------------------------------|---------------|----------------|-------------------------|-------------------------------------|--------------------|-----------------------|------------------------------------|---------------------------------------|------------------|-----------------------|----------------------------------|-----------------------------------|-----------------------------------|
| HXN1A | 1/4 " Ports | 43187 | 2200 | 43200 | 2205 | 2206 | 2216 | 2198 | 2199 | 2220 | N/A | N/A | N/A |
| HXN15B | 3/8 " Ports | 43188 | 2201 | 43201 | | | | | | | 2207 | 2208 | 2209 |
| HXN2B | 1/2 " Ports | 43189 | | | | | | | | | | | |
| HXN2BH | 1/2 " Ports | | | | | | | | | | | | |
| HXN3BH | 3/4 " Ports | 43190 | 2202 | 43202 | | | | | | | 2210 | 2211 | 2212 |
| HXN3C | 3/4 " Ports | 43191 | | | | | | | | | | | |
| HXN4C | 1 " Ports | 43192 | | | | | | | | | | | |
| HXN4D | 1 " Ports | | | | | | | | | | | | |
| HXN5D | 1-1/4 " Ports | 43193 | 2203 | 43203 | | | | | | | 2213 | 2214 | 2215 |
| HXN6D | 1-1/2 " Ports | 43194 | | | | | | | | | | | |
| HXN5E | 1-1/4" Ports | 43195 | 2204 | 43204 | | | | | | | N/A | N/A | N/A |
| HXN6E | 1-1/2" Ports | 43196 | | | | | | | | | | | |
| HXN8E | 2" Ports | 43197 | | | | | | | | | | | |
| HXN8F | 2" Ports | | 43205 | | | | | | | | | | |
| HXN8G | 2" Ports | | 43206 | | | | | | | | | | |
| HXN10H | 2-1/2" Ports | 43198 | 2204 | 43207 | N/A | N/A | N/A | | | | | | |
| HXN12H | 3" Ports | 43199 | | | | | | | | | | | |
| HXN12J | 3" Ports | | | 43208 | | | | | | | | | |

Worldwide Filtration Manufacturing Locations

North America

Compressed Air Treatment Filtration & Separation/Balston

Haverhill, MA
978 858 0505
www.parker.com/balston

Finite Airtek Filtration Airtek/domnick hunter/Zander

Lancaster, NY
716 686 6400
www.parker.com/faf

Finite Airtek Filtration/Finite

Oxford, MI
248 628 6400
www.parker.com/finitefilter

Engine Filtration & Water Purification

Racor
Modesto, CA
209 521 7860
www.parker.com/racor

Racor
Holly Springs, MS
662 252 2656
www.parker.com/racor

Racor
Beaufort, SC
843 846 3200
www.parker.com/racor

Racor – Village Marine Tec.

Gardena, CA
310 516 9911
desalination.parker.com

Hydraulic Filtration

Hydraulic Filter
Metamora, OH
419 644 4311
www.parker.com/hydraulicfilter

Process Filtration domnick hunter Process Filtration

Oxnard, CA
805 604 3400
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