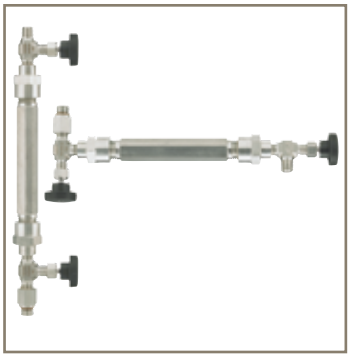
aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



High Pressure Compressed Air and Gas Filters

J-Series High Efficiency Filters / CNG and Alternative Fuel Filters

Bulletin 1300-220/USA

Parker

ENGINEERING YOUR SUCCESS.

Finite J-Series High Pressure Filters

Why do high pressure systems need filtration?

High pressure compressors are used in a variety of applications. Many owners, operators and designers of high pressure compressed air or gas systems rely on Parker's Finite Filter Operation for high efficiency filters. End users of high pressure compressed air, such as scuba divers and fire rescue workers, depend on high quality breathable air.

Throughout the stages of compression many contaminants can enter into the system. Excessive amounts of liquid aerosols, primarily lube oil carryover and solid particulate contamination are common in high pressure systems. In addition, higher temperature levels are possible and may cause liquid oils to varnish. This contamination can lead to poor component performance and wear that may lead to unscheduled maintenance. Even submicronic contaminants in compressed air or gas systems can foul multistage compressors, increasing maintenance costs and impacting product quality.

Parker's Finite Filter Operation offers a variety of high pressure compressed air and gas filters. With our wide range of elements, we have a solution for every stage of compression, as well as at the point of use. Whether you are storing high pressure air or gas or using a continuous flow, count on Parker to protect your equipment from contamination. Parker Finite is the solution to ending high pressure contamination fouling.

Parker's Finite Filter Operation's J-Series Filters are designed to filter contaminants such as rust, pipe scale, compressor lube oil, and water from compressed gases. These filters are often used in high pressure compressed natural gas (CNG) systems, not only as inter-stage filters in the multi-stage compression of the gas, but also in the storage and delivery of the gas for CNG powered vehicles.

Parker's varied media choices remove up to 99.995% of both solid and liquid aerosols, and contaminants as small as 0.01 microns in size. An activated carbon media is also available which removes oil vapor. This stage of filtration is often used as the final filter before the storage of high pressure breathing air used by scuba divers, firefighters, and others who utilize portable breathing devices.

The filter housings and the replaceable elements used in this product line have an extremely robust construction, specially designed for use in system pressures up to 5,000 psig. Five housing sizes and two thread styles (NPT or SAE) are available with connections ranging from 1/4" to 2"; temperatures up to 350°F, and flows up to 26,000 SCFM at 5,000 PSIG.

J-Series High Pressure Filters

- CNG, alternative fuel and breathing air filters
- Pressures to 5000 PSIG
- Spheroidal Graphite Cast Iron
- Coalescing, particulate and adsorption filter elements available

Filter Element Features

Parker Finite offers six filter media grades ensuring that we have the correct media choice for nearly any application requirement.

Available are coalescing grades with 95% to 99.995% efficiency and pleated or UNI-CAST coalescing media designs. Additionally, a bulk liquid separator, a particulate removal and oil vapor removal choices are standard offerings.

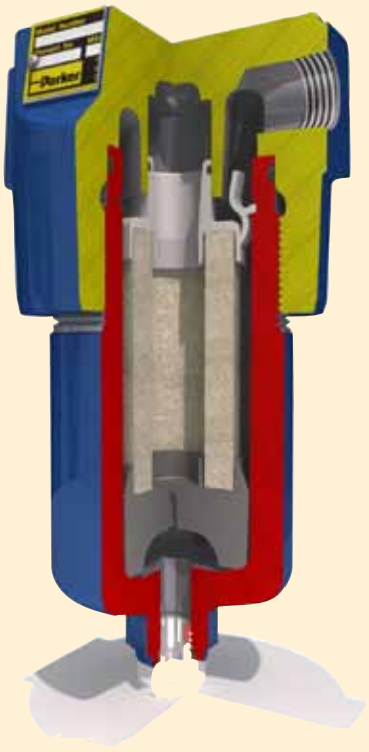
Each element uses a retention clip design that ensures the element is seated and sealed properly. This built-in, fail-safe feature will virtually eliminate any possibility of contaminant by-pass and is unique amongst high pressure filters.

Each element is composed of internal and external plated carbon steel retainers which provide the element with a 75+ PSID burst rating. Each element also features a bore seal interface with the housing, an anti-vibration shoulder, and an integrated standoff which minimizes the likelihood of any movement of the element, even during severe system pulsations.

Element standoff lengths were designed for each housing size to allow an optimal volume of liquid contaminant to be collected in the filter's quiet zone, further minimizing any chance of contaminant carryover.

Filter Housing Features

- Robust, spheroidal graphite-cast iron offers higher mechanical strength, improved ductility, and increased shock resistance, assuring the user that this filter is built for the task at hand.
- Head to bowl bore seal ensures greater seal integrity.
- Threaded mounting holes on top of filter head allow each size to be easily panel mounted when line mounting is not an option.
- Engraved flow direction arrow in filter's head notifies the user of proper flow direction. One direction flow for all media choices reduces the possibility of a housing being installed improperly.
- The spheroidal graphite cast iron head and steel bowl are nickel plated for corrosion resistance. The completed assembly is finished with a UV stable epoxy powder paint that will allow the filter to stand-up to harsh outdoor conditions.
- An imprinted aluminum part number tag ensures that each unit's identifying information will be visible in the years ahead.
- SAE-6 steel drain plug with positive o-ring seal installed. This port also allows the easy installation of Finite's JDK5000H or JDK5000V high pressure drain kits which allow the safe removal of liquid contamination at system pressures.
- Bowls are designed to be easily tightened or loosened with a standard socket wrench.
- Bowls feature a slotted positional locator which enables the element to be positively retained, therefore having a low bowl removal clearance.



Element Types and Media Grade Options

Coalescers:

Removes: Oil, water, liquids

Coalescing elements are specially designed for the removal of liquid contaminants from gaseous flows. These media types flow from the inside of the element to the outside. Coalesced liquid collects in the bowl where it is drained, while clean air or gas exits the housing through the outlet port. Particulate contaminants are captured and held in the media.

Type C

The Finite UNI-CAST coalescing elements are made of epoxy saturated borosilicate glass microfiber and includes a polyester drain layer. (1)(2)

Type 7CVP

This pleated coalescer is made of fluorocarbon saturated borosilicate glass microfiber and includes a polyester drain layer. (1)(2)

Water Separator:

Removes: Bulk liquids

In this element, the gas or liquid flows from the inside of the element to the outside

Type WS

The Finite water separator element is composed of wrapped stainless steel mesh. (1)(2)

Adsorber:

Removes: Oil vapor (odor)

Adsorption elements are used to remove vapors (hydrocarbon or water) that are not removed by the coalescing filter. Hydrocarbon vapors collect in the element, while clean air exits the housing through the outlet port. In this element, the air or gas flows from the inside of the element to the outside

Type A

Our Type A media is wrapped activated carbon. This element has a galvanized carbon steel inner retainer and a stainless steel perforated metal outer retaining layer. (2)

Particulate:

Removes: Solid contaminants

Particulate filters in the J-Series flow from the inside of the element to the outside. Particles collect in the element, while the clean air exits through the outlet port.

Type 3P

This 3 micron absolute rated pleated element is made of cellulose. (1)(2)

Notes:
1 Each element is retained internally and externally with galvanized carbon steel perforated metal. Not shown in some photos above.
2 Top and bottom end caps are made of glass filled nylon to ensure durability.

Media Grades and Specifications:

Finite media grades determine the filtration efficiency. Capture efficiencies are available up to 99.995%. Micron ratings range from 0.01 to 3 micron. The columns on the right note both the wet and dry pressure drops.

Grade Designation	Media Type	Removes...	Max. Oil Coalescing Efficiency	Micron Carryover ppm[1]	Rating (um)	Pressure Drop Media Dry (PSID)	Additional Pressure Drop Media Wet[2] (PSID)
4C	Coalescing	Liquid from Gas	99.995%	0.003	0.01	1.25	3-4
7CP	Coalescing	Liquid from Gas	99.5%	0.09	0.5	0.25	0.5-0.7
10C	Coalescing	Liquid from Gas	95%	0.85	1.0	0.5	0.5
WS	Bulk Separator	Bulk Liquid from Gas	99+%[3]	N.A.	100	<0.25	<0.25
3P	Particulate	Solids from Gas	N.A.	N.A.	3.0	0.25	N.A.
A	Adsorbor	Vapor from Gas	99+%[4]	N.A.	3.0	1.0	N.A.

[1]Tested per ISO 12500-1 at 40 ppm inlet.
[2]Add dry + wet columns for total pressure drop.
[3]Bulk liquid removal efficiency..
[4]Oil vapor removal efficiency is given for A media.

Applications:

High Pressure (HP) Filter Applications							
Test Air for HP Hydraulics	10C / 7C						
Inter-stage HP Compressor	WS / 10C						
CNG Compressor Outlet	10C	→	4C				
CNG Storage Cascades	10C	→	4C				
CNG Dispensers	10C	→	4C				
Breathing Air / SCUBA	10C	→	4C	→	A		
High Pressure "Ultra Pure Air"	10C	→	4C	→	4C	→	A
Bulk Liquid contamination	WS	→	7C	→	4C		
Bulk solid Contamination	3P	→	7C	→	4C		
HP Air / Gas Dryer Protection	10C / 7C	→	4C	→	Dryer	→	7C / 3P
Food Applications / Odor Removal	10C / 7C	→	4C	→	A		

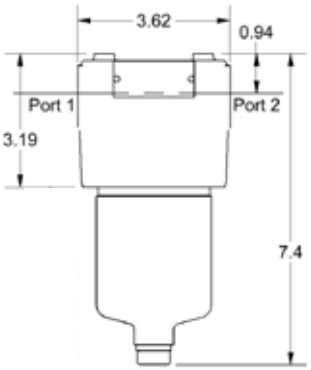
Flow Rates:

Choose Filter Size to find the corresponding flow rates

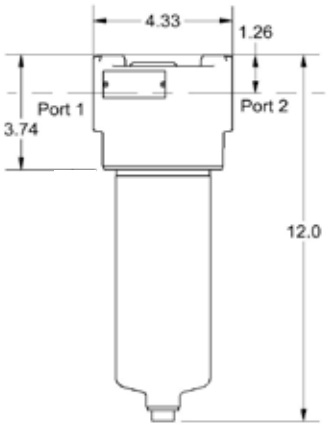
J-Series Flow Rates (SCFM)

Model	Port	Filter Type	100 PSIG	1000 PSIG	1500 PSIG	2000 PSIG	2500 PSIG	3000 PSIG	3500 PSIG	4000 PSIG	4500 PSIG	5000 PSIG
J_1A	1/4"	4C, A	15	135	200	265	330	395	460	525	590	655
		7CP, 10C, 3P, WS	30	265	395	525	660	790	920	1050	1180	1310
J_2A	1/2"	4C, A	25	220	330	440	550	655	765	875	985	1095
		7CP, 10C, 3P, WS	50	440	660	880	1095	1315	1530	1750	1970	2185
J_2B	1/2"	4C, A	35	310	460	615	765	920	1070	1225	1380	1530
		7CP, 10C, 3P, WS	80	710	1055	1405	1755	2105	2450	2800	3150	3500
J_3B	3/4"	4C, A	60	530	790	1055	1315	1575	1840	2100	2360	2525
		7DP, 10C, 3P, WS	130	1150	1715	2285	2850	3415	3985	4550	5115	5685
J_4C	1"	4C, A	90	795	1190	1580	1975	2365	2760	3150	3540	3935
		7CP, 10C, 3P, WS	200	1770	2640	3515	4385	5255	6130	7000	7870	8745
J_6D	1-1/2"	4C, A	180	1590	2375	3160	3945	4730	5515	6300	7085	7870
		7CP, 10C, 3P, WS	400	3540	5280	7025	8770	10515	12255	14000	15745	17490
J_8E	2"	4C, A	275	2435	3630	4830	6030	7230	8425	9625	10825	12025
		7CP, 10C, 3P, WS	600	5310	7925	10540	13155	15770	18385	21000	23615	26230

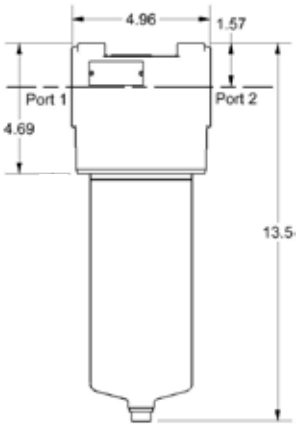
Note: These rates are based on compressed air flow. For CNG, these flows can be multiplied by a factor of 1.2.



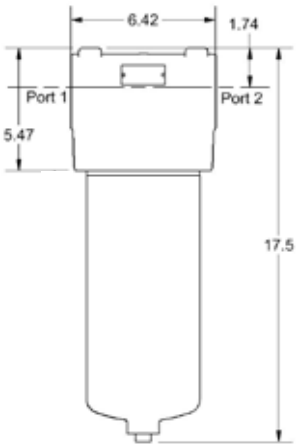
J_A Series



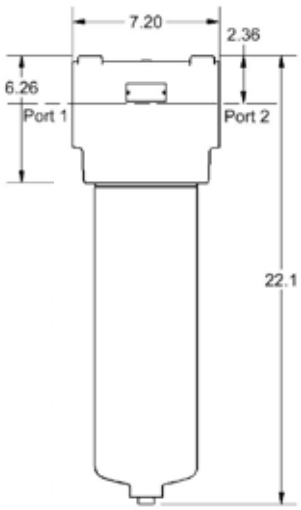
J_B Series



J_C Series



J_D Series



J_E Series

Specifications:

Model	J_1A	J_2A	J_2B	J_3B	J_4C	J_6D	J_8E
Port Size (N=NPT)	1/4" NPT	1/2"NPT	1/2"NPT	3/4" NPT	1"NPT	1-1/2"NPT	2" NPT
Port Size (S=SAE)	SAE-4	SAE-8	SAE-8	SAE-12	SAE-16	SAE-24	SAE-32
Max. Pressure	5000 PSIG	5000 PSIG	5000 PSIG	5000 PSIG	5000 PSIG	5000 PSIG	5000 PSIG
Max. Temperature[1]	350°F	350°F	350°F	350°F	350°F	350°F	350°F
Head	SG Iron*	SG Iron*	SG Iron*	SG Iron*	SG Iron*	SG Iron*	SG Iron*
Bowl	Steel	Steel	Steel	Steel	Steel	Steel	Steel
Seals:	Fluorocarbon	Fluorocarbon	Fluorocarbon	Fluorocarbon	Fluorocarbon	Fluorocarbon	Fluorocarbon
Backing Ring	Nitrile	Nitrile	Nitrile	Nitrile	Nitrile	Nitrile	Nitrile
Sump Volume	50 mL	50 mL	180 mL	180 mL	230 mL	500 mL	500 mL
Weight	9.0 lbs.	9.0 lbs.	13.0 lbs.	13.0 lbs.	21.0 lbs.	45.0 lbs.	67.0 lbs.
Port to Port	3.62"	3.62"	4.33"	4.33"	4.96"	6.42"	7.2"
Height	7.4"	7.4"	12.0"	12.0"	13.5"	17.5"	22.1"
Clearance	2.0"	2.0"	2.25"	2.25"	2.25"	3.0"	3.0"
Drain Port	SAE-6	SAE-6	SAE-6	SAE-6	SAE-6	SAE-6	SAE-6
Socket / Bowl Removal	1-1/16" HEX	1-1/16" HEX	1-1/16" HEX	1-1/16" HEX	1-1/16" HEX	1-1/2 HEX	1-1/2 HEX
Head / Bowl Torque	15-20 ft-lbs.	15-20 ft-lbs.	25-30 ft-lbs.	25-30 ft-lbs.	25-30 ft-lbs.	60-70 ft-lbs.	60-70 ft-lbs.

*Note: SG Iron is an abbreviation for Spheroidal Graphite Cast Iron
(1) Maximum temperature of filter assembly is dependent on element installed in housing.

High Pressure Drains and Gauge:

JDK5000H	Horizontal Drain Kit 5000 psig
JDK5000V	Vertical Drain Kit 5000 psig
BDPI-25	Differential Pressure Gauge and Bracket

Note: Replacement Element supplied with o-ring and lube tube.

How To Order
Part Numbers for Complete Assemblies:

Use the steps below to build your own part number.
For any permutation not mentioned below, please consult factory at 1-800-521-4357.

Series Name	Thread	Port Size	=	Housing Size	Media Grade	Accessories
J	N - NPT	1 (1/4")	=	A	4C	N = None
	S - SAE	2 (1/2")	=	A	10C	Available
		2 (1/2")	=	B	7CP	
		3 (3/4")	=	B	WS	
		4 (1")	=	C	3P	
		6 (1-1/2")	=	D	A	
		8 (2")	=	E		

Examples:

JN2A-4CN, JS6D-WSN, JN3B-3PN

Replacement Element Part Numbers:

Note: Replacement element supplied with replacement head/bowl seals and tube of lubricant.

Media Grade/Type	Series Name	Housing Size	Kit
4C	J	A	K
10C		B	
7CP		C	
WS		D	
3P		E	
A			

Examples:

4CJAK, WSJDK, 3PJBK

J-Series filters are used in a number of applications, ranging from breathing air for scuba divers, to high-pressure hydraulic circuit testing, to a variety of uses in the alternative fuel industry.

Worldwide Filtration Manufacturing Locations

North America

Compressed Air Treatment

Filtration & Separation/Balston
Haverhill, MA
978 858 0505
www.parker.com/balston

Filtration & Separation/Finite
Oxford, MI
248 628 6400
www.parker.com/finitefilter

Purification, Dehydration & Filtration Division
Lancaster, NY
716 685 4040
www.parker.com/pdf

Sales Office
Charlotte, NC
704 921 9303
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Engine Filtration & Water Purification

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

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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

Process Advanced Filtration
Oxnard, CA
805 604 3400
www.parker.com/processfiltration

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