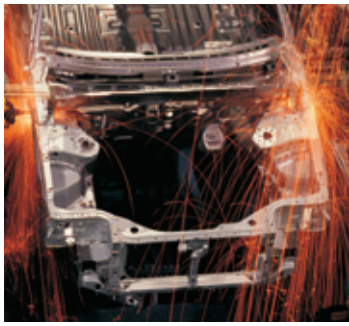
aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

# Parker EcoPure Plus

## High Efficiency Compressed Air Filter



ENGINEERING YOUR SUCCESS.

## Compressed air is an important source of energy in today's modern production factories because it is flexible and reliable.

However, unlike gas, water and electricity, compressed air is only fully reliable and efficient when it is dry and clean.

Contaminants are ever present in the atmosphere. The compressed air stream typically contains water, oil, dirt and micro-organisms which can contribute to product rejects, lost production time and increased maintenance expenses. For example, small traces of impurities can cause serious fisheye blemishing in automotive finishing operations. Water left in air stream can freeze during exposure to cold temperatures, blocking flow or rupturing pipes. Residual compressor oil and water can form an acidic sludge and therefore, compressed air contaminants will eventually, lead to premature component wear, needing repairs or replacements.

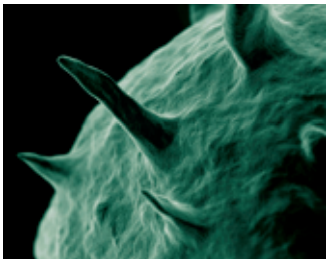
Most problems experienced by compressed air users derive from contamination that already in the compressed air system.

There are typically 10 different contaminants. These are coming from four different sources:

- Atmospheric Dirt
- Rust
- pipescale

- Water Vapour
- Condensed Water
- Water Aerosols

- Liquid Oil
- Oil Aerosols
- Oil Vapour



- Micro – organisms

Before compressed air can be efficiently used, these contaminants need to be removed or reduced to acceptable levels.

**Compressed air is expensive to produce and must be properly treated in order to limit maintenance costs, downtime and spoilage.**

Parker EcoPure$^{Plus}$: compressed air filters remove the water, oil mist and dirt particles form the key contaminants in any compressed air stream.


Parker Hannifin, the global leader in motion and control technologies, carries a stable of strong known brands in the field of compressed air treatment. Parker EcoPure$^{Plus}$ is our latest addition to this family and continues to offer a perfect high value solution to compressed air purification.

The Parker EcoPure$^{Plus}$ range filter is designed by Parker's highly trained team of filter experts with advanced and proven compressed air purification technology. It combines the key essential elements of Parker's total filtration knowledge, pooled over decades of filter manufacturing experience to ensure clean compressed air with the minimum of cost.

## Parker EcoPure$^{Plus}$ compressed air filter

- Air flow from 0.6m$^3$/min to 40m$^3$/min
- Filter housings from 1/4" BSPP to 3" BSPP connections
- Operate at pressures from 1 bar g to 16 bar g
- Technically advanced and proven technology
- Patented, unique element interface for high efficiency filter performance
- Filter element performance guaranteed for 12 months *
- Air quality performance tested in accordance with ISO8573

* - If used in accordance with manufacturer's instructions

# Parker EcoPure$^{Plus}$ - Embodying the Essence of Compressed Air Filters

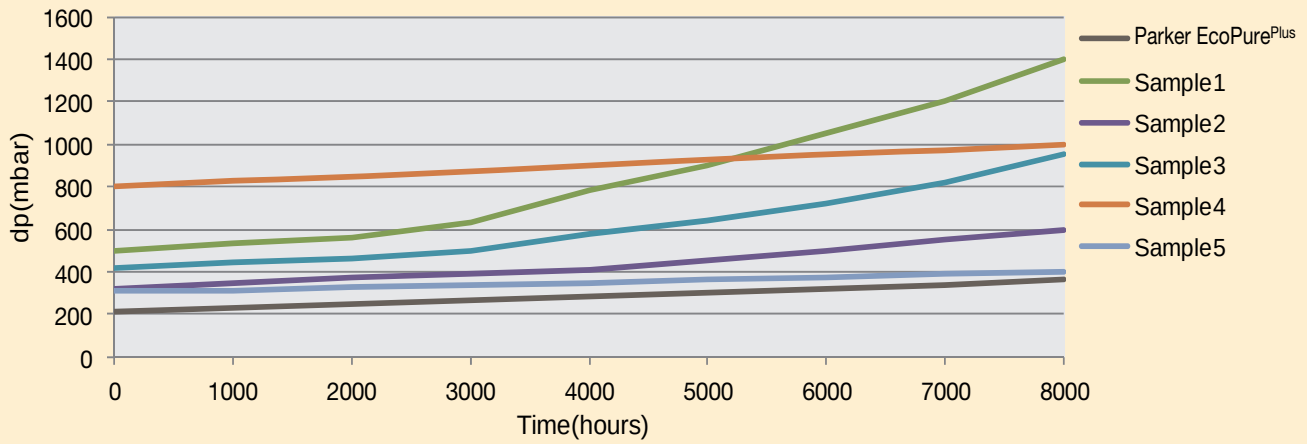
The Parker EcoPure$^{Plus}$ series of compressed air filters, inherits many characteristics of Parker's compressed air filtration technology. Yes, this is Parker EcoPure$^{Plus}$ - an innovation in compressed air filtration, designed with reliability & efficiency for you.

Parker EcoPure$^{Plus}$ amasses decades of Parker's design experience in compressed air filters, drawing out the most perfect high value solution to compressed air purification. Most importantly, Parker EcoPure$^{Plus}$ delivers consistent high quality compressed air.

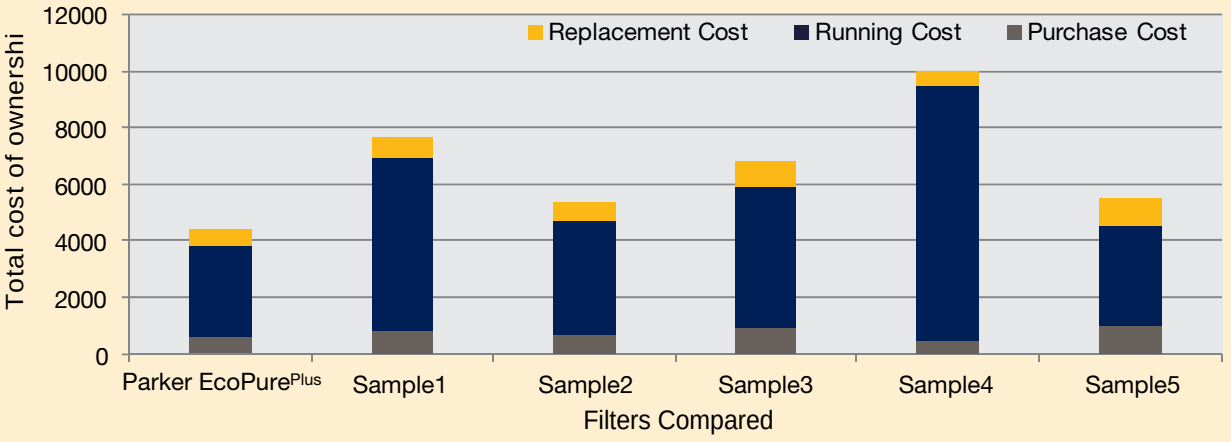

## Filter Performance

In a comparative test of Parker EcoPure$^{Plus}$ filters against five commonly available alternative filters, the blockage characteristics and the true differential pressure of each filter reflects its superior performance.

### Differential Pressure - An accurate picture




### Five years total cost of ownership

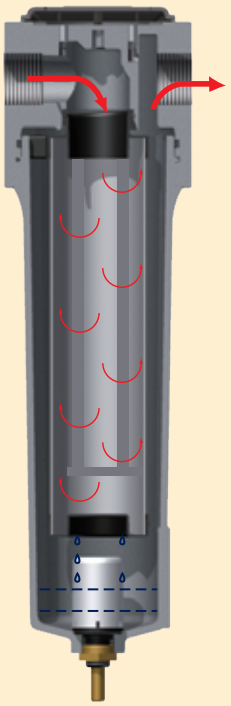


## Proven technology means Reliability & Efficiency

Parker EcoPure$^{Plus}$ filters carry air flow from the inside out; a long understood and proven method. Liquid contaminants are captured in the filter matrix and collect together into larger and larger droplets through collisions with the media. These droplets eventually coalesce on the outside of the filter tube where they collect and are drained away by gravity.

The inner element surface acts as a pre-filter to remove large contaminants while the internal pores are trap and to remove aerosols and solids from the air stream. The larger outside pores also allow a smooth air stream to pass freely through the media, minimizing pressure drop.

Another important relationship is the gap between the filter element outside diameter and the filter bowl's inner diameter. The spacing between these two surfaces are sized so that air velocity is minimized, thus reducing the possibility of oil or water vapor carryover.



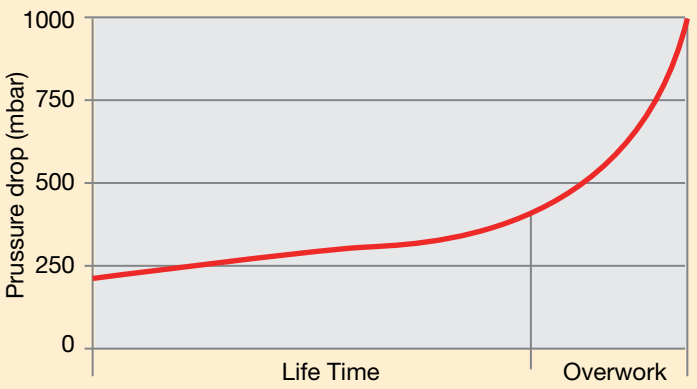
## Maintaining air quality and energy efficiency through regular maintenance

It has long been the practice to change filter elements based upon the pressure drop measured across the filter as this directly contributes to increased operational costs. However, one must remember the reason for installing the filter in the first place, i.e. to achieve high quality compressed air.

Filter elements must always be replaced in accordance with the manufacturers instructions to ensure the delivered air quality is never compromised.

### What are the benefits of regularly changing filter elements?

- High quality compressed air - Guaranteed
- Protection of adsorption dryer beds
- Protection of downstream equipment, person-nel and processes
- Reduced operational costs
- Increased productivity & profitability
- Continued peace of mind



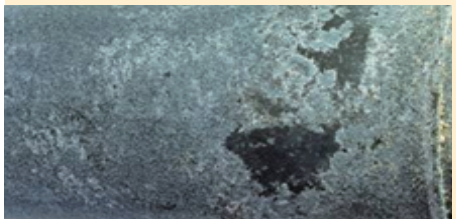
# Parker EcoPure$^{Plus}$ - Feature


The differential pressure indicator gives a visual indication on the current state of the filter element.(option)

As the clean air exits the element, outlet air stabilizers direct the air out of the filter housing with the minimum of turbulence and pressure loss. These also ensure the element is located correctly within the filter bowl.

To maintain your guaranteed air quality, filter elements must be replaced every year with genuine Parker parts. Throughout its life, the filter element is constantly under bombardment from oily, acidic condensate and high velocity dirt particles, which needs to be removed and retained to protect your compressed air system.

The zero-loss drain (standard for filtration grades GP & HE) features an auto-cleaning protection screen for highest reliability. Simply press the drain to verify its correct operation.



## Surface Protection

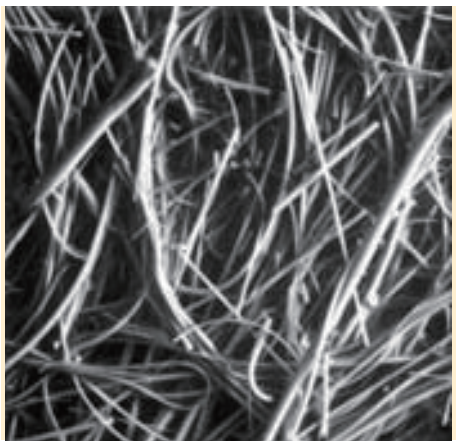
All sizes of housings are built to the highest quality standards, featuring our unique surface protection treatment, applied to both the inside and the outside of the filter housing. Thanks to the attention of quality surface treatment, Parker EcoPure$^{Plus}$ can withstand even the toughest industrial conditions and comes with a 5 year guarantee on the filter housings.

## Clean change filter element

Filter element changes are now easy and do not enquire the user to directly handle the contaminated portion of the element during annual maintenance.

## Minimal service clearance

Space saving design minimizes service clearance and allows installation in confined spaces.

## Filtration Media

Modern coalescing filters use a graded porosity filter medium with fine glass fibers in the interior and larger fibers on both the inside and outside surfaces. Parker EcoPure$^{Plus}$ elements have 8 to 10µm pores on the inner surface, reducing to 0.5 µm pores in the interior of the element, and widening to 40 to 80µm pores on the outer surface.

## Coalescing Elements

This coalescing element is made with Parker's special UNI-CAST construction. Composing an epoxy saturated, borosilicate glass micro-fiber media, this media is used in applications requiring the removal of liquid and particulate contamination. The outer synthetic fabric layer allows swift removal of coalesced liquids.

# Compressed Air Standards and Applications

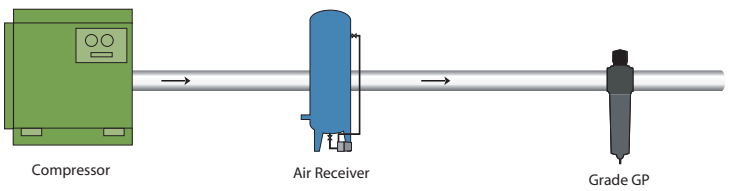
From aeration in pharmaceutical and chemical processes to pneumatic power systems, the possibilities for applications are endless. Parker has some suggested air cleanliness standards that may fit your needs.

International Standard ISO8573-1 has become the industry standard method for specifying compressed air cleanliness. The following diagrams describe various systems in terms of their corresponding ISO classification.

| International ISO Standards | | | | | |
|---|---|---|---|---|---|
| Notification as specified in ISO8573 - 1 | | | | | |
| Class | Solid Particle Maximum number of particles per $m^3$ | | | Water Pressure Dewpoint °C | Oil (Incl. Vapour) $mg/m^3$ |
| | 0.1-0.5 Micron | 0.5-1.0 Micron | 1.0-5.0 Micron | | |
| 1 | 20,000 | 400 | 10 | -70 | 0.01 |
| 2 | 400,000 | 6,000 | 100 | -40 | 0.1 |
| 3 | - | 90,000 | 1,000 | -20 | 1 |
| 4 | - | - | 10,000 | 3 | 5 |
| 5 | - | - | 100,000 | 7 | - |
| 6 | - | - | - | 10 | - |

## ISO Class 2 ☐ 3

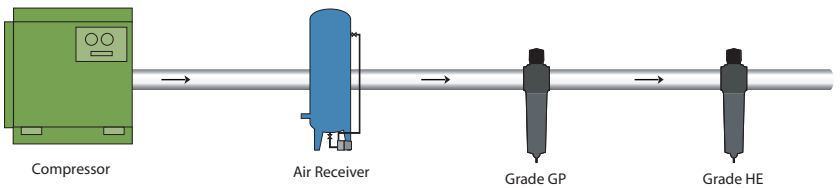
Compressor Room (Source)
Air Preparation Equipment:




Any compressor with aftercooler. Air intended for use with lubricated air tools, air motors, cylinders, shot blasting, non-frictional valves.

## ISO Class 1 ☐ 1

Compressor Room (Source)
Air Preparation Equipment:

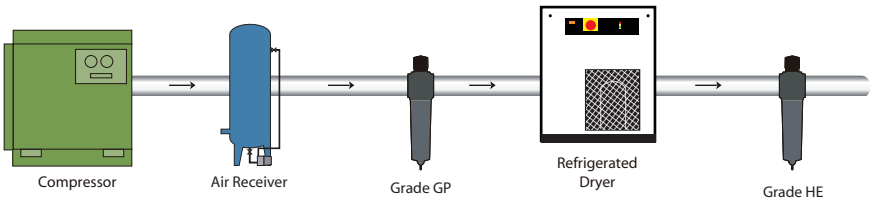



Any compressor with aftercooler and 2-stage coalescing. Air intended for use with lubricated control valves, cylinders, parts blow-down, etc.

## ISO Class 1 4 1

Compressor Room (Source)
Air Preparation Equipment:

Point-Of-Use
Air Preparation Equipment:

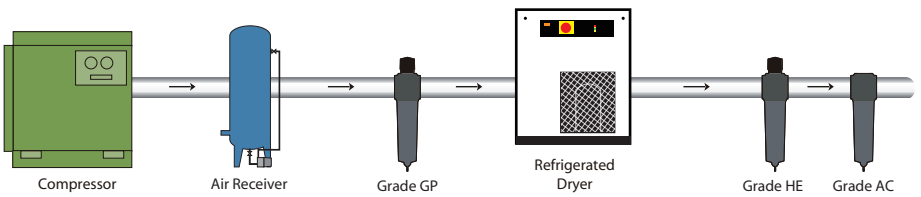



Any compressor with aftercooler, 2-stage coalescing and refrigerated dryer. Air intended for use with air-gauging, air conveyors, spray-painting, food processing, instrumentation, blow molding, cosmetics, film processing, bottling, pharmaceuticals, dairy, breweries, medical, robotics and close tolerance valves.

## ISO Class 1 4 1

Compressor Room (Source)
Air Preparation Equipment:

Point-Of-Use
Air Preparation Equipment:

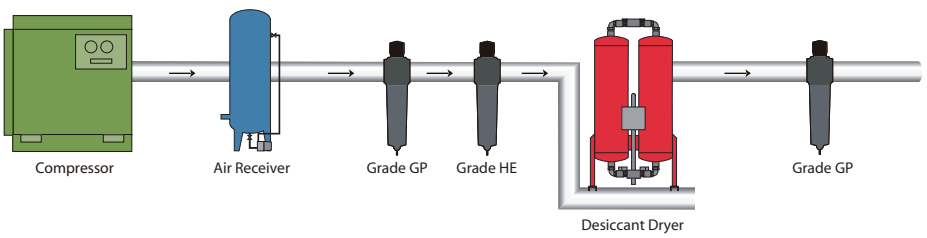



Any compressor with aftercooler, 2-stage coalescing, refrigerated dryer and carbon absorber. Air intended for use as industrial breathing air and decompression chambers. CAUTION: Always use high temperature synthetic lubricants and monitor (alarm for carbon monoxide concentrations). This system will not eliminate toxic gases!

## ISO Class 1 2 1

Compressor Room (Source)
Air Preparation Equipment:

Point-Of-Use
Air Preparation Equipment:




Any compressor with aftercooler, two-stage and double coalescing and a regenerative-type desiccant dryer. Air intended for use in applications involving rapid expansion of compressed air, critical instrumentation, high purity gases, computer chip drying, etc. CAUTION: This air is too dry for respiratory use.

The applications are based upon the test result of GP-060-FX, HE-060-FX and AC-060-MX.

# Filtration Grades

| Coalescing Elements (removal of liquids and particulate) | | Adsorption Element (removal of vapor and odor) |
|---|---|---|
| **Grade GP**<br>Grade GP filters are used as pre-filters for Grade HE to remove gross amounts of particle, water and oil aerosols. | **Grade HE**<br>(Precede with Grade GP filter)<br>Grade HE filters are used when "total removal of particle, water and oil aerosols" is required. Because of its overall performance characteristics, this grade is most often recommended. | **Grade AC**<br>(Precede with Grade HE filter)<br>Grade AC are used to remove oil vapor and odor. It is used to remove smell or taste of compressor lube oil, as well as trace amounts of oil vapour in the compressed air stream. |

# Product Selection

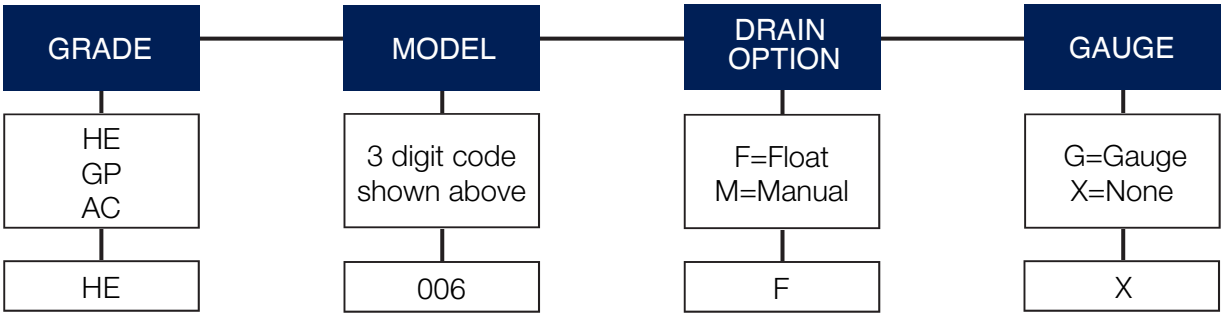
Stated flows are for operation at 7 bar g (100 psi g) with reference to 20°C, 1 bar a, 0% relative water vapour pressure.
For flows at other pressures apply the correction factors shown.

| Model | Port Size | Flow Rate | | | | Replacement Element kit |
|---|---|---|---|---|---|---|
| | | m³/min | m³/hr | scfm | l/sec | |
| (Grade)-006- ☐☐ | 1/4" BSPP | 0.6 | 36 | 21 | 10 | E006-(Grade) |
| (Grade)-010- ☐☐ | 1/2" BSPP | 1 | 60 | 36 | 17 | E010-(Grade) |
| (Grade)-020- ☐☐ | 3/4" BSPP | 2 | 120 | 72 | 34 | E020-(Grade) |
| (Grade)-030- ☐☐ | 1" BSPP | 3 | 180 | 106 | 50 | E030-(Grade) |
| (Grade)-045- ☐☐ | 1" BSPP | 4.5 | 270 | 161 | 76 | E045-(Grade) |
| (Grade)-060- ☐☐ | 1" BSPP | 6 | 360 | 216 | 102 | E060-(Grade) |
| (Grade)-080- ☐☐ | 1.1/2" BSPP | 8 | 480 | 286 | 135 | E080-(Grade) |
| (Grade)-100- ☐☐ | 1.1/2" BSPP | 10 | 600 | 360 | 170 | E100-(Grade) |
| (Grade)-120- ☐☐ | 1.1/2" BSPP | 12 | 720 | 432 | 204 | E120-(Grade) |
| (Grade)-150- ☐☐ | 2" BSPP | 15 | 900 | 540 | 255 | E150-(Grade) |
| (Grade)-180- ☐☐ | 2" BSPP | 18 | 1080 | 646 | 305 | E180-(Grade) |
| (Grade)-210- ☐☐ | 2" BSPP | 21 | 1260 | 754 | 356 | E210-(Grade) |
| (Grade)-250- ☐☐ | 3" BSPP | 25 | 1500 | 898 | 424 | E250-(Grade) |
| (Grade)-350- ☐☐ | 3" BSPP | 35 | 2100 | 1257 | 593 | E350-(Grade) |
| (Grade)-400- ☐☐ | 3" BSPP | 40 | 2400 | 1437 | 678 | E400-(Grade) |

Correction Factors

| Line Pressure | | Correction Factor pressure (CFP) |
|---|---|---|
| bar g | psi g | |
| 1 | 15 | 0.38 |
| 2 | 29 | 0.53 |
| 3 | 44 | 0.65 |
| 4 | 58 | 0.76 |
| 5 | 73 | 0.85 |
| 6 | 87 | 0.93 |
| 7 | 100 | 1.00 |
| 8 | 116 | 1.07 |
| 9 | 131 | 1.13 |
| 10 | 145 | 1.19 |
| 11 | 160 | 1.25 |
| 12 | 174 | 1.31 |
| 13 | 189 | 1.36 |
| 14 | 203 | 1.41 |
| 15 | 218 | 1.46 |
| 16 | 232 | 1.51 |

Filter Coding Examples




To correctly select a filter model, the flow rate of the filter must be adjusted for the minimum operating pressure of the system
1. Obtain the minimum operating pressure and maximum compressed air flow rate at the inlet of the filter.
2. Select the correction factor for minimum operating pressure from the CFP table (always round down e.g. for 5.3 bar, use 5 bar correction factor)
3. Calculate the minimum filtration capacity Minimum Filtration Capacity = Compressed Air Flow Rate x CFP
4. Using the minimum filtration capacity, select a filter model from the flow rate tables above (filter selected must have a flow rate equal to or greater than the minimum filtration capacity)

# Media Specifications

| Grade Designation | Coalescing Efficiency 0.3 to 0.6 Micron Particles | Maximum Oil Carryover[1] PPM w/w | Micron Rating |
|---|---|---|---|
| Grade GP | 95% | 1.0 | 1.0 |
| Grade HE | 99.97% | 0.01 | 0.01 |
| Grade AC | 99+%[2] | N/A | N/A |

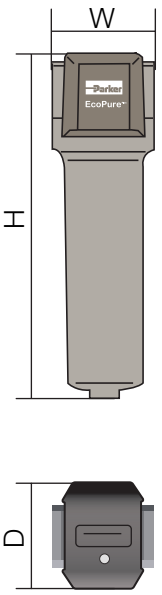
1. Tested per ISO 8573.2.
2. Oil vapor removal efficiency is given for AC media.

# Technical Data

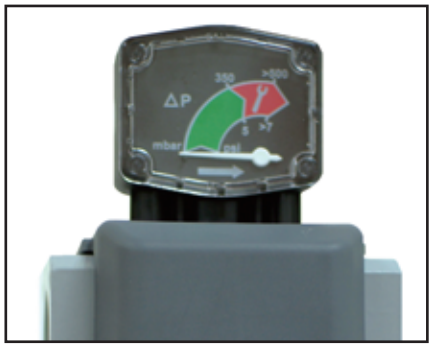
| Filter Grade | Max Operating Pressure | | Min Operating Temp | | Max Operating Temp | |
|---|---|---|---|---|---|---|
| | bar g | psi g | °C | °F | °C | °F |
| GP | 16 | 232 | 1.5 | 35 | 66 | 151 |
| HE | 16 | 232 | 1.5 | 35 | 66 | 151 |
| AC | 16 | 232 | 1.5 | 35 | 66 | 151 |

# Weights and Dimensions

| Model | Port Size | Height (H) | | Width (W) | | Depth (D) | | Weight | |
|---|---|---|---|---|---|---|---|---|---|
| | | mm | ins | mm | ins | mm | ins | kg | lbs |
| 006 | 1/4" BSPP | 177.7 | 7 | 69 | 2.72 | 73 | 2.87 | 0.63 | 1.39 |
| 010 | 1/2" BSPP | 275.5 | 10.85 | 89 | 3.5 | 92 | 3.62 | 1.17 | 2.58 |
| 020 | 3/4" BSPP | 275.5 | 10.85 | 89 | 3.5 | 92 | 3.62 | 1.23 | 2.71 |
| 030 | 1" BSPP | 375.5 | 14.78 | 109 | 4.29 | 115.9 | 4.56 | 2.35 | 5.18 |
| 045 | 1" BSPP | 375.5 | 14.78 | 109 | 4.29 | 115.9 | 4.56 | 2.48 | 5.47 |
| 060 | 1" BSPP | 522.5 | 20.57 | 109 | 4.29 | 115.9 | 4.56 | 3 | 6.61 |
| 080 | 1 1/2" BSPP | 522 | 20.57 | 109 | 4.29 | 115.9 | 4.56 | 3.1 | 6.83 |
| 100 | 1 1/2" BSPP | 560 | 22.05 | 150 | 5.91 | 154.9 | 6.1 | 6.42 | 14.15 |
| 120 | 1 1/2" BSPP | 560 | 22.05 | 150 | 5.91 | 154.9 | 6.1 | 6.56 | 14.46 |
| 150 | 2" BSPP | 560 | 22.05 | 150 | 5.91 | 154.9 | 6.1 | 6.60 | 14.55 |
| 180 | 2" BSPP | 560 | 22.05 | 150 | 5.91 | 154.9 | 6.1 | 6.86 | 15.12 |
| 210 | 2" BSPP | 560 | 22.05 | 150 | 5.91 | 154.9 | 6.1 | 7.09 | 15.63 |
| 250 | 3" BSPP | 768 | 30.24 | 188 | 7.4 | 168.9 | 6.65 | 11.96 | 26.37 |
| 350 | 3" BSPP | 768 | 30.24 | 188 | 7.4 | 168.9 | 6.65 | 12.72 | 28.04 |
| 400 | 3" BSPP | 768 | 30.24 | 188 | 7.4 | 168.9 | 6.65 | 13.14 | 28.97 |




# Accessories



Differential Pressure Gauge

Float Drain

Manual Drain

# Worldwide Manufacturing Locations

Parker Hannifin Corporation
**Filtration Group**
**Global Headquarters**
6035 Parkland Boulevard
Cleveland, OH 44124-4141
T 216 896 3000, F 216 896 4021
www.parker.com

## North America

### Compressed Air Treatment

**Filtration & Separation/Balston**
242 Neck Road
Haverhill, MA 01835-0723
T 978 858 0505, F 978 858 0625
www.parker.com/balston

**Filtration & Separation/Finite**
500 Glaspie Street, PO. Box 599
Oxford, MI 48371-5132
T 248 628 6400, F 248 628 1850
www.parker.com/finitefilter

**Purification, Dehydration and Filtration Division**
4087 Walden Avenue
Lancaster, NY 14086
T 716 685 4040, F 716 685 1010
www.parker.com/pdf

**Sales Office**
5900-B Northwoods Parkway
Charlotte, NC 28269
T 704 921 9303, F 704 921 1960
www.domnickhunter.com

### Engine Filtration & Water Purification

**Racor**
3400 Finch Road, PO Box 3208
Modesto, CA 95353
T 209 521 7860, F 209 529 3278
www.parker.com/racor

**Racor - Village Marine Tec.**
2000 West 135th Street
Gardena, CA 90249
T 310 516 9911, F 310 538 3048
www.villagemarine.com

### Hydraulic Filtration

**Hydraulic Filter**
16810 Fulton County Road #2
Metamora, OH 43540-9714
T 419 644 4311, F 419 644 6205
www.parker.com/hydraulicfilter

### Process Filtration

**Process Advanced Filtration**
2340, Eastman Avenue
Oxnard, CA 93030
T 805 604 3400, F 805 604 3401
www.parker.com/processfiltration

## Europe

### Compressed Air Treatment

**domnick hunter Industrial**
Dukesway, Team Valley Trading Estate
Gateshead, Tyne & Wear
England NE11 0PZ
T +44 (0) 191 402 9000,
F +44 (0) 191 482 6296
www.domnickhunter.com

**Parker Gas Separations**
Oude Kerkstraat 4
P O Box 258
4870 AG Etten-Leur, Netherlands
T +31 76 508 5300, F +31 76 508 5333

**Hiross Zander**
**Padova Business Unit**
Strada Zona Industriale 4
35020 S. Angelo di Piove Padova, Italy
T +39 049 9712 111, F +39 049 9701 911
www.dh-hiross.com

**Hiross Zander**
**Essen Business Unit**
Zander Aufberaitungstechnik GmbH
Im Teelbruch 118
D-45219 Essen, Germany
T +49 2054 9340, F +49 2054 934164
www.zander.de

### Engine Filtration & Water Purification

**Racor**
Shaw Cross Business Park
Churwel Vale Dewsbury,
WF12 7RD England
T +44 (0) 1924 487000,
F +44 (0) 1924 487038
www.parker.com/rfde

**Racor Research & Development**
Parker Hannifin GmbH & Co KG
Inselstrasse 3-5
70327 Stuttgart Germany
T +49 (0) 711 7071 290-0,
F +49 (0) 711 7071 290-70
www.parker.com/racor

### Hydraulic Filtration

**Hydraulic Filter**
Stieltjesweg 8, 6827 BV
P.O. Box 5008 6802 EA
Arnhem, Holland
T +31 26 3760376, F +31 26 3643620
www.parker.com/hfde

**Urjala Operation**
Salmentie 260
31700 Urjala as Finland
T +358 20 753 2500, F +358 20 753 2501
www.parker.com/hfde

**Condition Monitoring Center**
Brunel Way Thetford,
Norfolk IP 24 1HP England
T +44 1842 763299, F +44 1842 756300
www.parker.com/hfde

### Process Filtration

**domnick hunter Process**
Durham Road, Birtley Co. Durham,
DH3 2SF England
T +44 (0) 191 410 5121,
F +44 (0) 191 410 5312
www.domnickhunter.com

## Asia Pacific

**Australia**
9 Carrington Road, Castle Hill
NSW 2154, Australia
T +61 2 9634 777, F +61 2 9899 6184
www.parker.com/australia

**China**
280 YunQiao Road
JinQiao Export Processing Zone
Shanghai 101206 China
T +86 21 5031 2525, F +86 21 5834 3714
www.parker.com/china

**India**
Plot EL 26, MIDC, TTC Industrial Area
Mahape, Navi Mumbai 400 709 India
T +91 22 5613 7081, 82, 83, 84, 85
F +91 22 2768 6618 6841
www.parker.com/india

**Japan**
626, Totsuka-cho, Totsuka-ku
Yokohama-shi, 244-0003 Japan
T +81 45 870 1522, F +81 45 864 5305
www.parker.com/japan

**Korea**
1-C Block, Industrial Complex of Jangan,
615-1, Geumui-Ri Jangan-Myeon,
Hwaseong-City Gyeonggi-Do, Korea
T +82 31 359 0771, F +82 31 359 0770
www.parker.com/korea

**Singapore**
11, Fourth Chin Bee Road
Singapore 619 702
T +65 6887 6300, F +65 6261 4929
www.parker.com/singapore

**Thailand**
1023 3rd Floor, TPS Building
Pattanakam Road, Suanluang,
Bangkok 10250 Thailand
T +66 2717 8140, F +66 2717 8148
www.parker.com/thailand

## Latin America

**Parker Comercio Ltda.**
**Filtration Division**
Estrada Municipal Joel de Paula
900 Eugenio de Melo,
Sao Jose dos Campos
CEP 12225-390 SP Brazil
T +55 12 4009 3500, F +55 12 4009 3529
www.parker.com/br

**Pan American Division-Miami**
7400 NW 19th Street, Suite A
Miami, FL 33128
T 305 470 8800, F 305 470 8808
www.parker.com/panam

## Africa

**Parker Hannifin Africa Pty Ltd**
Parker Place, 10 Berne Avenue,
Aeroport Kempton Park,
1620 South Africa
T +27 11 9610700, F +27 11 3927213
www.parker.com/eu

FC-2-54A 12/03

Parker Hannifin Filtration Products and Systems (Shanghai) Co.,Ltd
No.2 Workshop,786 Wangqiao Road,
Jinqiao Processing Southem Zone,
Shanghai, China
Tel: +(86)21 5838 3030
Fax:+(86)21 5838 2428