



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



# OIL-X EVOLUTION

High Efficiency Compressed Air Filters



ENGINEERING YOUR SUCCESS.

# Compressed air contamination is a real problem for industry

In today's modern production facilities, the use of compressed air is often pivotal to manufacturing processes. Irrespective of whether the compressed air comes into direct contact with the product or is used to automate a process, provide motive power, or even to generate other gases on-site, a clean, dry, reliable compressed air supply is essential to maintain efficient and cost effective production.

Most problems experienced by compressed air users derive from contamination already in the compressed air system. Typically there are 10 different contaminants from four different sources and even more in critical applications. that need to be removed or reduced to acceptable levels.



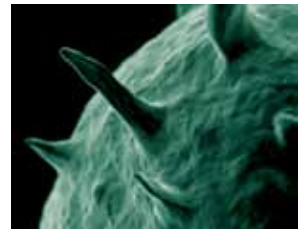
Atmospheric dirt



Water vapour



Oil vapour



Micro-organisms

**Failure to remove or reduce contamination will cause many problems with the compressed air system, for example:**

- Corrosion within compressed air storage vessels and the air distribution system
- Blocked or damaged valves, cylinders, air motors and air tools
- Damaged production equipment
- Premature and unplanned desiccant changes for adsorption dryers
- Product contamination

In addition to problems associated with the compressed air system itself, allowing contaminants such as particulate, oil and micro-organisms to exhaust from valves, cylinders and air tools, can lead to an unhealthy and unsafe working environment.

**Compressed air contamination will ultimately lead to:**

- Inefficient production processes
- Spoiled, damaged or reworked products
- Reduced production efficiency
- Increased manufacturing costs

## Parker domnick hunter has a cost effective solution for every contaminant

Purification Equipment Technologies	Contamination Removal							
	Bulk Condensed Water	Water Vapour	Water Aerosols	Atmospheric Dirt & Solid Particulate	Micro-organisms	Oil Vapour	Liquid Oil & Oil Aerosols	Rust & Pipescale
Water Separators	•							
Coalescing Filters			•	•	•		•	•
Adsorption Filters						•		
Adsorption Dryers		•						
Refrigeration Dryers		•						
Dust Removal Filters				•	•			•
Microbiological Filters				•	•			

Many manufacturers offer compressed air filters, that look the same, claim the same, but are not the same.

**Parker domnick hunter – Your Compressed Air Purification Partner**

# Parker domnick hunter - The original name in Compressed Air Purification



The origins of modern compressed air filtration can be traced back to domnick hunter in 1963, it was the first company to use microfibre filter media for purification applications, changing the compressed air industry forever.

The OIL-X filter range was the first filter range to fully utilise this groundbreaking technology and has always been synonymous with high quality compressed air. Now in the 21st century, the OIL-X name remains, but the technology has evolved beyond recognition.

## Parker domnick hunter OIL-X EVOLUTION

Since the introduction of the first OIL-X range, Parker domnick hunter has continued to develop both the compressed air filter and the standards governing compressed air quality. Constantly innovated, OIL-X EVOLUTION has become the leading technology for compressed air filtration, providing the exact balance between air quality, energy efficiency and low lifetime costs.

- Industry leading design
- World-wide approvals for safety and reliability
- Meets or exceeds the requirements for delivered air quality shown in all editions of ISO8573-1, the international standard for compressed air quality
- Fully tested in accordance with ISO12500-1
- Performance independently validated by Lloyds Register
- The only filter range to offer a one year air quality guarantee
- 10 years guarantee on filter housings
- World-wide Parker support network
- OIL-X EVOLUTION - often copied, never matched

### APPROVALS, ACCREDITATIONS AND ASSOCIATIONS



ISO9001:2000 ISO14001



### INTERNATIONAL APPROVALS



## The Parker domnick hunter Design Philosophy

Parker domnick hunter has been supplying industry with high efficiency filtration and purification products since 1963. Our philosophy 'Designed for Air Quality & Energy Efficiency' ensures products that not only provide the user with clean, high quality compressed air, but also with low lifetime costs and reduced CO<sub>2</sub> emissions.



# Air Quality

The primary reason for using a compressed air filter is to remove contamination and improve air quality.

Parker domnick hunter's design Philosophy of Air Quality & Energy Efficiency has led to a product that provides:

- **Highest air quality**
- **Lowest power consumption**
- **Lowest operational differential pressure**
- **Lowest CO<sub>2</sub> emissions**
- **Lowest total cost of ownership**

## Air Quality Claims

Most compressed air filter manufacturers claim that the delivered air from their filters complies with the quality classifications of ISO8573 part 1 when tested with the methods and equipment stated in ISO8573 parts 2-9, but how do they really perform?

## Filters & Elements may look the same, but they don't all perform the same.

Six of the top selling compressed air filters available today were tested against OIL-X EVOLUTION for filtration performance and energy consumption (Dirt Loading)

- **83% of General Purpose filters and 67% of High Efficiency filters tested did not meet their published performance claims for oil carryover**
- **50% of manufacturers tested did not publish initial wet differential pressure figures**
- **67% of the General Purpose filters and 33% of High Efficiency filters tested that did publish wet differential pressure figures did not meet their published performance claims**
- **0% of General Purpose filters tested met published performance figures for both oil carryover and wet dp**
- **Only 17% of High Efficiency filters tested met published performance figures for both oil carryover and wet dp**
- **0% Matched OIL-X EVOLUTION for filtration performance**
- **0% Exceeded OIL-X EVOLUTION for filtration performance**



## OIL-X EVOLUTION - #1 in filtration

- **Air quality which meets or exceeds the requirements of ISO8573-1 (all revisions)**
- **Performance tested in accordance with ISO12500 & ISO8573**
- **Only filter range to offer a one year air quality guarantee**
- **Filtration performance independently verified by Lloyds Register**



# Energy Efficiency

Any restriction to air flow within a filter housing and element will reduce the system pressure. To generate compressed air, large amounts of electrical energy are consumed, therefore any pressure losses within the system can be directly converted into a cost for wasted energy. The higher the pressure loss, the higher the energy cost.

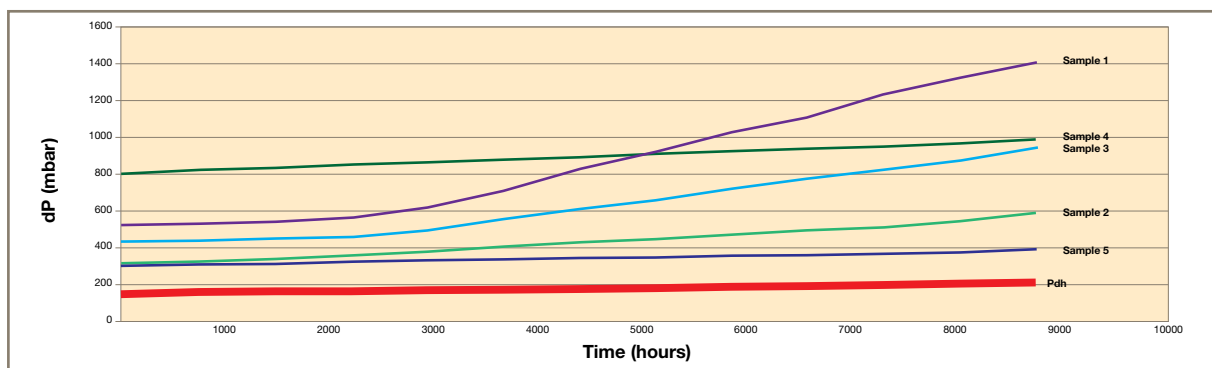
When comparing the running cost of alternative filters, many will calculate the energy cost of the filter, using the differential pressure or dP values printed in literature. As demonstrated, these figures are not always accurate. Additionally, literature values are only representative of the

filter in an “as new” condition, and do not take into consideration the initial and on-going blockage characteristics of the filter. Although filters and elements may look the same, their blockage characteristics and operational costs are quite different

## Differential Pressure – An accurate picture

In a comparative test of OIL-X EVOLUTION filters against five commonly available alternative filters, the blockage characteristics and therefore the true differential pressure of each filter can be demonstrated.

### Operational dP

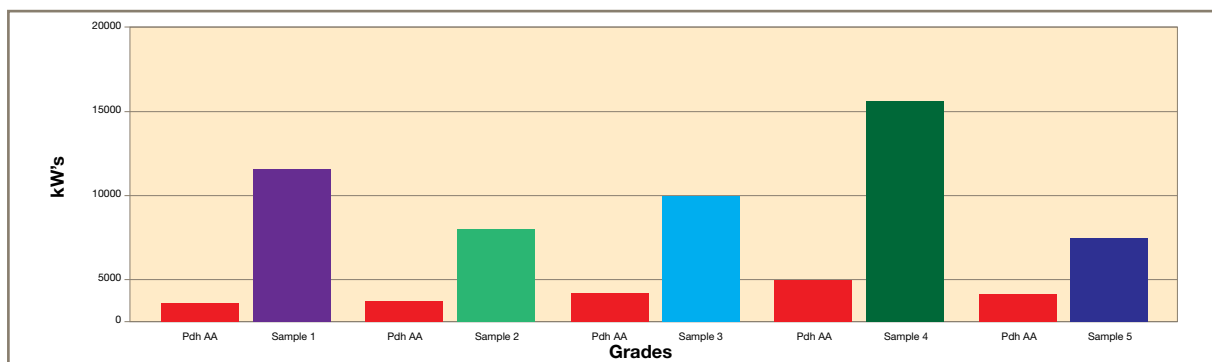


Test criteria: Filters were tested at their full rated flow and injected with ISO 12103 A4 course test dust using a pressurised dust injection system. The dust was injected in 12 intervals to simulate the monthly loading of the filter element and show a total annual differential pressure curve. OIL-X EVOLUTION filters were tested at an identical flow rate to the comparative filter and with an identical dirt loading.

### The accurate running costs of a filter

Using the above data, a true picture of energy consumption can be seen.

### Comparison of annual energy usage (4000 hrs operation)



This calculation based upon a 75kW compressor operating for 4000 hours

**OIL-X EVOLUTION – Payback within first year!**

# OIL-X EVOLUTION

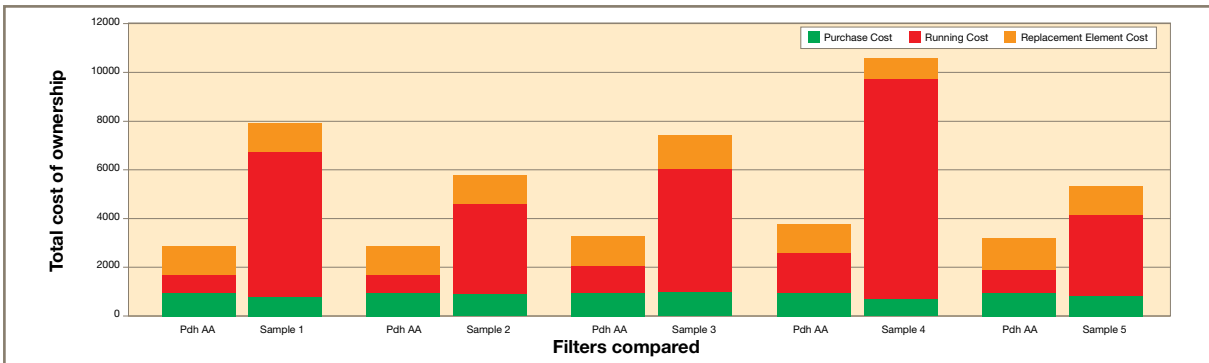
The most energy efficient compressed air filters in the world.



### Low Lifetime Cost

A filter with a low purchase price may not always turn out to be the most cost effective solution

### Five years total cost of ownership



Calculation based upon initial purchase price of the filter housing, cost of £0.10 per kWh and five annual filter element changes. An estimated annual increase of 3% was included on both energy costs and element price.

**And remember, not all filters achieved their claimed air quality!**

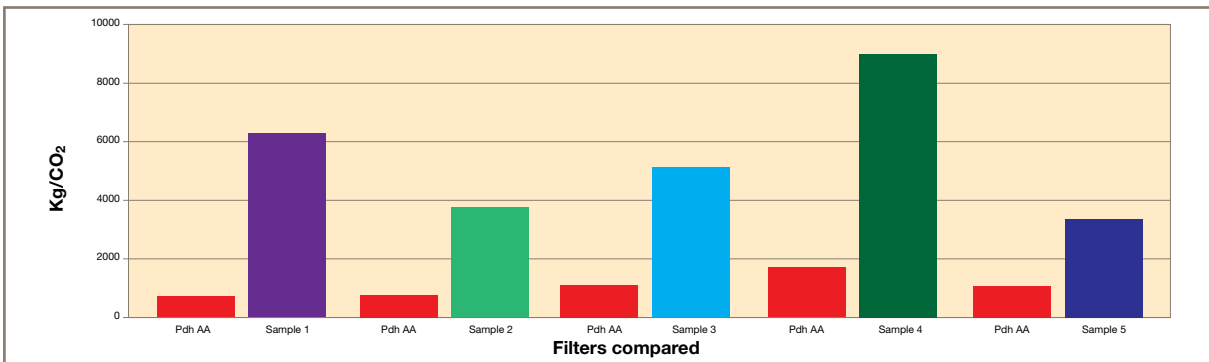


### Reduced CO<sub>2</sub> Emissions

Many countries worldwide are looking closely at their manufacturing industries in an effort to reduce the amount of harmful greenhouse gases released into the atmosphere. The use of electricity has a direct impact on

the generation and release of CO<sub>2</sub>. By significantly reducing the energy consumption of its products, Parker can help you to reduce your carbon footprint and protect the environment.

### Comparison of annual CO<sub>2</sub> emissions (4000 hrs Operation)



Calculation assumes 1kWh emits 0.544Kg/CO<sub>2</sub> (Information provided by UK Carbon Trust at time of publication)

**OIL-X EVOLUTION - The environmentally friendly filter**

# OIL-X EVOLUTION

## Water Separators - Grade WS

- The world's most energy efficient Water Separators
- For the removal of bulk condensed water and liquid oil
- Used to protect coalescing filters from bulk liquid contamination
- High liquid removal efficiencies at all flow conditions
- Tested in accordance with ISO8573-9



### How OIL-X EVOLUTION Water Separators work

Parker domnick hunter OIL-X EVOLUTION WS Water Separators utilise centrifugal technology which provides a more efficient method of bulk liquid removal. Using a combination of direction change and centrifugal action, water is effectively separated from the compressed air flow. Parker domnick hunter centrifugal separators are very efficient with varying flow conditions and have been further optimised to reduce energy costs.

- Wet air enters the inlet port and is directed into the separator module fixed turning vanes causing the air to spin inside the vessel and then change direction as it passes the impinger.
- A vortex is then created which narrows and intensifies as it reaches the lower part of the separator.
- Bulk liquid is therefore removed from the air stream due to a combination of:
  - Directional changes of the air stream.
  - Velocity changes.
  - Centrifugal action of the vortex.
- As the vortex reaches the bottom of the separator module, air is forced through the centre of the vortex.
- Aerospace turning vanes located in the outlet of the separator module now turn an “inefficient corner” into a number of more “efficient corners” to reduce turbulence, minimise pressure loss and therefore operational costs.

In addition to protecting coalescing filters from bulk liquid contamination, Grade WS Water Separators can be used on compressor inter-cooler and after-cooler stages, wet air receivers and refrigeration dryers.

# OIL-X EVOLUTION

## High efficiency coalescing and dust removal filters

- For the removal of water and oil aerosols, atmospheric dirt and solid particles, rust, pipescale and micro-organisms
- Coalescing filter performance tested to the stringent requirements of ISO12500-1 and ISO8573-2
- Dry particulate filter performance tested in accordance with the requirements of ISO8573-4



### OIL-X EVOLUTION – Features that provide air quality

The Parker domnick hunter OIL-X EVOLUTION range of die-cast compressed air filters has been designed from the outset to meet the air quality requirements of all editions of ISO8573-1, when validated in accordance with the stringent requirements of ISO12500-1.

#### Correct selection of filtration media

Coalescing and dust removal filters use a high efficiency borosilicate glass nanofibre material which has a 96% voids volume, providing media with excellent filtration efficiency and a high dirt holding capacity.



#### Construction of the filtration media into a filter element

OIL-X EVOLUTION filter media is constructed into a filter element using a unique deep bed pleating technique in place of the more conventional wrapped construction. This provides 450% more filtration surface area when compared to a traditional wrapped filter element and around 200% more surface area compared to a traditional pleated element. Deep bed pleating also reduces the air flow velocity within the media, which further improves filtration performance.

Additionally, the high efficiency AA and AAR grade elements have a unique graded density media construction which provides even greater filtration performance without adding to pressure loss or energy consumption.



### OIL-X EVOLUTION

coalescing filters utilise four drainage methods to ensure high performance liquid removal, whilst conventional filters use only one.



#### Drainage method 1

High efficiency drainage layer provides increased liquid drainage, improved chemical compatibility and higher operational temperatures when compared to ordinary materials.

#### Typical element



Wet band in air flow path

#### OIL-X EVOLUTION



No wet band in air flow path

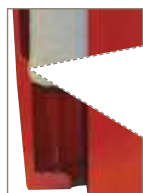
#### Drainage method 2

Typical filter elements have a build up of liquid known as a "wet band" where the drainage layer is glued into the lower endcap. The OIL-X EVOLUTION design wraps the drainage layer under the lower endcap to remove coalesced liquid from the air flow path, increasing liquid removal efficiency, and providing more usable filtration surface area.



#### Drainage method 3

Surface tension breakers on the lower filter element endcap provide fast and efficient drainage of coalesced liquid.



#### Drainage method 4

Drainage ribs cast into the filter bowl compress the lower part of the filter element, allowing bulk liquid to rapidly drain from the filter element through capillary action.

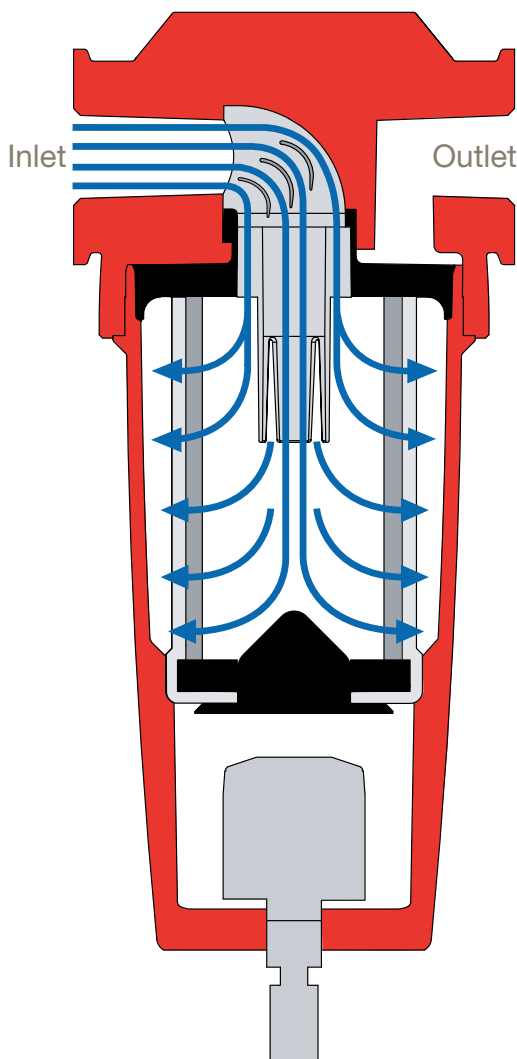


# OIL-X EVOLUTION – Features providing energy efficiency

In these times of increasing energy costs, an efficient and cost effective manufacturing process is a major factor in maintaining the profitability and growth of your business. All Parker domnick hunter products are designed to not only minimise the use of compressed air and electrical energy in their operation, but also to significantly reduce the operational costs of the compressor by minimising pressure losses.

OIL-X EVOLUTION filters incorporate a number of unique and patented design features to minimise differential pressure and provide a filter and element combination where the differential pressure starts low and stays low to maximise energy savings and provide the lowest lifetime costs without compromising air quality.

## OIL-X EVOLUTION die-cast filters optimised flow path from patented Aerospace Flow Management System



**Providing an optimal flow path for the compressed air through the filter housing and element is key to reducing system operating costs**

Pressure losses in a compressed air filter is a combination of fixed pressure losses and incremental pressure losses. Fixed pressure losses are derived from the filter housing and the interface between the filter housing and filter element.

Incremental pressure losses are directly related to the filter element as it blocks up with contamination.

In most filters, high operational costs can be attributed to an inefficient air flow path within the filter housing and element and poorly selected filtration media.

In addition to this, the high differential pressure “change points” recommended by many filter manufacturers increase operational costs even further.



“Bell mouth” housing inlet & full flow inlet conduit



Smooth 90° elbow & aerospace turning vanes



Flow distributor



Conical flow diffuser



### Deep bed pleating

Deep bed pleating reduces the air flow velocity within the filtration media. This both improves filtration performance of the filter element and also reduces pressure losses.



### Specialist media treatment

All OIL-X EVOLUTION coalescing and dust removal filter media includes a specialist treatment. This actively repels oil and water to ensure that coalesced liquid does not reduce the voids volume. Maintaining a high voids volume reduces the risk of premature blockage, system pressure losses and high energy consumption.

# Advanced filter housings

OIL-X EVOLUTION die-cast filter housings provide simple installation and long housing life with reduced maintenance. The unique design of the OIL-X EVOLUTION die-cast filter also provides more port sizes to give greater application flexibility. A ‘clean change’ element design ensures that service technicians do not have to directly handle contaminated filter elements during maintenance.



### Filter connections

More port sizes are available to match both pipe size and system flow rate giving additional customer choice and reduced installation costs. Standard range suitable for pressures up to 20 bar g (290 psi g).



No corrosion with Alocrom treatment.

Rapid corrosion of untreated aluminium.

### Compact and lightweight

Advanced element design provides a smaller, more compact filter.

### Full corrosion protection

OIL-X EVOLUTION filter housings undergo cleaning, de-greasing and Alocrom treatment before painting. This not only primes the aluminium surface for painting, but also provides corrosion protection. All OIL-X EVOLUTION filter housings are protected with a tough, durable dry powder epoxy coating.



### ‘Clean change’ filter element

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

### Minimal service clearance

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



Float drain

### Choice of drains

Grade AO and AA coalescing filters are fitted with energy efficient, zero air loss float drains as standard for the removal of coalesced liquids. Grade AR and AAR dust removal filters and grade ACS adsorption filters are fitted with manual drains.

# OIL-X EVOLUTION for larger flowrates

4" Die-Cast Aluminium and Carbon Steel Fabricated Filters.

For larger flowrate applications, Parker domnick hunter manufactures cast aluminium 4" ported filters and a range of fabricated carbon steel filters from DN80 to DN300 sized flanges. These filters are also available in the standard five filtration grades.



## 4" Die-cast aluminium filters

- Cost effective alternative to flanged, fabricated carbon steel vessels
- Standard range up to 20 bar g (290 psi g)
- Alocrom and dry powder epoxy coated for full corrosion protection
- NT Easy fit element location for quick and simple maintenance



## Carbon steel fabricated filters

- Fabricated from carbon steel
- Standard range up to 16 bar g (232 psi g)
- Stainless steel models also available
- Designed in accordance with AD-2000
- NT Easy fit element location for quick and simple maintenance

## NT Easy fit element technology

- Low pressure drop when compared to traditional wrapped filter elements
- Drainage layer is suitable for use up to 100°C and is compatible with all compressor oils



Special endcap design allows for quick and easy maintenance.



No tie-rod to reduce pressure drop and simplify installation.



Pleated element technology for increased filtration area



Lower endcap design eases installation and prevents damage to drainage layer.

High capacity drainage layer ensures that all coalesced liquids are removed.

# OIL-X EVOLUTION - OVR Oil Vapour Removal

Oil vapour is oil in a gaseous form and will pass straight through coalescing filters which are designed to remove liquid oil and oil aerosols.

Parker domnick hunter use adsorption filter technology for the removal of oil vapours. The OIL-X EVOLUTION range consists of three types of oil vapour removal filters, modular carbon towers - Grade OVR, single stage in-line filters - Grade ACS and double stage in-line filters - Grade AC which consist of both coalescing and adsorption filter elements combined into one unit.

Oil vapour removal filters are selected based upon their position in the system and the frequency with which the elements can be changed.

OIL-X EVOLUTION Grade OVR can be used for both plant scale protection and at the point of use. OIL-X EVOLUTION Grade OVR filters are also used when frequent element changes cannot be tolerated by the user.

OIL-X EVOLUTION Grades ACS and AC are used for smaller flow rate applications, point of use applications and applications where more frequent element changes can be tolerated.



Grade OVR



Grade ACS



Grade AC

**OIL-X EVOLUTION adsorption filters utilise two types of adsorbent:**

- **OIL-X EVOLUTION - Grade OVR uses activated carbon granules**
- **OIL-X EVOLUTION - Grade ACS uses 100% activated carbon cloth**
- **OIL-X EVOLUTION - Grade AC use a combination of both adsorbents (depending upon flow rate)**



Carbon granules



100% activated carbon cloth

Removing oil vapour from compressed air is necessary to meet the air quality standards required by many critical applications and processes within industries such as pharmaceutical, medical, chemical, electronics, food and beverage and breathing air applications.

# Maintaining Air Quality

Annual filter element changes are essential (coalescing and dust removal filters)



To maintain your guaranteed air quality, filter elements must be replaced every year with genuine Parker domnick hunter parts.

Throughout its' life, the filter element is constantly under bombardment from oily, acidic condensate and high velocity dirt particles, which it has to remove and retain to protect your compressed air system. Over time, this can weaken the filter media and reduce filtration performance. This potential but critical reduction in filtration performance cannot be detected by simple differential pressure monitoring techniques.

Annual filter element changes are therefore essential and failure to replace every year could result in reduced production performance, degrading air quality and increased operational costs.

**Annual filter element changes ensure:**

- **Optimal performance is maintained**
- **Air quality continues to meets international standards**
- **Protection of downstream equipment, personnel and processes**
- **Low operational costs**
- **Increased productivity and profitability**
- **Peace of mind**

# Maintenance of oil vapour removal filters



Unlike oil aerosol removal filters which are changed annually to guarantee compressed air quality, the lifetime of an oil vapour removal filter can be attributed to various factors and require more frequent changes (unless OVR is used which is sized for 6000hrs life):

## Factors affecting the lifetime of adsorption filters

### Oil vapour concentration

The higher the inlet concentration of oil vapour, the faster the activated carbon capacity will expire.

### Bulk oil

Adsorption filters are designed to remove oil vapour and odours, not liquid oil or aerosols. Poorly maintained or non-existent pre-filtration will cause the OVR filter capacity to quickly expire.

### Temperature

Oil vapour content increases proportionally to inlet temperature, reducing element life. Additionally, as temperature increases, the adsorption capacity decreases, again reducing element life.

### Relative Humidity or Dewpoint

Wet air reduces the adsorptive capacity of the carbon – always try to install an adsorption filter after a dryer.

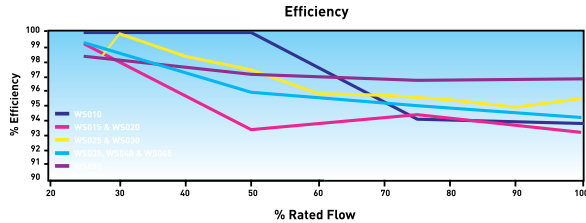
### Compressor oil changes

When compressor oil is changed, the new lubricant burns off “light ends” which increases the oil vapour content for hours or even weeks afterwards. This increase in oil vapour content is adsorbed by the OVR filter, significantly reducing its adsorptive life.

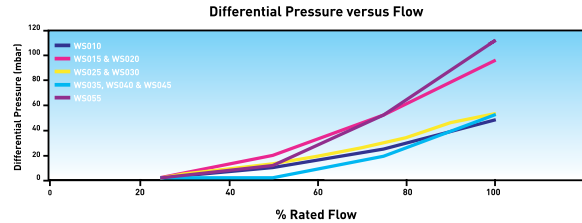
# OIL-X EVOLUTION

## Water Separators - Grade WS

### Separation Performance (models WS010 - WS055)



### Differential Pressure versus Flow (models WS010 - WS055)



### 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.

	Model	Pipe Size	L/S	m <sup>3</sup> /min	m <sup>3</sup> /hr	cfm
Cast Aluminum Range	WS010A <input type="checkbox"/> FX	1/4"	10	0.6	36	21
	WS010B <input type="checkbox"/> FX	3/8"	10	0.6	36	21
	WS010C <input type="checkbox"/> FX	1/2"	10	0.6	36	21
	WS015B <input type="checkbox"/> FX	3/8"	40	2.4	144	85
	WS020C <input type="checkbox"/> FX	1/2"	40	2.4	144	85
	WS020D <input type="checkbox"/> FX	3/4"	40	2.4	144	85
	WS020E <input type="checkbox"/> FX	1"	40	2.4	144	85
	WS025D <input type="checkbox"/> FX	3/4"	110	6.6	396	233
	WS030E <input type="checkbox"/> FX	1"	110	6.6	396	233
	WS030F <input type="checkbox"/> FX	1 1/4"	110	6.6	396	233
	WS030G <input type="checkbox"/> FX	1 1/2"	110	6.6	396	233
	WS035F <input type="checkbox"/> FX	1 1/4"	350	21	1260	742
	WS040G <input type="checkbox"/> FX	1 1/2"	350	21	1260	742
	WS045H <input type="checkbox"/> FX	2"	350	21	1260	742
	WS055I <input type="checkbox"/> FX	2 1/2"	800	48	2880	1695
	WS055J <input type="checkbox"/> FX	3"	800	48	2880	1695
Carbon Steel Range	WS1000	4"	1000	60	3600	2119
	WS800F	DN80	800	48	2880	1695
	WS1000F	DN100	1000	60	3600	2119
	WS1800F	DN150	1800	108	6480	3814
	WS3000F	DN200	3000	180	10800	6357
	WS4800F	DN250	4800	288	17280	10171
	WS7200F	DN300	7200	421	25920	14885

Note: Connection options (010 - 055) G = BSPP / N = NPT.  
WS1000 NPT option available on request.  
(800F - 7200F) DN = flanged.

### Water separator coding example

WS010 - WS055

Grade	Model	Pipe Size	Connection Type	Drain Option	Incident Monitor Option
WS	3 digit code denotes filter housing size	Letter denotes pipe size	G = BSPP N = NPT DN = Flanged	F = Float M = Manual	X = None
Example code					
WS	010	A	G	F	X

### Correction Factors

Line Pressure		Correction Factor pressure (CFP)
bar g	psi g	
1	15	4.00
2	29	2.63
3	44	2.00
4	58	1.59
5	73	1.33
6	87	1.14
7	100	1.00
8	116	0.94
9	131	0.89
10	145	0.85
11	160	0.82
12	174	0.79
13	189	0.76
14	203	0.73
15	218	0.71
16	232	0.68
When ordering a WS filter for pressures above 16 bar g (232 psi g), use manual drain. Replace F with M in product code. e.g. 015BBFX becomes 015BBMX. Models 250F - 7200F not suitable for pressures above 16 bar g (232 psi g)		
17	248	0.67
18	263	0.65
19	277	0.63
20	290	0.62

To correctly select a filter model, the flow rate of the filter must be adjusted for the minimum operating pressure of the system.

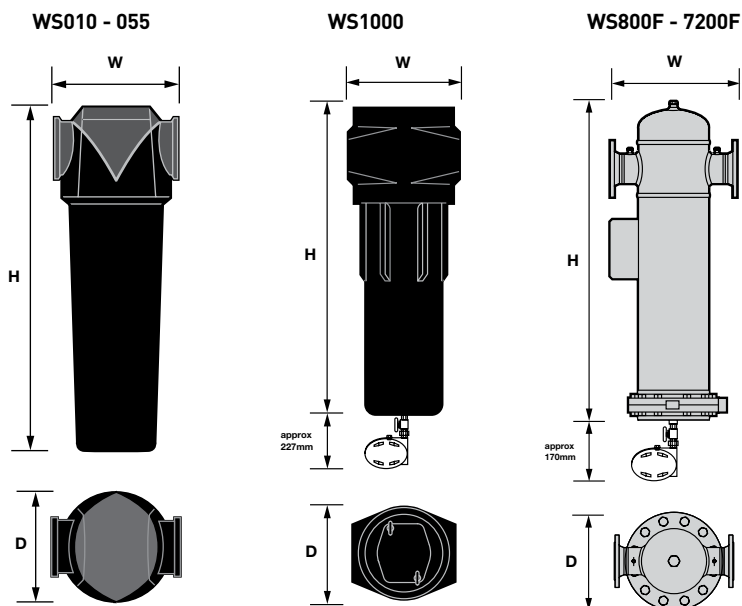
- Obtain the minimum operating pressure and maximum compressed air flow rate at the inlet of the filter.
- Select the correction factor for minimum operating pressure from the CFP table (always round down e.g. for 5.3 bar, use 5 bar correction factor)
- Calculate the minimum filtration capacity  
Minimum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

## Technical Data

Grade	Water Separator Models	Min Operating Pressure		Max Operating Pressure		Min Operating Temp		Max Operating Temp	
		bar g	psi g	bar g	psi g	°C	°F	°C	°F
WS	010A <input type="checkbox"/> FX - 055J <input type="checkbox"/> FX	1	15	16	232	2	35	80	176
WS	1000	1	15	16	232	2	35	66	150
WS	800F - 7200F	1	15	16	232	2	35	66	150

## Weights and Dimensions

Model	Pipe Size	Height (H)		Width (W)		Depth (D)		Weight	
		mm	ins	mm	ins	mm	ins	kg	lbs
WS010A <input type="checkbox"/> FX	1/4"	181	7.2	76	3.0	64	2.5	0.6	1.3
WS010B <input type="checkbox"/> FX	3/8"	181	7.2	76	3.0	64	2.5	0.6	1.3
WS010C <input type="checkbox"/> FX	1/2"	181	7.2	76	3.0	64	2.5	0.6	1.3
WS015B <input type="checkbox"/> FX	3/8"	235	9.3	97	3.8	84	3.3	1.1	2.4
WS020C <input type="checkbox"/> FX	1/2"	235	9.3	97	3.8	84	3.3	1.1	2.4
WS020D <input type="checkbox"/> FX	3/4"	235	9.3	97	3.8	84	3.3	1.1	2.4
WS020E <input type="checkbox"/> FX	1"	235	9.3	97	3.8	84	3.3	1.1	2.4
WS025D <input type="checkbox"/> FX	3/4"	275	10.8	129	5.1	115	4.5	2.2	4.8
WS030E <input type="checkbox"/> FX	1"	275	10.8	129	5.1	115	4.5	2.2	4.8
WS030F <input type="checkbox"/> FX	1 1/4"	275	10.8	129	5.1	115	4.5	2.2	4.8
WS030G <input type="checkbox"/> FX	1 1/2"	275	10.8	129	5.1	115	4.5	2.2	4.8
WS035F <input type="checkbox"/> FX	1 1/4"	432	17	170	6.7	156	6.1	5.1	11.2
WS040G <input type="checkbox"/> FX	1 1/2"	432	17	170	6.7	156	6.1	5.1	11.2
WS045H <input type="checkbox"/> FX	2"	432	17	170	6.7	156	6.1	5.1	11.2
WS055I <input type="checkbox"/> FX	2 1/2"	504	19.9	205	8.1	181	7.1	10.0	22.0
WS055J <input type="checkbox"/> FX	3"	504	19.9	205	8.1	181	7.1	10.0	22.0
WS1000	4"	847	33.3	420	16.5	282	11.1	42.0	92.0
WS800F	DN80	1070	42.1	370	14.6	285	11.2	66	146
WS1000F	DN100	1120	44.1	450	17.7	340	13.4	102	225
WS1800F	DN150	1240	48.8	580	22.8	460	18.1	191	434
WS3000F	DN200	1585	62.4	750	29.5	640	25.2	397	875
WS4800F	DN250	1570	61.8	862	33.9	715	28.2	537	1184
WS7200F	DN300	1610	63.4	1000	39.4	840	33.1	675	1488



# OIL-X EVOLUTION

## Coalescing & Dry Particulate Filters – Grades AO/AA/AR/AAR

### Filtration Grades

Filtration Grade	Filter Type	Particle removal (inc water & oil aerosols)	Max Remaining Oil Content at 21°C (70°F)	Filtration Efficiency	Initial Dry Differential Pressure	Initial Saturated Differential Pressure	Change Element Every	Precede with Filtration Grade
AO	Coalescing	Down to 1 micron	0.6 mg/m <sup>3</sup> 0.5 ppm(w)	99.925%	<70 mbar (1psi)	<140 mbar (2psi)	12 months	WS (for bulk liquid)
AA	Coalescing	Down to 0.01 micron	0.01 mg/m <sup>3</sup> 0.01 ppm(w)	99.9999%	<140 mbar (2psi)	<200 mbar (3psi)	12 months	AO
AR	Dry Particulate	Down to 1 micron	N/A	99.925%	<70 mbar (1psi)	N/A	12 months	N/A
AAR	Dry Particulate	Down to 0.01 micron	N/A	99.9999%	<140 mbar (2psi)	N/A	12 months	AR

### 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.

### Correction Factors

	Model	Pipe Size	L/S	m <sup>3</sup> /min	m <sup>3</sup> /hr	cfm	Replacement Element kit	No.	Line Pressure		Correction Factor pressure (CFP)
									bar g	psi g	
Cast Aluminum Filters	grade 005A <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1/4"	6	0.4	22	13	005 grade	1	1	15	2.65
	grade 005B <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	3/8"	6	0.4	22	13	005 grade	1	1.5	22	2.16
	grade 005C <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1/2"	6	0.4	22	13	005 grade	1	2	29	1.87
	grade 010A <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1/4"	10	0.6	36	21	010 grade	1	2.5	37	1.67
	grade 010B <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	3/8"	10	0.6	36	21	010 grade	1	3	44	1.53
	grade 010C <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1/2"	10	0.6	36	21	010 grade	1	3.5	51	1.41
	grade 015B <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	3/8"	20	1.2	72	42	015 grade	1	4	58	1.32
	grade 015C <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1/2"	20	1.2	72	42	015 grade	1	4.5	66	1.25
	grade 020C <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1/2"	30	1.8	108	64	020 grade	1	5	73	1.18
	grade 020D <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	3/4"	30	1.8	108	64	020 grade	1	5.5	80	1.13
	grade 020E <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1"	30	1.8	108	64	020 grade	1	6	87	1.08
	grade 025D <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	3/4"	60	3.6	216	127	025 grade	1	6.5	95	1.04
	grade 025E <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1"	60	3.6	216	127	025 grade	1	7	100	1.00
	grade 030E <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1"	110	6.6	396	233	030 grade	1	7.5	110	0.97
	grade 030F <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1 1/4"	110	6.6	396	233	030 grade	1	8	116	0.94
	grade 030G <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1 1/2"	110	6.6	396	233	030 grade	1	8.5	124	0.91
	grade 035F <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1 1/4"	160	9.6	576	339	035 grade	1	9	131	0.88
	grade 035G <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1 1/2"	160	9.6	576	339	035 grade	1	9.5	139	0.86
	grade 040G <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	1 1/2"	220	13.2	792	466	040 grade	1	10	145	0.84
	grade 040H <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	2"	220	13.2	792	466	040 grade	1	10.5	153	0.82
	grade 045H <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	2"	330	19.8	1188	699	045 grade	1	11	160	0.80
	grade 050I <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	2 1/2"	430	25.9	1548	911	050 grade	1	11.5	168	0.78
	grade 050J <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	3"	430	25.9	1548	911	050 grade	1	12	174	0.76
	grade 055I <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	2 1/2"	620	37.3	2232	1314	055 grade	1	12.5	183	0.75
grade 055J <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	3"	620	37.3	2232	1314	055 grade	1	13	189	0.73	
grade 060K <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	4"	1000	60	3600	2119	060 grade	3	13.5	197	0.72	
grade 065ND <input type="checkbox"/> <input checked="" type="checkbox"/>	DN80	620	37.2	2232	1312	200 grade	1	14	203	0.71	
grade 070OD <input type="checkbox"/> <input checked="" type="checkbox"/>	DN100	1240	74.4	4464	2625	200 grade	2	14.5	212	0.69	
grade 075PD <input type="checkbox"/> <input checked="" type="checkbox"/>	DN150	1860	111.6	6696	3938	200 grade	3	15	218	0.68	
grade 080PD <input type="checkbox"/> <input checked="" type="checkbox"/>	DN150	2480	148.8	8928	5251	200 grade	4	15.5	226	0.67	
grade 085QD <input type="checkbox"/> <input checked="" type="checkbox"/>	DN200	3720	223.2	13392	7877	200 grade	6	16	232	0.66	
grade 090RD <input type="checkbox"/> <input checked="" type="checkbox"/>	DN250	6200	372	22320	13129	200 grade	10	16.5	241	0.65	
grade 095SD <input type="checkbox"/> <input checked="" type="checkbox"/>	DN300	8680	520.8	31248	18380	200 grade	14	17	248	0.64	

	Line Pressure		Correction Factor pressure (CFP)
	bar g	psi g	
	1	15	2.65
	1.5	22	2.16
	2	29	1.87
	2.5	37	1.67
	3	44	1.53
	3.5	51	1.41
	4	58	1.32
	4.5	66	1.25
	5	73	1.18
	5.5	80	1.13
	6	87	1.08
	6.5	95	1.04
	7	100	1.00
	7.5	110	0.97
	8	116	0.94
	8.5	124	0.91
	9	131	0.88
	9.5	139	0.86
	10	145	0.84
	10.5	153	0.82
	11	160	0.80
	11.5	168	0.78
	12	174	0.76
	12.5	183	0.75
	13	189	0.73
	13.5	197	0.72
	14	203	0.71
	14.5	212	0.69
	15	218	0.68
	15.5	226	0.67
	16	232	0.66
When ordering an AO/AA filter for pressures above 16 bar g (232 psi g), use manual drain. Replace F with M in product code. e.g. 015BBFX becomes 015BBMX. Models 150 - 500 not suitable for pressures above 16 bar g (232 psi g)			
	16.5	241	0.65
	17	248	0.64
	17.5	256	0.63
	18	263	0.62
	18.5	270	0.62
	19	277	0.61
	19.5	285	0.60
	20	290	0.59

Note: Connection options (005 - 060) G = BSPP / N = NPT / (065 - 095) DN = flanged.  
Drain options (005 - 060) F = Float / M = Manual / (065 - 095) E = Electronic drain / M = Manual.

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)

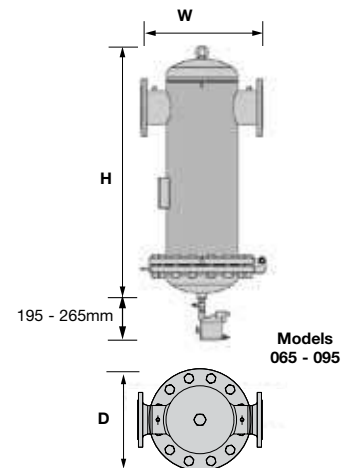
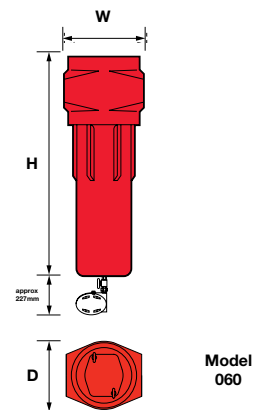
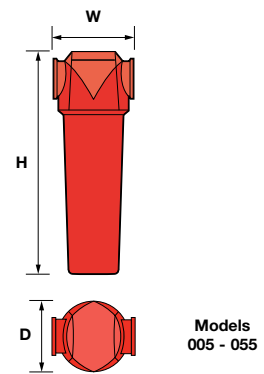


## Technical Data

Filter Grade	Filter Models	Min Operating Pressure		Max Operating Pressure		Min Operating Temp		Max Operating Temp	
		bar g	psi g	bar g	psi g	°C	°F	°C	°F
AO/AA	005 □□ FX - 055 □□ FX	1	15	16	232	2	35	80	176
AO/AA	005 □□ MX - 055 □□ MX	1	15	20	290	2	35	100	212
AO/AA	060 K □ FX	1	15	16	232	2	35	66	150
AO/AA	060 K □ MX	1	15	20	290	2	35	100	212
AO/AA	065 NDEX - 095 SDEX	1	15	16	232	2	35	60	140
AO/AA	065 NDMX - 095 SDMX	1	15	16	232	2	35	100	212
AO/AA	065 NDEI - 095 SDEI	1	15	16	232	2	35	60	140
AO/AA	065 NDMI - 095 SDMI	1	15	16	232	2	35	80	176
AR/AAR	005 □□ MX - 055 □□ MX	1	15	20	290	2	35	100	212
AR/AAR	060 K □ MX	1	15	20	290	2	35	100	212
AR/AAR	065 NDMX - 095 SDMX	1	15	16	232	2	35	100	212
AR/AAR	065 NDMI - 095 SDMI	1	15	16	232	2	35	80	176

## Weights and Dimensions

Model	Pipe Size	Height (H)		Width (W)		Depth (D)		Weight	
		mm	ins	mm	ins	mm	ins	kg	lbs
005A	1/4"	154	6.1	76	3.0	64	2.5	0.5	1.1
005B	3/8"	154	6.1	76	3.0	64	2.5	0.5	1.1
005C	1/2"	154	6.1	76	3.0	64	2.5	0.5	1.1
010A	1/4"	181	7.2	76	3.0	64	2.5	0.6	1.3
010B	3/8"	181	7.2	76	3.0	64	2.5	0.6	1.3
010C	1/2"	181	7.2	76	3.0	64	2.5	0.6	1.3
015B	3/8"	235	9.3	97	3.8	84	3.3	1.1	2.4
015C	1/2"	235	9.3	97	3.8	84	3.3	1.1	2.4
020C	1/2"	235	9.3	97	3.8	84	3.3	1.1	2.4
020D	3/4"	235	9.3	97	3.8	84	3.3	1.1	2.4
020E	1"	235	9.3	97	3.8	84	3.3	1.1	2.4
025D	3/4"	275	10.8	129	5.1	115	4.5	2.2	4.8
025E	1"	275	10.8	129	5.1	115	4.5	2.2	4.8
030E	1"	364	14.3	129	5.1	115	4.5	2.7	5.9
030F	1 1/4"	364	14.3	129	5.1	115	4.5	2.7	5.9
030G	1 1/2"	364	14.3	129	5.1	115	4.5	2.7	5.9
035F	1 1/4"	432	17.0	170	6.7	156	6.1	5.1	11.2
035G	1 1/2"	432	17.0	170	6.7	156	6.1	5.1	11.2
040G	1 1/2"	524	20.6	170	6.7	156	6.1	5.7	12.5
040H	2"	524	20.6	170	6.7	156	6.1	5.7	12.5
045H	2"	524	20.6	170	6.7	156	6.1	5.7	12.5
050I	2 1/2"	641	25.3	205	8.1	181	7.1	11.1	24.4
050J	3"	641	25.3	205	8.1	181	7.1	11.1	24.4
055I	2 1/2"	832	32.8	205	8.1	181	7.1	13.9	30.6
055J	3"	832	32.8	205	8.1	181	7.1	13.9	30.6
060K	4"	847	33.3	420	16.5	282	11.1	44.5	98.1
065ND	DN80	1065	42	440	17.3	340	13.4	70	154
070OD	DN100	1152	45.4	500	19.7	405	16	97	214
075PD	DN150	1256	49.5	600	23.6	520	20.5	148	326
080PD	DN150	1332	52.4	650	25.6	580	22.8	187	412
085QD	DN200	1415	55.7	750	29.5	640	25.2	240	529
090RD	DN250	1603	63.1	1000	39.4	840	33	470	1036
095SD	DN300	1706	67.2	1050	41.3	910	35.8	580	1279



# Filter Selection - AO/AA/AR/AAR

## Filter coding examples

### Cast aluminium filters 005 - 060

Grade	Model	Pipe Size	Connection Type	Drain Option	Incident Monitor Option
AO, AA, AR, AAR	3 digit code denotes filter housing size	Letter denotes pipe size	G = BSPP N = NPT	F = Float M = Manual	X = None
<b>Example code</b>					
AA	010	A	G	F	X

### Carbon steel filters 065 - 095

Grade	Model	Pipe Size	Connection Type	Drain Option	Incident Monitor Option
AO, AA, AR, AAR	3 digit code denotes filter housing size	Letter denotes Flange Connection	D = DN	E = Electronic Drain M = Manual	X = None I = Incident Monitor
<b>Example code</b>					
AR	150	N	D	E	X

## Optional accessories 005 - 060



### Incident monitor

Used to indicate premature high differential pressure. Indicator can be retrofitted to existing housings without depressurising the system.

Filter model	
015 - 055	DPM
060	DPM - 060



### Filter fixing kits

Fixing clamp allows quick and simple connection of multiple filter housings.

Filter model	
005 - 010	FXKE1
015 - 020	FXKE2
025 - 030	FXKE3
035 - 045	FXKE4
050 - 055	FXKE5



### Filter mounting brackets

Mounting brackets provide additional support to filters installed in flexible piping systems or OEM equipment.

Filter model	
005 - 010	MBKE1
015 - 020	MBKE2
025 - 030	MBKE3
035 - 045	MBKE4
050 - 055	MBKE5



### Oil Indicator

Filter Models	
AC010 - AC030	605009902



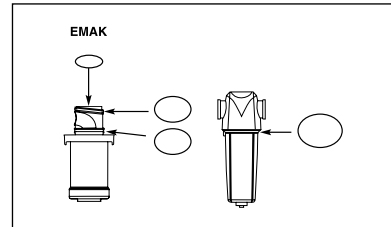
### EF1 Float Drain

WS/AO/AA Grade filters fitted with float drains as standard.



### EM1 Manual Drain

AR/AAR/ACS Grade filters fitted with a manual drain.



Filter Models	
005 - 010	EMAK1
015 - 020	EMAK2
025 - 030	EMAK3
035 - 045	EMAK4
050 - 055	EMAK5

## Replacement items and optional accessories 065 - 095

### Condensate drains

Order no.	Description
ED3007-G230	electronic drain for 065
ED3030-G230	electronic drain for 070 - 085
ED3100-G230	electronic drain for 090 - 095
398H473471	1/2" manual drain kit for 065
398H473472	1" manual drain kit for 070 - 095
SKED3000	Annual ED maintenance kit

Other drains available as loose accessories.

### Differential pressure gauge (DPG) - mounted

Order no.	Factory fit option I = Incident Monitor
ZD95FL	calibrated analogue DPG
<b>Non factory fit options</b>	
ZDE95FL	calibrated analogue DPG with Reed contact
ZDE125FL	electronic DPG

All DP gauges suitable for 065 - 095

### Replacement body gasket

Model	Order no.
Gasket DN200 for model 065	398H240245
Gasket DN250 for model 070	398H240270
Gasket DN350 for model 075	398H240292
Gasket DN400 for model 080	398H240293
Gasket DN450 for model 085	398H240295
Gasket DN600 for model 090	398H240296
Gasket DN700 for model 095	398H240297

# OIL-X EVOLUTION

Plant scale / point of use

Oil vapour removal filters - Grades OVR

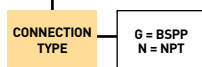
## Filtration Performance

Filtration Grade	Filter Type	Particle removal (inc water & oil aerosols)	Max Remaining Oil Content at 21°C (70°F)	Filtration Efficiency	Test Methods Used	ISO12500-1 Inlet Challenge Concentration	Initial Dry Differential Pressure	Initial Saturated Differential Pressure	Absorbent Life	Precede with Filtration Grade
OVR	Oil Vapour Removal	N/A	0.003 mg/m <sup>3</sup> 0.003 ppm(w)	N/A	ISO8573-5	N/A	<350 mbar (5psi)	N/A	6000 hrs*	AA

\* When corrected to match system conditions

## Product Selection - Grade OVR Plant scale and point of use oil vapour removal

	Model	Pipe Size	Flow Rates				Replacement Element Kit	No. Req'd
			L/s	m <sup>3</sup> /min	m <sup>3</sup> /hr	cfm		
Modular Aluminum range	OVR100E □ XX	G 1	80	4.8	288	170	100OVR	1
	OVR150H □ XX	G 2	160	9.6	576	339	100OVR	2
	OVR200H □ XX	G 2	330	19.8	1188	699	100OVR	4
	OVR250J □ XX	G 3	620	37.2	2232	1314	100OVR	6
	2 x OVR250J	G 3	1240	74.5	4465	2628		
	3 x OVR250J	G 3	1860	111.8	6696	3941		
	4 x OVR250J	G 3	2480	149.1	8928	5255		
	5 x OVR250J	G 3	3100	186.4	11160	6569		



## Correction Factors Temperature (CFT)

### Oil Lubricated Compressors

CFT Inlet Air Temperature		Correction Factor
°C	°F	
20	68	1.00
25	77	1.53
30	86	2.33
35	95	3.55
40	104	5.47
45	113	8.55
50	122	13.23

### Oil-free Compressors

CFT Inlet Air Temperature		Correction Factor
°C	°F	
20	68	1.00
25	77	1.02
30	86	1.03
35	95	1.05
40	104	1.07
45	113	1.09
50	122	1.10

## Correction Factors Pressure (CFP)

CFP Inlet Pressure		Correction Factor	CFP Inlet Pressure		Correction Factor
bar g	psi g		bar g	psi g	
3	44	2.00	10	145	1.00
4	58	1.60	11	160	1.00
5	73	1.33	12	174	1.00
6	87	1.14	13	189	1.00
7	100	1.00	14	203	1.00
8	116	1.00	15	218	1.00
9	131	1.00	16	232	1.00

## Correction Factors Dewpoint (CFD)

CFD Dewpoint	°C	°F	Correction Factor
Dry	-70 to +3	-100 to +38	1.00
Wet	+3 and above	+38 and above	2.00

It is assumed inlet oil vapour concentration does not exceed 0.05mg/m<sup>3</sup> at 21°C (70°F). For applications with higher oil vapour concentrations, please contact Parker domnick hunter for accurate sizing.

## Filter Selection - Grade OVR

To correctly select an OVR oil vapour removal filter, the flow rate of the OVR must be adjusted for the minimum operating pressure, maximum operational temperature and pressure dewpoint of the system.

1. Obtain the minimum operating pressure, maximum inlet temperature, maximum compressed air flow rate and dewpoint of the compressed air at the inlet of the OVR.
2. Select correction factor for maximum inlet temperature from the CFT table that corresponds to compressor type (always round up e.g. for 37°C use 40°C correction factor).
3. Select correction factor for minimum inlet pressure from the CFP table that corresponds to compressor type (always round down e.g. for 5.3 bar use 5 bar correction factor).
4. Select correction factor for pressure dewpoint from the CFD table.
5. Calculate minimum filtration capacity.  
Minimum filtration Capacity =  
Compressed Air Flow x CFT x CFP x CFD
6. Using the minimum filtration capacity, select an OVR model from the flow rate tables above (OVR selected must have a flow rate equal to or greater than the minimum filtration capacity).

If the minimum filtration capacity exceeds the maximum values of the models shown within the tables, please contact Parker domnick hunter for advice regarding larger multi-banked units.

# OIL-X EVOLUTION

## Point of use Oil vapour removal filters - Grade ACS

### Filtration Performance

Filtration Grade	Filter Type	Particle removal (inc water & oil aerosols)	Max Remaining Oil Content at 21°C (70°F)	Filtration Efficiency	Test Methods Used	ISO12500-1 Inlet Challenge Concentration	Initial Dry Differential Pressure	Initial Saturated Differential Pressure	Absorbent Life	Precede with Filtration Grade
ACS	Oil Vapour Removal	N/A	0.003 mg/m <sup>3</sup> 0.003 ppm(w)	N/A	ISO8573-5	N/A	<200 mbar (3psi)	N/A	When oil vapour or odour is detected	AA

### Product Selection - Grade ACS Point of use oil vapour removal

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	Pipe Size	L/S	m <sup>3</sup> /min	m <sup>3</sup> /hr	cfm	Replacement Element kit	No.
Cast Aluminum Filters	ACS 005A □ MX	1/4"	6	0.4	22	13	005 ACS	1
	ACS 005B □ MX	3/8"	6	0.4	22	13	005 ACS	1
	ACS 005C □ MX	1/2"	6	0.4	22	13	005 ACS	1
	ACS 010A □ MX	1/4"	10	0.6	36	21	010 ACS	1
	ACS 010B □ MX	3/8"	10	0.6	36	21	010 ACS	1
	ACS 010C □ MX	1/2"	10	0.6	36	21	010 ACS	1
	ACS 015B □ MX	3/8"	20	1.2	72	42	015 ACS	1
	ACS 015C □ MX	1/2"	20	1.2	72	42	015 ACS	1
	ACS 020C □ MX	1/2"	30	1.8	108	64	020 ACS	1
	ACS 020D □ MX	3/4"	30	1.8	108	64	020 ACS	1
	ACS 020E □ MX	1"	30	1.8	108	64	020 ACS	1
	ACS 025D □ MX	3/4"	60	3.6	216	127	025 ACS	1
	ACS 025E □ MX	1"	60	3.6	216	127	025 ACS	1
	ACS 030E □ MX	1"	110	6.6	396	233	030 ACS	1
	ACS 030F □ MX	1 1/4"	110	6.6	396	233	030 ACS	1
	ACS 030G □ MX	1 1/2"	110	6.6	396	233	030 ACS	1
	ACS 035F □ MX	1 1/4"	160	9.6	576	339	035 ACS	1
	ACS 035G □ MX	1 1/2"	160	9.6	576	339	035 ACS	1
	ACS 040G □ MX	1 1/2"	220	13.2	792	466	040 ACS	1
	ACS 040H □ MX	2"	220	13.2	792	466	040 ACS	1
ACS 045H □ MX	2"	330	19.8	1188	699	045 ACS	1	
ACS 050I □ MX	2 1/2"	430	25.9	1548	911	050 ACS	1	
ACS 050J □ MX	3"	430	25.9	1548	911	050 ACS	1	
ACS 055I □ MX	2 1/2"	620	37.3	2232	1314	055 ACS	1	
ACS 055J □ MX	3"	620	37.3	2232	1314	055 ACS	1	
ACS 060K □ MX	4"	1000	60	3600	2119	060 ACS	3	
Carbon Steel Filters	ACS 065ND MX	DN80	620	37.2	2232	1312	200 ACS	1
	ACS 070OD MX	DN100	1240	74.4	4464	2625	200 ACS	2
	ACS 075PD MX	DN150	1860	111.6	6696	3938	200 ACS	3
	ACS 080PD MX	DN150	2480	148.8	8928	5251	200 ACS	4
	ACS 085QD MX	DN200	3720	223.2	13392	7877	200 ACS	6
	ACS 090RD MX	DN250	6200	372	22320	13129	200 ACS	10
ACS 095SD MX	DN300	8680	520.8	31248	18380	200 ACS	14	

Note: Connection options (005 - 060) G = BSPP / N = NPT / (065 - 095) DN = flanged.

### Correction Factors

Grades ACS and AC only

Line Pressure		Correction Factor pressure (CFP)
bar g	psi g	
1	15	2.65
2	29	1.87
3	44	1.53
4	58	1.32
5	73	1.18
6	87	1.08
7	100	1.00
8	116	0.94
9	131	0.88
10	145	0.84
11	160	0.80
12	174	0.76
13	189	0.73
14	203	0.71
15	218	0.68
16	232	0.66
All ACS models are fitted with a manual drain. AC models are supplied with a float drain as standard. For Pressures of 16 to 20 bar g (232 to 290 psi g) a manual drain must be used.		
17	248	0.64
18	263	0.62
19	277	0.61
20	290	0.59

### Filter Coding Examples

ACS 005 - 060

Grade	Model	Pipe Size	Connection Type	Drain Option	Incident Monitor
ACS	3 digit code shown above	Letter denotes pipe size	G = BSPP N = NPT	M = Manual	X = None
<b>Example code</b>					
ACS	010	A	G	M	X

# OIL-X EVOLUTION

## Point of use Oil vapour removal filters - Grade AC

### Filtration Performance

Filtration Grade	Filter Type	Particle removal (inc water & oil aerosols)	Max Remaining Oil Content at 21°C (70°F)	Filtration Efficiency	Test Methods Used	ISO12500-1 Inlet Challenge Concentration	Initial Dry Differential Pressure	Initial Saturated Differential Pressure	Absorbent Life	Precede with Filtration Grade
AC	Oil Vapour Removal	N/A	0.003 mg/m <sup>3</sup> 0.003 ppm(w)	N/A	ISO8573-5	N/A	<775 mbar (11psi)	N/A	When oil vapour or odour is detected	AO

### Product Selection - Grade AC point of use oil vapour removal

	Model	Flow Rates					Replacement Elements	
		Pipe Size BSPT	L/s	m <sup>3</sup> /min	m <sup>3</sup> /hr	cfm		
Cast Aluminum Filters	AC010A <input type="checkbox"/> FI	1/4"	6	0.4	22	13	010AA	010AC
	AC010B <input type="checkbox"/> FI	3/8"	6	0.4	22	13	010AA	010AC
	AC010C <input type="checkbox"/> FI	1/2"	6	0.4	22	13	010AA	010AC
	AC015B <input type="checkbox"/> FI	3/8"	13	0.8	46	27	015AA	015AC
	AC015C <input type="checkbox"/> FI	1/2"	13	0.8	46	27	015AA	015AC
	AC020C <input type="checkbox"/> FI	1/2"	25	1.5	90	53	020AA	020AC
	AC020D <input type="checkbox"/> FI	3/4"	25	1.5	90	53	020AA	020AC
	AC020E <input type="checkbox"/> FI	1"	25	1.5	90	53	020AA	020AC
	AC025D <input type="checkbox"/> FI	3/4"	40	2.4	143	84	025AA	025DAC
	AC025E <input type="checkbox"/> FI	1"	65	3.9	231	136	025AA	025EAC
	AC030E <input type="checkbox"/> FI	1"	85	5.1	305	180	030AA	030AC
	AC030F <input type="checkbox"/> FI	1 1/4"	85	5.1	305	180	030AA	030AC
	AC030G <input type="checkbox"/> FI	1 1/2"	85	5.1	305	180	030AA	030AC

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)

### Filter Coding Examples

AC 010 - 030

Grade	Model	Pipe Size	Connection Type	Drain Type	Bulk Oil Indicator
AC	3 digit code shown above	Letter denotes pipe size	G = BSPP N = NPT	F = Float	I = Bulk Oil Indicator
<b>Example code</b>					
AC	010	A	G	F	I

AC models are supplied with a float drain as standard. For Pressures of 16 to 20 bar g (232 to 290 psi g) a manual drain must be used.

Ref: Accessories - EM1

# OIL-X EVOLUTION

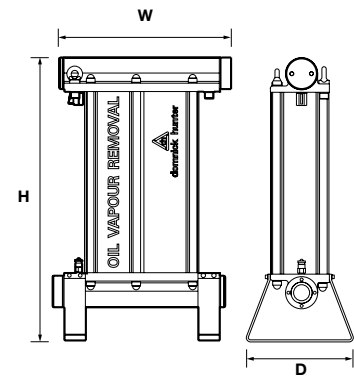
## Oil vapour removal (continued)

### Technical Data

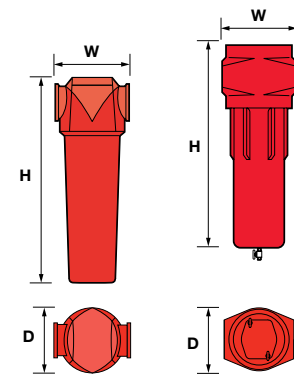
Filter Grade	Filter Models	Min Operating Pressure		Max Operating Pressure		Min Operating Temp		Max Operating Temp	
		bar g	psi g	bar g	psi g	°C	°F	°C	°F
OVR	100E □ XX - 250J □ XX	1	15	16	232	2	35	50	122
ACS	005A □ MX - 060K □ MX	1	15	20	290	2	35	50	122
ACS	065NDMX - 095SDMX	1	15	16	232	2	35	50	122
AC	010A □ FI - 030G □ FI	1	15	16	232	2	35	30	86

### Weights and Dimensions

Model	Pipe Size	Height (H)		Width (W)		Depth (D)		Weight	
		mm	ins	mm	ins	mm	ins	kg	lbs
OVR100E	G 1	670	26.3	352	13.8	250	9.8	25	55
OVR150H	G 2	797	31.3	504	19.9	300	11.8	42	93
OVR200H	G 2	797	31.3	829	32.6	300	11.8	74	163
OVR250J	G 3	816	32.1	1194	47.0	300	11.8	107	235
ACS 005A □ MX	1/4"	154	6.1	76	3.0	64	2.5	0.5	1.1
ACS 005B □ MX	3/8"	154	6.1	76	3.0	64	2.5	0.5	1.1
ACS 005C □ MX	1/2"	154	6.1	76	3.0	64	2.5	0.5	1.1
ACS 010A □ MX	1/4"	181	7.2	76	3.0	64	2.5	0.6	1.3
ACS 010B □ MX	3/8"	181	7.2	76	3.0	64	2.5	0.6	1.3
ACS 010C □ MX	1/2"	181	7.2	76	3.0	64	2.5	0.6	1.3
ACS 015B □ MX	3/8"	235	9.3	97	3.8	84	3.3	1.1	2.4
ACS 015C □ MX	1/2"	235	9.3	97	3.8	84	3.3	1.1	2.4
ACS 020C □ MX	1/2"	235	9.3	97	3.8	84	3.3	1.1	2.4
ACS 020D □ MX	3/4"	235	9.3	97	3.8	84	3.3	1.1	2.4
ACS 020E □ MX	1"	235	9.3	97	3.8	84	3.3	1.1	2.4
ACS 025D □ MX	3/4"	275	10.8	129	5.1	115	4.5	2.2	4.8
ACS 025E □ MX	1"	275	10.8	129	5.1	115	4.5	2.2	4.8
ACS 030E □ MX	1"	364	14.3	129	5.1	115	4.5	2.7	5.9
ACS 030F □ MX	1 1/4"	364	14.3	129	5.1	115	4.5	2.7	5.9
ACS 030G □ MX	1 1/2"	364	14.3	129	5.1	115	4.5	2.7	5.9
ACS 035F □ MX	1 1/4"	432	17.0	170	6.7	156	6.1	5.1	11.2
ACS 035G □ MX	1 1/2"	432	17.0	170	6.7	156	6.1	5.1	11.2
ACS 040G □ MX	1 1/2"	524	20.6	170	6.7	156	6.1	5.7	12.5
ACS 040H □ MX	2"	524	20.6	170	6.7	156	6.1	5.7	12.5
ACS 045H □ MX	2"	524	20.6	170	6.7	156	6.1	5.7	12.5
ACS 050I □ MX	2 1/2"	641	25.3	205	8.1	181	7.1	11.1	24.4
ACS 050J □ MX	3"	641	25.3	205	8.1	181	7.1	11.1	24.4
ACS 055I □ MX	2 1/2"	832	32.8	205	8.1	181	7.1	13.9	30.6
ACS 055J □ MX	3"	832	32.8	205	8.1	181	7.1	13.9	30.6
ACS 060KMX	4"	847	33.3	420	16.5	282	11.1	44.5	98
ACS 065ND MX	DN80	1065	42	440	17.3	340	13.4	70	154
ACS 070OD MX	DN100	1152	45.4	500	19.7	405	16	97	214
ACS 075PD MX	DN150	1256	49.5	600	23.6	520	20.5	148	326
ACS 080PD MX	DN150	1332	52.4	650	25.6	580	22.8	187	412
ACS 085QD MX	DN200	1415	55.7	750	29.5	640	25.2	240	529
ACS 090RD MX	DN250	1603	63.1	1000	39.4	840	33	470	1036
ACS 095SD MX	DN300	1706	67.2	1050	41.3	910	35.8	580	1279
AC010A □ FI	1/4"	311	12.3	76	3.0	65	2.6	0.8	1.8
AC010B □ FI	3/8"	311	12.3	76	3.0	65	2.6	0.8	1.8
AC010C □ FI	1/2"	311	12.3	76	3.0	65	2.6	0.8	1.8
AC015B □ FI	3/8"	474	18.7	97	3.8	84	3.3	1.6	3.5
AC015C □ FI	1/2"	474	18.7	97	3.8	84	3.3	1.6	3.5
AC020C □ FI	1/2"	474	18.7	97	3.8	84	3.3	1.45	3.2
AC020D □ FI	3/4"	474	18.7	97	3.8	84	3.3	1.45	3.2
AC020E □ FI	1"	474	18.7	97	3.8	84	3.3	1.45	3.2
AC025D □ FI	3/4"	554	21.8	129	5.1	115	4.5	3.5	7.8
AC025E □ FI	1"	554	21.8	129	5.1	115	4.5	3.4	7.6
AC030E □ FI	1"	733	28.9	129	5.1	115	4.5	4.1	9.0
AC030F □ FI	1 1/4"	733	28.9	129	5.1	115	4.5	4.1	9.0
AC030G □ FI	1 1/2"	733	28.9	129	5.1	115	4.5	4.1	9.0

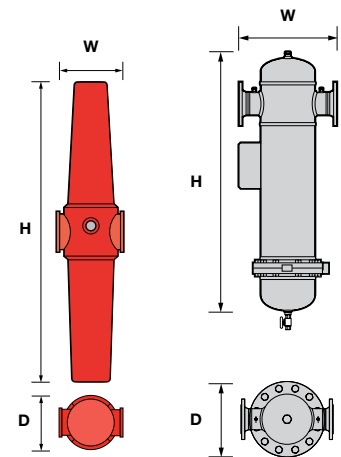


OVR 100 - 250



ACS 005-055

ACS 060



AC 010 - 030

ACS 065 - 095

# Aftermarket

## ELEMENTS

Parker filters are designed to produce clean compressed air, gas and liquid to the highest industry standards. To maintain impeccable results, Elements within the filter must be replaced annually.

Choosing the Parker brand means you can be assured that Elements are readily available, affordable and the most energy efficient product of its kind on the market. The elements are also supplied in 100% recyclable packaging. An additional advantage of purchasing Parker Elements is that you will reduce your company's carbon footprint by 190kg. This is the equivalent of a 700 mile flight from Edinburgh to Berlin!

Parker Filter Elements also prove to be highly efficient when used in any leading competitor's filters.

## SPECIALISED SERVICES

Parker Specialist Service Engineers test on-site efficiency measuring many variables including airflow, pressure, temperature, dewpoint and power consumption.

Our team of highly trained experts are the best in the industry. They take into account a range of environmental factors that could affect your system's performance. The results from this Specialist Service are extremely accurate and produce invaluable information.

Importantly, Parker informed recommendations lead to significant savings for our customers, which mean they return time and time again for our advice and products.

## SUPPORT SERVICES

Parker Support Services are the first port of call for customers in need of help or guidance.

The fact that this team is responsible for the production of User Guides and Manuals gives you an insight into the level and detail of their parts and product knowledge.

Over-the-phone support is just one way in which Parker's extremely knowledgeable team, quickly reduces downtime or resolves product queries.

On some occasions engineers need to be on site to carry out a repair. In these cases, the local engineer will be quickly dispatched to ensure our customers can return to production as soon as possible.

One-to-one training can also be provided by our Support Services team. This has enabled hundreds of Parker distributors to gain an in-depth understanding. Training will also ensure distributors can make timely repairs and easily maintain their customers' products.

## PARTS

Parker Kits make everyday maintenance easy. They are available for all of our products and are simply value-for-money. The Parts within the kits support our customers' varied maintenance, repair and overhaul activities.

Additionally, Preventative Maintenance Kits can be purchased for dryers and gas generators. These kits mean customers can service their generators to ensure optimum performance.

An extensive range of durable Parker Parts can be obtained within 24 hours to any European, Middle East of African destination.

## M.R.O.

Maintenance Repair & Overhaul - Parker Technicians are the industry's finest. Their skills and qualifications are annually approved to keep their product and legislation knowledge fresh and expertise relevant.

With this in mind, Parker offers onsite and on demand servicing to meet customers' unique requirements in a timely and efficient manner.

Parker MRO service ranges from a basic maintenance check covered under product warranty right through to a comprehensive programme, which even puts the onsite application under the microscope.

With customers at the heart of everything Parker does, the MRO service is no exception to this.





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