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

OIL-X EVOLUTION

High Efficiency Compressed Air Filters

Parker domnick hunter

ENGINEERING YOUR SUCCESS.

Compressed air contamination is a real problem for industry

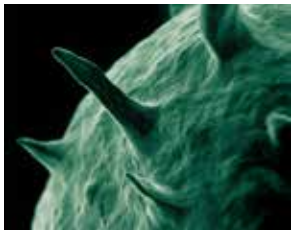
In today's modern production facilities, the use of compressed air is often pivotal to manufacturing processes. Irrespective of whether the compressed air comes into direct contact with the product or is used to automate a process, provide motive power, or even to generate other gases on-site, a clean,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


Oil vapor


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 (desiccant) 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

	Contamination Removal							
Purification Equipment Technologies	Bulk Condensed Water	Water Vapor	Water Aerosols	Atmospheric Dirt & Solid Particulate	Micro-organisms	Oil Vapor	Liquid Oil & Oil Aerosols	Rust & Pipescale
Water Separators	●							
Coalescing Filters			●	●	●		●	●
Adsorption Filters						●		
Adsorption (Desiccant) Dryers		●						
Refrigerated 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 microfiber filter media for purification applications, changing the compressed air industry forever.

The OIL-X filter range was the first filter range to fully utilize this ground breaking 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

Parker domnick hunter

ISO9001:2000 ISO14001

INTERNATIONAL APPROVALS

CE ASME VIII CRN

AS1210

bcas BRITISH COMPRESSED AIR SOCIETY LIMITED

CAGI Compressed Air & Gas Institute

pneurop

VDMA Druckluft effizient

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_2 emissions.

DESIGNED FOR AIR QUALITY & ENERGY EFFICIENCY

REDUCED CO_2

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_2 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

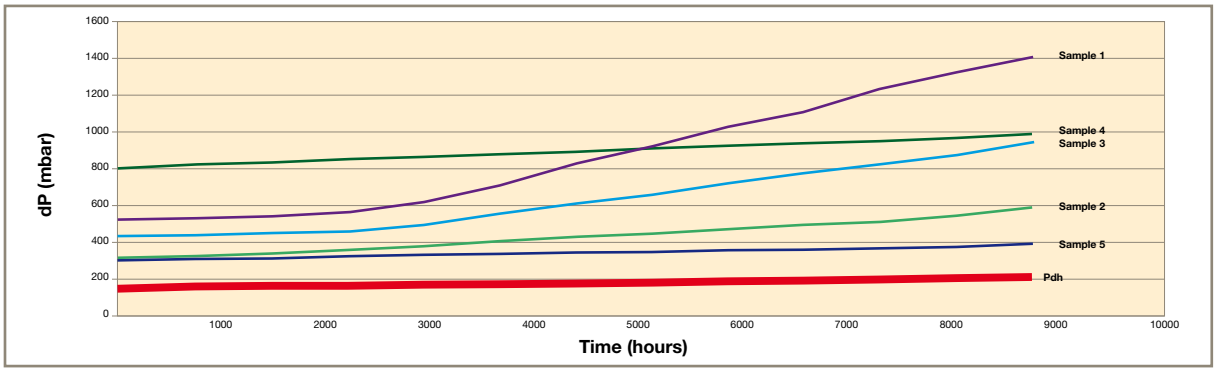
Any restriction to air flow within a filter housing and element will reduce the system pressure. To generate compressed air, large amounts of electrical energy are consumed, therefore any pressure losses within the system can be directly converted into a cost for wasted energy. The higher the pressure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

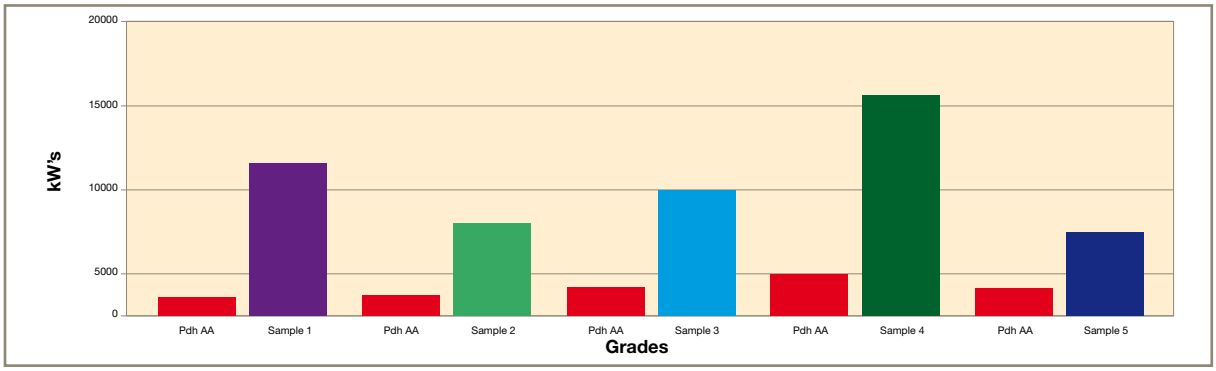


Test criteria: Filters were tested at their full rated flow and injected with ISO 12103 A4 course test dust using a pressurized dust injection system. The dust was injected in 12 intervals to simulate the monthly loading of the filter element and show a total annual differential pressure curve. OIL-X 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 100 hp compressor operating for 4000 hours

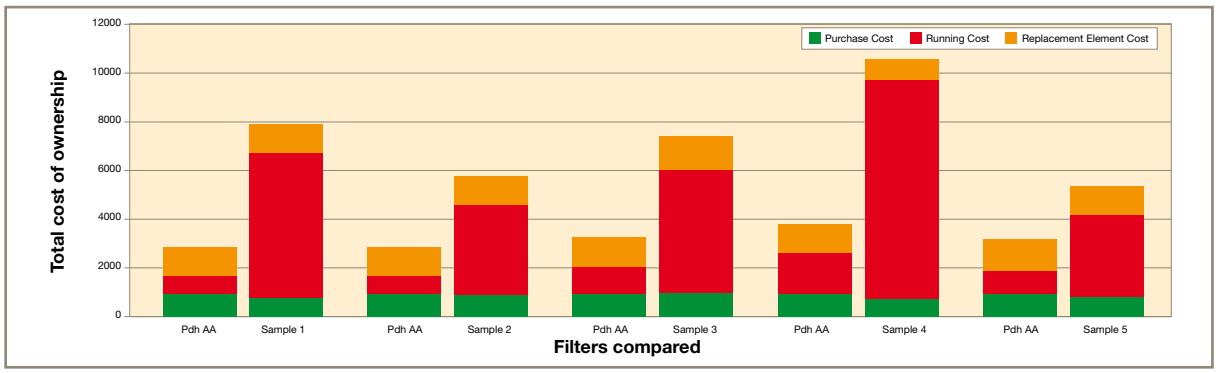
OIL-X EVOLUTION – Payback within first year!

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

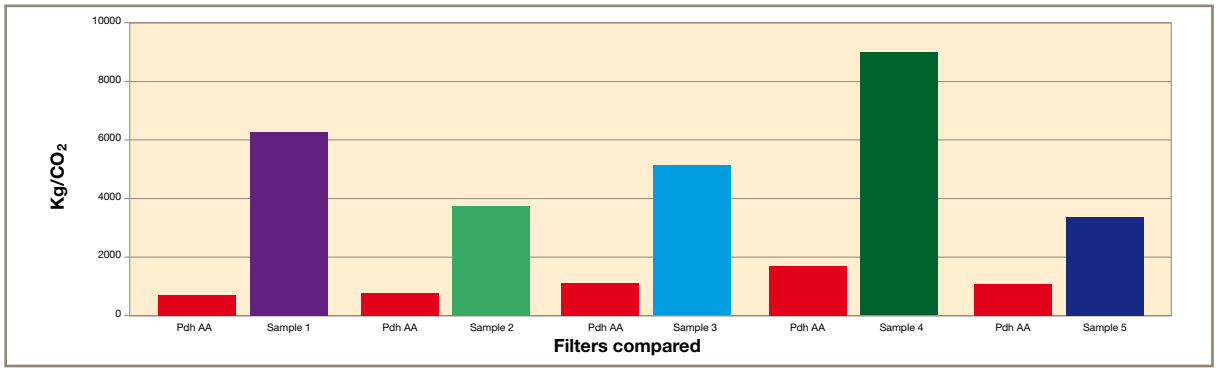


Calculation based upon initial purchase price of the filter housing, cost of 0.15¢ per kWH and five annual filter element changes. An estimated annual increase of 3% was included on both energy costs and element price.

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

Reduced CO_2 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_2. 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_2 emissions (4000 hrs Operation)



Calculation assumes 1KwH emits 0.544 Kg/CO_2 (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 utilize 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 optimized 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 center 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, minimize 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 refrigerated dryers.

OIL-X EVOLUTION

High efficiency coalescing and dust removal filters

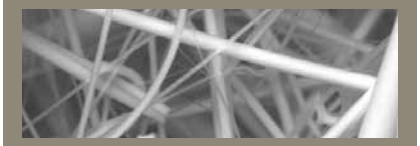
- **For the removal of water and oil aerosols, atmospheric dirt and solid particles, rust, pipescale and micro-organisms**
- **Coalescing filter performance tested to the stringent requirements of ISO12500-1 and ISO8573-2**
- **Dry particulate filter performance tested in accordance with the requirements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

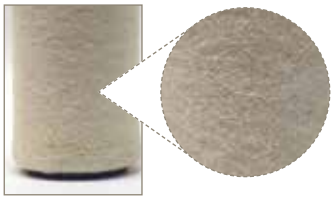
OIL-X EVOLUTION filter media is constructed into a filter element using a unique deep bed pleating technique in place of the more conventional wrapped construction. This provides 450% more filtration surface area when compared to a traditional wrapped filter element and around 200% more surface area 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 utilize four drainage methods to ensure high performance liquid removal, while conventional filters use only one.

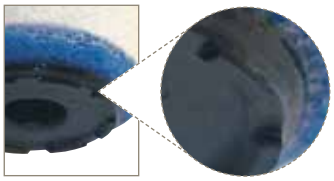


Drainage method 1

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

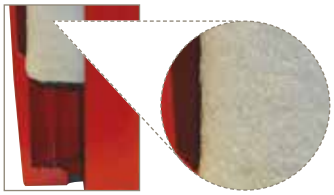
Drainage method 2

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

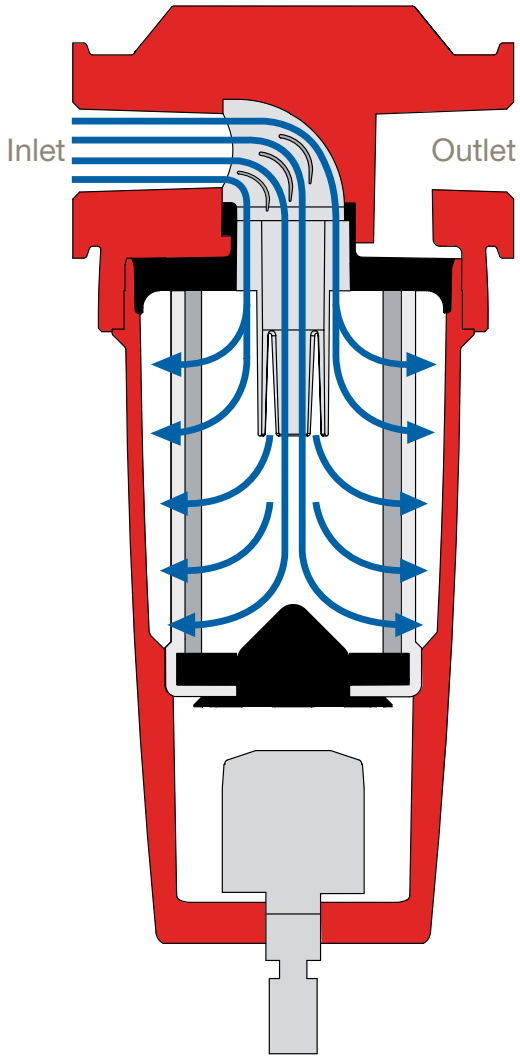
Drainage ribs cast into the filter bowl compress the lower part of the filter element, allowing bulk liquid to rapidly drain from the filter element through capillary action.

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 minimize the use of compressed air and electrical energy in their operation, but also to significantly reduce the operational costs of the compressor by minimizing pressure losses.

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

OIL-X EVOLUTION die-cast filters optimized 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 232 psi g (20 bar g).

No corrosion with Alocrom treatment.

Rapid corrosion of untreated aluminum.

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 aluminum 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 minimizes 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 Aluminum and Carbon Steel Fabricated Filters

For larger flowrate applications, Parker domnick hunter manufactures cast aluminum 4” ported filters and a range of fabricated carbon steel filters from 3 to 12” sized flanges.

These filters are also available in the standard five filtration grades.

4” Die-cast aluminum filters

- **Cost effective alternative to flanged, fabricated carbon steel vessels**
- **Standard range up to 290 psi g (20 bar 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 232 psi g (16 bar g)**
- **Stainless steel models also available**
- **Designed to ASME VIII Div 1 (non-U)**
- **Specialist housings also available**
- **NT Easy fit element location for quick and simple maintenance**
- **Higher pressures available**
- **Filters for other gases available**

NT Easy fit element technology

- **Low pressure drop when compared to traditional wrapped filter elements**
- **Drainage layer is suitable for use up to 212°F (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 Vapor Removal

Oil vapor 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 vapors. The OIL-X EVOLUTION range consists of three types of oil vapor 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 vapor 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 utilize 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 vapor 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 vapor removal filters

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

Factors affecting the lifetime of adsorption filters

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

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

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

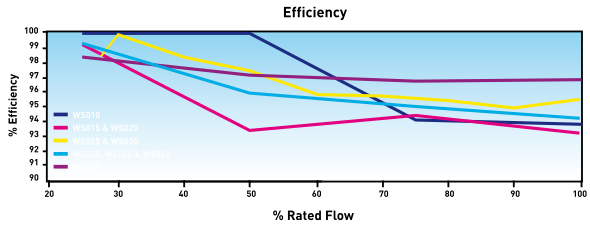
Relative Humidity or Dewpoint
Wet air reduces the adsorptive capacity of the carbon – always try to install an adsorption filter after a dryer.

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

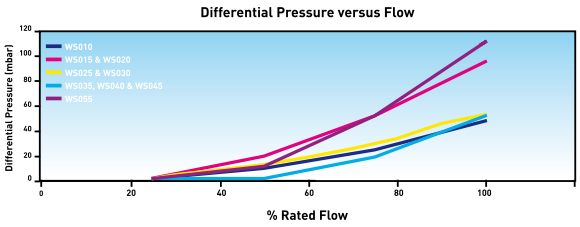
OIL-X EVOLUTION

Water Separators - Grade WS

Separation Performance (models WS010 - WS055)



Differential Pressure versus Flow (models WS010 - WS055)



Product Selection

Stated flows are for operation at 100 psi g (7 bar g) with reference to 68°F (20°C), 1 bar a, 0% relative water vapor pressure.

	Model	Pipe Size	cfm	L/S	m³/min	m³/hr
Cast Aluminum Range	WS010ANFX-US	1/4"	21	10	0.6	36
	WS010BNFX-US	3/8"	21	10	0.6	36
	WS010CNFX-US	1/2"	21	10	0.6	36
	WS015BNFX-US	3/8"	85	40	2.4	144
	WS020CNFX-US	1/2"	85	40	2.4	144
	WS020DNFX-US	3/4"	85	40	2.4	144
	WS020ENFX-US	1"	85	40	2.4	144
	WS025DNFX-US	3/4"	233	110	6.6	396
	WS030ENFX-US	1"	233	110	6.6	396
	WS030FNFX-US	1 1/4"	233	110	6.6	396
	WS030GNFX-US	1 1/2"	233	110	6.6	396
	WS035FNFX-US	1 1/4"	742	350	21	1260
	WS040GNFX-US	1 1/2"	742	350	21	1260
	WS045HNFX-US	2"	742	350	21	1260
	WS055INFX-US	2 1/2"	1695	800	48	2880
	WS055JNFX-US	3"	1695	800	48	2880
	WS1000	4"	2119	1000	60	3600
Carbon Steel Range	DH-WSA800-F	3" Flg	1700	802	48.1	2888
	DH-WSA1000-F	4" Flg	2100	991	59.5	3568
	DH-WSA1800-F	6" Flg	3780	1784	107	6422
	DH-WSA3000-F	8" Flg	6300	2973	178.4	10704
	DH-WSA4800-F	10" Flg	10080	4757	285.4	17126
	DH-WSA7200-F	12" Flg	15120	7136	428.2	25689

Correction Factors

Line Pressure		Correction Factor pressure (CFP)
psi g	bar g	
15	1	4.00
29	2	2.63
44	3	2.00
58	4	1.59
73	5	1.33
87	6	1.14
100	7	1.00
116	8	0.94
131	9	0.89
145	10	0.85
160	11	0.82
174	12	0.79
189	13	0.76
203	14	0.73
218	15	0.71
232	16	0.68
When ordering a WS filter for pressures above 232 psi g (16 bar g), use manual drain. Replace F with M in product code. e.g. 015BNFX becomes 015BNMX. Models 800F - 7200F not suitable for pressures above 232 psi g (16 bar g)		
248	17	0.67
263	18	0.65
277	19	0.63
292	20	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.

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 75 psi, use 73 psi 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 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)

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	N = NPT G = BSPP	F = Float M = Manual	X = None
Example code					
WS	**010**	**A**	**N**	**F**	**X**

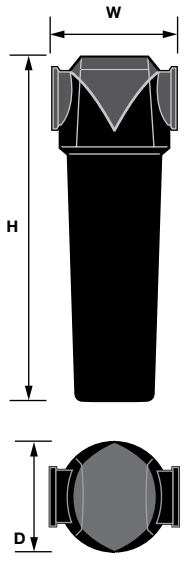
Technical Data

Grade	Water Separator Models	Min Operating Pressure		Max Operating Pressure		Min Operating Temp		Max Operating Temp	
		psi g	bar g	psi g	bar g	°F	°C	°F	°C
WS	010ANFX-US - 055JNFX-US	15	1	232	16	35	2	176	80
WS	1000	15	1	232	16	35	2	150	66
DH-WSA	800-F - 1800-F	15	1	232	16	35	2	140	60
DH-WSA	3000-F - 7200-F	15	1	150	10.4	35	2	140	60

Weights and Dimensions

Model	Pipe Size	Height (H)		Width (W)		Depth (D)		Weight	
		ins	mm	ins	mm	ins	mm	lbs	kg
WS010ANFX-US	1/4"	7.2	181	3.0	76	2.5	64	1.3	0.6
WS010BNFX-US	3/8"	7.2	181	3.0	76	2.5	64	1.3	0.6
WS010CNFX-US	1/2"	7.2	181	3.0	76	2.5	64	1.3	0.6
WS015BNFX-US	3/8"	9.3	235	3.8	97	3.3	84	2.4	1.1
WS020CNFX-US	1/2"	9.3	235	3.8	97	3.3	84	2.4	1.1
WS020DNFX-US	3/4"	9.3	235	3.8	97	3.3	84	2.4	1.1
WS020ENFX-US	1"	9.3	235	3.8	97	3.3	84	2.4	1.1
WS025DNFX-US	3/4"	10.8	275	5.1	129	4.5	115	4.8	2.2
WS030ENFX-US	1"	10.8	275	5.1	129	4.5	115	4.8	2.2
WS030FNFX-US	1 1/4"	10.8	275	5.1	129	4.5	115	4.8	2.2
WS030GNFX-US	1 1/2"	10.8	275	5.1	129	4.5	115	4.8	2.2
WS035FNFX-US	1 1/4"	17	432	6.7	170	6.1	156	11.2	5.1
WS040GNFX-US	1 1/2"	17	432	6.7	170	6.1	156	11.2	5.1
WS045HNFX-US	2"	17	432	6.7	170	6.1	156	11.2	5.1
WS055INFX-US	2 1/2"	19.9	504	8.1	205	7.1	181	22.0	10.0
WS055JNFX-US	3"	19.9	504	8.1	205	7.1	181	22.0	10.0
WS1000	4"	33.3	847	16.5	420	11.1	282	92.0	42.0
DH-WSA800-F	3" Flg	41.5	1123	15	381	7.5	191	112.0	50.8
DH-WSA1000-F	4" Flg	48.6	1234	18	457	9.0	229	180.0	81.6
DH-WSA1800-F	6" Flg	54.8	1392	24	610	11.0	279	257.0	116.6
DH-WSA3000-F	8" Flg	CF	CF	CF	CF	CF	CF	CF	CF
DH-WSA4800-F	10" Flg	CF	CF	CF	CF	CF	CF	CF	CF
DH-WSA7200-F	12" Flg	CF	CF	CF	CF	CF	CF	CF	CF

WS010 - 055



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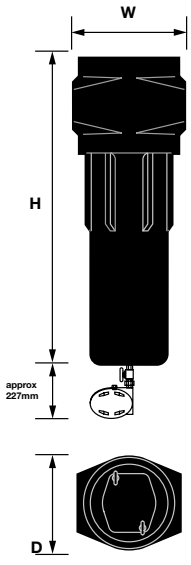

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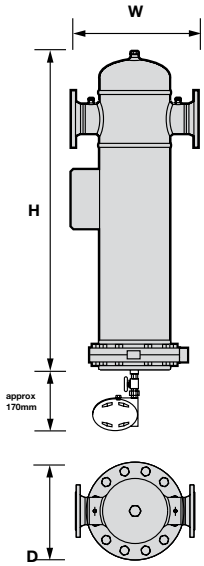


OIL-X EVOLUTION

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 70°F (21°C)	Filtration Efficiency	Initial Dry Differential Pressure	Initial Saturated Differential Pressure	Change Element Every	Precede with Filtration Grade
AO	Coalescing	Down to 1 micron	0.5 ppm(w) 0.6 mg/m^3	99.925%	1psi (<70 mbar)	2psi (<140 mbar)	12 months	WS (for bulk liquid)
AA	Coalescing	Down to 0.01 micron	0.01 ppm(w) 0.01 mg/m^3	99.9999%	2psi (<140 mbar)	3psi (<200 mbar)	12 months	AO
AR	Dry Particulate	Down to 1 micron	N/A	99.925%	1psi (<70 mbar)	N/A	12 months	N/A
AAR	Dry Particulate	Down to 0.01 micron	N/A	99.9999%	2psi (<140 mbar)	N/A	12 months	AR

Product Selection

Stated flows are for operation at 100 psi g (7 bar g) with reference to 68°F (20°C), 1 bar a, 0% relative water vapor pressure.
For flows at other pressures apply the correction factors shown.

	Model	Pipe Size	cfm	L/S	m^3/min	m^3/hr	Replacement Element kit	No.
Cast Aluminum Filters	grade **010A** ☐☐X	1/4"	21	10	0.6	36	010 grade	1
	grade **010B** ☐☐X	3/8"	21	10	0.6	36	010 grade	1
	grade **010C** ☐☐X	1/2"	21	10	0.6	36	010 grade	1
	grade **015B** ☐☐☐	3/8"	42	20	1.2	72	015 grade	1
	grade **015C** ☐☐☐	1/2"	42	20	1.2	72	015 grade	1
	grade **020C** ☐☐☐	1/2"	64	30	1.8	108	020 grade	1
	grade **020D** ☐☐☐	3/4"	64	30	1.8	108	020 grade	1
	grade **020E** ☐☐☐	1"	64	30	1.8	108	020 grade	1
	grade **025D** ☐☐☐	3/4"	127	60	3.6	216	025 grade	1
	grade **025E** ☐☐☐	1"	127	60	3.6	216	025 grade	1
	grade **030E** ☐☐☐	1"	233	110	6.6	396	030 grade	1
	grade **030F** ☐☐☐	1 1/4"	233	110	6.6	396	030 grade	1
	grade **030G** ☐☐☐	1 1/2"	233	110	6.6	396	030 grade	1
	grade **035F** ☐☐☐	1 1/4"	339	160	9.6	576	035 grade	1
	grade **035G** ☐☐☐	1 1/2"	339	160	9.6	576	035 grade	1
	grade **040G** ☐☐☐	1 1/2"	466	220	13.2	792	040 grade	1
	grade **040H** ☐☐☐	2"	466	220	13.2	792	040 grade	1
	grade **045H** ☐☐☐	2"	699	330	19.8	1188	045 grade	1
	grade **050I** ☐☐☐	2 1/2"	911	430	25.9	1548	050 grade	1
	grade **050J** ☐☐☐	3"	911	430	25.9	1548	050 grade	1
	grade **055I** ☐☐☐	2 1/2"	1314	620	37.3	2232	055 grade	1
	grade **055J** ☐☐☐	3"	1314	620	37.3	2232	055 grade	1
	grade **060K** ☐☐☐	4"	2119	1000	60	3600	060 grade	3
Carbon Steel Filters	DH-grade**150ND** ☐☐-1	3" Flg	911	430	25.9	1548	150 grade	1
	DH-grade**200ND** ☐☐-1	3" Flg	1314	620	37.3	2232	200 grade	1
	DH-grade**250OD** ☐☐-1	4" Flg	2119	1000	60	3600	060 grade	3
	DH-grade**300OD** ☐☐-1	4" Flg	2755	1300	78	4680	060 grade	4
	DH-grade**350PD** ☐☐-1	6" Flg	4132	1950	117	7020	060 grade	6
	DH-grade**400QD** ☐☐-1	8" Flg	6886	3250	195.1	11699	060 grade	10
	DH-grade**450RD** ☐☐-1	10" Flg	11018	5200	312.1	18720	060 grade	16
	DH-grade**500SD** ☐☐-1	12" Flg	16527	7800	468.1	28080	060 grade	20

Note: Connection sizes, (010 - 055) NPT as standard, D = flanged connection.

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 75 psi, use 73 psi 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)

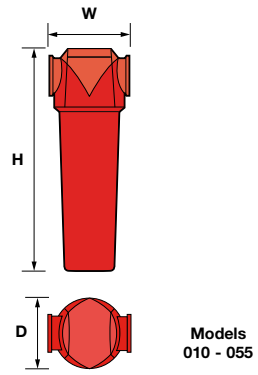
Correction Factors

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

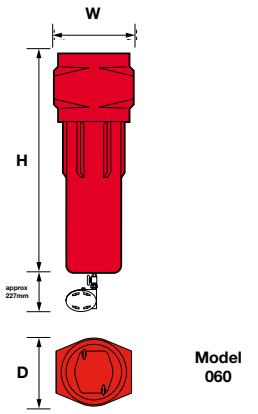
Technical Data

Filter Grade	Filter Models	Min Operating Pressure		Max Operating Pressure		Min Operating Temp		Max Operating Temp	
		psi g	bar g	psi g	bar g	°F	°C	°F	°C
AO/AA	010 ☐☐ FX - 055 ☐☐ FX	15	1	232	16	35	2	176	80
AO/AA	010 ☐☐ MX - 055 ☐☐ MX	15	1	290	20	35	2	212	100
AO/AA	060K ☐ FX	15	1	232	16	35	2	150	66
AO/AA	060K ☐ MX	15	1	290	20	35	2	212	100
DH-AO/AA	150NDFX-1 - 500SDFX-1	15	1	232	16	35	2	150	66
DH-AO/AA	150NDMX-1 - 500SDMX-1	15	1	232	16	35	2	212	100
AO/AA	010☐☐ FI - 055 ☐☐ FI	15	1	232	16	35	2	176	80
AO/AA	010☐☐ MI - 055 ☐☐ MI	15	1	290	20	35	2	212	100
AO/AA	060K ☐ FI	15	1	232	16	35	2	150	66
AO/AA	060K ☐ MI	15	1	290	20	35	2	150	66
DH-AO/AA	150NDFI-1 - 500SDFI-1	15	1	232	16	35	2	150	66
DH-AO/AA	150NDMI-1 - 500SDMI-1	15	1	232	16	35	2	150	66
AR/AAR	010☐☐ MX - 055 ☐☐ MX	15	1	290	20	35	2	212	100
AR/AAR	060K ☐ MX	15	1	290	20	35	2	212	100
DH-AR/AAR	150NDMX-1 - 500SDMX-1	15	1	232	16	35	2	212	100
AR/AAR	010☐☐ MI - 055 ☐☐ MI	15	1	290	20	35	2	212	100
AR/AAR	060K ☐ MI	15	1	290	20	35	2	150	66
DH-AR/AAR	150NDMI-1 - 500SDMI-1	15	1	232	16	35	2	150	66

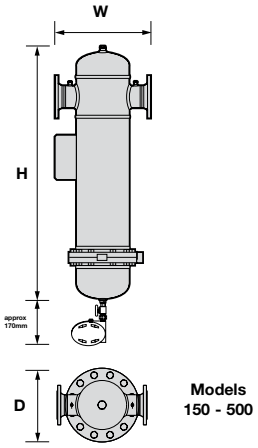
Model	Pipe Size	Height (H)		Width (W)		Depth (D)		Weight	
		ins	mm	ins	mm	ins	mm	lbs	kg
010A	1/4"	7.2	181	3.0	76	2.5	64	1.3	0.6
010B	3/8"	7.2	181	3.0	76	2.5	64	1.3	0.6
010C	1/2"	7.2	181	3.0	76	2.5	64	1.3	0.6
015B	3/8"	9.3	235	3.8	97	3.3	84	2.4	1.1
015C	1/2"	9.3	235	3.8	97	3.3	84	2.4	1.1
020C	1/2"	9.3	235	3.8	97	3.3	84	2.4	1.1
020D	3/4"	9.3	235	3.8	97	3.3	84	2.4	1.1
020E	1"	9.3	235	3.8	97	3.3	84	2.4	1.1
025D	3/4"	10.8	275	5.1	129	4.5	115	4.8	2.2
025E	1"	10.8	275	5.1	129	4.5	115	4.8	2.2
030E	1"	14.3	364	5.1	129	4.5	115	5.9	2.7
030F	1 1/4"	14.3	364	5.1	129	4.5	115	5.9	2.7
030G	1 1/2"	14.3	364	5.1	129	4.5	115	5.9	2.7
035F	1 1/4"	17.0	432	6.7	170	6.1	156	11.2	5.1
035G	1 1/2"	17.0	432	6.7	170	6.1	156	11.2	5.1
040G	1 1/2"	20.6	524	6.7	170	6.1	156	12.5	5.7
040H	2"	20.6	524	6.7	170	6.1	156	12.5	5.7
045H	2"	20.6	524	6.7	170	6.1	156	12.5	5.7
050I	2 1/2"	25.3	641	8.1	205	7.1	181	24.4	11.1
050J	3"	25.3	641	8.1	205	7.1	181	24.4	11.1
055I	2 1/2"	32.8	832	8.1	205	7.1	181	30.6	13.9
055J	3"	32.8	832	8.1	205	7.1	181	30.6	13.9
060K	4"	33.3	847	16.5	420	11.1	282	98.1	44.5
150ND	3" Flg	40.0	1016	14.6	370	11.0	279	135	61.2
200ND	3" Flg	48.0	1220	14.6	370	11.0	279	150	68.0
250OD	4" Flg	55.9	1420	21.1	536	15.9	404	310	140.6
300OD	4" Flg	55.9	1420	21.1	536	15.9	404	325	147.4
350PD	6" Flg	56.6	1438	23.8	605	19.0	483	425	192.8
400QD	8" Flg	66.0	1676	28.8	732	25.0	635	720	326.6
450RD	10" Flg	63.4	1610	29.1	739	27.5	699	870	394.6
500SD	12" Flg	71.3	1811	39.4	1000	32.1	815	1215	551.1



Models 010 - 055



Model 060



Models 150 - 500

Filter coding examples

Cast aluminum filters 010 - 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	N = NPT G = BSPP	F = Float M = Manual	X = None
Example code					
AA	**010**	**A**	**N**	**F**	**X**

Carbon steel filters 150 - 500

Grade	Model	Pipe Size	Connection Type	Drain Option	Incident Monitor Option
AO, AA, AR, AAR	4 digit code denotes filter housing size	Letter denotes Flange Connection	D = DN	F = Float N = No Drain M = Manual	X = None I = Incident Monitor
Example code					
A0	**150**	**N**	**D**	**F**	**X**

Optional accessories 010 - 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	
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.

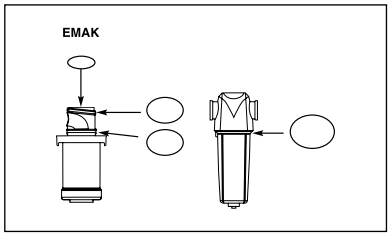
Filter model	
010	**MBKE1**
015 - 020	**MBKE2**
025 - 030	**MBKE3**
035 - 045	**MBKE4**
050 - 055	**MBKE5**

Oil Indicator

Filter Models	
AC010 - AC030	**605009902**

Replacement Drains

EF1 Float Drain	EM1 Manual Drain
WS/AO/AA Grade filters fitted with float drains as standard.	AR/AAR/ACS Grade filters fitted with a manual drain.



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

OIL-X EVOLUTION

Plant scale / point of use

Oil vapor removal filters - Grades OVR

Filtration Performance

Filtration Grade	Filter Type	Particle removal (inc water & oil aerosols)	Max Remaining Oil Content at 70°F (21°c)	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 Vapor Removal	N/A	0.003 ppm(w) 0.003 mg/m³	N/A	ISO8573-5	N/A	5psi (<350 mbar)	N/A	6000 hrs*	AA

* When corrected to match system conditions

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

	Model	Pipe Size	Flow Rates				Replacement Element Kit	No. Req'd
			cfm	L/s	m³/min	m³/hr		
Modular Aluminum range	**OVR100E ☐ XX**	1"	170	80	4.8	288	100OVR	1
	OVR150H ☐ XX	2"	339	160	9.6	576	100OVR	2
	OVR200H ☐ XX	2"	699	330	19.8	1188	100OVR	4
	OVR250J ☐ XX	3"	1314	620	37.2	2232	100OVR	6
	2 x OVR250J	3"	2628	1240	74.5	4465		
	3 x OVR250J	3"	3941	1860	111.8	6696		
	4 x OVR250J	3"	5255	2480	149.1	8928		
	5 x OVR250J	3"	6569	3100	186.4	11160		

CONNECTION TYPE — N = NPT, B = BSPT

Correction Factors Temperature (CFT)

Oil Lubricated Compressors

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

Oil-free Compressors

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

Correction Factors Pressure (CFP)

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

Correction Factors Dewpoint (CFD)

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

It is assumed inlet oil vapor concentration does not exceed 0.05mg/m³ at 70°F (21°C). For applications with higher oil vapor concentrations, please contact Parker domnick hunter for accurate sizing.

Filter Selection - Grade OVR

To correctly select an OVR oil vapor 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 98.6°F (37°C) use 104°F (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 75 psi use 73 psi 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 vapor removal filters - Grade ACS

Filtration Performance

Filtration Grade	Filter Type	Particle removal (inc water & oil aerosols)	Max Remaining Oil Content at 70°F (21°C)	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 Vapor Removal	N/A	0.003 ppm(w) 0.003 mg/m	N/A	ISO8573-5	N/A	3 psi (<200 mbar)	N/A	When oil vapor or odor is detected	AA

Product Selection - Grade ACS Point of use oil vapor removal

Stated flows are for operation at 100 psi g (7 bar g) with reference to 68°F (20°C), 1 bar a, 0% relative water vapor pressure. For flows at other pressures apply the correction factors shown.

	Model	Pipe Size	cfm	L/S	m^3/min	m^3/hr	Replacement Element kit	No.
Cast Aluminum Filters	**ACS010A ☐ MX**	1/4"	21	10	0.6	36	010 ACS	1
	ACS010B ☐ MX	3/8"	21	10	0.6	36	010 ACS	1
	ACS010C ☐ MX	1/2"	21	10	0.6	36	010 ACS	1
	ACS015B ☐ MX	3/8"	42	20	1.2	72	015 ACS	1
	ACS015C ☐ MX	1/2"	42	20	1.2	72	015 ACS	1
	ACS020C ☐ MX	1/2"	64	30	1.8	108	020 ACS	1
	ACS020D ☐ MX	3/4"	64	30	1.8	108	020 ACS	1
	ACS020E ☐ MX	1"	64	30	1.8	108	020 ACS	1
	ACS025D ☐ MX	3/4"	127	60	3.6	216	025 ACS	1
	ACS025E ☐ MX	1"	127	60	3.6	216	025 ACS	1
	ACS030E ☐ MX	1"	233	110	6.6	396	030 ACS	1
	ACS030F ☐ MX	1 1/4"	233	110	6.6	396	030 ACS	1
	ACS030G ☐ MX	1 1/2"	233	110	6.6	396	030 ACS	1
	ACS035F ☐ MX	1 1/4"	339	160	9.6	576	035 ACS	1
	ACS035G ☐ MX	1 1/2"	339	160	9.6	576	035 ACS	1
	ACS040G ☐ MX	1 1/2"	466	220	13.2	792	040 ACS	1
	ACS040H ☐ MX	2"	466	220	13.2	792	040 ACS	1
	ACS045H ☐ MX	2"	699	330	19.8	1188	045 ACS	1
	ACS050I ☐ MX	2 1/2"	911	430	25.9	1548	050 ACS	1
	ACS050J ☐ MX	3"	911	430	25.9	1548	050 ACS	1
	ACS055I ☐ MX	2 1/2"	1314	620	37.3	2232	055 ACS	1
	ACS055J ☐ MX	3"	1314	620	37.3	2232	055 ACS	1
	ACS060K ☐ MX	4"	2119	1000	60	3600	060 ACS	3
Carbon Steel Filters	**DH-ACS150NDMX-1**	3" Flg	911	430	25.9	1548	150 ACS	1
	DH-ACS200NDMX-1	3" Flg	1314	620	37.3	2232	200 ACS	1
	DH-ACS250ODMX-1	4" Flg	2119	1000	60	3600	060 ACS	3
	DH-ACS300ODMX-1	4" Flg	2755	1300	78	4680	060 ACS	4
	DH-ACS350PDMX-1	6" Flg	4132	1950	117	7020	060 ACS	6
	DH-ACS400QDMX-1	8" Flg	6887	3250	195	11700	060 ACS	10
	DH-ACS450RDMX-1	10" Flg	11019	5200	313	18720	060 ACS	16
	DH-ACS500SDMX-1	12" Flg	16528	7800	469	28080	060 ACS	20

Note: Connection sizes, (010 - 055) NPT as standard, D = flanged connection.

Correction Factors

Grades ACS and AC only

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

Filter Coding Examples

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

OIL-X EVOLUTION

Point of use oil vapor 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 Vapor Removal	N/A	0.003 mg/m^3 0.003 ppm(w)	N/A	ISO8573-5	N/A	<775 mbar (11psi)	N/A	When oil vapor or odor is detected	AO

Product Selection - Grade AC point of use oil vapor removal

	Model	Flow Rates					Replacement Elements	
		Pipe Size	cfm	L/s	m^3/min	m^3/hr		
Cast Aluminum Filters	**AC010A ☐ FI**	1/4"	13	6	0.4	22	010AA	010AC
	AC010B ☐ FI	3/8"	13	6	0.4	22	010AA	010AC
	AC010C ☐ FI	1/2"	13	6	0.4	22	010AA	010AC
	AC015B ☐ FI	3/8"	27	13	0.8	46	015AA	015AC
	AC015C ☐ FI	1/2"	27	13	0.8	46	015AA	015AC
	AC020C ☐ FI	1/2"	53	25	1.5	90	020AA	020AC
	AC020D ☐ FI	3/4"	53	25	1.5	90	020AA	020AC
	AC020E ☐ FI	1"	53	25	1.5	90	020AA	020AC
	AC025D ☐ FI	3/4"	84	40	2.4	143	025AA	025DAC
	AC025E ☐ FI	1"	136	65	3.9	231	025AA	025EAC
	AC030E ☐ FI	1"	180	85	5.1	305	030AA	030AC
	AC030F ☐ FI	1 1/4"	180	85	5.1	305	030AA	030AC
	AC030G ☐ FI	1 1/2"	180	85	5.1	305	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 75 psi, use 73 psi 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

AC010 - 030

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

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

Ref: Accessories - EM1

OIL-X EVOLUTION

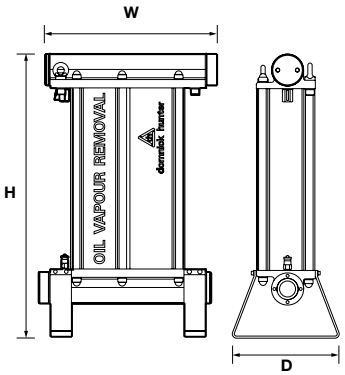
Oil vapor removal (continued)

Technical Data

Filter Grade	Filter Models	Min Operating Pressure		Max Operating Pressure		Min Operating Temp		Max Operating Temp	
		psi g	bar g	psi g	bar g	°F	°C	°F	°C
OVR	100E ☐ XX - 250J ☐ XX	15	1	232	16	35	2	122	50
ACS	010A ☐ MX - 060K ☐ MX	15	1	290	20	35	2	122	50
DH-ACS	150NDMX - 500SDMX-1	15	1	232	16	35	2	122	50
AC	010A ☐ FI - 030G ☐ FI	15	1	232	16	35	2	86	30

Weights and Dimensions

Model	Pipe Size	Height (H)		Width (W)		Depth (D)		Weight	
		ins	mm	ins	mm	ins	mm	lbs	kg
OVR100E ☐ XX	1"	26.3	670	13.8	352	9.8	250	55	25
OVR150H ☐ XX	2"	31.3	797	19.9	504	11.8	300	93	42
OVR200H ☐ XX	2"	31.3	797	32.6	829	11.8	300	163	74
OVR250J ☐ XX	3"	32.1	816	47.0	1194	11.8	300	235	107
ACS010A ☐ MX	1/4"	7.2	181	3.0	76	2.5	64	1.3	0.6
ACS010B ☐ MX	3/8"	7.2	181	3.0	76	2.5	64	1.3	0.6
ACS010C ☐ MX	1/2"	7.2	181	3.0	76	2.5	64	1.3	0.6
ACS015B ☐ MX	3/8"	9.3	235	3.8	97	3.3	84	2.4	1.1
ACS015C ☐ MX	1/2"	9.3	235	3.8	97	3.3	84	2.4	1.1
ACS020C ☐ MX	1/2"	9.3	235	3.8	97	3.3	84	2.4	1.1
ACS020D ☐ MX	3/4"	9.3	235	3.8	97	3.3	84	2.4	1.1
ACS020E ☐ MX	1"	9.3	235	3.8	97	3.3	84	2.4	1.1
ACS025D ☐ MX	3/4"	10.8	275	5.1	129	4.5	115	4.8	2.2
ACS025E ☐ MX	1"	10.8	275	5.1	129	4.5	115	4.8	2.2
ACS030E ☐ MX	1"	14.3	364	5.1	129	4.5	115	5.9	2.7
ACS030F ☐ MX	1 1/4"	14.3	364	5.1	129	4.5	115	5.9	2.7
ACS030G ☐ MX	1 1/2"	14.3	364	5.1	129	4.5	115	5.9	2.7
ACS035F ☐ MX	1 1/4"	17.0	432	6.7	170	6.1	156	11.2	5.1
ACS035G ☐ MX	1 1/2"	17.0	432	6.7	170	6.1	156	11.2	5.1
ACS040G ☐ MX	1 1/2"	20.6	524	6.7	170	6.1	156	12.5	5.7
ACS040H ☐ MX	2"	20.6	524	6.7	170	6.1	156	12.5	5.7
ACS045H ☐ MX	2"	20.6	524	6.7	170	6.1	156	12.5	5.7
ACS050I ☐ MX	2 1/2"	25.3	641	8.1	205	7.1	181	24.4	11.1
ACS050J ☐ MX	3"	25.3	641	8.1	205	7.1	181	24.4	11.1
ACS055I ☐ MX	2 1/2"	32.8	832	8.1	205	7.1	181	30.6	13.9
ACS055J ☐ MX	3"	32.8	832	8.1	205	7.1	181	30.6	13.9
ACS 060KMX	4"	33.3	847	16.5	420	11.1	282	98	44.5
DH-ACS150NDMX-1	3" Flg	40.0	1016	14.6	370	11.0	279	135	61.2
DH-ACS200NDMX-1	3" Flg	48.0	1220	14.6	370	11.0	279	150	68.0
DH-ACS250ODMX-1	4" Flg	55.9	1420	21.1	536	15.9	404	310	140.6
DH-ACS300ODMX-1	4" Flg	55.9	1420	21.1	536	15.9	404	325	147.4
DH-ACS350PDMX-1	6" Flg	56.6	1438	23.8	605	19.0	483	425	192.8
DH-ACS400QDMX-1	8" Flg	66.0	1676	28.8	732	25.	635	720	326.6
DH-ACS450RDMX-1	10" Flg	63.4	1610	29.1	739	27.5	699	870	394.6
DH-ACS500SDMX-1	12" Flg	71.3	1811	39.4	1000	32.1	815	1215	551.1
AC010A ☐ FI	1/4"	12.3	311	3.0	76	2.6	65	1.8	0.8
AC010B ☐ FI	3/8"	12.3	311	3.0	76	2.6	65	1.8	0.8
AC010C ☐ FI	1/2"	12.3	311	3.0	76	2.6	65	1.8	0.8
AC015B ☐ FI	3/8"	18.7	474	3.8	97	3.3	84	3.5	1.6
AC015C ☐ FI	1/2"	18.7	474	3.8	97	3.3	84	3.5	1.6
AC020C ☐ FI	1/2"	18.7	474	3.8	97	3.3	84	3.2	1.45
AC020D ☐ FI	3/4"	18.7	474	3.8	97	3.3	84	3.2	1.45
AC020E ☐ FI	1"	18.7	474	3.8	97	3.3	84	3.2	1.45
AC025D ☐ FI	3/4"	21.8	554	5.1	129	4.5	115	7.8	3.5
AC025E ☐ FI	1"	21.8	554	5.1	129	4.5	115	7.6	3.4
AC030E ☐ FI	1"	28.9	733	5.1	129	4.5	115	9.0	4.1
AC030F ☐ FI	1 1/4"	28.9	733	5.1	129	4.5	115	9.0	4.1
AC030G ☐ FI	1 1/2"	733	28.9	129	5.1	115	4.5	4.1	9.0



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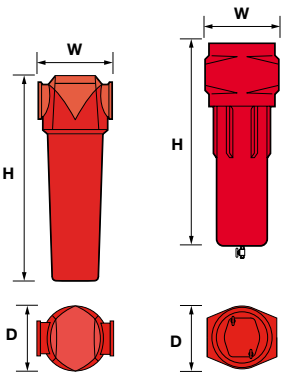

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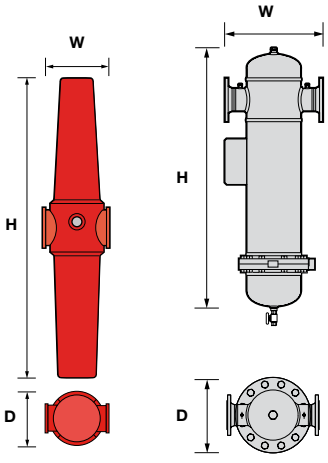

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