CNG, NGV and RNG Filtration Solutions

IVYS
Purely Driven

ivysads.com

DESIGNED AND BUILT FOR STRENGTH,
DURABILITY, AND RELIABILITY.

TABLE OF CONTENTS

Our Vision

Ivys is committed to responsible and sustainable environmental solutions

IVYS
Purely Driven

A World Powered by Clean Energy

By providing both high-performance and innovative technological solutions for the purification of renewable gas and by offering a wide range of equipment for the conditioning, compression, and filtration of air and gas, Ivys is part of the great line of companies aiming to decarbonize the planet. A sustainable development model that integrates economic growth with social and environmental responsibility.

Our slogan, “Purely Driven,” reflects our vision of a cleaner planet, our continued search for more efficient solutions, and our dedication to building an organization of excellence together that stays true to its values.

Products Designed for CNG

- Full range of products for one-stop shopping
- Proven quality on a global scale

Exceptional Technical Support

- Flexible, fully-trained technical team
- Expert advice and simple solutions for the right product, every time

Customers First

- Direct line, live support
- Products in stock, ready to ship
- Easy to use catalogue

What is compressed natural gas?

Compressed Natural Gas (CNG) is clean energy—a readily available and affordable alternative to gasoline and diesel, as well as other fossil fuels. Consisting mostly of methane, CNG is odorless, colorless, and tasteless. It has up to 90%* fewer greenhouse gas (GHG) emissions than gasoline and is non-toxic, posing no threat to land or water.

*Emission reductions vary by pollutant and make/model of vehicle.

The Application

CNG comes from drilled natural gas wells or in conjunction with crude oil production. It's made by drying gas taken from the pipeline through a compressor station where it is pressurized ranging from 2,000 to 6,000 psig. It is then stored in tanks, ultimately making its way to CNG dispensers for natural gas vehicles (NGVs).

The Problem

CNG may be clean energy but it still requires treatment against moisture and oil. Much like gas and diesel, contaminants develop during pipeline handling: water condenses in tanks and compressors leak oil into the fuel stream.

Trucks, vans, buses, forklifts, cars—all CNG vehicles have expensive fuel systems that need protection against solids, liquids, and oils to avoid premature failing of the fuel injectors. Without precision filters throughout the delivery channel and in the vehicle itself, the inevitable will happen:

- Engine contamination and vehicle downtime
- Increased vehicle emissions during engine combustion
- Less fuel economies
- Reduced accuracy and possible rupture of the regulator diaphragm

The Solution

From pipeline to engine, superior filtration is critical. Ivys supplies a range of high-efficiency, low to high pressure filters to handle the essential needs of the CNG delivery channel as seen in the illustration below. Ivys' particulate and coalescing filters are found on the best fuel systems in the world, removing all forms of contaminants while protecting dryers, compressors, storage cascades, and dispensers.

Typical CNG Fuel Station Layout

Compressed Natural Gas (CNG) Filters

Our filters are essential for compressed natural gas treatment and can be found throughout the treatment chain: dryers, compressors, storage cascades, dispensers.

Overview

WHAT BEST IN CLASS LOOKS LIKE

Surface Protection

High-grade, cast aluminum filter housings (XL and XM series)

- Chromatized for corrosion protection
- Finished with impact and abrasion-proof coating on the outer side

High pressure carbon steel housings (XH series)

- Manufactured by means of iron phosphate passivation
- Nickel-coated finish

This multi-layer surface protection ensures high resistance and a long service life.

Conformity with International Standards (ISO8573)

The X Series has been performance validated according to ISO8573 quality standards and ISO test methods by IUTA, an independent verification body. All filters have been tested to ASME standards, are CRN registered and comply with EU Pressure Equipment Directive 2014/68/EU (PED).

CRN PED

An Optimized Accessories Range – Perfectly Simple

- Differential pressure gauges
- Condensate drains

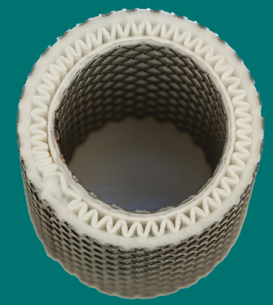
Simple Design. Easy Maintenance

Ivys' filters have lugs in the lower filter part to which the filter element is securely mounted, fastened and sealed when the housing is screwed tight. That eliminates the need for a tie rod, which allows the filter to be located only a few inches above ground level. A mechanical end stop prevents the housing thread from being overstressed and ensures easy opening of the filter housing even after prolonged operating periods. A hex-nut at the bottom of the bowl has been added for extra help. The filter element holder has guide paths in order for the filter element to be automatically locked in the holder when being installed.

Doesn't require a tie rod

Filter Media Designed For Natural Gas

High-quality compressed gas filtration starts with selecting the correct filter media. Ivys uses superior-quality filter media with a new hybrid technology. Ivys elements stop the perpetual discussion about the use of filter media with or without binders because they are layered with both types, tailored to the filtration task. The fine filter media is protected on both sides using a supporting fabric to increase both stability and reliability.



Pleated Filter Elements

Pleated filter elements provide significantly greater filtration volumes than non-pleated. The higher filter volume provides more void space for holding contaminants which reduces the differential pressure caused by retention of solid particles. The service life of the filter element increases proportionally, which results in operating and maintenance cost savings.

Incorporated Drainage Media

The filter and drainage media are compacted between two stainless steel supporting cylinders, eliminating any potential detachment of the filter media. The drainage media is located inside the filter element, eliminating potential handling damage. The stainless steel cylinders have big, diamond-shaped openings for optimum flow conditions. Compared to punch-hole versions, their contribution to differential pressure is much lower and they are much more environmentally friendly because they are made from expanded sheet metal, i.e. without metal scrap during the production process.

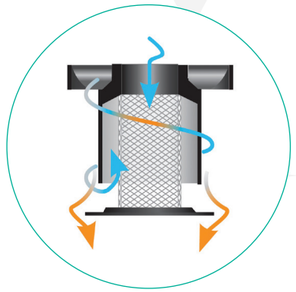
2-Stage Dry-Type Separation

During dry-type separation with out-to-inside flow through the filter elements, the drainage media functions as a pre-filter stage, preventing coarse contaminants from entering the fine filter media. As a result, the differential pressure caused by contaminants is reduced and the service life of the filter is extended. As an additional advantage, the filter elements can also be used for wet-type filtration.

Type of filtration

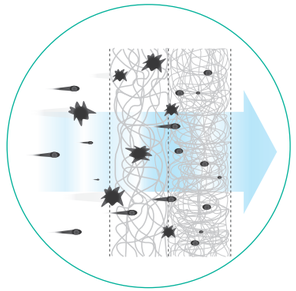
Water Separation

Large, heavy amounts of liquid droplets or particles from a compressed gas flow are separated through gravitational forces, centrifugal forces, inertial effects, etc. The differential pressure is constant and a high-separation efficiency is guaranteed over the whole specified flow rate range.



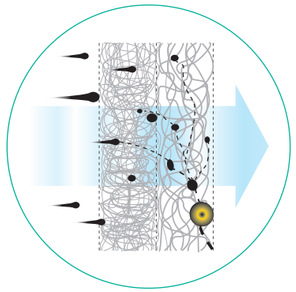
Dry Type Filtration

Solid contaminants are separated from the compressed gas system. The solids contact the fibres of the filter media where they remain. A coarse and a fine coarse media filter protects the fine filter media, increasing the service life. The differential pressure (dry) increases with an increasing amount of contaminant. The elements can be operated from inside-to-out or vice versa. The preferred direction of flow is toward the finer filter fibres, i.e. from out-to-in.



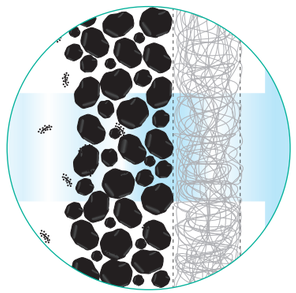
Wet Type Filtration

Liquid contaminants from the compressed gas flow are separated using a fine multi-layer filter media in combination with a drainage media (coalescing filter). The liquid contaminants contact the fibres of the fine filter media, move along the fibres due to the compressed gas flow and form larger droplets when they are merged (coalescing effect). The droplets are adsorped by the drainage media, discharged to the filter element bottom due to gravitational forces and drop off the filter element. Theoretically, the differential pressure (wet) is constant. However, it rises as the filter element is continuously loaded with liquid and solid contaminants. The direction of flow is toward the drainage media, i.e. from in-to-out.



Oil Vapour Adsorption

Compressed gas flow is separated by means of adsorption to activated carbon. The CNG becomes virtually oil-free that cannot condense into a liquid any more. There is often a filter media downstream of the activated carbon in order to eliminate activated carbon abrasion particles (abrasion-free activated carbon filter). The differential pressure (dry) is constant. The direction of flow is always toward the media, i.e. from in-to-out. Liquid oil or water would dramatically reduce the retention capacity of the activated carbon for oil vapour and should, therefore, be separated in advance, using appropriate grade filters.



LOW PRESSURE

XL series

Pressure:
290 psig/
20 barg

page 14

MEDIUM PRESSURE

XM series

Pressure:
725 psig/
50 barg

page 16

HIGH PRESSURE

XH series

Pressure:
6,000 psig/
420 barg

page 18

XL Series

LOW PRESSURE 290 psig/20 barg

The XL series of low pressure filters are used to remove solid, liquid, and, when using activated carbon cartridges, gaseous contaminants from compressed gas flows. In addition to liquids and dust, these filters eliminate oil droplets and finest dust particles from the compressed gas.

Volume Flow Range	Up to 5,400 SCFM – Up to 9,200 Nm³/h
Operating Temps	32-248 °F/0-120 °C
Port Size	¼" to 3" NPT
Accessories	Differential Pressure Gauge, Manual Drain

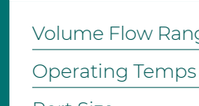
Filter Elements

WS — Water Separator Element

C — 3 µm Coarse Pre-filter Element

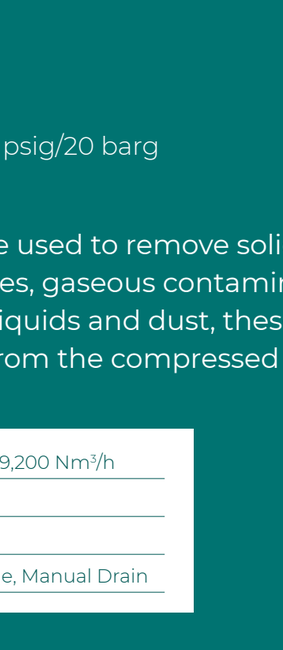
G — 1 µm General Purpose Element
F — 0,1 µm Fine Element
SF — 0,01 µm Super-Fine Element

AC — Activated Carbon Element



AAC — Activated Alumina Cartridge
MSC — Molecular Sieve Cartridge

ACC — Activated Carbon Cartridge



Gauges

G1

G2

G3

Manual Drains

D1

D3

To Order Your XL Filters

Ordering example: XLC | N | 5 | SF | P | G1 | D1

Low pressure CNG filter, ¾" NPT, flow 400 SCFM, superfine media grade, DP gauge, manual drain.

Ivys	Series	Application	Port Connection	Filter Model	Media Grade (microns)	End Cap	Gauge	Condensate Drain
X	L (Low)	C (CNG)	N (NPT)	1	WS	A (aluminum) Default Max. Temps. 248 °F/120 °C	N (None) Default	N (None) Default
				2	C (3 µ)	S (stainless steel) Max. Temp. 248 °F/120 °C	G1 (Magnetic Differential Manometer)	D1 (Manual valve)
				3	G (1 µ)		G2 (Magnetic Differential Manometer w/ alarm)	D3 (Manual ball valve)
				4	F (0,1 µ)		G3 (Differential pressure drop indicator)	
				5	SF (0,01 µ)			
				6	AC			
				7	AAC			
				8	ACC			
				9	MSC			
				10				
				11				
				12				

Use this table to find your filter model

XL Filter Model	NPT Port Size (in)	Filter Element	CNG flow capacity at 290 psig/20 barg		Dimensions						Volume		Mass	
					A		B		C					
			SCFM	Nm³/h	in	mm	in	mm	in	mm	gal	litres	lb	kg
1	¼	XE105	105	180	7 ¾	197	3 ¼	80	¾	21	0.13	0.5	1.5	0.7
2	⅜	XE107	160	260	7 ¾	197	3 ¼	80	¾	21	0.13	0.5	1.5	0.7
3	½	XE114	240	400	10 ½	267	3 ¼	80	¾	21	0.18	0.7	1.8	0.8
4	¾	XE114	240	400	10 ½	267	3 ¼	80	¾	21	0.18	0.7	1.8	0.8
5	¾	XE201	400	660	10 ¼	259	4 ½	117	1 ¼	33	0.42	1.6	4.0	1.8
6	1	XE202	780	1,200	14	359	4 ½	117	1 ¼	33	0.55	2.1	5.0	2.2
7	1 ½	XE203	1,080	1,850	18	459	4 ½	117	1 ¼	33	0.71	2.7	5.5	2.5
8	1 ½	XE205	1,660	2,760	25 ¼	639	4 ½	117	1 ¼	33	1.0	3.8	6.8	3.1
9	2	XE305	2,160	3,700	27 ½	700	5 ½	140	2	50	1.6	6.1	12.1	5.5
10	2	XE307	3,260	5,500	37 ¼	950	5 ½	140	2	50	2.2	8.4	16.3	7.4
11	2 ½	XE506	4,340	7,370	32	811	8 ½	217	2 ¾	69	4.46	16.9	30.0	13.6
12	3	XE507	5,400	9,200	39 ½	1,003	8 ½	217	2 ¾	69	5.52	20.9	37.3	16.9

Flow Correction Factors

To select the right filter use the following formulas and the nominal flow figures from the filter model table:
For calculating Actual Flow Capacity: $V_a = V_n * Cft * Cfp$
For calculating Nominal Flow Capacity: $V_n = V_a / Cft / Cfp$

Operating Temperature	°F	32	41	50	59	68	77	86	95	104	122	140	158	176	194	221	230	248	
	°C	0	5	10	15	20	25	30	35	40	50	60	70	80	90	100	110	120	
	cft	1.07	1.1	1.04	1.02	1	0.98	0.97	0.95	0.94	0.91	0.88	0.85	0.83	0.81	0.79	0.77	0.75	
Operating Pressure	psig	15	29	44	58	73	87	100	116	131	145	160	174	189	203	218	232	247	261	276	290
	barg	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	cfp	0.10	0.14	0.19	0.24	0.29	0.34	0.38	0.43	0.48	0.52	0.57	0.62	0.67	0.71	0.76	0.81	0.85	0.90	0.96	1

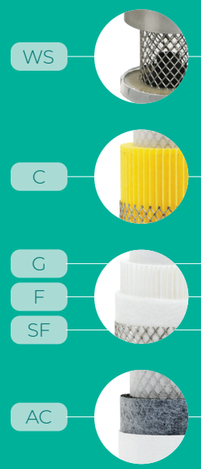
XM Series

MEDIUM PRESSURE 725 psig/50 barg

The XM series of medium-pressure filters are used to remove solid, liquid, and, when using activated carbon cartridges, gaseous contaminants from compressed gas flows. In addition to liquids and dust, these filters eliminate oil droplets and the finest dust particles from the compressed gas. With AC grade elements oil aerosols and odours will be removed.

Volume Flow Range	260 to 13,000 SCFM – 450 to 22,300 Nm^3/h
Operating Temps	32-248 °F/0-120 °C
Port Size	¼" to 3" NPT
Accessories	Differential Pressure Gauge, Manual Drain

Filter Elements



WS — Water Separator Element

C — 3 µm Coarse Pre-filter Element

G — 1 µm General Purpose Element

F — 0,1 µm Fine Element

SF — 0,01 µm Super-Fine Element

AC — Activated Carbon Element

Differential Pressure Drop Indicator

G3

Manual Ball Valve

D3

To Order Your XM Filters

Ordering example: XMC | N | 1 | G | S | G4 | N

Low pressure CNG filter, ¾" NPT, flow 400 SCFM, superfine media grade, DP gauge, manual drain.

Ivys	Series	Application	Port Connection	Filter Model	Media Grade (microns)	End Cap	Gauge	Condensate Drain
X	M (Med)	C (CNG)	N (NPT)	1	WS	A (aluminum) Default Max. Temps. 248 °F/120 °C	N (None) Default	N (None) Default
				2	C (3 µ)	S (stainless steel) Max. Temp. 248 °F/120 °C	G4 (Differential Pressure Drop Indicator)	D3 (Manual ball valve)
				3	G (1 µ)			
				4	F (0,1 µ)			
				5	SF (0,01 µ)			
				6	AC			

Use this table to find your filter model

XM Filter Model	NPT Port Size (in)	Filter Element	CNG flow capacity at 725 psig/50 barg		Dimensions A		B		C		Volume		Mass	
			SCFM	Nm^3/h	in	mm	in	mm	in	mm	gal	litres	lb	kg
1	½	XE105	260	450	9 ¾	250	4	102	1 ¼	31	0.21	0.8	4.6	2.1
2	¾	XE107	380	640	9 ¾	250	4	102	1 ¼	31	0.21	0.8	4.6	2.1
3	1	XE114	570	950	9 ¾	250	4	102	1 ¼	31	0.21	0.8	4.6	2.1
4	1 ½	XE202	1,900	2,850	21	535	5 ½	141	1 ¾	46	0.98	3.7	20.9	9.5
5	1 ½	XE203	2,600	4,400	21	535	5 ½	141	1 ¾	46	0.98	3.7	20.9	9.5
6	2	XE205	4,000	6,700	28 ¼	715	5 ½	141	1 ¾	46	1.37	5.2	26.9	12.2
7	2	XE305	5,200	8,900	28 ¼	715	5 ½	141	1 ¾	46	1.37	5.2	26.9	12.2
8	2	XE307	7,900	13,300	37 ¼	945	5 ½	141	1 ¾	46	2.09	7.9	34.2	15.5
9	3	XE506	10,500	17,800	33 ¼	847	7 ¾	198	2 ¾	70	4.41	16.7	67.0	30.4
10	3	XE507	13,000	22,300	39 ¾	1,010	7 ¾	198	2 ¾	70	5.23	19.8	76.9	34.9

Flow Correction Factors

To select the right filter use the following formulas and the nominal flow figures from the filter model table:

For calculating Actual Flow Capacity: $V_a = V_n * Cft * Cfp$

For calculating Nominal Flow Capacity: $V_n = V_a / Cft / Cfp$

Operating Temperature	°F	32	41	50	59	68	77	86	95	104	122	140	158	176	194	221	230	248
	°C	0	5	10	15	20	25	30	35	40	50	60	70	80	90	100	110	120
	cft	1.07	1.1	1.04	1.02	1	0.98	0.97	0.95	0.94	0.91	0.88	0.85	0.83	0.81	0.79	0.77	0.75

Operating Pressure	psig	290	363	435	508	580	653	725
	barg	20	25	30	35	40	45	50
	cfp	0.41	0.51	0.61	0.70	0.80	0.90	1.00

XH Series

HIGH PRESSURE 6,000 psig/420 barg

The XH series of high pressure filters are used to remove solid, liquid, and, when using activated carbon cartridges, gaseous contaminants from compressed gas flows. In addition to liquids and dust, these filters eliminate oil droplets and the finest dust particles from the compressed gas.

Volume Flow Range	480 to 6,560 SCFM – 800 to 11,200 Nm³/h
Operating Temps	32-248 °F/0-120 °C
Port Size	¼" to 2" NPT, SAE option available
Accessories	Manual Drain

Filter Elements

WS — Water Separator Element

C — 3 µm Coarse Pre-filter Element

G — 1 µm General Purpose Element

F — 0,1 µm Fine Element

SF — 0,01 µm Super-Fine Element

AC — Activated Carbon Element

Manual Needle Valve

D4

To Order Your XH Filters

Ordering example: XHC | N | 5 | SF | S | N | D4

Low pressure CNG filter, ¾" NPT, flow 400 SCFM, Super-Fine media grade, DP gauge, manual drain.

Ivys	Series	Application	Port Connection	Filter Model	Media Grade (microns)	End Cap	Gauge	Condensate Drain
X	H (High)	C (CNG)	N (NPT)	1	WS	A (aluminum) Default Max. Temps. 248 °F/120 °C	N (None) Default*	N (None) Default
			S (SAE)	2	C (3 µ)	S (stainless steel) Max. Temp. 248 °F/120 °C	*available on request	D4 (Manual Needle valve)
				3	G (1 µ)			
				4	F (0,1 µ)			
				5	SF (0,01 µ)			
				6	AC			
				7				

Use this table to find your filter model

XH Filter Model	NPT Port Size (in)	Filter Element	CNG flow capacity at 6,000 psig/420 barg		Dimensions						Volume		Mass	
					A		B		C					
			SCFM	Nm³/h	in	mm	in	mm	in	mm	gal	litres	lb	kg
1	¼	XH1	750	1,210	6.3	160	3.5	90	0.8	20.5	0.04	0.16	10.9	4.8
2	⅜	XH2	1,710	2,760	7.6	192	4.1	103	1.1	27	0.08	0.32	19.1	8.9
3	½	XH3	2,470	3,970	10.3	261	4.3	110	1.1	27	0.14	0.52	22.8	10.2
4	¾	XH4	2,470	3,970	10.3	261	4.3	110	1.2	30	0.14	0.53	22.4	10.1
5	1	XH5	4,430	7,130	10.9	278	6.8	172	2.0	49.8	0.29	1.1	48.8	28
6	1 ½	XH6	7,400	11,910	14.7	374	6.8	172	2.0	49.8	0.40	1.78	71.1	32.6
7	2	XH7	11,580	18,640	19.4	493	7.5	190	2.3	57.8	0.75	3.35	128.8	58.3

Flow Correction Factors

To select the right filter use the following formulas and the nominal flow figures from the filter model table:
For calculating Actual Flow Capacity: $V_a = V_n * Cft * Cfp$
For calculating Nominal Flow Capacity: $V_n = V_a / Cft / Cfp$

Operating Temperature	°F	32	41	50	59	68	77	86	95	104	122	140	158	176	194	221	230	248
	°C	0	5	10	15	20	25	30	35	40	50	60	70	80	90	100	110	120
	cft	1.07	1.1	1.04	1.02	1	0.98	0.97	0.95	0.94	0.91	0.88	0.85	0.83	0.81	0.79	0.77	0.75

Operating Pressure	psig	798	870	943	1,015	1,088	1,160	1,233	1,305	1,378	1,450	1,813	2,175	2,538	2,901	3,263	3,626	3,988
	barg	55	60	65	70	75	80	85	90	95	100	125	150	175	200	225	250	275
	cfp	0.43	0.47	0.51	0.55	0.59	0.63	0.66	0.70	0.73	0.74	0.78	0.79	0.80	0.81	0.83	0.85	0.88

Operating Pressure	psig	4,351	4,713	5,076	5,439	5,801	6,000
	barg	300	325	350	375	400	420
	cfp	0.90	0.93	0.94	0.97	0.99	1

Accessories

X SERIES

G1

Name
Magnetic Pressure Drop Indicator Differential Manometer
Technical Data
Max. Pressure: 290 psig/20 barg Max. Temperature: 176 °F/80 °C
For Use With
XL

G2

Name
Magnetic Pressure Drop Indicator Differential Manometer Voltage-free REED Contact version for remote alarm
Technical Data
Max. Pressure: 290 psig/20 barg Max. Temperature: 176 °F/80 °C
For Use With
XL

G3

Name
Differential Pressure Drop Indicator Aluminum Alloy Housing
Technical Data
Max. Pressure: 290 psig/20 barg Max. Temperature: 176 °F/80 °C
For Use With
XL

G4

Name
Differential Pressure Drop Indicator
Technical Data
Max. Pressure: 725 psig/50 barg Max. Temperature: 176 °F/80 °C
For Use With
XM

D1

Name
Manual Valve Condensate Drain Stainless Steel
Technical Data
Max. Pressure: 290 psig/20 barg Max. Temperature: 176 °F/80 °C
For Use With
XL

D3

Name
Manual Ball Valve Condensate Drain
Technical Data
Max. Pressure: 725 psig/50 barg Max. Temperature: 176 °F/80 °C
For Use With
XL, XM

D4

Name
Manual Ball Valve Condensate Drain
Technical Data
Max. Pressure: 6,000 psig/420 barg Max. Temperature: 176 °F/80 °C
For Use With
XH

Summary

Elements come with aluminum end caps and are also available with optional stainless steel end caps.

	Filtration Grade						XL Line Only/Low Pressure (0-290 psi)		
	WS	C	G	F	SF	AC	AAC	ACC	MSC
									
Designation									
	Water separator	Coarse, Pre-Filter	General Purpose Filter particulate and coalescing	Fine Filter particulate and coalescing	Super Fine Filter	Odour Removal Activated Carbon	Activated Alumina Cartridge	Activated Carbon Cartridge	Molecular Sieve Cartridge
Purity Class acc to ISO 8573-1									
	-/8/-	6/-/4	2/-/2	1/-/1	1/-/0-1	1/-/0-1	1/-/0-1	1/-/0-1	1/3/1
Performance Specs									
	>98% >10 µ (microns) separation (droplets and big particles)	99.99% 3 µ (microns) separation of coarse particles & reduction of liquid particles	99,9999% 1 µ (microns) separation of fine particles 0.5 mg/m³ residual oil content (liquid phase)	99.9999% 0.1 µ (microns) separation of fine particles <0.1 mg/m³ residual oil content (liquid phase)	99.99999% 0,01 µ (microns) separation of finest particles <0.01 mg/m³ residual oil content (liquid phase)	<0.005 mg/m³ Residual oil content (gas phase)	Application dependent	<0.005 mg/m³ Residual oil content (gas phase)	Application dependent
Type of Filtration									
	Water separation	Wet and dry type	Wet and dry type	Wet and dry type	Wet and dry type	Oil vapour adsorption	Water vapour adsorption	Oil vapour adsorption	Water vapour adsorption
Application									
	Removal of large amounts of liquid	Removal of large amounts of solid or liquid coarse contaminants	Removal of medium amounts of solid or liquid fine contaminants	Removal of small amounts of solid or liquid of finer contaminants. Recommend combining with upstream C or G element in the event of increased amounts of contaminant	Removal of small amounts of solid or liquid of finest contaminants. Recommend combining with upstream G or F element in the event of increased amounts of contaminants	Removal of small amounts of gaseous contaminants, in particular, oil vapour. Upstream F or SF element required. No downstream particulate filter required as it comes with integrated G element	Removal of small amounts of water vapour	Removal of small amounts of gaseous contaminants, in particular, oil vapour for low volume flow rates. Upstream F or SF element required. No downstream particulate filter required as it comes with integrated G element	Removal of small amounts of water vapour

To Order Replacement Elements for your Filters

Ordering example: XE | 201 | G | A

Ivys element size 201, grade 1 µ, aluminum end caps.

Ivys	Filter Model	Media Grade (microns)	End Cap
XE	103	WS	A (Aluminum) Default
	105	C (3 µ)	S (stainless steel)
	107	G (1 µ)	
	201	F (0,1 µ)	
	202	SF (0,01 µ)	
	203	AC	
	305	AAC	
	307	ACC	
	506	MSC	
	507		

Natural Gas Vehicle (NGV) Filters

Our filters are your solution for onboard protection of critical vehicle engine components.

Specifically designed to remove solids, liquids, and oil from vehicle gas streams, Ivys' Natural Gas Vehicle (NGV) filters are constructed to withstand operating pressures up to 5000 psig, while removing 99.99 % particle contamination with less than 0.0039 mg/m3 oil carryover.

Your filtration solutions for trucks, vans, cars, forklifts, buses, etc.

XV1 Filter

MAX OPERATING PRESSURE 800 psig/55 barg

Combines a high-strength, low-pressure aluminum housing with a superior performance element that provides both particulate and coalescing filtration. Constructed specifically for lower operating pressures of up to 800 psig, the XV1 Filter with XEV112 Element removes 99.99% particle contamination. Replacement elements are available in two different micron ratings.

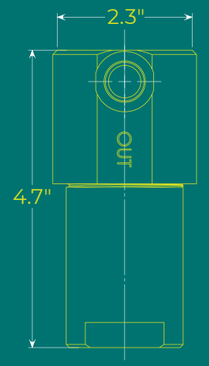
Model	XV1
Max Operating Pressure	800 psig/55 barg
Volume Flow Range	18–125 SCFM/29–200 Nm³/h
Temperature	-20 to 200 °F/-29 to 93 °C
Port Size	Available in ¼" NPT and 9/16-18 SAE
Type	Particulate or Coalescing
Material	Anodized Aluminum

XEV 112 Element

G
1.0 micron General Purpose

SF
0.01 micron Super-Fine

- Made of durable, anodized aluminum
- Easy to install and maintain
- Performs both particulate and coalescing filtration



Independently tested and certified to ISO 12,500-1&3

To Order Your XL Filters

Ordering example: X V 1 5 SFP

High pressure NGV filter, 9/16-18 SAE, flow 559 SCFM, Super-Fine media grade.

Ivys	Series	Filter Model	Port Connection	Media Grade (microns)
X	V	1	N (NPT)	GP (1 µ)
		2	S (SAE)	SFP (0.0 µ)
		3		
		4		
		5		
		6		

	Microns	Purity Class	Oil Carryover	Efficiency
G - General Purpose	1.0 µ	2/-/2	0.0039 mg/m³	99.99%
SF - Super-Fine	0.01 µ			

Operating Pressure		Flow Rate	
psig	barg	SCFM	Nm³/h
100	7	18	29
250	17	41	66
500	35	81	130
800	55	125	200

Length		Diameter		Sump Capacity		Mass	
in	cm	in	cm	oz	ml	lb	kg
4.7	11.9	2.3	5.8	0.5	14.8	1.1	0.5

XV2 Filter

1,000 psig/70 barg MAX OPERATING PRESSURE

Combines a high-strength, low-pressure aluminum housing with a superior performance element that provides both particulate and coalescing filtration. Constructed specifically for lower operating pressures of up to 1,000 psig, the XV2 Filter with XEV114 Element removes 99.99% particle contamination. Replacement elements are available in two different micron ratings.

Model	XV2
Max Operating Pressure	1,000 psig/70 barg
Volume Flow Range	45–450 SCFM/72–720 Nm³/h
Temperature	-20 to 200 °F/-29 to 93 °C
Port Size	Available in ½" NPT and 7/8-14 SAE
Type	Particulate or Coalescing
Material	Anodized Aluminum

XEV 114 Element

G
1.0 micron General Purpose

SF
0.01 micron Super-Fine

- Made of durable, anodized aluminum
- Easy to install and maintain
- Performs both particulate and coalescing filtration

Independently tested and certified to ISO 12500-1&3

To Order Your XL Filters

Ordering example: X V 2 5 SFP

High pressure NGV filter, 9/16-18 SAE, flow 559 SCFM, Super-Fine media grade.

Ivys	Series	Filter Model	Port Connection	Media Grade (microns)
X	V	1	N (NPT)	GP (1 µ)
		2	S (SAE)	SFP (0.0 µ)
		3		
		4		
		5		
		6		

	Microns	Purity Class	Oil Carryover	Efficiency
G - General Purpose	1.0 µ	2/-/2	0.0041 mg/m³	99.99%
SF - Super-Fine	0.01 µ	1/-/0-1		

Length		Diameter		Sump Capacity		Mass	
in	cm	in	cm	oz	ml	lb	kg
10.6	26.9	3.7	9.4	7.0	207.0	4.1	1.8

Operating Pressure		Flow Rate	
psig	barg	SCFM	Nm³/h
100	7	45	72
200	14	90	144
300	21	135	216
400	28	180	288
500	35	225	360
600	42	270	432
800	55	360	576
900	63	405	648
1,000	70	450	720

XV3 Filter

MAX OPERATING PRESSURE 3,900 psig/268 barg

Combines a high-strength, medium-pressure aluminum housing with a superior performance element that provides both particulate and coalescing filtration. Constructed to withstand operating pressures of up to 3,900 psig, the XV3 Filter with XEV112 Element removes 99.99% particle contamination. Replacement elements are available in two different micron ratings.

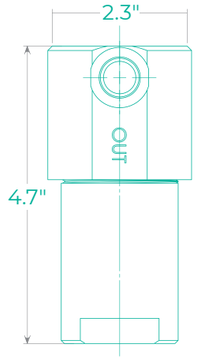
Model	XV3
Max Operating Pressure	3,900 psig/268 barg
Volume Flow Range	18–559 SCFM/29–900 Nm³/h
Temperature	-20 to 200 °F/-29 to 93 °C
Port Size	Available in ¼" NPT and 9/16-18 SAE
Type	Particulate or Coalescing
Material	Anodized Aluminum

XEV 112 Element

G
1.0 micron General Purpose

SF
0.01 micron Super-Fine

- Made of durable, anodized aluminum
- Easy to install and maintain
- Performs both particulate and coalescing filtration



To Order Your XL Filters

Ordering example: X V 3 S SFP

High pressure NGV filter, 9/16-18 SAE, flow 559 SCFM, Super-Fine media grade.

Ivys	Series	Filter Model	Port Connection	Media Grade (microns)
X	V	1	N (NPT)	GP (1 µ)
		2	S (SAE)	SFP (0.0 µ)
		3		
		4		
		5		
		6		

Independently tested and certified to ISO 12,500-1&3

	Microns	Purity Class	Oil Carryover	Efficiency
G - General Purpose	1.0 µ	2/-/2	0.0039 mg/m³	99.99%
SF - Super-Fine	0.01 µ	1/-/0-1		

Length		Diameter		Sump Capacity		Mass	
in	cm	in	cm	oz	ml	lb	kg
4.7	11.9	2.3	5.8	0.5	14.8	1.1	0.5

Operating Pressure		Flow Rate	
psig	barg	SCFM	Nm³/h
100	7	18	29
250	17	41	66
500	35	80	128
750	52	118	190
1,000	69	157	253
1,500	103	234	377
2,000	138	312	502
2,500	172	389	626
3,000	248	466	751
3,900	268	559	900

XV4-5 Filter

4,500 psig/310 barg MAX OPERATING PRESSURE

Combines a high pressure stainless steel housing with a superior performance element that provides both particulate and coalescing filtration. Constructed to withstand operating pressures of up to 4,500 psig, the XV4 & XV5 Filters with XEV113 Elements remove 99.99% particle contamination. Replacement elements are available in two different micron ratings.

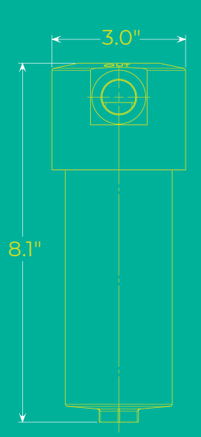
Model	XV4	XV5
Max Operating Pressure	4,500 psig/310 barg	
Volume Flow Range	60–2,371 SCFM/ 97–3,871 Nm³/h	63–2,464 SCFM/ 101–3,967 Nm³/h
Temperature	-20 to 200 °F/-29 to 93 °C	
Port Size	Available in ½" NPT and 7/8-14 SAE	¾" SAE
Type	Particulate or Coalescing	
Material	Stainless Steel (304)	

XEV 113 Element

G
1.0 micron General Purpose

SF
0.01 micron Super-Fine

- Made of corrosion-resistant stainless steel
- Easy to install and maintain
- Performs both particulate and coalescing filtration



To Order Your XL Filters

Ordering example: X V 4 S SFP

High pressure NGV filter, 9/16-18 SAE, flow 559 SCFM, Super-Fine media grade.

Ivys	Series	Filter Model	Port Connection	Media Grade (microns)
X	V	1	N (NPT)	GP (1 µ)
		2	S (SAE)	SFP (0.0 µ)
		3		
		4		
		5		
		6		

Independently tested and certified to ISO 12,500-1&3

	Microns	Purity Class	Oil Carryover	Efficiency
G - General Purpose	1.0µ	2/-/2	0.0039 mg/m³	99.99%
SF - Super-Fine	0.01 µ	1/-/0-1		

Length		Diameter		Sump Capacity		Mass	
in	cm	in	cm	oz	ml	lb	kg
8.1	20.5	3.0	7.5	5.0	147.8	6.1	2.7

Operating Pressure		Flow Rate	
psig	barg	SCFM	Nm³/h
100	7	63	101
250	17	145	233
500	35	281	453
750	52	418	673
1,000	69	554	893
1,500	103	828	1,332
2,000	138	1,101	1,772
2,500	172	1,374	2,212
3,000	248	1,647	2,652
3,900	268	1,975	3,179
4,500	310	2,464	3,967

XV6 Filter

MAX OPERATING PRESSURE 5,000 psig/345 barg

Combines a high-strength, high-pressure aluminum housing with a superior performance element that provides both particulate and coalescing filtration. Constructed to withstand operating pressures of up to 5,000 psig, the XV6 Filter with XEV116 Element removes 99.99% particle contamination. Replacement elements are available in two different micron ratings.

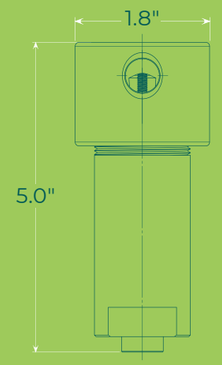
Model	XV6
Max Operating Pressure	5,000 psig/345 barg
Volume Flow Range	35–1,535 SCFM/56–2,471 Nm³/h
Temperature	-20 to 200 °F/-29 to 93 °C
Port Size	Available in ¼" NPT and 9/16-18 SAE
Type	Particulate or Coalescing
Material	Stainless Steel (316)

XEV 116 Element

G
1.0 micron General Purpose

SF
0.01 micron Super-Fine

- Made of corrosion-resistant stainless steel
- Easy to install and maintain
- Performs both particulate and coalescing filtration



Independently tested and certified to ISO 12,500-1&3

	Microns	Purity Class	Oil Carryover	Efficiency
G - General Purpose	1.0 µ	2/-/2	0.0039 mg/m³	99.99%
SF - Super-Fine	0.01 µ	1/-/0-1		

Length		Diameter		Sump Capacity		Mass	
in	cm	in	cm	oz	ml	lb	kg
5.0	12.7	1.8	4.5	0.3	8.8	1.2	0.5

To Order Your XL Filters

Ordering example: X | V | 6 | 5 | SFP

High pressure NGV filter, 9/16-18 SAE, flow 559 SCFM, Super-Fine media grade.

Ivys	Series	Filter Model	Port Connection	Media Grade (microns)
X	V	1	N (NPT)	GP (1 µ)
		2	S (SAE)	SFP (0.0 µ)
		3		
		4		
		5		
		6		

Operating Pressure		Flow Rate	
psig	barg	SCFM	Nm³/h
100	7	35	56
250	17	80	129
500	35	157	254
750	52	234	377
1,000	69	311	500
1,500	103	464	747
2,000	138	617	993
2,500	172	770	1,240
3,000	248	923	1,486
3,900	268	1,107	1,782
4,500	310	1,381	2,223
5,000	345	1,535	2,471

Summary

Model Number		XV1	XV2	XV3	XV4	XV5	XV6
							
Pressure		LOW		MEDIUM	HIGH		
Temperature		-20 °F/200 °F (-29 °C/93 °C)					
Material		ANODIZED ALUMINUM			SS (304)		SS (316)
Port Size	NPT	¼"	½"	¼"	½"		¼"
	SAE	9/16-18"	7/8-14"	9/16"	7/8-14"	¾"	9/16-18"
	G	¼	½	¼	½		¼
Max Operating Pressure	psig	800	1,000	3,900	4,500	4,500	5,000
	barg	55	70	268	310	310	345
Flow Rate @100psig	SCFM	18	45	18	60	63	35
	Nm³/h	29	72	29	97	101	56
Lenght	in	4.7	10.6	4.7	8.1	8.1	5.0
	cm	11.9	26.9	11.9	20.5	20.5	12.7
Diameter	in	2.3	3.7	2.3	3.0	3.0	1.8
	cm	5.8	9.4	5.8	7.5	7.5	4.5
Mass	lb	1.1	4.1	1.1	6.1	6.1	1.2
	kg	0.5	1.8	0.5	2.7	2.7	0.5
Sump Capacity	oz	0.5	7.0	0.5	5.0	5.0	0.3
	ml	14.8	207.0	14.8	147.8	147.8	8.8
Element Part #		XEV-112	XEV-114	XEV-112	XEV-113		XEV-116
Type		ELEMENTS ARE BOTH PARTICULATE AND COALESCING					
Purity Classlass according to ISO 8573-1	G Microns	2/-/2 1 µ					
	SF Microns	1/-/0-1 0.01 µ					

To Order Replacement Elements for your XV Filters

Ordering example: XEV | 112 | GP

Ivys NGV element size 112, grade 1 µ

Ivys Element	Element size	Media Grade (microns)
XEV	112	GP (1 µ)
	113	SFP (0.0 µ)
	114	
	116	
	202	
	203	
	305	
	307	
	506	
	507	

Filters, Service and Parts

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We support you for all your equipment needs!
Ivys is committed to providing you with top-quality services and a complete range of replacement parts, and spares for your compressed air and gas equipment of all makes and models.

- Fully certified technicians on call
- Onsite commissioning
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