



A world powered by **clean energy**

FSXSOLUTIONS



X HIGH EFFICIENCY CNG VEHICLE FILTRATION
V SERIES



AUTOMOTIVE & VAN FLEETS | TRUCK & BUS CONVERSIONS

CNG FILTRATION

- Trucks
- Vans
- Cars
- Forklifts



Natural Gas Vehicle (NGV) Filters

What is Compressed Natural Gas (CNG)?

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 in a range from 2000 to 5000 psig. It is then stored in tanks, ultimately making its way to CNG dispensers for natural gas vehicles (NGVs).

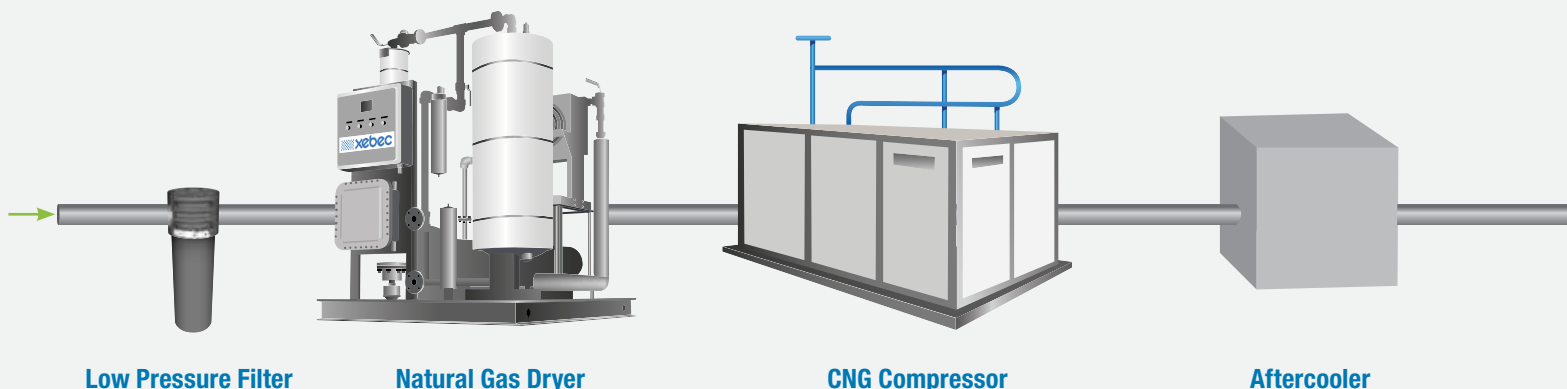
The Problem

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

Typical CNG Fuel Station Layout



The Solution

From pipeline to engine, superior filtration is critical. Xebec 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. Xebec's X Series of 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.

Xebec XV Filters are the latest addition to the X-Series—your answer to onboard vehicle protection of critical engine components.



CITY, SCHOOL AND TOUR BUSES



TAXI FLEETS



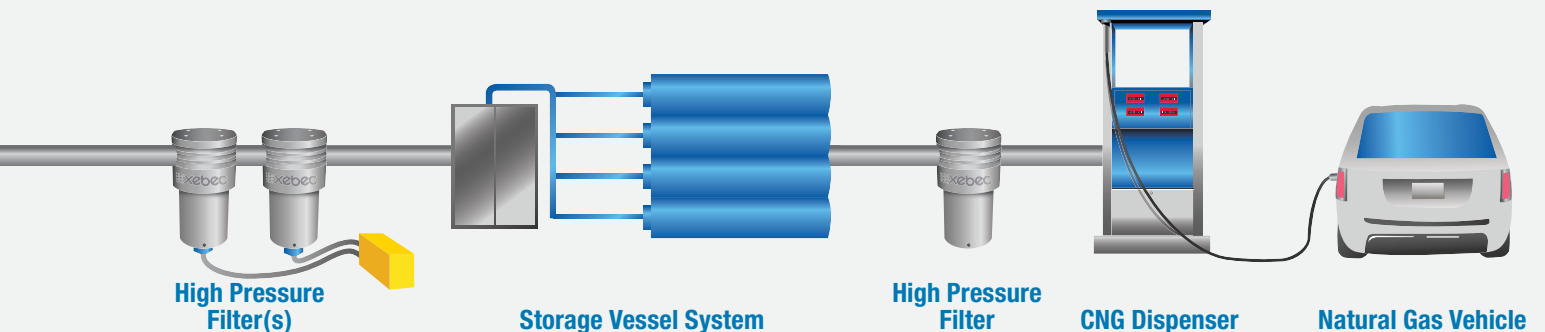
TRUCK FLEETS—REFUSE, LONG HAUL



CARTS—FROM PASSENGER TO PLEASURE



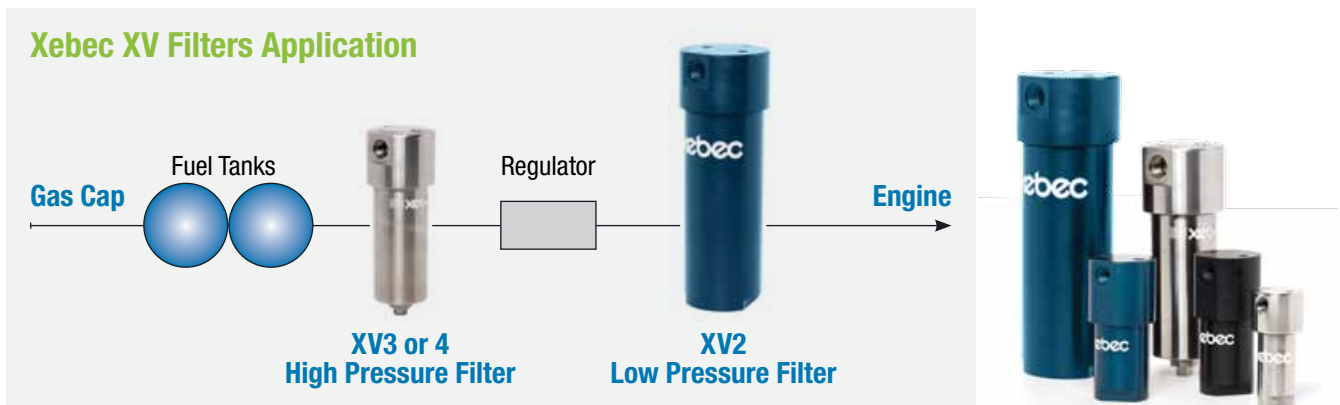
PICK-UP TRUCKS AND DELIVERY VANS



Onboard CNG Vehicle Filtration

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

Xebec XV Filters Application



Tested and Proven

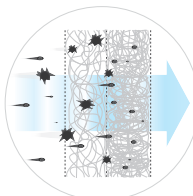
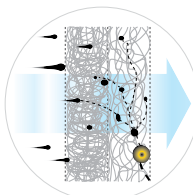
Certified to ISO 9001, Xebec quality management systems are guaranteed to provide the highest quality in all its filtration products. Within the X-Series, high strength, low to medium pressure filters have anodized aluminum housings and superior performance elements that provide both particulate and coalescing filtration. High pressure filters are made of corrosion-resistant stainless steel, constructed to withstand up to 5000 psig. They also provide both particulate and coalescing filtration. All XV Filters are fully certified with ASME, pending CRN and PED. All XEV elements have ISO 12500-1&3 validation certificates from leading European and North American independent laboratories.









CRN PED

Element-Savy

Wet type filtration: Liquid contaminants from compressed gas flows are separated using multi-layer filter media in combination with a drainage media. This is known as the **coalescing filter**. The liquid contaminants contact the fibres of the filter media, move along the fibres due to the compressed gas flow and form larger droplets when they merge. This is known as the coalescing effect. The droplets are absorbed by the drainage media, discharged to the filter element bottom due to gravitational forces, and drop off the filter element. The direction of flow is toward the drainage media, i.e. from in to out.



Dry type filtration: Solid contaminants are separated by contacting the fibres of the filter media where they remain. This is known as the **particulate filter**. Multi-layered media are used to protect the filter, increasing its service life. The differential pressure (dry) increases with an increasing amount of contaminant. The elements can be operated from inside to out but the preferred direction of flow is toward the finer filter fibres, i.e. from out to in.

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	1000	3900	4500	4500	5000
	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
Length	INCHES	4.7	10.6	4.7	8.1	8.1	5.0
	CMS	11.9	26.9	11.9	20.5	20.5	12.7
Diameter	INCHES	2.3	3.7	2.3	3.0	3.0	1.8
	CMS	5.8	9.4	5.8	7.5	7.5	4.5
Mass	LBS	1.1	4.1	1.1	6.1	6.1	1.2
	KGS	0.5	1.8	0.5	2.7	2.7	0.5
Sump Capacity	OZS	0.5	7.0	0.5	5.0	5.0	0.3
	MLS	14.8	207.0	14.8	147.8	147.8	8.8
Element Part #		XEV-112	XEV-114	XEV-112	XEV-113	XEV-113	XEV-116
Type		ELEMENTS ARE BOTH PARTICULATE AND COALESCING					
Purity Class according to ISO 8573-1	G Microns	2 / - / 2			1µ		
	SF Microns	1 / - / 0-1			0.01µ		

ASK XEBEC ABOUT CUSTOM OPTIONS FOR SPECIALIZED APPLICATIONS.

XV1 FILTER

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 Nm ³ /h
Temperature	-20 to 200°F / -29 to 93°C
Port Size	Available in 1/4" 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 Superfine



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



	G	SF
	General Purpose	Super Fine
Microns	1.0μ	0.01μ
Purity Class	2 / - / 2	1 / - / 0-1
Oil Carryover	0.0039 mg/m ³	
Efficiency	99.99%	
	Independently tested and certified to ISO 12500-1 & 3	

Length		Diameter		Sump Capacity		Mass	
inches	cm	inches	cm	ozs	mls	lbs	kgs
4.7	11.9	2.3	5.8	0.5	14.8	1.1	0.5

*Operating Pressure @		Flow Rate	
psig	barg	scfm	Nm ³ /h
100	7	18	29
250	17	41	66
500	35	81	130
800	55	125	200

XV2 FILTER

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 1000 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*	1000 PSIG / 70 BARG
Volume Flow Range	45–450 scfm / 72–720 Nm ³ /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

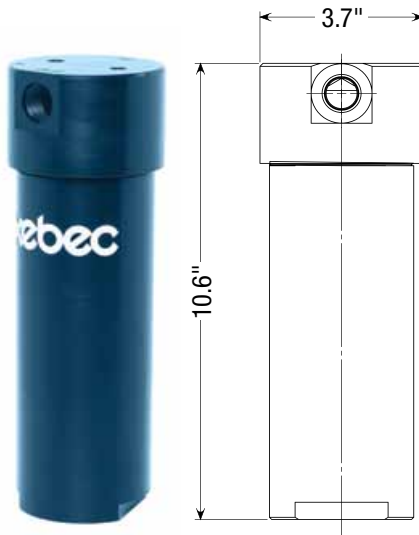
1.0 micron General Purpose


SF

0.01 micron Superfine



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



	G	SF
	General Purpose	Super Fine
Microns	1.0μ	0.01μ
Purity Class	2 / - / 2	1 / - / 0-1
Oil Carryover	0.0041 mg/m ³	
Efficiency	99.99%	
	Independently tested and certified to ISO 12500-1 & 3	

Length		Diameter		Sump Capacity		Mass	
inches	cm	inches	cm	ozs	mls	lbs	kgs
10.6	26.9	3.7	9.4	7.0	207.0	4.1	1.8

*Operating Pressure @		Flow Rate	
psig	barg	scfm	Nm ³ /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
1000	70	450	720

XV3 FILTER

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 3900 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*	3900 PSIG / 268 BARG
Volume Flow Range	18 – 559 scfm / 29 – 900 Nm ³ /h
Temperature	-20 to 200°F / -29 to 93°C
Port Size	Available in 1/4" 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 Superfine



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



	G	SF
	General Purpose	Super Fine
Microns	1.0μ	0.01μ
Purity Class	2 / - / 2	1 / - / 0-1
Oil Carryover	0.0039 mg/m ³	
Efficiency	99.99%	
	Independently tested and certified to ISO 12500-1 & 3	

Length		Diameter		Sump Capacity		Mass	
inches	cm	inches	cm	ozs	mls	lbs	kgs
4.7	11.9	2.3	5.8	0.5	14.8	1.1	0.5

*Operating Pressure @		Flow Rate	
psig	barg	scfm	Nm ³ /h
100	7	18	29
250	17	41	66
500	35	80	128
750	52	118	190
1000	69	157	253
1500	103	234	377
2000	138	312	502
2500	172	389	626
3000	248	466	751
3900	268	559	900

XV4-5 FILTERS

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 4500 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*	4500 PSIG / 310 BARG	
Volume Flow Range	60–2371 scfm / 97–3817 Nm ³ /h	63–2464 scfm / 101–3967 Nm ³ /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)	

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



Length		Diameter		Sump Capacity		Mass	
inches	cm	inches	cm	ozs	mls	lbs	kgs
8.1	20.5	3.0	7.5	5.0	147.8	6.1	2.7

XEV 113 Element




G

1.0 micron General Purpose

SF

0.01 micron Superfine



	G	SF
	General Purpose	Super Fine
Microns	1.0µ	0.01µ
Purity Class	2 / - / 2	1 / - / 0-1
Oil Carryover	0.0039 mg/m ³	
Efficiency	99.99%	
	Independently tested and certified to ISO 12500-1 & 3	

*Operating Pressure @		Flow Rate	
psig	barg	scfm	Nm ³ /h
100	7	63	101
250	17	145	233
500	35	281	453
750	52	418	673
1000	69	554	893
1500	103	828	1332
2000	138	1101	1772
2500	172	1374	2212
3000	248	1647	2652
3900	268	1975	3179
4500	310	2464	3967

XV6 FILTER

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 5000 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*	5000 PSIG / 345 BARG
Volume Flow Range	35 – 1535 scfm / 56 – 2471 Nm ³ /h
Temperature	-20 to 200°F / -29 to 93°C
Port Size	Available in 1/4" NPT and 9/16-18 SAE
Type	Particulate or Coalescing
Material	Stainless Steel (316)

XEV 116 Element



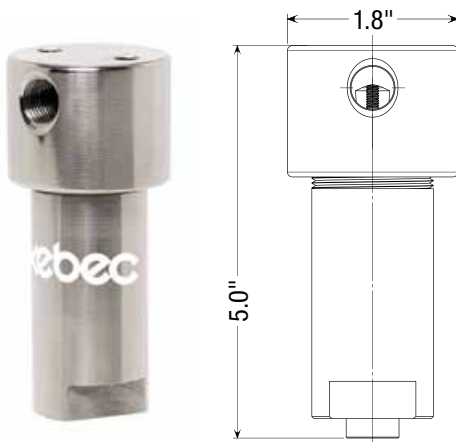
G


1.0 micron General Purpose

SF

0.01 micron Superfine

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



	G	SF
	General Purpose	Super Fine
Microns	1.0μ	0.01μ
Purity Class	2 / - / 2	1 / - / 0-1
Oil Carryover	0.0039 mg/m ³	
Efficiency	99.99%	
	Independently tested and certified to ISO 12500-1 & 3	

*Operating Pressure @		Flow Rate	
psig	barg	scfm	Nm ³ /h
100	7	35	56
250	17	80	129
500	35	157	254
750	52	234	377
1000	69	311	500
1500	103	464	747
2000	138	617	993
2500	172	770	1240
3000	248	923	1486
3900	268	1107	1782
4500	310	1381	2223
5000	345	1535	2471

Length		Diameter		Sump Capacity		Mass	
inches	cm	inches	cm	ozs	mls	lbs	kgs
5.0	12.7	1.8	4.5	0.3	8.8	1.2	0.5

CUSTOMIZATION

One of Xebec's strengths is our ability and flexibility for custom engineering. Our filters can be tailor-made to your specific requirements, like the custom application below. Constructed to withstand operating pressures of up to 1100 psig, this custom XV-C1 Filter with XEV113 Element removes 99.99% particle contamination. Replacement elements are available in two different micron ratings.

Model	XV-C1
Max Operating Pressure*	1100 PSIG / 76 BARG
Volume Flow Range	63 – 828 scfm / 101 – 1332 Nm ³ /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

- ✓ Custom solutions for specialized needs
- ✓ Easy to install and maintain
- ✓ Made of durable, anodized aluminum
- ✓ Performs both particulate & coalescing filtration



Length		Diameter		Sump Capacity		Mass	
inches	cm	inches	cm	ozs	mls	lbs	kgs
8.1	20.5	3.0	7.5	5.0	147.8	5.5	2.5

*Operating Pressure @		Flow Rate	
psig	barg	scfm	Nm ³ /h
100	7	63	101
250	17	145	233
500	35	281	453
750	52	418	673
1000	69	554	893
1500	103	828	1332



A world powered by clean energy

About Xebec

Xebec specializes in clean air and gas. With over 50 years of experience in adsorption technology, Xebec has supplied more than 9000 adsorption systems to more than 1500 customers worldwide.

This solid foundation of expertise and experience has led Xebec's evolution into renewable energy—developing products, systems and technology solutions for environmentally-responsible purification, generation, dehydration, separation and filtration equipment.

Today, Xebec designs, engineers and manufactures innovative products that transform raw gases into marketable sources of clean energy for the natural gas, field gas, biogas, helium, hydrogen and compressed air markets.



Customer Commitment. Quality Focus.

Committed to first class customer service, Xebec stands behind the service, spare parts and technical support needed to keep your equipment up and running at maximum performance.

Xebec and You... End to End

Whatever your needs—for compressed air or gas dehydration and filtration, purification, gas generation, Xebec can offer a solution.

Professional Services

- 3D and Adsorption Modelling
- Basic and Detailed Engineering
- Custom Adsorption Design and Fabrication
- Electrical Design and Engineering
- Full Turnkey Solutions
- Mechanical and Piping Design
- Process Control and Automation
- Process Engineering
- Process/Product Development Services (Contract R&D)
- Process Simulation and Modelling
- Project Management

Aftermarket Services **AMX**SOLUTIONS

- 7/24 Troubleshooting Support
- Custom Service/Maintenance Contracts
- Desiccants
- Parts—Filters, Separators, Elements, Drains, Hygrometers, Probes, Probe Recalibration
- Training—Workshops, Webinars, Certification

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