

ECOCLEAN®

GENERATION 2
GTF



Filtration Technology

**Compressed Air & Gas Filters, Vacuum Filters, Water Separators,
Sterile & Process Filters, Filter Elements**

Compressed Air Filters

Operationally reliable high-performance filtration and separation for the professional treatment of compressed air and compressed gases to the highest industrial equipment quality

Modern production methods make ever increasing demands on the quality of compressed air. However, the ambient air taken in and compressed by the compressor is heavily contaminated by impurities. Moreover, depending on the compressor type, the delivered air will contain oil, which is conveyed with the compressed air in fine aerosols, together with impurities from the compressed air network, e.g. rust and scale. In addition, any condensate formed must be removed from the system. The function of the **ECOCLEAN®** compressed air filter is to remove these impurities and formed condensate, thereby preventing any damage to the downstream equipment.

Manufacturer competence ensures High Quality

KSI Filtertechnik GmbH produces **ECOCLEAN®** compressed air filters and filter elements in-house. This ensures complete control for safeguarding our certified KSI industrial equipment quality. For that reason our compressed air treatment components satisfy current as well as future market demands. This assurance is provided through long-term and continuous cooperation with market specialists, specialized trade channels, the institutes, as well as our ongoing and intensive development work.



The ECOCLEAN® Plus-Effect +++ – Everything that makes a High Performance Filter

- + protects production & processes => extends machine & installation cycle time
- + minimizes operating costs => saves energy
- + maximizes operational reliability => protection against production or machine downtime
- + best industrial equipment quality => long lifetime
- + easy serviceability => minimized service costs
- + quick and secure assembly => quick installation
- + user-oriented filtration (25, 5, 1 and 0.01 micron as well as activated carbon) => optimum selection
- + activated carbon-, molecular sieve & Hopcalite cartridges => can be combined individually

Compressed Air Filter Elements



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Filter Compressed Air and Gases cost-effectively and reliably with KSI ECOCLEAN® Filter Elements

The quality of the compressed air in modern compressed air systems is a deciding factor. Compressed air filters ensure that, among other contaminants, solid particles, oil components, condensate, oil vapour and odours are safely removed from the compressed air system. The core piece of a compressed air filter is its filter insert (element) that has to match the respective filtration requirement.



Cutaway of a high-performance element: KSI Filter Depth Volume

The ECOCLEAN® Approach to KSI Filter Elements

The combination of operational safety and cost effectiveness perfectly implemented in one product is KSI's starting point for **ECOCLEAN®** high performance filter elements. **Simply the best Alternative!**

The customer enjoys all of the advantages of the **ECOCLEAN®** filter elements not only if the filter elements are used in an **ECOCLEAN®** compressed air filter, but also when they are used in almost any of the housings from other manufacturers that are on the market.

An additional plus: KSI offers these filter elements at prices that are up to 30% lower (than qualitatively comparable filter elements on the market).



Reliability



1. Optimum Operational Reliability

Filter Housing

- A** High-quality cast aluminum with anti-corrosion coating (on the inside and outside), plus an impact and scratch-resistant resin powder coating provide a corrosion-resistant filter housing.
- B** Condensate is continually removed via the automatic D150 (from F140/ D200) condensation drain. As a user-friendly feature the internal pressure can be released via the condensate drain.
- C** Highest quality with every ECOCLEAN® filter verified as 100% leak-proof.

Filter Element

- D** Tie rod anchoring, proven in millions of applications, secures the position and the function of the filter element, even during common pressure shocks.
- E** A special compound adhesive securely fixes the end caps to the stainless steel support cages and the filter media.
- F** The ECOCLEAN® high performance media is securely fixed and supported between stainless steel support cages.
- G** The plasticizer-free plastic end caps prevent corrosion. This means no efflorescence and no increased bacterial growth.

High Performance Filter media

- H** The filter drainage layer made of special fleece stabilizes the filter media and prevents efflorescence and cracking - meaning it safely counteracts the loss of filtering action.
- I** The high-performance filter fleece has a high chemical, mechanical and thermal loading capacity (up to 120° C), and it is silicone-free.



Cost



2. Maximum Cost Effectiveness

Filter Housings

- A** KSI high-performance filters lower energy costs drastically through minimized investment costs and low differential pressure, while providing maximum efficiency.
- B** The differential pressure indicator displays the most economical point in time for a filter element change, reducing operational costs.
- C** Ideally sized connections and optimized flow paths achieve high flow efficiency to avoid pressure losses that increase cost.
- D** ECOCLEAN® filter housings achieve up to 75% lower flow resistance compared to housings with right-angle flow paths.

Filter Element

- E** The specially designed interior and exterior ECOCLEAN® support cages achieve up to 45% less differential pressure as compared with conventional support cylinders.

Energy Saving Filter Media

- F** The KSI high-performance element achieves maximum filter surface area through the specially optimized winding of the filter media. The construction-based surface filtration, in contrast to the usual 2-layer pleated elements, achieves a significantly higher internal surface area (filter depth volume) for maximum depth filtration. Due to this very high depth filtration capacity of ECOCLEAN® filter elements the differential pressure rises very slowly giving longer life and reduced energy costs.
- G** The media depth volume ensures the highest contaminant removal, whilst allowing maximum filtration performance.

A hexagonal nut on the outside of the filter housing base facilitates quick and easy service.

Compressed Air Filter Elements

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The GTF2 series:

Advantages:

- + easier and quicker assembly by inserting the element in the filter bowl
- + less pressure drop due to no tie rod
- + disassembly of filter bowl possible without additional space
- + new filter elements can be used in existing KSI filter housings



SMA grade

0.01 micron separation efficiency
maximum residual oil content at 20°C: 0.01 mg/m³
Highest temp.: 120°C

MFO grade

1 micron separation efficiency
maximum residual oil content at 20°C: 0,1 mg/m³
Highest temp.: 120°C

FF5 grade

5 micron separation efficiency
maximum residual oil content at 20°C: 5 mg/m³
Highest temp.: 120°C

VF25 grade

25 micron separation efficiency
maximum residual oil content at 20°C: 10 mg/m³
Highest temp.: 120°C

CA grade (activated carbon)

maximum residual oil content at 20°C: 0.003 mg/m³
maximum temperature 70°C (effective up to 30°C)

Compressed Air Quality achieved with ECOCLEAN® Filter Elements according to ISO 8573.1*

Element grade	SMA	MFO	FF5	VF25	CA
Max. particle Ø [micron]					
Compressed air class	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
Max. residual oil content [mg/m ³]					

*ECOCLEAN® high-performance filter elements exceed ISO 8573.1 requirements

Cartridges



CAK activated carbon cartridges:

removal of oil vapour and odours, residual oil content 0.003 mg/m³ (at 20°C)

MSK molecular sieve cartridges:

the removal of moisture (dew point to -40°C possible)

HC catalyst cartridges:

For the removal of carbon monoxide (CO)

Water Separator



WS Water Separator

Cyclone separators that safely separate condensate using centrifugal force

Element type	CAK	MSK	HC
Element type	Cartridge	Cartridge	Cartridge
F70	FE5111 CAK	FE5111 MSK	FE5111 HC
F90	FE7111 CAK	FE7111 MSK	FE7111 HC
F110	FE7311 CAK	FE7311 MSK	FE7311 HC
F130	FE7411 CAK	FE7411 MSK	FE7411 HC



Compressed Air Filters

with threaded ports

up to 1460 cfm/2480 m³/h, 3"

Filter stages

VF25	(25 micron)
FF5	(5 micron)
MFO	(1 micron)
SMA	(0.01 micron)
CA	(activated carbon)

Compressed Air Filters

with flanged connection

up to 6588 cfm/11200 m³/h, DN200

Filter stages

VF25	(25 micron)
FF5	(5 micron)
MFO	(1 micron)
SMA	(0.01 micron)
CA	(activated carbon)

Compressed Air Filters

Cartridge filter with threaded ports

CAK activated carbon cartridge (removal of oil vapour and odours)

MSK molecular sieve cartridge (removal of moisture)

HC Hopcalite catalyst cartridge (removal of carbon monoxide CO)



WS water separator

with threaded ports

up to 1460 cfm/2480 m³/h, 3"

with flanged connection

up to 4941 cfm/8400 m³/h, DN150

Vacuum pump protection filter

with threaded ports

up to 118 cfm/200 m³/h, 2 1/2"

Filter stages

MFO	(1 micron)
SMA	(0.01 micron)
CA	(activated carbon)

Vacuum pump exhaust filters

with threaded ports

up to 118 cfm/200 m³/h, 2 1/2"

Filter stages

MFO	(1 micron)
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Medical sterile filters

with threaded ports

up to 882 cfm/1500 m³/h, 2 1/2"

Filter stages

SE	(0.01 micron)
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medical vacuum filters

with threaded ports

up to 118 cfm/200 m³/h, 2 1/2"

Filter stages

VMS



High pressure filter

50, 100, 350 bar

with threaded ports

VF25	(25 micron)
FF5	(5 micron)
MFO	(1 micron)
SMA	(0.01 micron)
CA	(activated carbon)

Sterile stainless steel filter

FES

with threaded ports

S	(0.01 micron)	sterile filter (Nomex)
ENS	(20 micron)	industrial filter (Inox with fabric)
ESS	(25 micron)	industrial filter (sintered metal)
SMS	(0.01 micron)	industrial filter (borosilicate)

Process filter

FPF

with threaded ports

ES	(20 micron)	sintered metal
BS	(15 micron)	sintered bronze
SM	(0.01 micron)	borosilicate

Options



Differential pressure indicator



Volt free digital differential pressure manometer



Moisture indicator



Oil indicator



Filter connection set



Wall mount including filter connection set

Condensate Drains



1 automatic drain D150, standard for threaded filter F25 - F135



2 automatic drain D200, standard for threaded filter F140 - F190, as well as for all flanged filters



3 level-regulated condensate drain **KONDRAIN**® N1 (option for **ECOCLEAN**® standard filter)



4 manual drain HAM12, standard in CA activated carbon grade, as well as in all cartridge filters

Compressed Air Filters – Technical Data

Type	Capacity*		Dimensions (mm)				connection	Element	Quantity
	cfm	m³/h	A	B	C	D			
F25	21	35	90	21	220	110	1/4"	FE3711	1
F50	31	52	90	21	220	110	3/8"	FE3711	1
F60	31	52	90	21	220	110	1/2"	FE3711	1
F70	71	120	90	21	281	160	1/2"	FE5111	1
F80	71	120	90	21	281	160	3/4"	FE5111	1
F90	127	216	130	40	332	260	3/4"	FE7111	1
F100	127	216	130	40	332	260	1"	FE7111	1
F110	212	360	130	40	478	310	1"	FE7311	1
F120	318	540	130	40	482	390	1 1/4"	FE7411	1
F130	426	725	130	40	545	435	1 1/2"	FE7411	1
F135	426	725	130	40	545	435	2"	FE7411	1
F140	471	800	184	51	704	490	2"	FE8501	1
F160	706	1200	184	51	704	560	2"	FE8601	1
F170	882	1500	250	74	620	440	2 1/2"	FE8701	1
F190	1460	2480	250	74	1062	630	3"	FE8901	1
Fo80-01	823	1400	360	162	841	550	DN 80	FE8601	1
F100-02	1647	2800	550	245	1115	550	DN 100	FE8601	2
F100-03	2470	4200	550	245	1115	550	DN 100	FE8601	3
F150-04	3294	5600	620	276	1237	550	DN 150	FE8601	4
F150-06	4941	8400	800	300	1270	680	DN 150	FE8601	6
F200-08	6588	11200	800	328	1275	680	DN 200	FE8601	8

in reference to 1 bar (abs.) and 68°F/20°C at 7 bar above operating pressure F25 – F170: 16 bar overpressure, F190: 12 bar overpressure, Fo80-01 – F200-08: 16 bar overpressure

Special Filters

KSI Filtertechnik GmbH is an expert in innovative products and system solutions in the compressed air and compressed gas treatment area. As a highly flexible enterprise, with our own development department and production in Germany and the United Kingdom, we are able to also offer individualized solutions for special applications. Contact us, we always find a solution.

KSI Alternative Filter Elements

The better Alternative

Alternative filter elements and cartridges for other manufacturers housings, such as Atlas Copco, Boge, ZANDER, DH, Ultrafilter, Hiross, Hankison, OMI, MTA, AFE, CompAir, Deltech, FST plus many more, are also available in KSI premium quality. All at a price advantage of up to 30% lower (than qualitatively comparable filter elements on the market).

