

Filters & Centrifugal Separators

Flow rates 0.58 to 248 m³/min



Why use compressed air filters?

On average, a compressor sucks in up to 190 million particles of dirt, hydrocarbons, viruses and bacteria with every cubic meter of atmospheric air. The compressor itself can only remove the larger particles and the majority of the contaminants remain in the compressed air. This means that for most applications careful treatment of the air is necessary: Clean, quality compressed air maximises air-tool service life, ensures that pneumatic machinery and control systems operate at the peak of their performance and keeps pipes & valves free from contamination. It therefore not only reduces service, maintenance and repair costs, but can also reduce initial investment costs.

KAESER filters ensure a dependable and cost-effective source of quality compressed air

Compressed air filters from KAESER KOMPRESSOREN are ideally suited for use with our compressors and compressed air drying systems. This ensures dependable compressed air treatment and exceptional efficiency.



- 1 Compressed air inlet
- 2 Compressed air outlet
- 3 Filter housing
- 4 Filter element
- 5 Electronically controlled ECO DRAIN condensate drain

KAESER Compressed Air Filters

Dependable and efficient



Centrifugal separator

High-pressure filters

Compressed air filters



Compressed air filters

Kaeser's extensive range of filters ensures that there's a model available to suit every compressed air need. Water, oil and dust are removed efficiently and with minimal differential pressure.



Centrifugal separator

For removal of liquid condensate. Typically used downstream from the compressor. Results in near 100% relative humidity, which is ideal for further drying systems.



Filters up to 48 or 62 bar

We also have an extensive range of filters available for high-pressure applications, such as PET container production. Suited for use with pressures of up to 48 or 62 bar, these high-quality filters remove oil, water and dust.

Tailored compressed air treatment

All KAESER filters and compressed air treatment components are specifically designed to be used in combination with one another and can be combined to suit the needs of the specific application.

The grade of compressed air quality ranges from general works air up to food grade and pharmaceutical quality air. KAESER compressed air filters are also available for high pressure applications up to 62 bar(g).

Compressed air filters

Perfectly matched to compressor and compressed air treatment equipment, Kaeser's extensive range of filters ensures that all relevant compressed air quality classes are maintained reliably and efficiently over the long-term.

Filter change maintenance indicator

The filter monitor... (optional)

- ...indicates when filter change is required.
- **Microprocessor-controlled LCD display**
- **Comprehensive filter monitoring based on:**
 - operating time
 - differential pressure
 - operation efficiency: comparison of increasing energy requirement caused by filter clogging to a maximum value that is dependent on the operating conditions and which is calculated by the monitor
- **Significant energy savings**
- **'Filter change' warning** with red LED and alarm contact
- **Continuous measurement of pressure differential** to an accuracy of 0.025 bar via precision pressure transducer
- **Direct data input**, no separate programming device required

The high performance filter element...

- ...ensures **reliable filtration** with minimal pressure losses:
- **Coalescence filter** with new, matrix filter-fibre structure
- **High efficiency even at low air volumes** of only five percent of nominal flow
- **Reliable element-to-housing** seal
- Stainless steel orifice tubes, **oil & acid resistant** coated sleeves and end caps

The filter housing...

- ...that lasts:
- **Long service life** thanks to the epoxy resin coating inside and out (proven in over 1000 hours of salt contamination tests)
- **Easy filter element removal** with Kaeser's O-ring seal system
- **Minimal pressure drop** due to optimised air flow
- The conical bowl **and turbulence-free lower filter zone** prevent condensate from being carried along with the air flow
- **audible warning** should leakages occur or if the filter is opened under pressure

The shut-off valve...

...allows maintenance of the condensate drain without interrupting air supply.

Condensate drainage with the ECO Drain...

- ...is electronically level-controlled and fully automatic, which means:
- **No air losses**
- **Maximum reliability**

D-Pack Version:
with electronic ECO DRAIN condensate drain, including floating alarm contact

D-Pack *basic* version:
With electronic ECO DRAIN 30 condensate drain; for filter sizes F6 to F221



FFG microfilter combination comprising:
FF microfilter and FG activated carbon filter

Optionally available without electronic
condensate drain ("Standard version")

KAESER
COMPRESSORS

Tailored filtration for every compressed air need



Use: For removal of solid particles and larger volumes of condensate.

To be used as a pre-filter for solid particles and for removal of larger volumes of condensate.

Size of particles removed: > 3 µm
Max. fluid load at inlet: 25 g/m³



Use: For removal of solid particles and smaller volumes of condensate.

To be used as a pre-filter for solid particles and for removal of small volumes of condensate.

Size of particles removed: > 1 µm
Max. fluid load at inlet: 2 g/m³



Use: For removal of solid particles

To be used only as a dust filter for solid particles, often used downstream from desiccant dryers and activated carbon adsorbers. Through-flow from outside to inside - ensures exceptionally high dust load capacity and maximum reliability.

Size of particles removed: > 1 µm
Max. fluid load at inlet: Compressed air must be dry



Use: For removal of fine solid particles, condensate droplets and oil aerosols.

For use as a fine filter for enhanced compressed air quality. The filter removes solid particles, condensate droplets and oil aerosols.

Size of particles removed: > 0.1 µm
Max. fluid load at inlet: 1 g/m³



Use: For removal of solid particles, the smallest of condensate droplets and oil aerosols.

The high capacity filter ensures exceptional compressed air quality in accordance with the most stringent requirements, e.g. for the pharmaceutical, electronics and foodstuff industries. Preferably use only with condensate-free compressed air. Ensure that a FE filter or a refrigeration dryer is installed upstream from this filter.

Size of particles removed: > 0.1 µm
Max. fluid load at inlet: 0.1 g/m³



Use: For removal of oil and adsorbable hydrocarbons, particularly suited to odour elimination.

The activated carbon filter ensures exceptional compressed air quality in accordance with the most stringent requirements, e.g. for the pharmaceutical, electronics and foodstuff industries. Compressed air must be dried and filtered beforehand. Ensure that a FE/FF filter and a dryer are installed upstream from this filter. Designed for approx. 1000 operating hours under reference conditions. Use an activated carbon adsorber (ACT series) if significantly longer service life is required.

Size of particles removed: –
Max. fluid load at inlet: Compressed air must be dry

Max. working pressure 16 bar
Max. working temperature +66 °C

Filters for 48 or 62 bar

KAESER high-pressure 48/62 bar filters are available for installation at the booster outlet for special high pressure applications, e.g. PET container production. These also ensure certified compressed air quality.

Filter housing

Durable, pressure-resistant steel housing

Filter element

Five different filter elements, ranging from pre-filters to activated carbon filters, are available for pressures up to 62 bar

Special electronic condensate drain (optional)

KAESER high-pressure filters can also be equipped with the electronically controlled ECO DRAIN condensate drain (PN63)



Centrifugal separator

Function:

The centrifugal separator removes large volumes of condensate from the compressed air. Optimised design enhances the centrifugal effect and ensures a near constant degree of condensate separation over a wide flow volume range. Furthermore, particles up to 5 µm are also “washed out”.

Application:

A centrifugal separator is recommended for systems where the refrigeration dryer is installed “directly” downstream from the rotary screw compressor.

The centrifugal separator is installed between the compressor and the refrigeration dryer and removes the ‘liquid condensate’ from the compressed air. This provides the refrigeration dryer with additional reserve drying capacity. This is particularly important at high ambient temperatures in order to ensure that the required dew point is consistently maintained.

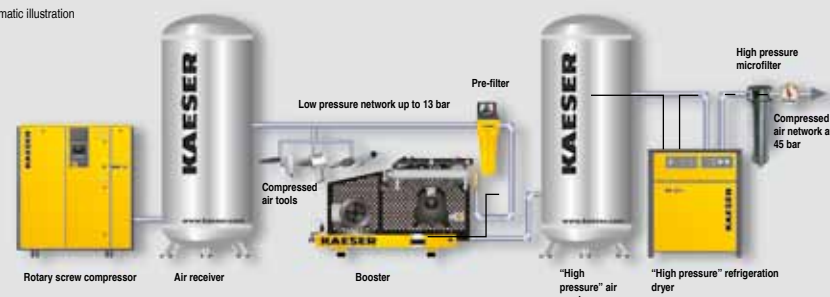
KAESER centrifugal separators are maintenance-free.

Tip:

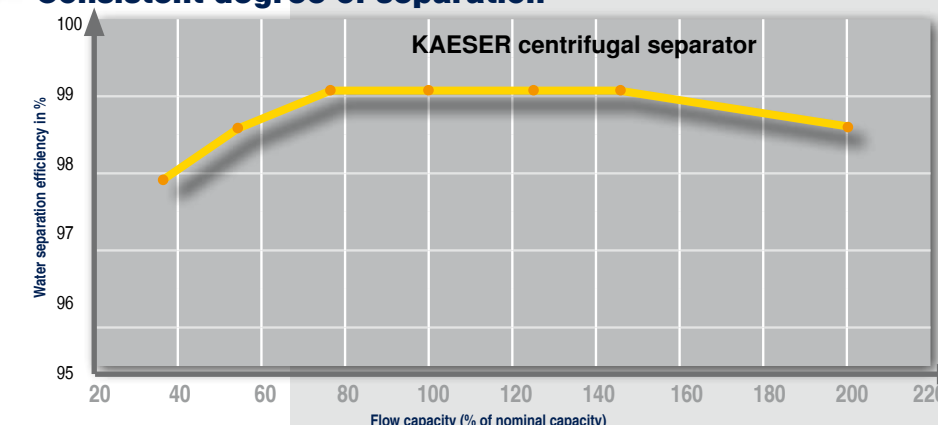
Each centrifugal separator should be fitted with an electronic ECO DRAIN condensate drain (available as a complete set with all necessary components).

Compressed air system with booster

Schematic illustration



Consistent degree of separation



Technical Specifications

Filter series: FB, FC, FD, FE, FF, FG, FFG – **Filter sizes:** 6, 10, 18, 28, 48, 71, 107, 138, 177, 221, 185, 283, 354, 526, 708, 885, 1420, 1950, 2480

Versions: “Normal” with float-controlled drain – “D” With electronic level-sensing controlled ECO DRAIN condensate drain

Aluminium casing for filter sizes from 6 to 221, **Steel casing** for filter sizes from 185 to 2480

Compressed air filter for max. 16bar, max. operating temp. +66°C

Designation: Filter housing

Filter series
↓
Size
↓
Version
↓
FE 221 D

Correction factors

| Flow rate*) m³/min | Filter size | Air connection | Weight kg (Normal version) | | | | | Dimensions: Diameter, height, removal height in mm (Standard version) | | | | | Removal height (for maintenance) mm |
|-----------------------|----------------|-------------------|-------------------------------|-------|---------|-------|-------|--------------------------------------------------------------------------|----------------|-----------------|----------------|------------------|-------------------------------------------|
| FB – FFG | | FB – FFG | FB – FC | FD | FE – FF | FG | FFG | FB – FC | FD | FE – FF | FG | FFG | |
| 0.58 | 6 | R 3/8 | 3.6 | 3.5 | 3.6 | 3.4 | 7.1 | 105, 233, 163 | 105, 306, 224 | 105, 306, 224 | 105, 182, 163 | 210, 306, 224 | 76 |
| 1.0 | 10 | R 1/2 | 3.7 | 3.6 | 3.7 | 3.5 | 7.3 | 105, 306, 224 | 105, 306, 224 | 105, 306, 224 | 105, 255, 244 | 210, 306, 224 | 76 |
| 1.75 | 18 | R 1/2 | 3.9 | 3.8 | 3.9 | 3.7 | 7.7 | 105, 367, 285 | 105, 367, 285 | 105, 367, 285 | 105, 316, 285 | 210, 367, 285 | 76 |
| 2.83 | 28 | R 3/4 | 4.4 | 4.3 | 4.4 | 4.2 | 8.7 | 133, 389, 298 | 133, 389, 298 | 133, 389, 298 | 133, 338, 298 | 266, 389, 298 | 89 |
| 4.83 | 48 | R 1 | 4.8 | 4.7 | 4.8 | 4.6 | 9.5 | 133, 497, 406 | 133, 497, 406 | 133, 497, 406 | 133, 446, 406 | 266, 497, 406 | 89 |
| 7.1 | 71 | R 1 1/2 | 4.6 | 4.5 | 4.6 | 4.4 | 9.1 | 164, 579, 482 | 164, 579, 482 | 164, 579, 482 | 164, 528, 482 | 328, 579, 482 | 102 |
| 10.7 | 107 | R 1 1/2 | 5.1 | 5.0 | 5.1 | 4.9 | 10.1 | 162, 693, 596 | 164, 693, 596 | 164, 693, 596 | 164, 642, 596 | 328, 693, 596 | 102 |
| 13.8 | 138 | R 2 | 12.7 | 12.6 | 12.7 | 12.5 | 25.3 | 194, 789, 681 | 194, 789, 681 | 194, 789, 681 | 194, 739, 681 | 388, 789, 681 | 102 |
| 17.7 | 177 | R 2 1/2 | 15 | 14.9 | 15 | 14.8 | 29.9 | 194, 935, 827 | 194, 935, 827 | 194, 935, 827 | 194, 885, 827 | 388, 935, 827 | 102 |
| 22.1 | 221 | R 2 1/2 | 17.2 | 17.1 | 17.2 | 17 | 34.3 | 194, 1091, 983 | 194, 1091, 983 | 194, 1091, 983 | 194, 1040, 983 | 388, 1091, 983 | 102 |
| 18.5 | 185 | DN 80 | 29.9 | 28.4 | 29.3 | 28.6 | 58.6 | 350, 1130, 950 | 350, 1025, 845 | 350, 1130, 950 | 350, 1025, 845 | 700, 1130, 950 | 610 |
| 28.3 | 283 | DN 80 | 41.1 | 37.0 | 40.1 | 37.2 | 78 | 400, 1205, 1013 | 400, 1045, 853 | 400, 1205, 1013 | 400, 1045, 853 | 800, 1205, 1013 | 610 |
| 35.4 | 354 | DN 80 | 41.8 | 37.4 | 40.5 | 38.1 | 79.3 | 400, 1240, 1013 | 400, 1045, 853 | 400, 1205, 1013 | 400, 1045, 853 | 800, 1205, 1013 | 610 |
| 52.6 | 526 | DN 100 | 53.4 | 48.4 | 51.5 | 49.7 | 101.9 | 440, 1240, 1023 | 440, 1085, 868 | 440, 1240, 1023 | 440, 1085, 868 | 880, 1240, 1023 | 610 |
| 70.8 | 708 | DN 100 | 70 | 64.4 | 66.7 | 66.2 | 133.6 | 535, 1255, 1022 | 535, 1105, 872 | 535, 1255, 1022 | 535, 1105, 872 | 1070, 1255, 1022 | 610 |
| 88.5 | 885 | DN 100 | 71.7 | 65.4 | 67.7 | 67.8 | 136.2 | 535, 1255, 1022 | 535, 1105, 872 | 535, 1255, 1022 | 535, 1105, 872 | 1070, 1255, 1022 | 610 |
| 142 | 1420 | DN 150 | 126.5 | 118.4 | 121.5 | 122.4 | 244.6 | 600, 1355, 1043 | 600, 1215, 903 | 600, 1355, 1043 | 600, 1215, 903 | 1200, 1355, 1043 | 610 |
| 195 | 1950 | DN 150 | 182.8 | 171.4 | 175.9 | 177.1 | 353.7 | 720, 1520, 1183 | 720, 1245, 908 | 720, 1520, 1183 | 720, 1245, 908 | 1440, 1520, 1183 | 610 |
| 248 | 2480 | DN 150 | 237.7 | 224.4 | 228.9 | 231.7 | 461.3 | 750, 1540, 1192 | 750, 1265, 917 | 750, 1540, 1192 | 750, 1265, 917 | 1500, 1540, 1192 | 610 |

| Working pressure bar | Conversion factor for flow rate |
|----------------------|---------------------------------|
| 2 | 0.38 |
| 3 | 0.52 |
| 4 | 0.63 |
| 5 | 0.75 |
| 6 | 0.88 |
| 7 | 1 |
| 8 | 1.13 |
| 9 | 1.26 |
| 10 | 1.38 |
| 11 | 1.52 |
| 12 | 1.65 |
| 13 | 1.76 |
| 14 | 1.87 |
| 15 | 2 |
| 16 | 2.14 |
| | |
| | |
| | |
| | |

Replacement filter elements

Replacement filter element →
Series
↓
Size
↓
E-E-221

| Filter size | No. | Replacement filter elements | | | | | |
|-------------|-----|-----------------------------|---------|---------|---------|---------|---------|
| | | FB | FC | FD | FE | FF | FG |
| 6 | 1 | E-B-6 | E-C-6 | E-D-6 | E-E-6 | E-F-6 | E-G-6 |
| 10 | 1 | E-B-10 | E-C-10 | E-D-10 | E-E-10 | E-F-10 | E-G-10 |
| 18 | 1 | E-B-18 | E-C-18 | E-D-18 | E-E-18 | E-F-18 | E-G-18 |
| 28 | 1 | E-B-28 | E-C-28 | E-D-28 | E-E-28 | E-F-28 | E-G-28 |
| 48 | 1 | E-B-48 | E-C-48 | E-D-48 | E-E-48 | E-F-48 | E-G-48 |
| 71 | 1 | E-B-48 | E-C-71 | E-D-71 | E-E-71 | E-F-71 | E-G-71 |
| 107 | 1 | E-B-107 | E-C-107 | E-D-107 | E-E-107 | E-F-107 | E-G-107 |
| 138 | 1 | E-B-138 | E-C-138 | E-D-138 | E-E-138 | E-F-138 | E-G-138 |
| 177 | 1 | E-B-177 | E-C-177 | E-D-177 | E-E-177 | E-F-177 | E-G-177 |
| 221 | 1 | E-B-138 | E-C-221 | E-D-221 | E-E-221 | E-F-221 | E-G-221 |
| 185 | 1 | E-B-185 | E-C-185 | E-D-185 | E-E-185 | E-F-185 | E-G-185 |
| 283 | 2 | E-B-283 | E-C-283 | E-D-283 | E-E-283 | E-F-283 | E-G-283 |
| 354 | 2 | E-B-185 | E-C-185 | E-D-185 | E-E-185 | E-F-185 | E-G-185 |
| 526 | 3 | E-B-185 | E-C-185 | E-D-185 | E-E-185 | E-F-185 | E-G-185 |
| 708 | 4 | E-B-185 | E-C-185 | E-D-185 | E-E-185 | E-F-185 | E-G-185 |
| 885 | 5 | E-B-185 | E-C-185 | E-D-185 | E-E-185 | E-F-185 | E-G-185 |
| 1420 | 8 | E-B-185 | E-C-185 | E-D-185 | E-E-185 | E-F-185 | E-G-185 |
| 1950 | 11 | E-B-185 | E-C-185 | E-D-185 | E-E-185 | E-F-185 | E-G-185 |
| 2480 | 14 | E-B-185 | E-C-185 | E-D-185 | E-E-185 | E-F-185 | E-G-185 |

Filters for 48 or 62 bar

Designation: High pressure filter

Filter series
↓
Size
↓
“High Pressure”
↓
Filter → **FB 18 HP 62** ← Max. pressure

| Flow rate *) m³/min | Filter size | Air connection | Weight kg | | | | | Dimensions A, B mm | | | | | Removal height mm | Max. working pressure bar |
|------------------------|-------------|----------------|-----------|----|----|----|----|--------------------|----|----|----|----|-------------------|---------------------------|
| | | | FB | FC | FE | FF | FG | FB | FC | FE | FF | FG | | |
| 1.75 | 18 | R 1/2 | 9 | | | | | 371 x 146 | | | | | 300 | 62 |
| 2.83 | 28 | R 1 | 9 | | | | | 371 x 117 | | | | | 300 | 62 |
| 7.1 | 71 | R 1 | 12 | | | | | 591 x 117 | | | | | 520 | 48 |
| 14.2 | 142 | DN 65 | 35 | | | | | 930 x 350 | | | | | 650 | 48 |

*) Air flow at 7bar (g) referred to 1bar (a) und 20°C

Correction factors

| | | | | |
|---------------------------------|---|----|----|----|
| Working pressure bar | 7 | 25 | 40 | 64 |
| Conversion factor for flow rate | 1 | 3 | 5 | 8 |

Replacement filter elements

Filter series
↓
Size
↓
“High Pressure”
↓
Replacement filter element → **E-E-18/28 HP 62** ← Max. pressure

| Filter size | No. | Replacement filter elements for high-pressure filter series | | | | |
|-------------|-----|-------------------------------------------------------------|-----------|-----------|-----------|-----------|
| | | FB | FC | FD | FE | FF |
| 18 | 1 | E-B-18/28 | E-C-18/28 | E-E-18/28 | E-F-18/28 | E-G-18/28 |
| 28 | 1 | E-B-18/28 | E-B-18/28 | E-E-18/28 | E-F-18/28 | E-G-18/28 |
| 71 | 1 | E-B-71 | E-C-71 | E-E-71 | E-F-71 | E-G-71 |
| 142 | 1 | E-B-283 | E-C-283 | E-E-283 | E-F-283 | E-G-283 |

Centrifugal separator for max. 16 bar

| Air flow rate*) m³/min | | Model | Air connection | Volume l | Weight kg | Dimensions H x W x Ø mm |
|---------------------------|--------|--------|----------------|-------------|--------------|-------------------------------|
| 7 bar | 10 bar | | | | | |
| 2.0 | 2.3 | ZK 01 | G 3/4 | 0.8 | 1.1 | 292 x 89 x – |
| 4.1 | 5.0 | ZK 02 | G 1 | 1.8 | 2.2 | 391.5 x 109 x – |
| 6 | 7.3 | ZK 03 | G 1 1/4 | 1.8 | 2.2 | 391.5 x 109 x – |
| 9.3 | 11.3 | ZK 04 | G 1 1/2 | 1.8 | 2.2 | 391.5 x 109 x – |
| 15.2 | 18.0 | ZK 05 | G 2 | 5.3 | 4.3 | 575 x 150 x – |
| 16.3 | 19.3 | ZK 061 | DN 65 | 11.0 | 22.0 | 654 x 370 x 168.3 |
| 26.4 | 31.3 | ZK 071 | DN 65 | 17.5 | 28.0 | 733 x 400 x 193.7 |
| 26.4 | 31.3 | ZK 072 | DN 80 | 18.0 | 30.0 | 733 x 400 x 193.7 |
| 46.1 | 55.4 | ZK 08 | DN 125 | 35.5 | 50.0 | 865 x 450 x 244.5 |
| 30.6 | 36.7 | ZK 081 | DN 80 | 34.0 | 44.0 | 892 x 460 x 244.5 |
| 36.8 | 43.6 | ZK 091 | DN 80 | 47.0 | 52.0 | 983 x 550 x 273 |
| 47.7 | 56.9 | ZK 09 | DN 125 | 50.0 | 60.0 | 983 x 550 x 273 |
| 80 | 95.8 | ZK 10 | DN 150 | 76.0 | 74.5 | 1082 x 570 x 324 |

*) Air flow at 7bar (g) referred to 1bar (a) und 20°C

KAESER filters – Options and accessories

Filter monitor

Indicates when filter change is required.

- Indicates filter changes based on prescribed operational parameters



- Continuous measurement using intelligent electronics
- Easy-to-read LCD display, alarm LED
- Digital display of pressure drop

Condensate drain ECO DRAIN



- Non-wearing electronic sensor, no moving parts
- Maximum reliability, no sticking or clogging
- No compressed air losses
- Button for test function
- self-monitoring electronics with automatic alarm sequences
- Floating alarm contact (not for ECO DRAIN 30)
- LED indicators for voltage supply and alarm messages (not ECO DRAIN 30)
- AC and DC (50 / 60 Hz) versions available
- All operating controls and control systems are water-resistant as per IP 65 (IP 54 for ECO DRAIN 30 and 31)

Filter monitor box

The Filter Monitor Box allows remote filter monitoring. It evaluates the signals from a filter monitor, as well as from an ECO DRAIN condensate drain, and can pass messages to a central maintenance control system via two alarm contacts.



Group alarm (floating contact)

- Indication of (demand-dependent) service interval for filter element change
- Indication of optimum time for filter element change – computed by microprocessor-aided measurement value processing
- Maximum differential pressure exceeded (two minute delay)
- Condensate drain alarm

Safety alarm (floating contact only active in safety mode)

- Maximum differential pressure exceeded (5 second delay)

The power supply for the filter monitor and ECO DRAIN is provided by the filter monitor.

Wall Bracket

Simple installation:

- Remove differential pressure indicator, remove fixing screws
- Screw the bracket to the wall
- Screw the filter housing to the bracket
- Reinstall the pressure differential indicator

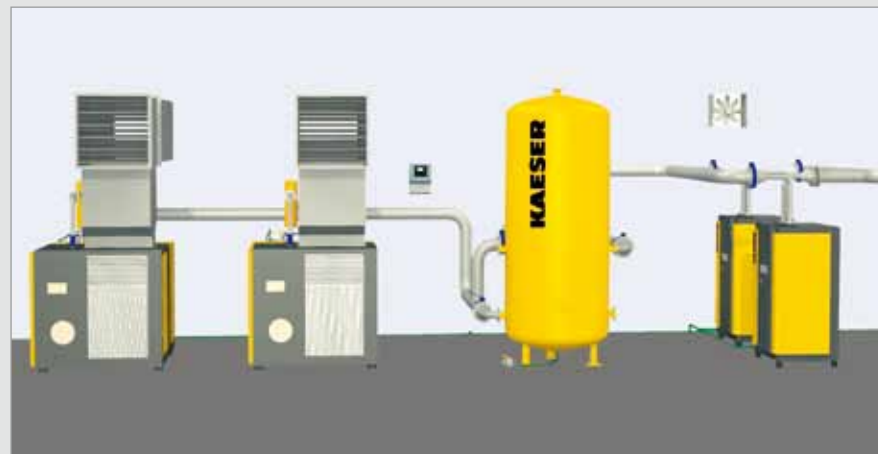


Modular design

The specially designed housing allows various filters to be combined together in series without the need for additional piping.



Comprehensive design know-how



KESS (KAESER's Energy Saving System) provides comprehensive analysis of your compressed air usage, enabling KAESER's experts to plan and design a system that is specially tailored to meet all of your compressed air needs. Typically ensuring a 95-98% load capacity, KAESER compressed air systems provide exceptional efficiency and produce application-specific quality compressed air at lowest possible cost. Use this expertise to your advantage and let KAESER design your compressed air system.

KAESER
COMPRESSORS

Genuine KAESER replacement filter elements

Only genuine KAESER replacement filter elements ensure reliable filtration with minimal pressure losses.

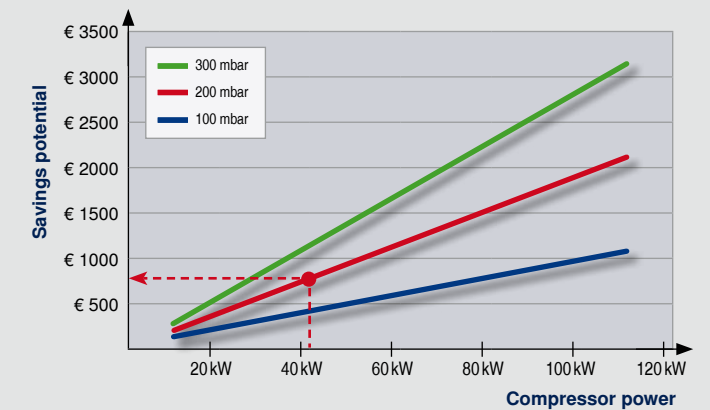
- Coalescence filter with new, matrix filter-fibre structure
- High efficiency even at low air volumes of only five percent of nominal flow
- Reliable element to housing seal
- Stainless steel orifice tubes, oil & acid resistant coated sleeves and end caps



KAESER replacement filter elements are also available for other housings.

Savings potential with timely element changes

Timely element changes (which prevent a further differential pressure increase of 200mbar) result in annual energy cost savings of € 864 for a 45 KW compressor.

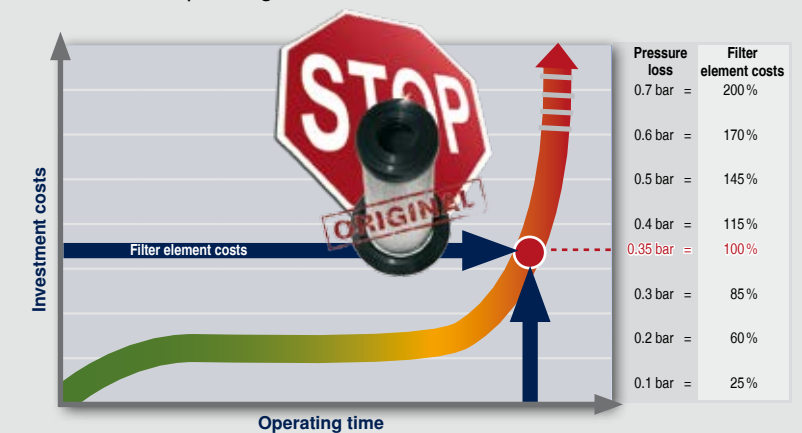


Calculation parameters:

6000 operating hours/year – energy price 0.20 €/kWh – 8% increase in electrical power consumption per 1 bar increase in differential pressure – Compressor specific power 6.55 kW/(m³/min)

Reduce operating costs

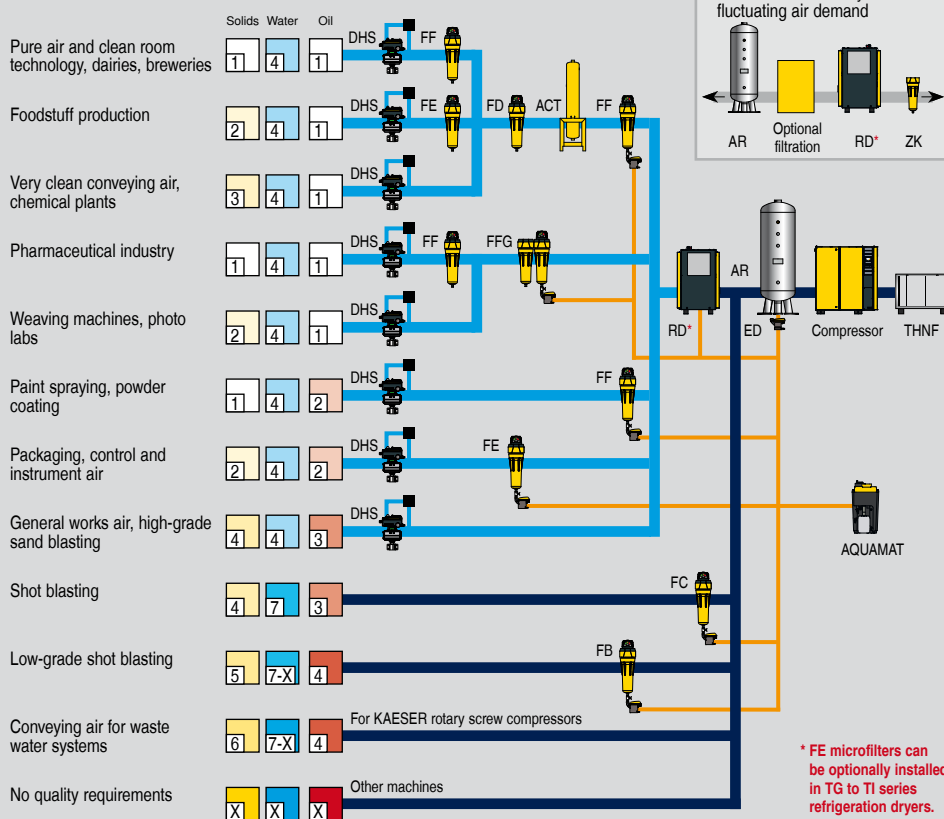
A pressure loss of only approx. 0.35bar is significantly more expensive than the costs required to change the filter element. Timely filter changes save considerable operating costs.



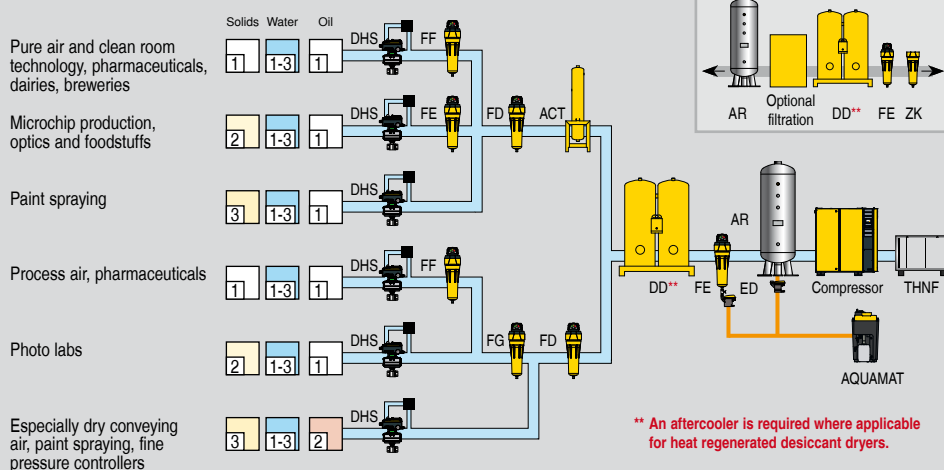
Choose the required grade of treatment according to your field of application:

Air treatment using a refrigeration dryer (pressure dew point +3 °C)

Application examples: Selection of treatment classes to ISO 8573-1 (2010)



For non frost protected air systems: Compressed air treatment with a desiccant dryer (down to -70 °C pressure dew point)



| Explanation | |
|-------------|----------------------------------------------|
| ACT | Activated carbon adsorber |
| AQUAMAT | AQUAMAT |
| DD | Desiccant dryer |
| DHS | Air-main charging system |
| AR | Air receiver |
| ED | ECO DRAIN |
| FB / FC | Pre-filter |
| FD | Particulate filter |
| FE / FF | Microfilter |
| FFG | Activated carbon and microfilter combination |
| FFG | Activated carbon filter |
| RD | Refrigeration dryer |
| THNF | Bag filter |
| ZK | Centrifugal separator |

Compressed air quality classes to ISO 8573-1(2010):

| Solid particles / dust | | | |
|--------------------------------------------------|-----------------------------------------------------------------|---------------|---------------|
| Class | max. particle count per m³ of a particle size with d [µm]* | | |
| | 0.1 ≤ d ≤ 0.5 | 0.5 ≤ d ≤ 1.0 | 1.0 ≤ d ≤ 5.0 |
| 0 | e.g. Consult KAESER regarding pure air and cleanroom technology | | |
| 1 | ≤ 20.000 | ≤ 400 | ≤ 10 |
| 2 | ≤ 400.000 | ≤ 6.000 | ≤ 100 |
| 3 | Not defined | ≤ 90.000 | ≤ 1.000 |
| 4 | Not defined | Not defined | ≤ 10.000 |
| 5 | Not defined | Not defined | ≤ 100.000 |
| Particle concentration C _p in mg/m³ * | | | |
| 6 | 0 < C _p ≤ 5 | | |
| 7 | 5 < C _p ≤ 10 | | |
| X | C _p > 10 | | |

| Water | |
|--------------------------------------------------------|-----------------------------------------------------------------|
| Class | Pressure dew point, in °C |
| 0 | e.g. Consult KAESER regarding pure air and cleanroom technology |
| 1 | ≤ -70 °C |
| 2 | ≤ -40 °C |
| 3 | ≤ -20 °C |
| 4 | ≤ +3 °C |
| 5 | ≤ +7 °C |
| 6 | ≤ +10 °C |
| Concentration of liquid water C _w in g/m³ * | |
| 7 | C _w ≤ 0.5 |
| 8 | 0.5 < C _w ≤ 5 |
| 9 | 5 < C _w ≤ 10 |
| X | C _w ≤ 10 |

| Oil | |
|-------|-----------------------------------------------------------------|
| Class | Total oil concentration (fluid, aerosol + gaseous) [mg/m³]* |
| 0 | e.g. Consult KAESER regarding pure air and cleanroom technology |
| 1 | ≤ 0.01 |
| 2 | ≤ 0.1 |
| 3 | ≤ 1.0 |
| 4 | ≤ 5.0 |
| X | > 5.0 |

*) At reference conditions 20 °C, 1 bar(a), 0% humidity