Installation and Operating Manual

Compressed air filter

KAESER FILTER F6 – F320

No.: 901708 17 USE

Read this manual before using this product.

Failure to follow the instructions and safety precautions in this manual can result in serious injury or death.

Manufacturer:

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/KKW/AFILT 2.17 en Z1 SBA-FILTER

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1 Regarding this Document

1.1 Using this document

The operating manual is a component of the product. It describes the machine as it was at the time of first delivery after manufacture.

- ➢ Keep the operating manual in a safe place throughout the entire life of the product.
- ➢ Supply any successive owner or user with this operating manual.
- ➢ Please insert any amendment or revision of the operating manual sent to you.

1.2 Symbols and labels

- ➢ Please note the symbols and labels used in this document.

1.2.1 Warnings

Warning notices indicate dangers that may result in injury when disregarded.

Warning notices indicate three levels of danger identified by the corresponding signal word:

Signal term	Meaning	Consequences of disregard
DANGER	Warns of an imminent danger	Will very likely result in death or severe injury
WARNING	Warns of a potentially imminent danger	May result in death or severe injury
CAUTION	Warns of a potentially dangerous situation	May result in a moderate physical injury

Tab. 1 Danger levels and their definition (personal injury)

Warning notices preceding a chapter apply to the entire chapter, including all sub-sections.

Example:

⚠ DANGER

The type and source of the imminent danger is shown here!
The possible consequences of ignoring a warning are shown here.
If you ignore the warning notice, the "DANGER" signal word indicates a lethal or severe injury will occur very likely.

- ➢ *The measures required to protect yourself from danger are shown here.*

Warning notes referring to a sub-section or the subsequent action are integrated into the procedure and numbered as an action.

Example:

1. **⚠ WARNING** *The type and source of the imminent danger is shown here!*
   The possible consequences of ignoring a warning are shown here.
   If you ignore the warning notice, the "WARNING" signal word indicates that a lethal or severe injury may occur.
   - ➢ *The measures required to protect yourself from danger are shown here.*
2. Always read and comply with warning instructions.

1.2.2 Potential damage warnings

Contrary to the warnings shown above, damage warnings do not indicate a potential personal injury.

Warning notices for damages are identified by their signal term.

Signal term	Meaning	Consequences of disregard
NOTE	Warns of a potentially dangerous situation	Damage to property is possible

Tab. 2 Danger levels and their definition (damage to property)

Example:

NOTICE

The type and source of the imminent danger is shown here!
Potential effects when ignoring the warning are indicated here.

➢ *The protective measures against the damages are shown here.*

➢ Carefully read and fully comply with warnings against damages.

1.2.3 Other alerts and their symbols

This symbol identifies particularly important information.

Material — Here you will find details on special tools, operating materials or spare parts.

Precondition — Here you will find conditional requirements necessary to carry out the task.
The conditions relevant to safety shown here will help you to avoid dangerous situations.

➢ This symbol denotes lists of actions comprising one stage of a task.
Operating instructions with several steps are numbered in the sequence of the operating steps.

Information referring to potential problems are identified by a question mark.
The cause is named in the help text ...

➢ ... as is a solution.

This symbol identifies important information or measures regarding the protection of the environment.

Further information — Further subjects are introduced here.

2 Technical Data

2.1 Options

The table contains a list of possible options.

➢ Enter options here as a reference.

Option	Option code	Available?
silicone-free (free of silicone)	F8	
Pressure differential gauge	F9	
Differential pressure transducer	F10	
Wall bracket kit	H22	
Electronic condensate drain	K5	—
Electronic condensate drain, floating relay contact	K6	—
Manual condensate drain	K12	
Automatic condensate drain	K13	
Installed: ✓ Not available: —		

Tab. 3 Options

2.2 Model designation of the compressed air filter

Compressed air filter

Series KAESER FILTER compressed air filters are filtration separators with the exception of KC degree of filtration. As the name suggests, the centrifugal separator uses centrifugal force as a means for separation.

Product	Filter size	Degree of filtration
F: Compressed air filter	6 9 16 22 26 46 83 110 142 184 250 320	KB: Basic: Coalescence filter KD: Dust Particulate filter KE: Extra: Coalescence filter KA: Adsorption Activated carbon filter KC: Cyclone Centrifugal separator
Example:		
F	22	KD

Product	Filter size	Degree of filtration
My compressed air filter:		

Tab. 4 Model designation of the compressed air filter

Filter element/cyclone insert

The compressed air filter includes a replaceable filter element. Pressure loss increases with increased saturation. With the activated carbon filter the saturation increases. Replacement of the filter element is required in both cases.

The centrifugal separator includes a so-called cyclone insert instead of the filter element, that forces the flowing fluid into a fast spinning motion. As a result of the centrifugal force, the liquid components are removed from the fluid flow.

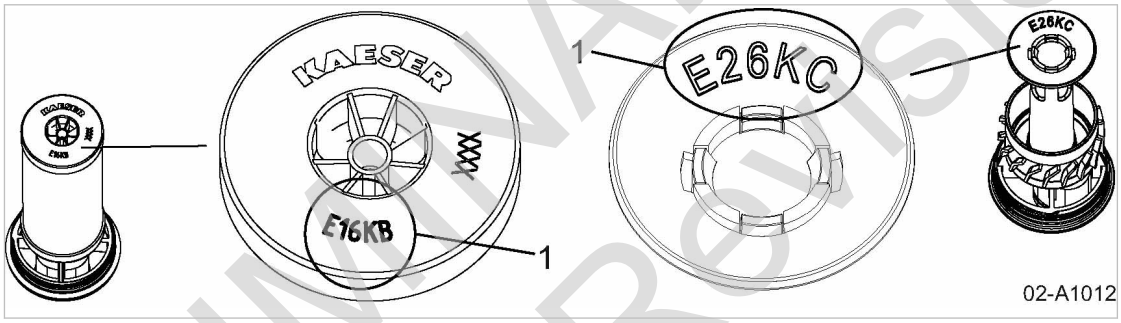


Fig. 1 Type designation of the filter element/cyclone insert (example)

[1] Type designation

Product	Filter size	Degree of filtration
E: Filter element	6 9 16 22 26 46 83 110 142 184 250 320	KB: Basic: Coalescence filter KD: Dust Particulate filter KE: Extra: Coalescence filter KA: Adsorption Activated carbon filter KC: Cyclone Centrifugal separator
Example:		
E	16	KB
My filter element:		

Tab. 5 Model designation of the filter element/cyclone insert

2.3 Operating limits

The compressed air filters may be used in various combinations.

Typical filter combinations:

- KBE:
  Filter combination of filtration degree KB with downstream KE
- KEA:
  Filter combination of filtration degree KE with downstream KA

➢ Consult KAESER regarding the usage options.

Application: Compressed air filter KB, KE, KBE and KC

Degree of filtration	KB	KE	KBE	KC
Short description	Basic	Extra	Extra Combination	Cyclone
Suitable fluids	Air Nitrogen			
Fluid properties	Non-corrosive Non-combustible Non-toxic Non-explosive Stable			
Application	Simultaneous filtration of solid and liquid aerosols and solid particles	Same application as KB, but for higher compressed air quality	Same application as KE, but ensuring higher reliability of compressed air quality	Removes condensate from the compressed air
Fluid quality at the inlet	Mostly free of condensate	Free of condensate	Mostly free of condensate	Contains condensate
Typical application near the compressor station	With contaminated compressed air lines (e.g., upstream of refrigeration dryers)	Downstream of compressed air dryers	In critical applications requiring a high compressed air quality (e.g., electronics, optics, etc.) Downstream of compressed air dryers Upstream of desiccant dryers	At high condensate content in the compressed air (e.g., directly downstream of a compressor)
Typical application near the consumers	Compressed air filter for simple air quality	Compressed air filter for higher air quality Micro-particle filter according to degree of filtration KD	Compressed air filter for higher air quality	—

Degree of filtration	KB	KE	KBE	KC
Short description	Basic	Extra	Extra Combination	Cyclone
Flow direction	From inside to outside			—

Tab. 6 Operating limits: Use of KB, KE, KBE and KC

Application: Compressed air filter KD, KA and KEA

Degree of filtration	KD	KA	KEA
Short description	Dust	Adsorption	Carbon Combination
Suitable fluids	Air Nitrogen		
Fluid properties	Non-corrosive Non-combustible Non-toxic Non-explosive Stable		
Application	Exclusively for the filtration of solid particles	Exclusively for the removal of oil vapors	Simultaneous filtration of aerosols, solid particles, and oil vapors
Fluid quality at the inlet	Free of condensate	Free of condensate and oil aerosols Pressure dew point: ≤+45 °F	Free of condensate Pressure dew point: ≤+45 °F
Typical application near the compressor station	Downstream of desiccant dryers and activated carbon adsorbers	—	—
Typical application near the consumers	Compressed air filter downstream of desiccant dryer and activated carbon adsorber	Downstream of compressed air filter with degree of filtration KE	Compressed air filter for the removal of odors and low concentrations of oil vapor
Flow direction	From inside to outside		

Tab. 7 Operating limits: Use of KD, KA and KEA

Pressure and temperature

Degree of filtration	KB	KE	KBE	KD	KA	KEA	KC
Short description	Basic	Extra	Extra Combination	Dust	Adsorption	Carbon Combination	Cyclone
Permissible working pressure [psi] at the inlet	30 – 232						
Permissible fluid temperature [°F] at the inlet	40 – 150						

Degree of filtration	KB	KE	KBE	KD	KA	KEA	KC
Short description	Basic	Extra	Extra Combination	Dust	Adsorption	Carbon Combination	Cyclone
Permissible ambient temperature [°F]	40 – 120						
Compression stress	Static						

Tab. 8 Operating limits: Pressure and temperature

2.4 Separation efficiency

The separation efficiency is often highly dependent on individual circumstances in the compressed air network (composition of the fluid, pressure and flow situation).

➢ Consult KAESER for advice on this subject.

Aerosol separation according to ISO 12500-1

Degree of filtration	KB	KE	KBE	KD	KA	KEA
Short description	Basic	Extra	Extra Combination	Dust	Adsorption	Carbon Combination
Differential pressure[1] in new state [psig]	<0.44	<1.02	<1.38	<0.58	<0.51	<1.23
Initial differential pressure at saturation [psig]	<2.03	<2.90	<2.90	—	—	<3.48
Residual aerosol content [mg/m³]	<0.1	<0.01	<0.01	—	—	<0.01

[1] At maximum flow rate

Tab. 9 Aerosol separation (oil aerosol test concentration: 10 mg/m³

Water separation according to ISO 12500-4

Degree of filtration	KC
Short description	Cyclone
Differential pressure[1] [2] in new state [psig]	0.15 – 1.22
Degree of water separation [2] [%]	97,0 – 99,7

[1] At maximum flow rate
[2] Type-dependent

Tab. 10 Water separation

Recommendation for suitable particle separation

We recommend degree of filtration KD in order to attain purity class 2 (acc. to ISO 8573-1).

In the case of more stringent requirements, we also recommend the degree of filtration KE as after-filter.

Oil vapor adsorption

Oil (vapor): Hydrocarbon mixture from components with a chain length with more than six C atoms.

For the measurement clean fluid (e.g. without oil vapors) is contaminate with an oil aerosol test concentration of 10 mg/m^3. First of all, oil aerosols are removed from the contaminated fluid by a compressed air filter with degree of filtration KE. The downstream compressed air filter with degree of filtration KA removes oil vapors.

Measurement conditions:

- Cooling oil approved by KAESER
- Maximum flow rate
- Working pressure: 100 psi
- Fluid inlet temperature: 68 °F
- Relative humidity: 0 %

If the aforementioned measuring condition is met, a residual oil content of <0.003 mg/m^3 is to be expected.

2.5 Option F10 Differential pressure transducer

Input signals	Value
Differential pressure $P_{Diff.}$ [psi]	0.0 – 23.2
Relative pressure P– [psi]	0.0 – 232.1

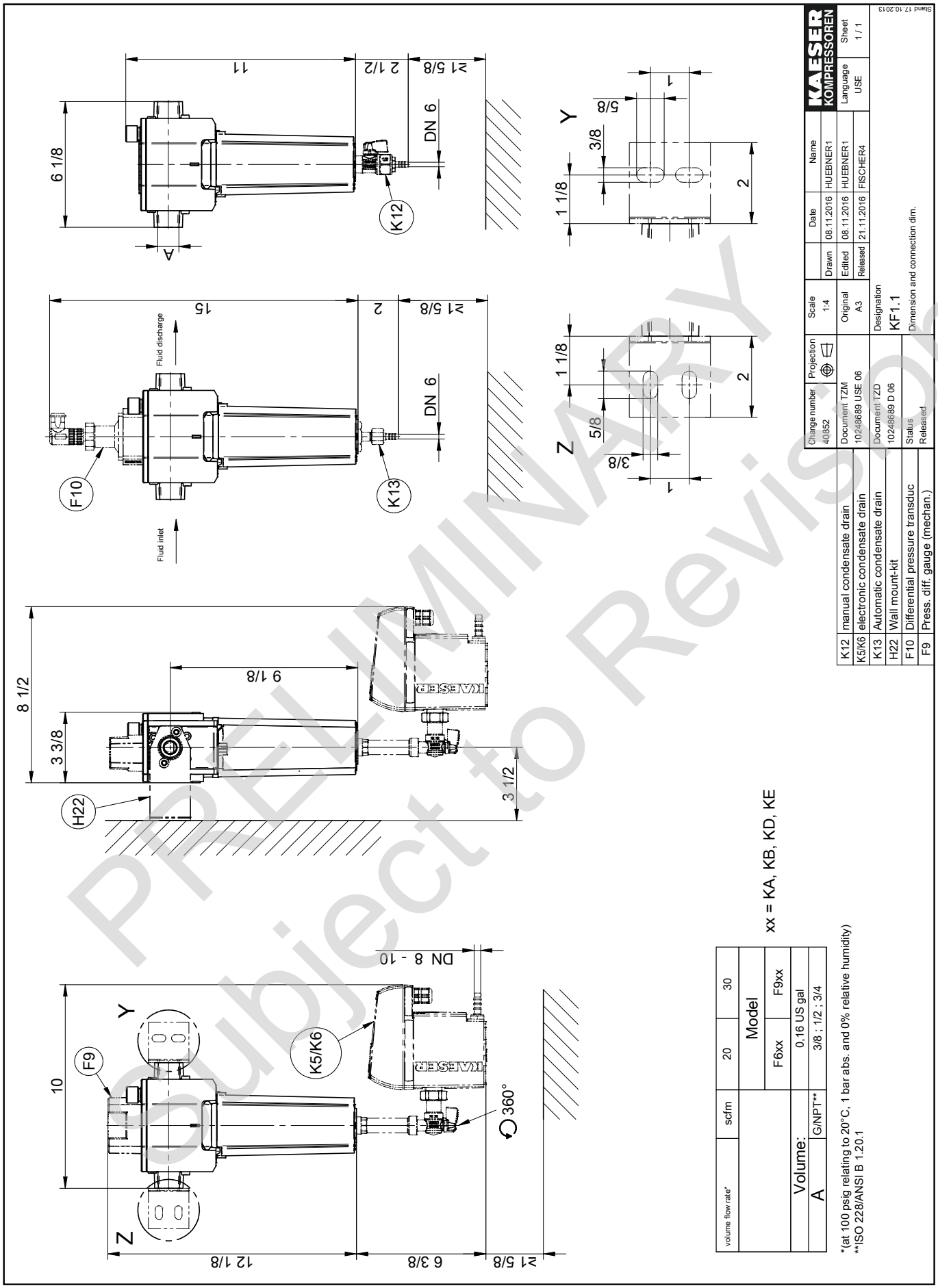
Tab. 11 Input signals

Output signals/auxiliary energy	Value
Differential pressure $P_{Diff.}$ [mA] (3-conductor)	4 – 20
Relative pressure P– [mA] (3-conductor)	4 – 20
Supply voltage U_B [V_{DC}] (NEC Class2)	16 – 30
Maximum power consumption [mA]	52
Maximum permissible burden (measuring resistance) [Ω] U_B = 16 V	250
Maximum permissible burden (measuring resistance) [Ω] U_B = 21 V	450

Output signals/auxiliary energy	Value
Reverse polarity protection	Yes

Tab. 12 Output signals/auxiliary energy

2.6 Dimensions and type-dependent data



Change number	Projection	Scale		Date	Name	KAESER KOMPRESSOREN	
40852		1:4	Drawn	08.11.2016	HUEBNER1	Language	Sheet
		Original	Edited	08.11.2016	HUEBNER1	USE	1 / 1
Document TZM		A3	Released	21.11.2016	FISCHER4		
10249689 USE 06		Designation					
Document TZD		KF1.1					
10248689 D 06		Dimension and connection dim.					
Status							
Released							

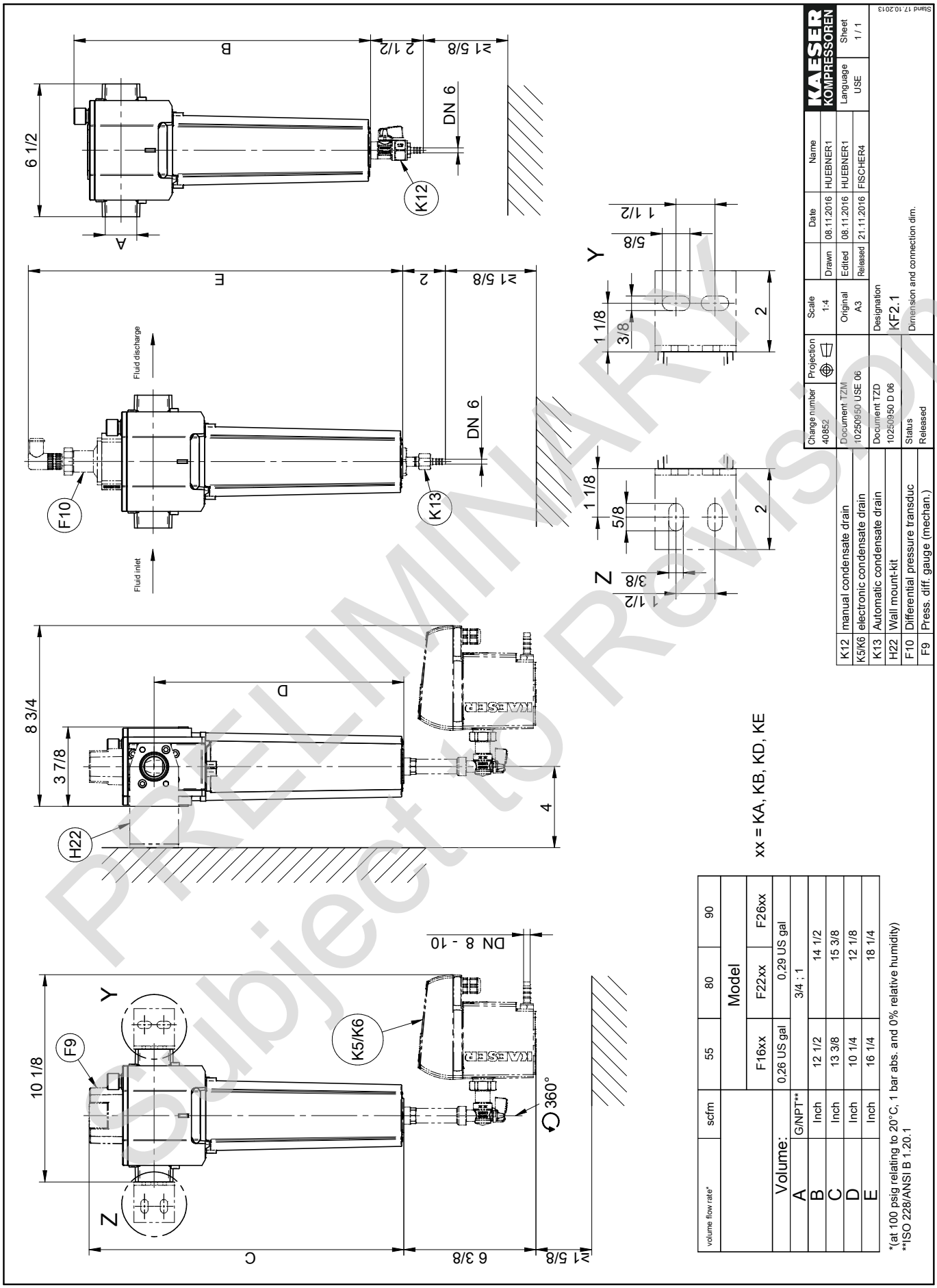
Stand 17.10.2013

K12	manual condensate drain
K5/K6	electronic condensate drain
K13	Automatic condensate drain
H22	Wall mount-kit
F10	Differential pressure transduc
F9	Press. diff. gauge (mechan.)

xx = KA, KB, KD, KE

volume flow rate*		20	30
		Model	
		F6xx	F9xx
Volume:		0,16 US gal	
A	G/NPT**	3/8 ; 1/2 ; 3/4	

*(at 100 psig relating to 20°C, 1 bar abs. and 0% relative humidity)
**ISO 228/ANSI B 1.20.1



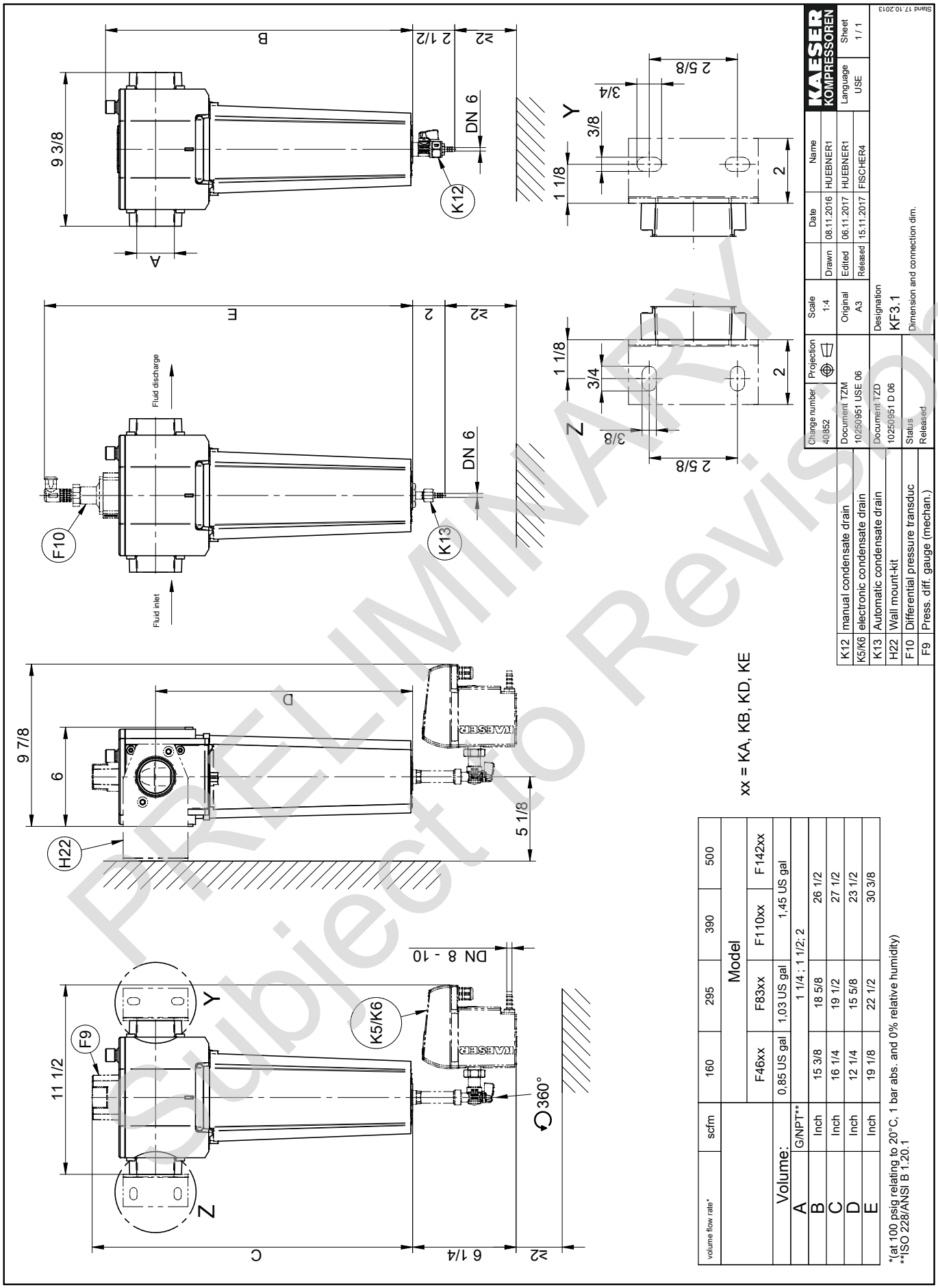
K12	manual condensate drain						
K5/K6	electronic condensate drain						
K13	Automatic condensate drain						
H22	Wall mount-kit						
F10	Differential pressure transduc						
F9	Press. diff. gauge (mechan.)						

Change number 40852	Projection	Scale 1:4		Date	Name	KAESER KOMPRESSOREN	
Document TZM 10250950 USE 06		Original A3	Drawn	08.11.2016	HUEBNER1	Language USE	Sheet 1 / 1
Document TZD 10250950 D 06		Designation KF2.1	Edited	08.11.2016	HUEBNER1		
Status Released		Dimension and connection dim.	Released	21.11.2016	FISCHER4		

Stand 17.10.2013

volume flow rate*		scfm	55	80	90
			Model		
			F16xx	F22xx	F26xx
Volume:			0,26 US gal	0,29 US gal	
A	G/NPT**		3/4 ; 1		
B	Inch	12 1/2		14 1/2	
C	Inch	13 3/8		15 3/8	
D	Inch	10 1/4		12 1/8	
E	Inch	16 1/4		18 1/4	

*(at 100 psig relating to 20°C, 1 bar abs. and 0% relative humidity)
**ISO 228/ANSI B 1.20.1



volume flow rate*	scfm				Model				
			160	295	390	500			
			F46xx	F83xx	F110xx	F142xx			
Volume:			0,85 US gal	1,03 US gal	1,45 US gal				
A	G/NPT**		1 1/4 ; 1 1/2; 2						
B	Inch		15 3/8	18 5/8	26 1/2				
C	Inch		16 1/4	19 1/2	27 1/2				
D	Inch		12 1/4	15 5/8	23 1/2				
E	Inch		19 1/8	22 1/2	30 3/8				

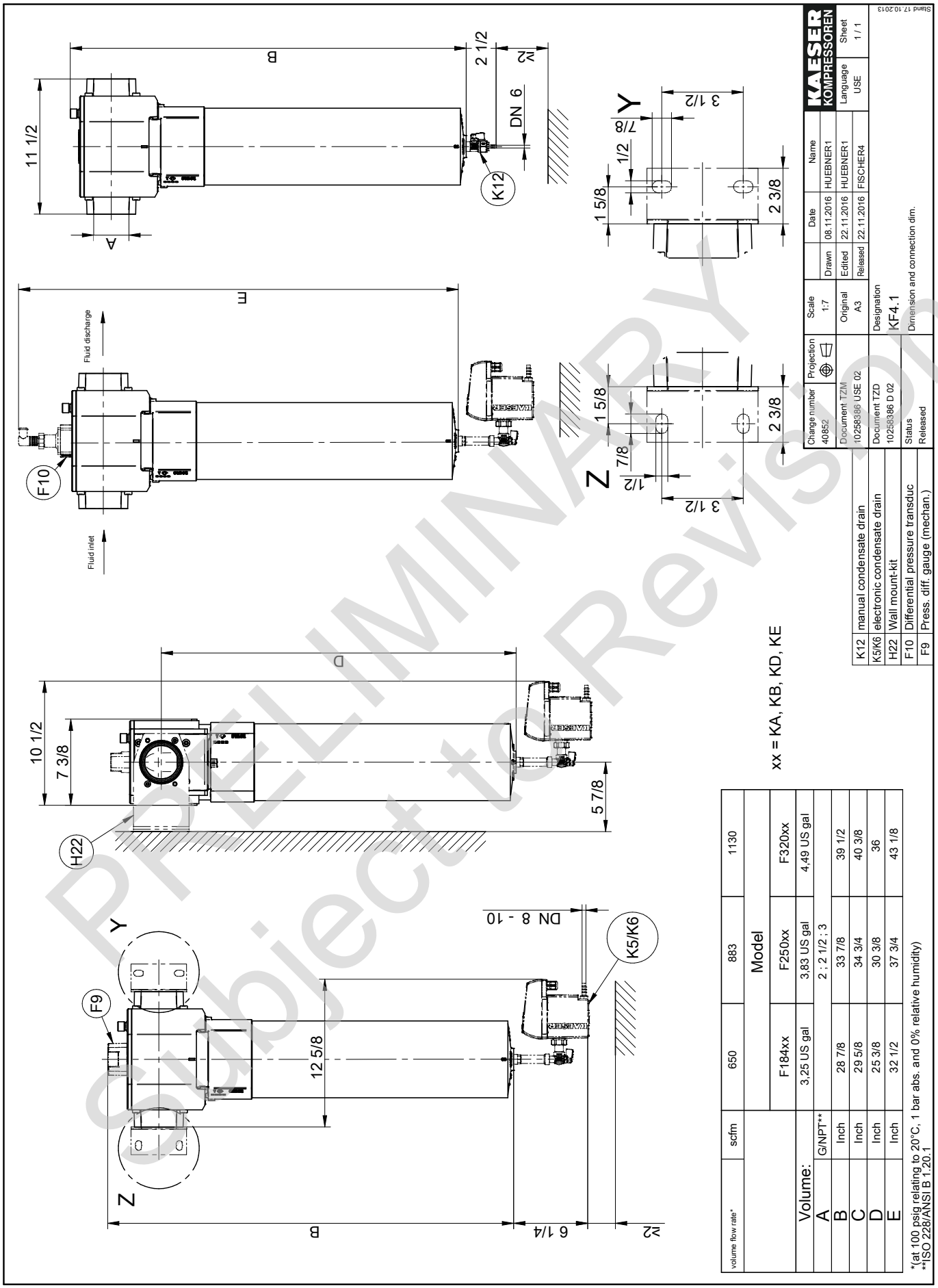
*(at 100 psig relating to 20°C, 1 bar abs. and 0% relative humidity)
**ISO 228/ANSI B 1.20.1

K12	manual condensate drain								
K5/K6	electronic condensate drain								
K13	Automatic condensate drain								
H22	Wall mount-kit								
F10	Differential pressure transduc								
F9	Press. diff. gauge (mechan.)								

Change number	Projection	Scale		Date	Name	KAESER KOMPRESSOREN			
40852		1:4	Drawn	08.11.2016	HUEBNER1				
Document TZM		Original	Edited	06.11.2017	HUEBNER1	Language	Sheet		
10250951 USE 06		A3	Released	15.11.2017	FISCHER4	USE	1 / 1		
Document TZD		Designation							
10250951 D 06		KF3.1							
Status		Dimension and connection dim.							
Released									

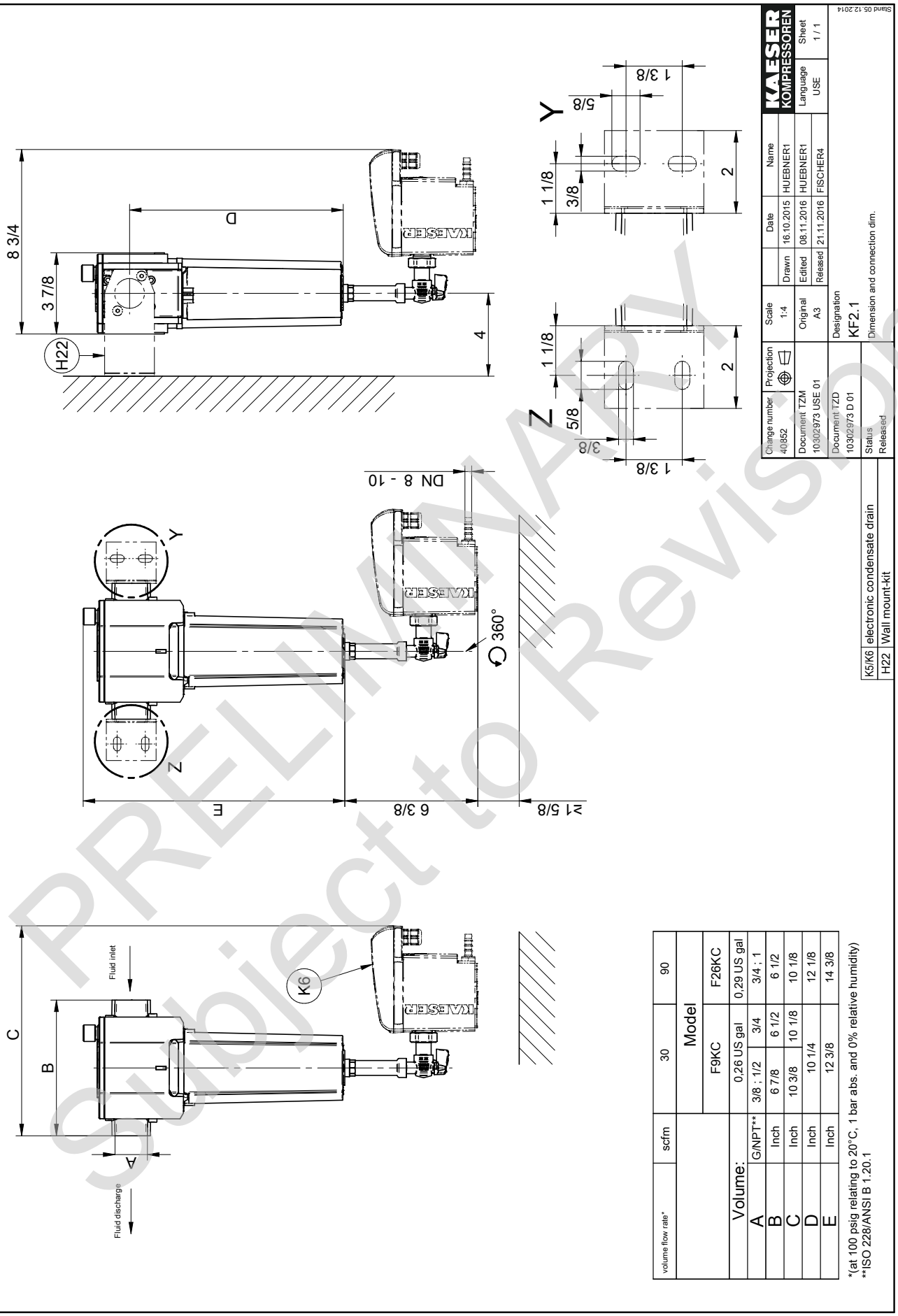
Stand 17.10.2013

PRELIMINARY
Subject to Revision



volume flow rate*		Model			
	scfm	650	883	1130	
Volume:		F184xx	F250xx	F320xx	
A	G/NPT**	3.25 US gal	3.83 US gal	4.49 US gal	
		2 ; 2 1/2 ; 3			
B	Inch	28 7/8	33 7/8	39 1/2	
C	Inch	29 5/8	34 3/4	40 3/8	
D	Inch	25 3/8	30 3/8	36	
E	Inch	32 1/2	37 3/4	43 1/8	

*(at 100 psig relating to 20°C, 1 bar abs. and 0% relative humidity)
**ISO 228/ANSI B 1.20.1



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Document TZM 1030297 3 USE 01		Original A3	Edited	08.11.2016	HUEBNER1		
			Released	21.11.2016	FISCHER4		
Document TZD 1030297 3 D 01		Designation KF2.1					
Status Released		Dimension and connection dim.					

K5/K6	electronic condensate drain
H22	Wall mount-kit

volume flow rate*		scfm	30		90	
			Model			
			F9KC		F26KC	
Volume:			0,26 US gal		0,29 US gal	
A	G/NPT**		3/8 ; 1/2	3/4	3/4 ; 1	
B	Inch		6 7/8	6 1/2	6 1/2	
C	Inch		10 3/8	10 1/8	10 1/8	
D	Inch		10 1/4		12 1/8	
E	Inch		12 3/8		14 3/8	

*(at 100 psig relating to 20°C, 1 bar abs. and 0% relative humidity)
**ISO 228/ANSI B 1.20.1

Stand 05.12.2014

3 Safety and Responsibility

3.1 Intended use

The compressed air filter is suited for the following gaseous fluids:

- Air
- Nitrogen

The compressed air filter is designed solely for the cleaning of the aforementioned fluids in an industrial environment. Any other use is considered incorrect. The manufacturer is not liable for any damage that may result from incorrect use. The operator alone is liable for any risks incurred.

➢ Comply with the instructions in this Operating Manual.

➢ Use the compressed air filter only within its performance limits and under the permitted operating conditions.

This compressed air filter is designed for a stationary use only. Accelerating forces can result in damage. This applies particularly to transportation in a depressurized condition.

➢ The compressed air filter is to be used in a stationary environment only.

3.2 Improper use

Improper usage can cause damage to property and/or (severe) injuries.

➢ Only use the filter as intended.

➢ Do not operate the compressed air filter in air networks with temperatures potentially exceeding 122°F. This may be the case downstream of heat-regenerated desiccant dryers.

➢ Do not operate the compressed air filter in areas in which specific requirements with regard to explosion protection are in force.

➢ Do not use the compressed air as breathing air.

➢ Do not modify the compressed air filter and/or its components.

3.3 Option F8 Ensuring silicon-free operation

Silicones are substances that interfere with paint adhesion and are the main causes for sporadic, funnel-shaped indentations in the paint coat. To avoid such defects, the surfaces of parts through which compressed air flows must be silicone-free.

Only correct and responsible machine operation will ensure that the components in contact with compressed air will be free from substances interfering with paint adhesion.

Installation, commissioning and maintenance

Commission the machine only when proper installation is ensured and it is impossible for substances interfering with paint adhesion to enter components containing compressed air.

➢ Do not allow anyone but an authorized KAESER service representative to perform installation, commissioning and maintenance.

➢ Use only compressed air filters and filter elements identified as "silicone-free", with undamaged packaging, and less than three months in storage.

➢ Wear only work clothes, gloves and shoes that do not emit any substances that interfere with paint wetting.
➢ For the installation and connection to the compressed air system, use only components not emitting substances interfering with paint adhesion.

The following materials must be free of substances interfering with paint adhesion:
- Cleaning agent
- Installation accessories (for example: adhesives, grease)
- Tools

Operation

➢ Ensure that the compressed air filter through which compressed air flows remains free of any substances that would interfere with paint wetting.

Packing and storing

➢ Wear work clothes, gloves and shoes that do not emit any substances that interfere with paint wetting.
➢ If necessary, clean the compressed air filter contaminated with substances that may interfere with paint wetting.
(e.g., Rivolta M.T.X. 60; 9.6808.00020)
➢ Tightly close the compressed air filter with silicone-free film and label with "silicone-free" (add date).
➢ Dispose of used filter elements as per environmental regulations. Do not reuse any filter element.
➢ Do not store longer than three months.

3.4 User's responsibilities

3.4.1 Observe statutory and universally accepted regulations

This is, for example, nationally applied European directives and/or valid national legislation, safety and accident prevention regulations.

➢ Observe relevant statutory and accepted regulations during installation, operation and maintenance of the compressed air filter.

3.4.2 Qualified personnel

These are people who, by virtue of their training, knowledge and experience as well as their knowledge of relevant regulations can assess the work to be done and recognize the possible dangers involved.

➢ Ensure that operating, installation and maintenance personnel are qualified and authorized to carry out their tasks.

3.4.3 Safely handling potential sources of danger

The following describes the various forms of danger that can occur during the operation of the compressed air filter.

Forces of compression

A compressed fluid is stored energy. Uncontrolled release of this energy can cause serious injury or death. The following instructions relate to work on components that may be under pressure.

- ➢ Close shut-off valves or otherwise isolate the machine from the distribution network, so as to ensure that no compressed fluid can flow back into the compressed air filter.
- ➢ Fully vent all pressurized components and enclosures.
- ➢ Do not carry out welding, heat treatment or mechanical modifications on pressurized components, as this will adversely affect their resistance to pressure.
  The safety of the compressed air filter is then no longer ensured.

Compressed air quality

The composition of the fluid must be suitable for the actual application in question, in order to preclude health and life-threatening dangers.

- ➢ Use suitable treatment systems when using compressed air as breathing air and/or for the processing of food products.

Nitrogen release

Nitrogen is a colorless, odorless and tasteless gas that can displace the oxygen out of the breathable air. Should the level of oxygen in the breathable air drop too low (<19.5 vol.%), abrupt loss of consciousness can occur without warning. At high levels of nitrogen, only a few breaths can be fatal.

- ➢ Observe local gas safety regulations when handling gases that displace oxygen from the breathable air.
- ➢ Observe the permissible levels of harmful substances in the breathable air as per OSHA 29CFR1910.134 / FDA 21CFR178.3570.
- ➢ Install a suitable warning system for monitoring oxygen levels in the breathable air and providing a reliable acoustic or visual warning for personnel in the event of a dangerous situation developing.
- ➢ Before entering, ensure that the machine room is sufficiently ventilated and the air is being continuously replaced.
- ➢ Only enter a room that could be subject to reduced levels of oxygen under the observation of a second person.

Temperature

High temperatures are generated during compression. Touching hot components may lead to injury.

- ➢ Allow surfaces to cool down sufficiently.
- ➢ Avoid contact with hot surfaces.
- ➢ Wear protective clothing.

Unsuitable spare parts

Unsuitable spare parts compromise the safety of the compressed air filter.

- ➢ Only use spare parts approved by KAESER for use in this compressed air filter.
- ➢ Use only genuine KAESER spare parts on pressure-bearing components.

Conversion or modification

Modifications, additions, or conversions can result in unpredictable hazards.

➢ Do not convert or modify the compressed air filter.

3.4.4 Safe operation of the compressed air filter

The following is information supporting you in the safe handling of the filter during individual product life phases.

Personal protective equipment

When working on the compressed air filter, you may be exposed to dangers that can result in accidents with severe adverse health effects.

➢ Wear protective clothing as necessary.

Suitable protective clothing (examples):

- Safety workwear
- Protective gloves
- Safety boots
- Eye protection

Transport

Depending on the weight and size, specific safety measures must be taken during transport, in order to prevent accidents.

➢ Use suitable lifting gear that conforms to local safety regulations.
➢ Allow transportation only by personnel trained in the safe movement of loads.
➢ Attach lifting gear only to suitable lifting points.
➢ Make sure the danger zone is clear of personnel.

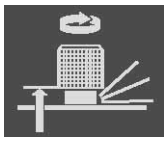
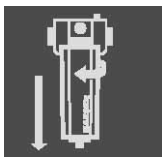
Assembly

➢ Use only electrical cables that are suitable and approved for the surroundings and electrical loads applied.
➢ Never dismantle compressed air pipes until they are fully vented.
➢ Use compressed air conduits suited and approved for the maximum working pressure.
➢ Do not allow connection pipes to be placed under mechanical stress.
➢ Do not induce any forces into the compressed air filter via the connections, so that the compressive forces must be balanced by bracing.
➢ Ensure accessibility to the compressed air filter so that all work can be carried out without danger or hindrance.
➢ Ensure frost protection if the compressed air filter is to be installed in open air.
➢ Do not operate in areas in which specific requirements with regard to explosion protection are in force.
➢ Ensure sufficient and suitable lighting such that the display can be read and work carried out comfortably and safely.
➢ The lower the temperature of the fluid in the filter, the higher its degree of efficiency.
➢ In the event of a surface temperature of the compressed air filter expected to exceed 122°F: Shield the compressed air filter and/or use suitable labelling to warn against hot surfaces.

Commissioning, operation and maintenance

During commissioning, operation and maintenance you may be exposed to dangers resulting from, e.g., electricity, pressure and temperature. Careless actions can cause accidents with severe adverse effects for your health.

➢ Refer to the quick installation guide:

	Symbol	Meaning
1.		➢ Read and understand the operating manual and all safety instructions prior to use.
2.		➢ Only loosen the locking screw manually! ➢ Wait until the compressed air filter is fully depressurized.
3.		➢ Carefully remove the filter bowl

Tab. 13 Quick installation guide

➢ Allow maintenance work to be carried out only by authorized personnel.
➢ Wear tightly fitting clothing. Wear protective clothing as necessary.
➢ Check that there is no voltage on floating relay contacts.
➢ Depressurize all pressurized components and enclosures.
➢ Allow the compressed air filter to cool down.
➢ Use the compressed air filter only with a suitable condensate drain.
➢ Use only spare parts approved by KAESER for use in this compressed air filter.
➢ Carry out regular inspections:
for visible damages,
of the safety installations,
of the components requiring monitoring.
➢ Pay particular attention to cleanliness during all maintenance and repair work. Cover components and openings with clean cloths, paper or tape to keep them clean.

Decommissioning, storage and disposal

Improper handling of used filter elements may endanger the environment.

➢ Dispose of the old parts in accordance with local environmental regulations.

3.5 Environment protection

The operation of the compressed air filter may cause dangers for the environment.

➢ Do not allow cooling oil to escape to the environment or into the sewage system.

- ➢ Store and dispose of replaced parts in accordance with local environmental protection regulations.
- ➢ Observe national regulations.
  This applies particularly to parts contaminated with cooling fluids or oil.

3.6 Copyright

This operator manual is copyright protected. Queries regarding use or duplication of the documentation should be referred to KAESER. Correct use of information will be fully supported.

4 Design and Function

4.1 General design

This section provides information on the design of the compressed air filter, using a filter combination KEA as example.

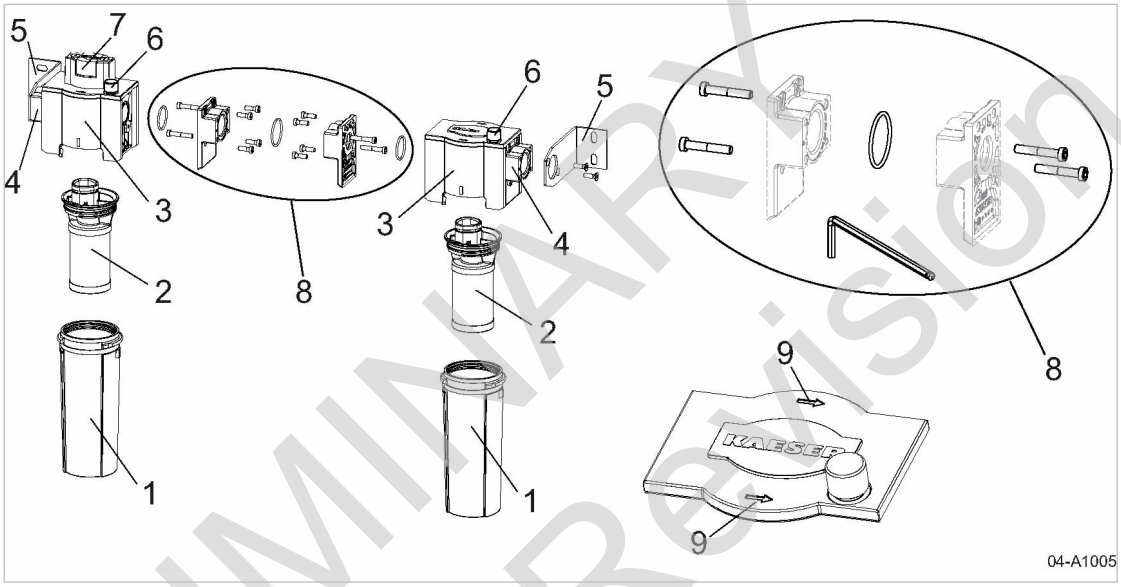


Fig. 2 General design

1	Filter bowl	6	Locking screw
2	Filter element	7	Differential pressure gauge
3	Filter head	8	Connection kit
4	Connection flange	9	Flow direction (example)
5	Wall bracket kit		

The filter bowl [1] receives the filter element [2].

The connection flanges [4] at the filter head [3] connect the compressed air filter with the air network. The connection flanges have been designed in such a manner that you can extend the compressed air filter to a filter combination, using the connection kit [8].

The arrows [9] on the filter head indicate the direction of flow.

The wall bracket [5] bears the weight and relieves the compressed air lines. The flow direction may differ, depending on the filter grade.

The retaining screw [6] secures the filter housing against unintended opening. The compressed air filter is vented as soon as the retaining screw is loosened.

The pressure differential gauge [7] provides information regarding the pressure difference between fluid inlet and fluid outlet.

4.2 Condensate drain

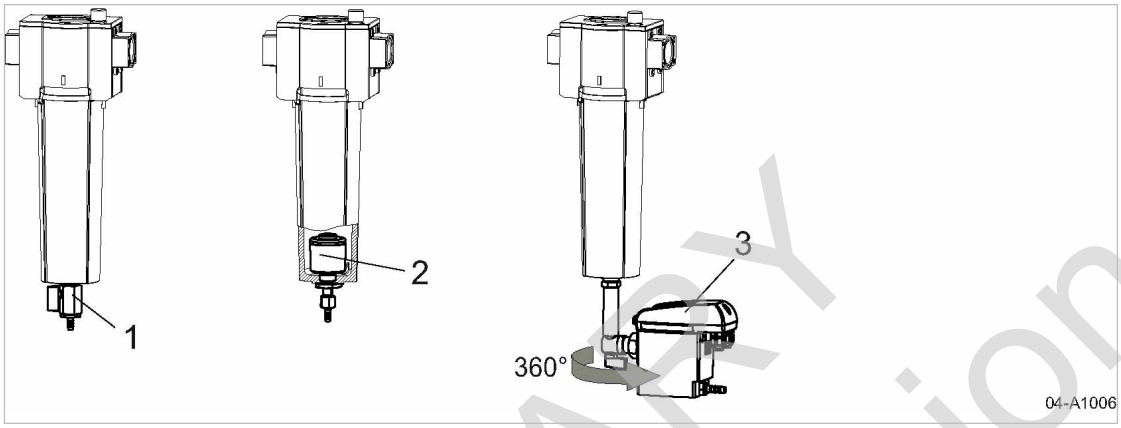


Fig. 3 Condensate drain

1 Manual condensate drain (ball valve)
2 Automatic condensate drain (internal float)
3 Electronic condensate drain

Option K12 Manual condensate drain

A manual condensate drain is provided in compressed air filters with degree of filtration KD and KA. The manual condensate drain is optional for compressed air filters with filter grade KE. It is only used for inspection as fluid is not removed from the compressed air flow. In a fault, oil or an oil-water mixture will escape.

Option K13 Automatic condensate drain

An automatic condensate train with internal float is installed as standard in compressed air filters with degree of filtration KB and KE. It opens automatically as soon as sufficient liquid has accumulated in the filter bowl.

Option K5/K6 Electronic condensate drain

In compressed air filters with degree of filtration KB and KE, an electronic condensate drain is offered as alternative option (Option K5). The electronic condensate drain opens automatically as soon as sufficient liquid has accumulated in the filter bowl.

In the variant of an electronic condensate drain with alarm contact (Option K6), a floating relay contact will transmit a signal in the event of a fault. Compressed air filters with degree of filtration KC are supplied with this condensate drain as standard.

The electronic condensate drain works more precisely, more reliably, causes lower pressure losses, and has a longer maintenance interval. It can be tilted horizontally by 360 degrees.

Further information The operating instructions for the electronic condensate drain are supplied in chapter 9.2.

4.3 Option F9
Pressure differential gauge

The pressure differential gauge does not provide maintenance information. The filter material ages due to the continuous use, regardless of the value of the differential pressure shown.

➢ Clean the disk of the measured value display only with solvent-free cleaning agents.

The pressure differential gauge indicates the pressure difference currently existing between fluid entry and fluid outlet.

As a rule, the pressure differential of a new filter element will slightly rise within a short time, and then remain at this level for a long time.

KAESER recommends an early replacement of the filter element if the display changes into the range around 5 psi (350 mbar) prior to the expiration of the regular maintenance interval for the filter element.

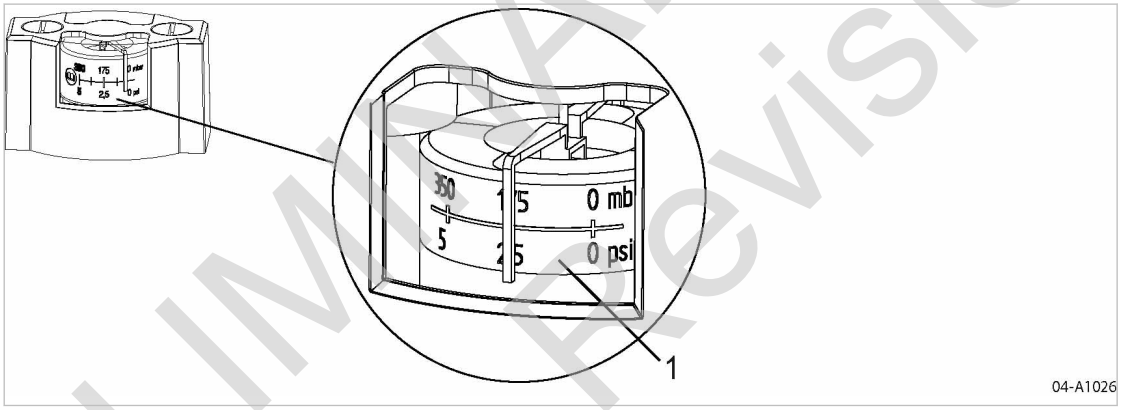


Fig. 4 Pressure differential gauge

[1] Measured value display

4.4 Option F10
Differential pressure transducer

The differential pressure transducer does not represent service monitoring. The filter material ages due to continuous use, regardless of the value of the differential pressure calculated.

A significant change in the differential pressure indicates a fault.

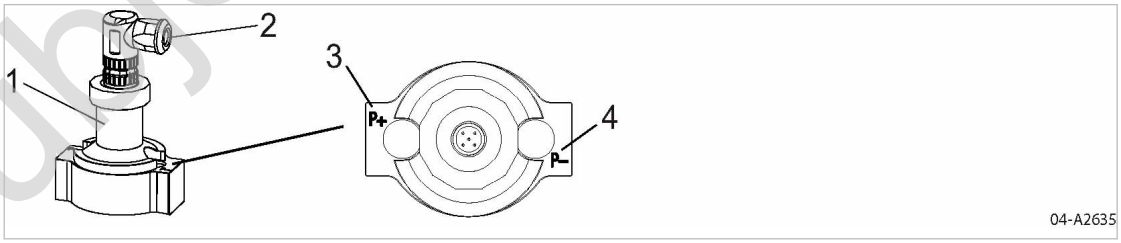


Fig. 5 Differential pressure transducer

[1] Differential pressure transducer
[2] Electrical connection
[3] P+: Fluid inlet
[4] P–: Fluid outlet

The differential pressure transducer calculates the relative pressure at the fluid outlet (P–) and the current pressure differential between fluid inlet and fluid outlet. It returns electrical signals which may be processed by, for example, a master controller.

As a rule, the pressure differential of a new filter element will slightly rise within a short time, and then remain at this level for a long time.

KAESER recommends an early replacement of the filter element if the differential pressure exceeds 350 mbar (5 psi) prior to the expiration of the regular maintenance interval for the filter element.

The differential pressure transducer is maintenance-free.

4.5 Flange adapter

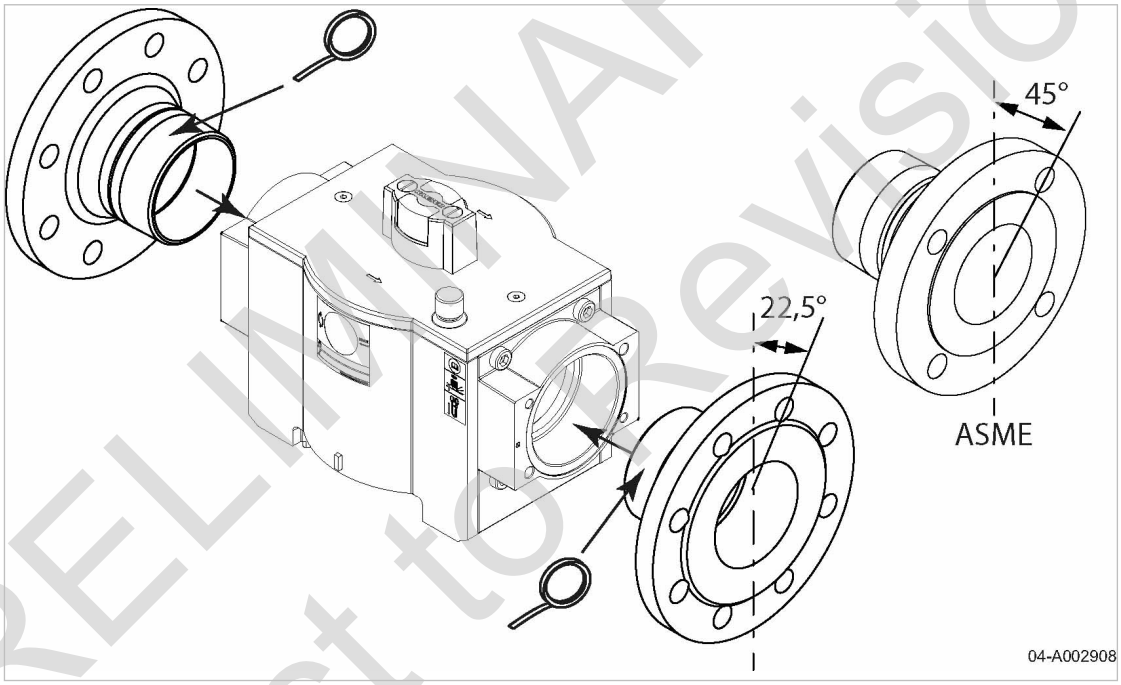


Fig. 6 Flange adapter

In the case of large thread diameters, you can request flange adapters for a flange connection to the compressed air network.

If using the wall-bracket kit (Option H22), first attach the wall bracket to the filter head. For the flange adapter use a suitable sealing strip or a low-adhesion thread lock adhesive.

5 Installation and commissioning

5.1 Reporting transport damage

1. Check the compressed air filter for visible and hidden transport damage.
2. Inform the carrier and the manufacturer in writing of any damage immediately.

5.2 Determining location and clearances

A suitable installation location has a decisive influence on the function of the compressed air filter.

➢ Select a location taking the various aspects into account.

5.2.1 Considering the air network

➢ Install the compressed air filter at a location at which the compressed air is coldest (free of frost). This is the case downstream of compressed air driers, air after-coolers, or storage tanks.

➢ If surface temperatures exceeding 122°F are to be expected, label the relevant components accordingly, and secure them against unintended contact.

➢ Maintain sufficient distance to the bottom, in order to be able to remove the filter bowl.

➢ Use KAESER wall brackets to ensure sufficient distance to the walls.

➢ Use the KAESER wall brackets to ensure that forces from the air network cannot be transferred to the compressed air filter.

➢ Do not install the compressed air filter at locations subject to sever and frequent fluctuations in pressure and flow rate.

➢ Load the compressed air filters as evenly as possible with their nominal flow rate.

➢ Ensure that air can flow through the compressed air filter only in the direction of flow.

➢ If you fit the compressed air filter with a bypass line, you must ensure the protection of downstream systems against contamination.

➢ If installed outdoors, the compressed air filter must be protected from frost, direct sunlight, and rain.

➢ If the design conditions for the air network change, please have an authorized KAESER service representative check as to whether the compressed air filter can still be used.

5.2.2 Considering the degrees of filtration

Compressed air filter degree of filtration KB must be protected from large quantities of drops of liquid, for example, in tropical regions.

➢ In such a situation, connect an upstream cyclone separator (degree of filtration KC).

Compressed air filters with degree of filtration KE must be protected from large quantities of drops of liquid and solid particles.

➢ In this case, install upstream a compressed air filter with degree of filtration KB.

➢ When using a compressed air filter with degree of filtration KBE, always install upstream a compressed air filter with degree of filtration KC.

➢ Prevent the introduction of drops of liquid in a compressed air filter with degree of filtration KA.

➢ If, downstream of a dry (oil-free) compressor, drops of liquid and dirt particles are to be filtered, use a combination of a compressed air filter with degree of filtration KB and a compressed air filter with degree of filtration KE.

5.3 Option H22 Installing the wall bracket kit

The weight of the compressed air filter increases if a fault causes the filter bowl to fill with condensate.

Suitable fixing elements depend also on the properties of the mounting surface.

➢ Select a sufficiently sized fixing element.

The wall bracket kit consists of two metal brackets and four screws.

Material Four suitable wall plugs and screws

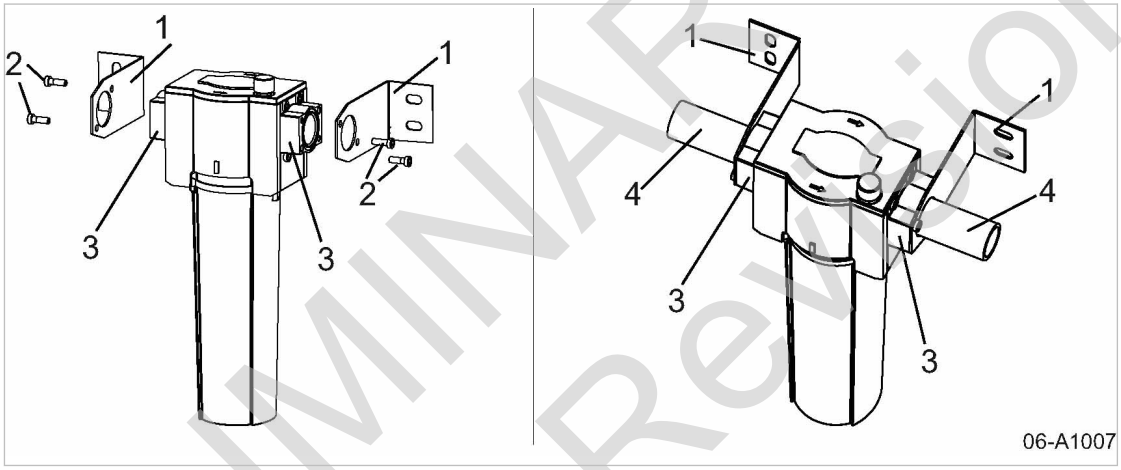


Fig. 7 Installing the wall bracket

[1] Metal bracket
[2] Screw
[3] Compressed air connection
[4] Compressed air line

1. Install the metal brackets [1] in appropriate distance at the wall.
2. Install the housing head with screws [2] between the metal brackets.
3. Connect the compressed air line [4].

Further information The dimensions are provided in chapter 2.6.

5.4 Installing the compressed air filter in the compressed air network

In order to simplify the installation, the filter head, filter element and filter bowl are provided separately.

In the case of large thread diameters, you can request flange adapters for a flange connection to the compressed air network.
First, screw the flange adapters into the connecting flanges of the filter head, before connecting the pre-assembled filter head with the air network.

➢ Install shut-off valves upstream and downstream of the compressed air filter, in order to perform maintenance on the compressed air filter without having to depressurize the entire air network.

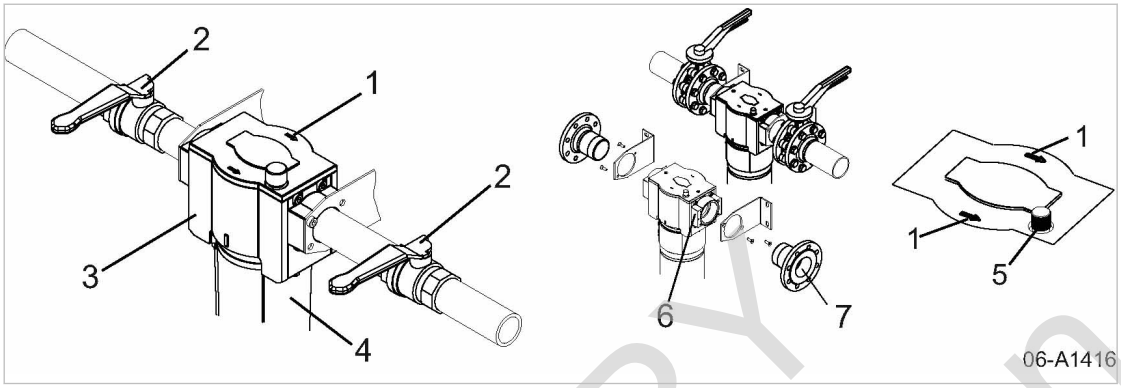


Fig. 8 Installing the compressed air filter

1	Direction of flow	5	Locking screw
2	Shut-off valve	6	Connection flange
3	Filter head	7	Flange adapter
4	Filter bowl (with filter element)		

1. Ensure correct direction of flow.
2. Attach the filter head as fully as possible.
3. Properly attach the compressed air hose to the filter head.
4. Install the assembly between the shut-off valves.
5. Install the filter element and the filter bowl as described in chapters 6.2.2 and 6.2.3.
6. Tighten the locking screw.

5.5 Installing the connection kit

You need the connection kit only if you want to install at least two compressed air filters in series.

➢ Do not exceed the specified maximum tightening torque of the screws:
Filter size 6 – 9: 3.7 lbf-ft
Filter size 16 – 26: 3.7 lbf-ft
Filter size 46 – 142: 7.4 lbf-ft
Filter size 184 – 320: 11.1 (M8) / 18.4 (M10) lbf-ft

➢ Use only original screws supplied by KAESER!

Material Connection kit
Torque wrench

Precondition The compressed air filter is vented completely to atmospheric pressure.

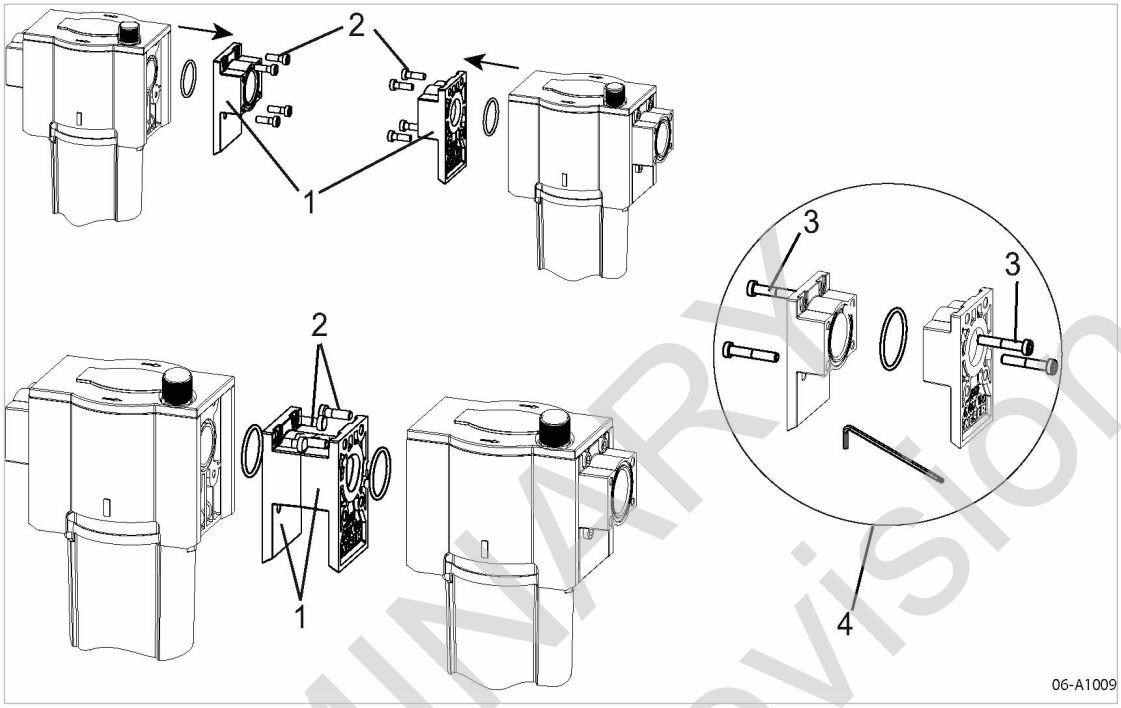


Fig. 9 Installing the connection kit

1	Connection flange	3	Screws
2	Screws	4	Connection kit

1. Loosen the screw 2 and remove the connecting flanges 1.
2. Use the connection kit 4 consisting of an O-ring and screws 3 to connect the two connecting flanges 1 with each other.
3. Use all screws 2, and install the connecting flanges 1 with O-rings at the filter heads.

5.6 Option K5/K6/K13 Connecting the condensate drain

The condensate must be able to drain freely.

➢ If applicable:
Note the information provided in the operating manual for the electronic condensate drain in chapter 9.2.

➢ Reduce the delivery head for applications where only little condensate is separated.

Fig. 10 illustrates the recommended installation.
Condensate flows downward into the condensate manifold. This prevents condensate from the condensate manifold to flow back into the compressed air filter.

If condensate flows at several point points into the condensate manifold, you must install a shut-off valve in each condensate line to enable individual shut-off of the condensate lines before starting maintenance work.

Condensate line

Feature	Value
Max. length [1] [ft.]	50
Max. delivery head [ft.]	16
Material (pressure-resistant, corrosion-proof)	Copper Stainless steel Plastics Hose line
[1] For longer lengths, please contact KAESER before installation.	

Tab. 14 Condensate line

Condensate manifold

Feature	Value
Gradient [%]	>1
Max. length [1] [ft.]	65
Material (pressure-resistant, corrosion-proof)	Copper Stainless steel Plastics Hose line
[1] For longer lengths, please contact KAESER before installation.	

Tab. 15 Condensate manifold

Compressed air flow rate[1] [cfm]	Line cross-section ["]
<350	3/4
350 – 700	1
701 – 1400	1 1/2
>1400	2
[1] Compressed air flow rate as guide for the condensate volume to be expected	

Tab. 16 Condensate manifold: Line cross-section

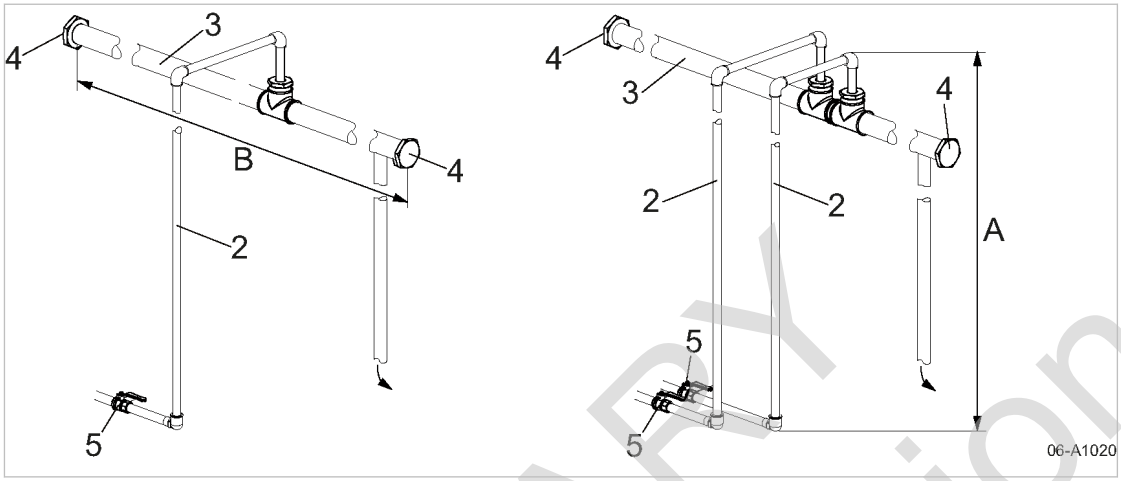


Fig. 10 Connect the condensate drain

[2] Condensate line
[3] Condensate manifold
[4] Screw plug
[5] Shut-off valve
[A] Delivery head
[B] Length of the condensate manifold

➢ Directly connect every condensate drain to the condensate manifold.

➢ Collect the condensate in a suitable container and dispose of it in accordance with local environmental regulations.

5.6.1 Installing the electronic condensate drain

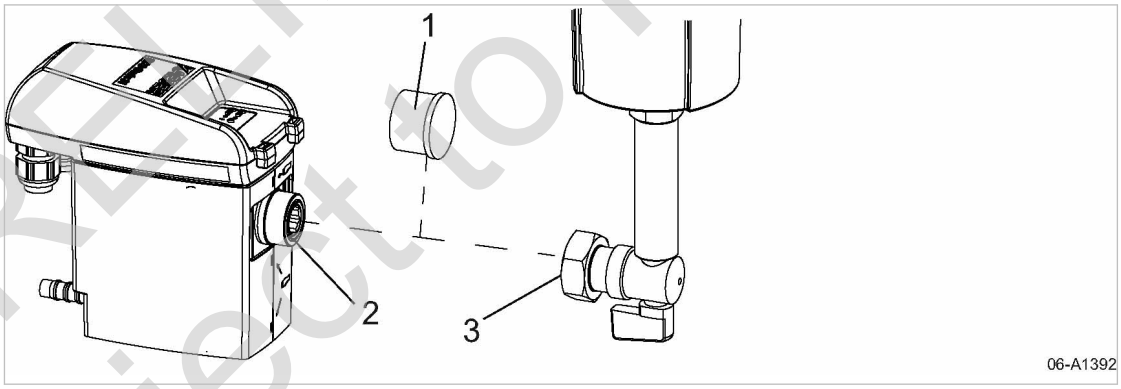


Fig. 11 Installing the electronic condensate drain

[1] Cap
[2] Gasket
[3] Union nut

1. Remove cap [1].
2. Verify that the gasket [2] is present.
3. Attach the electronic condensate drain to the shut-off valve with the union nut [3], and connect electrically.

5.7 Option F10
Installing the pressure differential transducer

Material Shielded multi-core cable:
Connection cross-section max. 0.03 in^2
External diameter 0.2–0.3 in.

Precondition The compressed air filter is fully vented to atmospheric pressure.
The electrical connection is de-energized.

Reverse polarity protection for interchanged connections:
- No damage
- No function

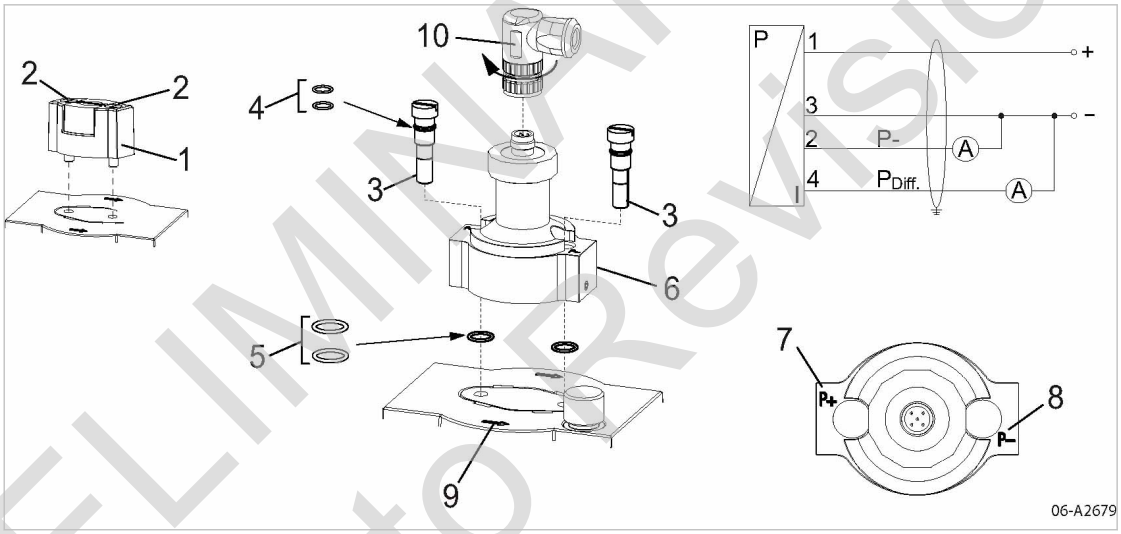


Fig. 12 Installing the pressure differential transducer

1	Differential pressure gauge	6	Differential pressure transducer
2	Self-sealing screws	7	P+: Fluid inlet (higher pressure)
3	Fastening screw	8	P–: Fluid outlet (lower pressure)
4	O-ring	9	Direction of flow
5	O-ring	10	Connecting plug with knurl

1. If required:
   Remove the self-sealing screws 2 and carefully remove the differential pressure gauge 1.
2. Place O-rings 4 in the groove of the fastening screws 3.
3. Use O-rings 5, ensure correct direction of flow 7, 8, 9 and place the differential pressure transducer 6 on the filter head.
4. Tighten the fastening screws 3 with a torque of max. 3 lbf-ft.
5. Electrically connect the connection plug.
6. Plug the connection plug onto the differential pressure transducer and tighten it with the knurl.

5.8 Commissioning the compressed air filter

High flow velocities are generated in all components of an air network when an empty air network is filled. Treatment equipment cannot work under these circumstances. Solid particles, aerosols and vapors will flow through the network without being filtered. These conditions could damage the material of the filter elements.

➢ Install an air main charging system from KAESER to fill your air network.

You will avoid subsequent damages caused by contaminated compressed air.

➢ Fill the air network slowly, in order not to exceed the permissible volume flow of the compressed air filter.

Newly installed compressed air lines may be contaminated (by shavings or chips, for example). These contaminations can adversely affect the function of the filter and the condensate drain.

➢ Vent the compressed air filter after first use, clean the filter bowl, and check the functioning of the condensate drain.

6 Maintenance

6.1 Regular maintenance tasks

The table below lists the required maintenance tasks.

The actually required intervals depend very much on the application conditions of the compressed air filter.

➢ Take these recommendations as a baseline and discuss with a KAESER service representative the economically appropriate intervals.

➢ Carry out maintenance tasks in a timely manner and according to the operating conditions:

Interval	Maintenance task	See chapter
Weekly	Check the compressed air filter for condensate. (Only filter grade KD and KA; optional KE)	6.5
	Electronic condensate drain: Check functionality.	9.2
See maintenance plate Up to 1000 h	Replacing the filter element: ■ KA	6.2
See maintenance plate At least annually Option K6 (ECO-DRAIN 31F): Display for monitoring function for the filter element (see chapter 9.2)	Replacing the filter element: ■ KB ■ KD ■ KE	6.2
At least annually	Automatic condensate drain: Replace the float.	6.4
At the latest every 2 years Option K6 (ECO-DRAIN 31F): Display for monitoring function for the condensate drain (see chapter 9.2)	Electronic condensate drain: Replace the service unit.	6.3
h = operating hours		

Tab. 17 Regular maintenance tasks

6.2 Replacing the filter element

The filter element of the cyclone separator (degree of filtration KC) does not require servicing.

➢ Carefully handle and manually install all components in order to avoid damages. This applies to sealing surfaces, in particular.

Material KAESER filter element (including silicone-free sealing grease and O-ring)

6.2.1 Removing the filter element

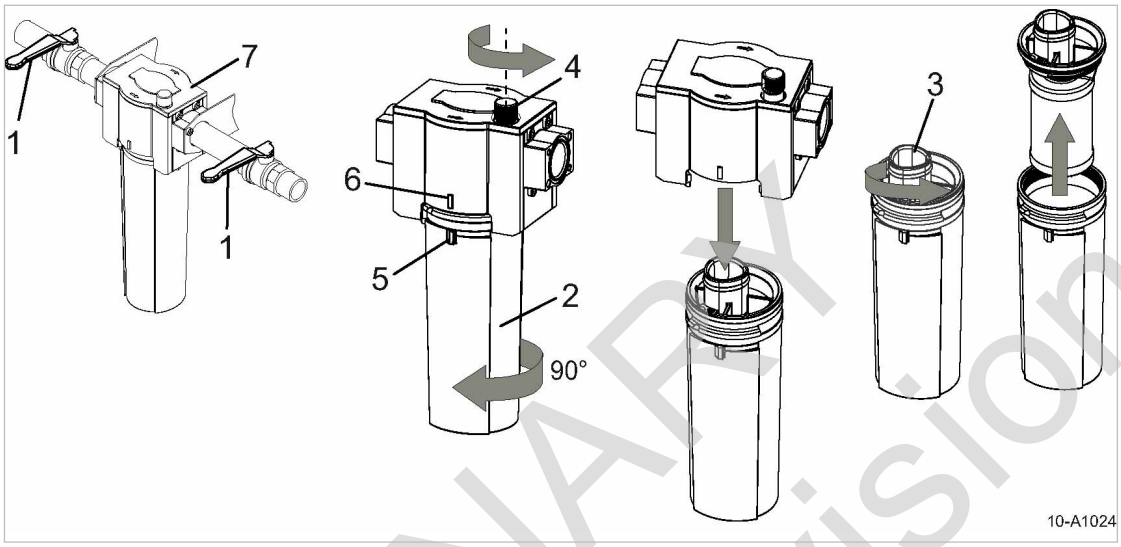


Fig. 13 Removing the filter element

[1]	Shut-off valve	[5]	Installation mark at the filter bowl
[2]	Filter bowl	[6]	Installation mark at the filter head
[3]	Filter element	[7]	Filter head
[4]	Locking screw (secured against full removal)		

1. Close the shut-off valve [1].
2. Loosen the locking screw [4] manually until you feel again resistance.
   If the compressed air filter was pressurized, the residual compressed air will escape.

The equipment emits persistent whistling?

The compressed air filter is pressurized!

➢ Disconnect the compressed air filter from the air network, or depressurize the entire air network.

3. Gently jiggle the filter bowl [2] and than turn by 90° until the installation markings at filter bowl [5] and filter head [6] face each other.
4. Remove the filter bowl and the screwed-in filter element vertically downward.
5. Unscrew the filter element [3] (approx. 1 1/2 turns) from the filter bowl.
6. If required: Drain and dispose of the condensate.
7. Check the filter bowl for corrosion.

The filter bowl is clearly corroded?

➢ Determine the cause (e.g., composition of the compressed air, operating conditions)

➢ Replace the compressed air filter completely.

Dispose of the contaminated filter element according to environmental regulations.

6.2.2 Installing the filter element

➢ Do not touch the surface of the filter material.

Precondition The inner surfaces of the filter head and the filter bowl are clean.

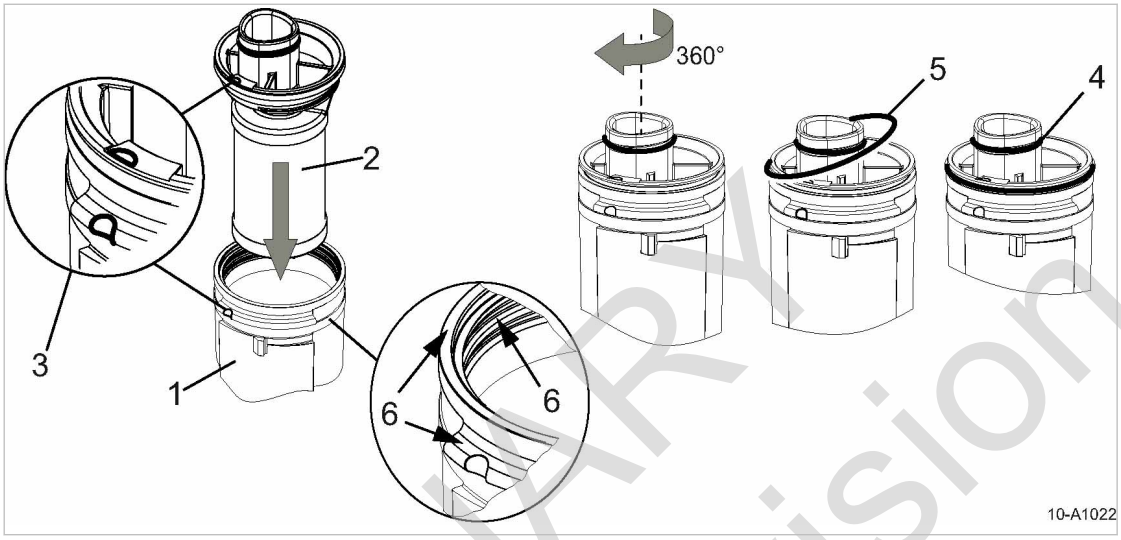


Fig. 14 Installing the filter element

1	Filter bowl	4	O-ring
2	Filter element	5	O-ring
3	Installation marks	6	Surface to be greased

1. Grease the thread, front surface, and bayonet catch of the filter bowl (item 6).
2. Push the filter element 2 into the filter bowl 1 in such a manner that the installation marks 3 are aligned to each other.
3. Use one turn to screw the filter element into the filter bowl.
4. Fully grease the O-ring 5 and insert between filter element and filter bowl.
5. Grease the O-ring 4.

6.2.3 Installing the filter bowl

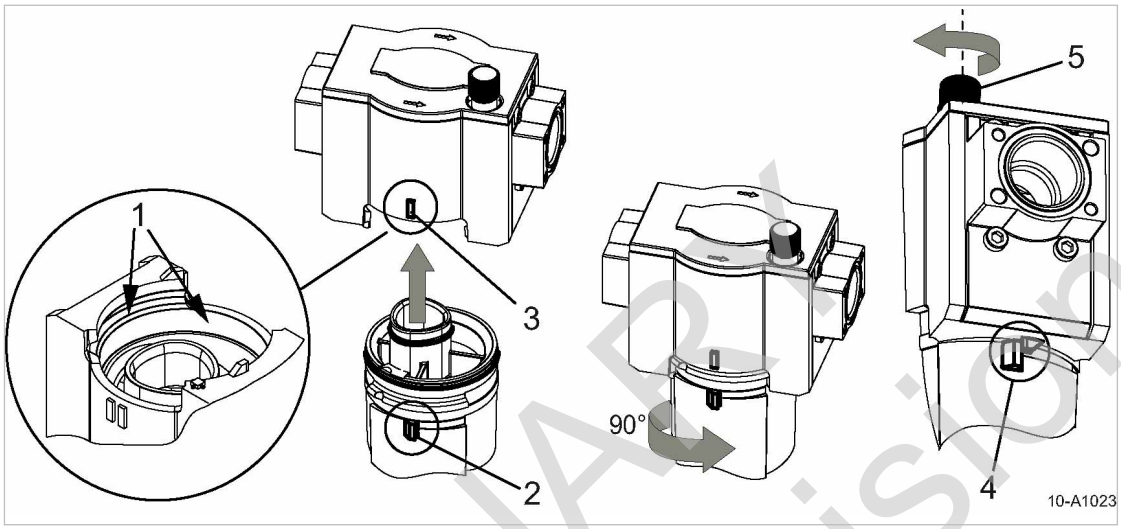


Fig. 15 Installing the filter bowl

[1] Surface to be greased
[2] Installation mark at the filter bowl
[3] Installation mark at the filter head
[4] Stop at the filter head
[5] Locking screw

1. Grease the interior of the filter bowl (item [1]).
2. Align the installation marks ([2] and [3]) at filter bowl and housing head to each other.
3. Insert the filter bowl into the filter head.
4. Turn the filter bowl 90° to the stop [4].
5. Manually tighten the locking screw [5].

? You cannot tighten the locking screw?
The bayonet catch of the filter bowl is not fully closed.
➤ Turn the filter bowl to the stop.

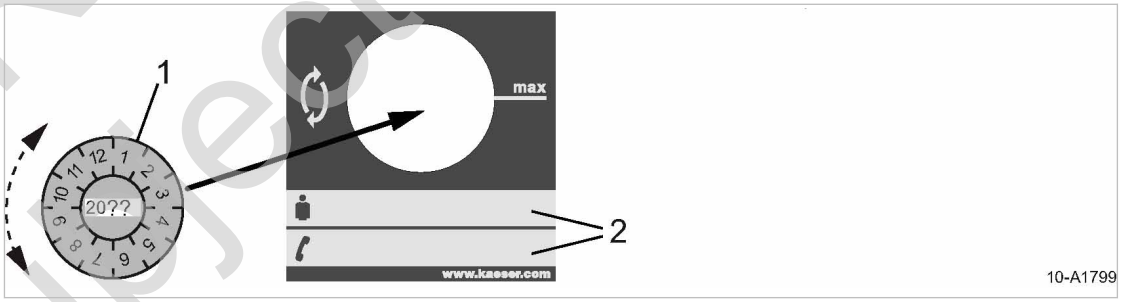


Fig. 16 Amending the maintenance sticker

[1] Maintenance sticker
[2] Service contact information

6. Inscribe the maintenance sticker with the year for the next maintenance.
7. Attach the maintenance sticker in such a manner that the marking *max* points to the month for the next maintenance.

6.2.4 Pressurizing the compressed air filter

A high flow rate of the fluid may damage the filter material.

1. Check as to whether the locking screw was properly tightened manually.
2. Slowly open the shut-off valve at the **fluid inlet**.
3. Slowly open the shut-off valve at the fluid outlet.

6.3 Option K5/K6 Changing the service unit

The condensate drain cannot be cleaned. The service unit must be changed if condensate does not drain.

Material Sealing tape for sealing the screw-in part

If required: O-ring 16x2 (5.1519.0)

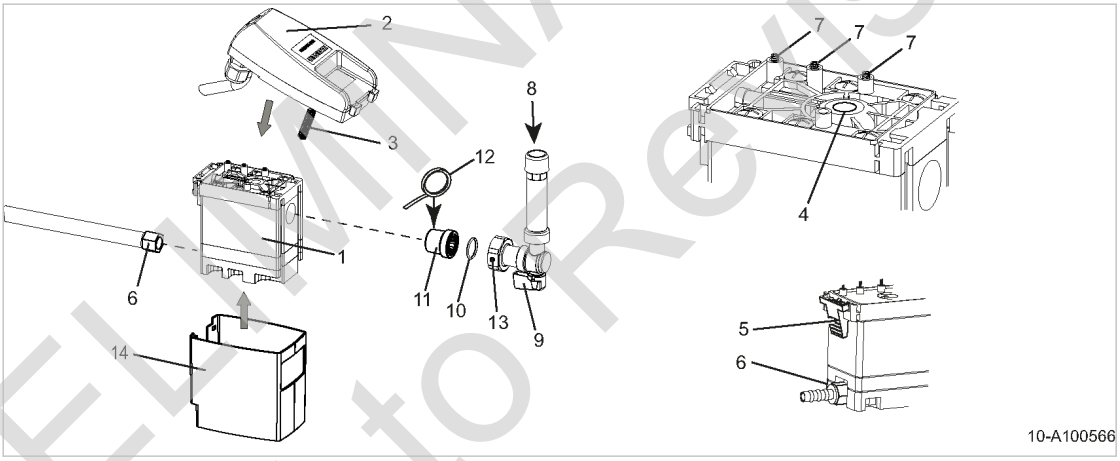


Fig. 17 Change the service unit

1	Service unit	8	Condensate inlet
2	Control unit	9	Shut-off valve
3	Sensor	10	O-ring
4	Sensor opening	11	Screw-in part
5	Snap fastener	12	Sealing tape
6	Condensate line screw connection	13	Clamping nut with vent hole
7	Contact springs	14	Casing

Removing the service unit

1. **⚠ WARNING** *Serious injury or death can result from loosening or opening components under pressure!*
   ➢ *Fully vent all pressurized components and enclosures.*
2. Close the shut-off valve 9 upstream of the condensate drain.
3. Unscrew the screw connection 6 at the condensate line.
4. Press the snap fastener 5 and carefully remove the control unit 2 from the service unit 1.
5. Carefully loosen the clamping nut 13 at the shut-off valve 9 until remaining residual air has escaped through the venting hole.

6. Unscrew the screw-in part [11] from the service unit and place aside.
7. Remove the casing [14] from the service unit.

Installing the service unit

Use only KAESER service units to ensure correct function of the condensate drain.

Precondition Make sure that the top of the service unit and the contact springs are clean and dry.

1. Fit the casing [14] to the service unit [1].
2. Carefully insert the sensor [3] of the control unit [2] in the opening [4] of the service unit.
3. Place the snap fastener [5] of the control unit into the service unit eyes.
4. Press the control unit against the service unit until the snap fastener can be heard clicking into place.
5. At the screw-in part [11], replace old sealing material with new sealing tape.
6. Install the screw-in part into the service unit and tighten to a maximum of 20 Nm.
7. If necessary, insert a new O-ring [10].
8. Tighten the clamping nut [13] at the shut-off valve [9].
9. Attach the condensate line.
10. Open the shut-off valve upstream of the condensate drain.

6.4 Option K13 Automatic condensate drain; Replacing the float

See chapter 6.2 for information on the removal and re-installation of the filter bowl.

Precondition The filter housing is fully vented.

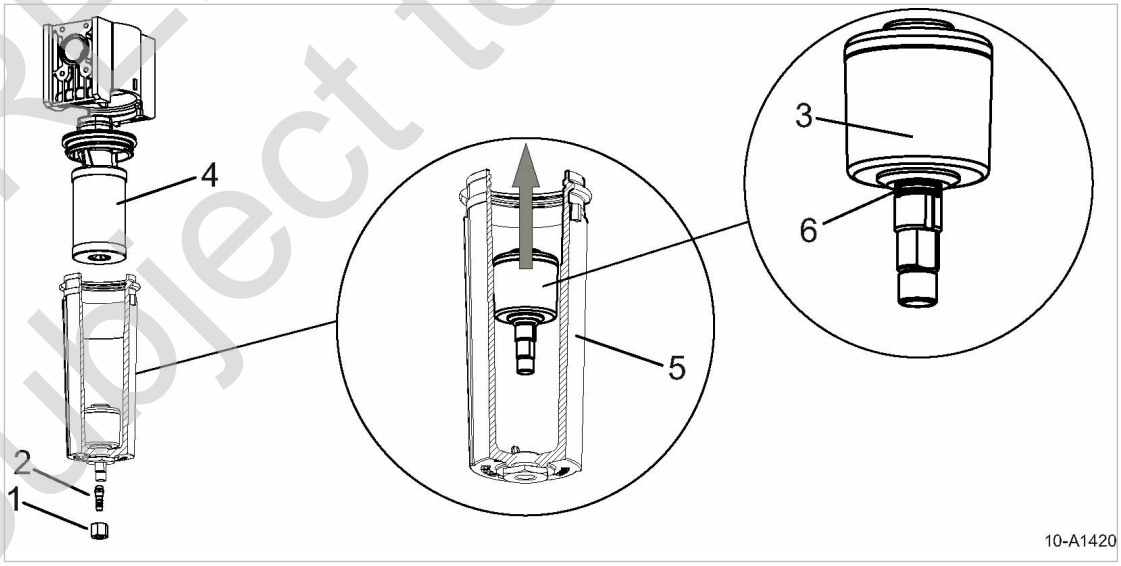


Fig. 18 Replacing the float

[1] Union nut
[2] Hose coupling
[3] Float
[4] Filter element
[5] Filter bowl
[6] O-ring

1. Undo the union nut [1] and remove the hose coupling [2].
2. Remove the filter bowl [5] and the filter element [4].
3. Turn the float [3] clockwise until it is fully removed from the filter bowl.
4. Check whether the O-ring [6] at the bottom of the new float is fully inserted in the groove.
5. Manually screw the float drain into the filter bowl and finally tighten with 3 lbf-ft.
6. Install the filter element and the filter bowl.
7. Install the hose coupling with the union nut.

6.5 Option K12 Checking the compressed air filter for condensate

Precondition The filter bowl is pressurized.

Wear safety glasses.

Fig. 19 Checking the compressed air filter for condensate

[1] Shut-off valve
[2] Hose coupling

1. Place a suitable container under the condensate drain.
2. Install a sufficiently long, transparent, and pressure-tight hose at the hose coupling and the collection container.
3. Carefully open the shut-off valve and close immediately when fluid escapes.

? In case of a fault, oil or an oil-water mixture will escape first.

➢ Examine and eliminate the cause of this fault.

7 Spares, Operating Materials, Service

7.1 Note the nameplate

The nameplate contains all information to identify your filter. This information is essential to us in order to provide you with optimal service.

➢ Please give the information from the nameplate with every inquiry and order for replacement parts.

7.2 KAESER AIR SERVICE

KAESER AIR SERVICE offers:

- authorized KAESER service representatives with KAESER factory training,
- increased operational reliability ensured by preventive maintenance,
- energy savings achieved by avoidance of pressure losses,
- optimum conditions for operation of the compressed air system,
- the security of genuine KAESER spare parts,
- increased legal certainty as all regulations are kept to.

➢ Why not sign a KAESER AIR SERVICE maintenance agreement!

Result Your advantage:
lower costs and higher compressed air availability.

7.3 Ordering replacement parts and operating materials

KAESER replacement parts and operating materials are original KAESER products. They are specifically selected for use in KAESER compressed air filters.

Unsuitable or poor quality consumable parts and operating materials may damage the filter or impair its proper function.

Damage to the filter can also result in personal injury.

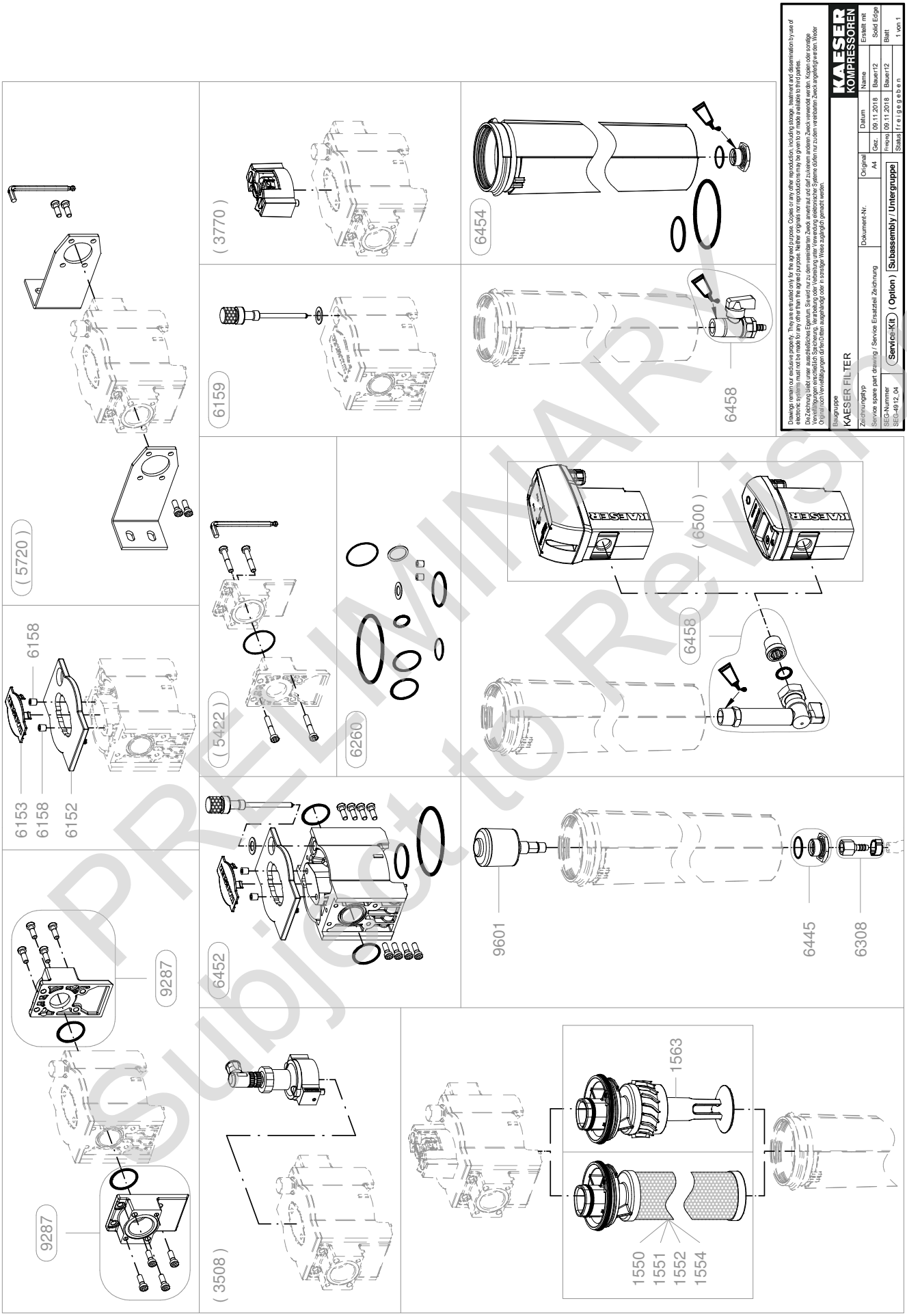
⚠ WARNING

There is risk of personal injury or damage to the machine resulting from the use of unsuitable replacement parts or operating materials.

➢ *Use only original KAESER parts and operating materials.*

➢ *Have an authorized KAESER service representative carry out regular maintenance.*

➢ *Do not attempt any tasks other than those described in this manual.*



Legend		KAESER KOMPRESSOREN
	KAESER FILTER	SEL-3642_04 E

Item	Description	Option
1550	Prefilter element	
1551	Microfilter element	
1552	Activat. carbon filter element	
1554	Particulate filter element	
1563	Centrifugal insert KC	
3508	Diff. pressure transducer	X
3770	Pressure diff. indicator	X
5422	Connecting kit	X
5720	Filter support	X
6152	Filter cover	
6153	Filter cover, covering	
6158	Threaded plug	
6159	Locking screw	
6260	Gasket kit	
6308	Hose connection	
6445	Reduction piece	
6452	Upper housing	
6454	Lower housing	
6458	Stop valve	
6500	Condensate drain	X
9287	Adaptor	
9601	Maintenance kit, condens.drain	

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual!

8 Decommissioning, Storage and Transport

8.1 De-commissioning

1. Isolate the compressed air filter from the air network.
2. Open the locking screw until the filter housing is fully vented.
3. Remove the compressed air filter from the air network.
4. Remove the filter element, and clean and dry the filter bowl.

Dispose of the used filter element according to environmental regulations.

8.2 Storage

Moisture can lead to corrosion.

Freezing moisture can damage components, valve diaphragms, and gaskets.

Please consult with KAESER if you have questions to the appropriate storage and commissioning.

➢ Store the compressed air filter in a dry, frost-proof room.

8.3 Transport

Weight determines the most suitable method of transportation.

Precondition Transport only by personnel trained in the safe transportation of loads.

1. **NOTICE** *Damages caused by incorrect lifting!*
   Pressure differential gauge or condensate drain can be damaged.
   ➢ *Lift the compressed air filter only at the filter head and the filter bowl.*
2. Secure the compressed air filter for transport.

8.4 Packing

Appropriate packaging is required for overland transport to protect the product from mechanical damage.

Other measures must be taken for the transport of the product by sea or air. Please contact KAESER SERVICE for more information.

Material Desiccant
Rigid carton as transport packing

Precondition The compressed air filter is dry.

1. Place sufficient desiccant (silica gel or desiccant clay) in the packaging.
2. Use a rigid carton to protect the compressed air filter from mechanical damages.

8.5 Disposal

➢ All components of the compressed air filter must be sent to a certified waste disposal company.

➢ Components contaminated with condensate or cooling fluids must be disposed of in accordance with local environmental protection regulations.

9 Annex

9.1 Declaration of Conformity

The declaration of conformity confirms the compliance with any applicable directives.

Manufacturer's Declaration

KAESER KOMPRESSOREN SE herewith declares that the compressed air filters shown below have been designed and manufactured according to good engineering practices as they are applicable in the EU member states.

KAESER FILTER:	**F6Kx, F9Kx, F16Kx, F22Kx, F26Kx *)**	
	Compressed air device:	Filter housing
	Fluid group:	2
	Category:	Article 4, Para. 3

Declaration of Conformity

KAESER KOMPRESSOREN SE herewith declares that the compressed air filters shown below meet the conformity assessment procedures stipulated in the EU guidelines shown below:

2014/68/EU Pressure Equipment Directive

KAESER FILTER:	**F46Kx, F83Kx, F110Kx, F142Kx, F184Kx *)**	
	Compressed air device:	Filter housing
	Fluid group:	2
	Category:	I Module: B+D
KAESER FILTER:	**F250Kx, F320Kx *)**	
	Compressed air device:	Filter housing
	Fluid group:	2
	Category:	II Module: B+D
Notified body:	DNV GL AS, Veritasveien 1, 1363 Høvik, NORWAY	
	Ref. No.: 0575	
	Certificate No.: PEDB000000V, PEDD000000U,	Module: B Module: D

2014/30/EU Directive concerning electromagnetic compatibility

KAESER FILTER with FDPS (Option F10):	**F6Kx, F9Kx, F16Kx, F22Kx, F26Kx, F46Kx, F83Kx, F110Kx, F142Kx, F184Kx F250Kx, F320Kx *)**	
	Standards met:	EN 61326-1:2013

*) The "x" suffix of the filter size stands for the different C, B, E, D and A degrees of filtration.

Coburg — Town/city
01.01.2021 — Date
Dipl.-Wirtsch.-Ing. Thomas Kaeser — Signature / Chairman of the Board

LGA InterCert Certified QM/EM System ISO 9001:2008/ 14001:2004

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www.kaeser.com

Bank Information
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Deutsche Bank AG, Coburg
IBAN: DE63 7607 0012 0868 8889 00 BIC: DEUTDEMM760
HypoVereinsbank UniCredit Bank AG, Coburg
IBAN: DE33 7832 0076 0001 4312 18 BIC: HYVEDEMM480

Chairman of the Supervisory Board
Dipl.-Ing. (FH) Carl J. Kaeser
Management Board
Dipl.-Wirtsch.-Ing. Thomas Kaeser (Chairman)
Dipl.-Wirtsch.-Ing. T.-M. Vlantoussi-Kaeser
Registration court Coburg, HRB 5382
VAT ID: DE 132460321

TCE/TCE-KFILTER_09E

9.2 Condensate drain – operating instructions

This model of the compressed air filter was supplied without an electronic condensate drain. All necessary information will be shipped with the electronic condensate drain. Read and follow these instruction when you retrofit the filter with the drain.