

По вопросам продаж и поддержки обращайтесь:

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Казань (843)206-01-48	Орел (4862)44-53-42	Ульяновск (8422)24-23-59
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Калуга (4842)92-23-67	Пенза (8412)22-31-16	Челябинск (351)202-03-61
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Киров (8332)68-02-04	Ростов-на-Дону (863)308-18-15	Ярославль (4852)69-52-93

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Установки охлаждения ВКФ Buhler

Off-line filter / cooler unit BKF



- Compact, space-saving design
- DIN filter elements
- Easy installation
- Easy element replacement
- Efficient plate heat exchanger



Introduction and description

Why off-line aggregates?

Depending on the system configuration there are operating conditions (variable capacity pumps, back-flow peaks, etc.), which significantly limit the effectiveness of full flow filtration or even render it completely ineffective.

In addition, quite practical considerations such as installing a cooler with is required anyway or the option of system-independent operation may argue for an off-line aggregate.

Why Bühler?

When we developed the BKF series, we incorporated our years of experience in designing and selling water coolers and filters. Special attention was paid to a compact design. By using standard filter elements in this respect we are not bound to a specific filter supplier.

Together with a well-known manufacturer, Bühler implemented these findings in a comprehensive product line customised for the requirements in fluid control.

Use the data in this leaflet to determine a suitable cooler for your application. If our standard range of products does not include the right system for your application, we will gladly develop a custom solution for you.

BKF 18/30

A low-noise gerotor pump resistant to dirt is integrated into the very compact baseplate. The drive motor and filter housing are arranged vertically and parallel to save space. The suction and pressure line are positioned so they can be routed straight down into the reservoir. This minimises the installation work.

Since the baseplate is also equipped with front connections, the aggregate can be cased next to the reservoir.

The aggregate has a built-in pressure limiting valve. NG 250 DIN elements are used as filter elements.

BKF 60/90

A compact, space-saving design was also realised in this series. Motor, pump and filter housing are combined into one unit and mounted to a frame for side mounting.

The DIN filter element with NG 400 removes to the top for changing.

Planning information

Installation site requirements

Ensure adequate ventilation.

The aggregates are mounted in the installation site using four screws

Electrical connection

The electrical connection must be made by an appropriately trained electrician! Observe the voltage and mains frequency! Fusing must comply with applicable standards! Please note the direction of rotation of the motor when connecting.

Hydraulic connection

Full utilisation of the high capacity of the aggregates requires care when configuring the intake line. This is a very important factor with use in lubricating systems. These are typically filled with higher viscosity oils and must operate reliably in a large temperature range. Although the tremendous increase in viscosity in low temperatures are frequently overlooked. For applications where the parameters are within critical ranges, we recommend calculating the precise expected pressure loss in the suction pipe or using an adequate size (never smaller than the existing pump suction port!).

The suction and pressure pipe must be installed free from tension and vibration. When using hoses, pay particular attention to the appropriate reinforcement on the suction side so the hose cannot collapse due to the negative pressure.

Do not continuously exceed the recommended suction pressure of the pumps. Some situations may require priming the suction pipe prior to first start-up.

Avoid possible leaks in the circuit to prevent environmental damages. If necessary, use e.g. an oil pan.

Technical data

Technical data	
Pump housing:	Anodised and impregnated cast aluminium
Gerotor:	Sintered steel
Hydraulic screw joint:	Galvanised steel
Operating fluids:	Mineral oils per DIN 51524
Operating oil temperature:	max. 80 °C (higher temperatures on request)
Seal:	Perbunan (NBR) or Viton (FPM) on request
Ambient temperature:	-20 °C to +40 °C

Electric motors	
Voltage / frequency:	230 / 400 V - 50 Hz ± 5 % 276 / 480 V - 60 Hz ± 5 %
Thermal stability:	Class of insulation F, utilisation per Class B
Design:	three-phase asynchronous squirrel-cage induction motor totally enclosed, fan cooled
Protection class:	IP55
on request:	other voltages higher motor power for higher viscosities UL- or CSA-approved motors higher protection class
The motors comply with standards IEC 60034, IEC 60072, IEC 60085	

Please also observe the operating manual for the motor! All motors are supplied with cable gland inside the terminal box. The total height of the aggregate may vary by motor make.

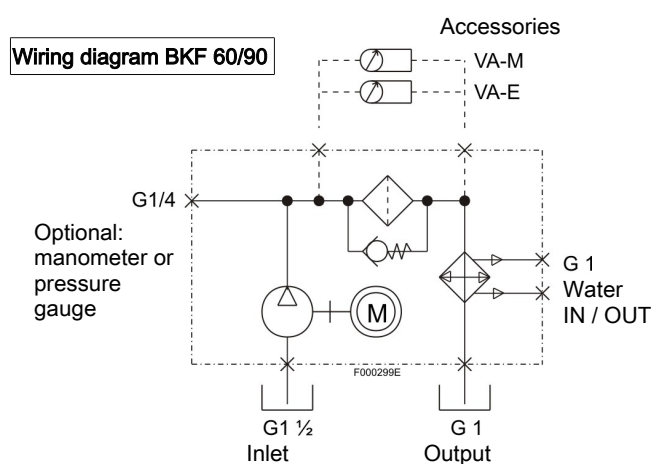
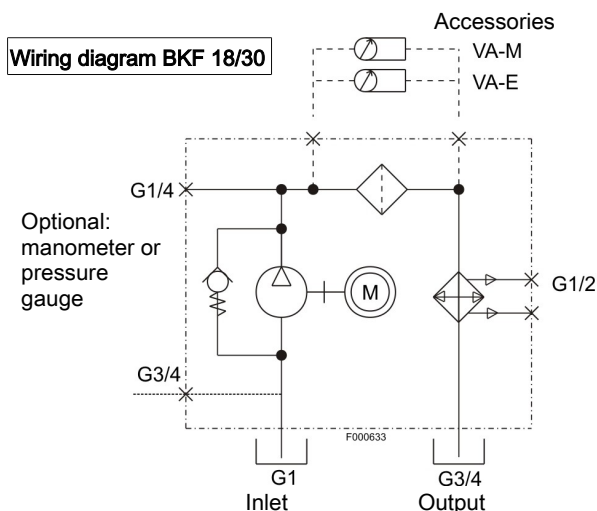
Installation information:

The connection threads are manufactured to ISO 228. The screw-in surfaces are finished and suitable for the use of soft seals. We recommend using screwed plugs per ISO 1179-2.

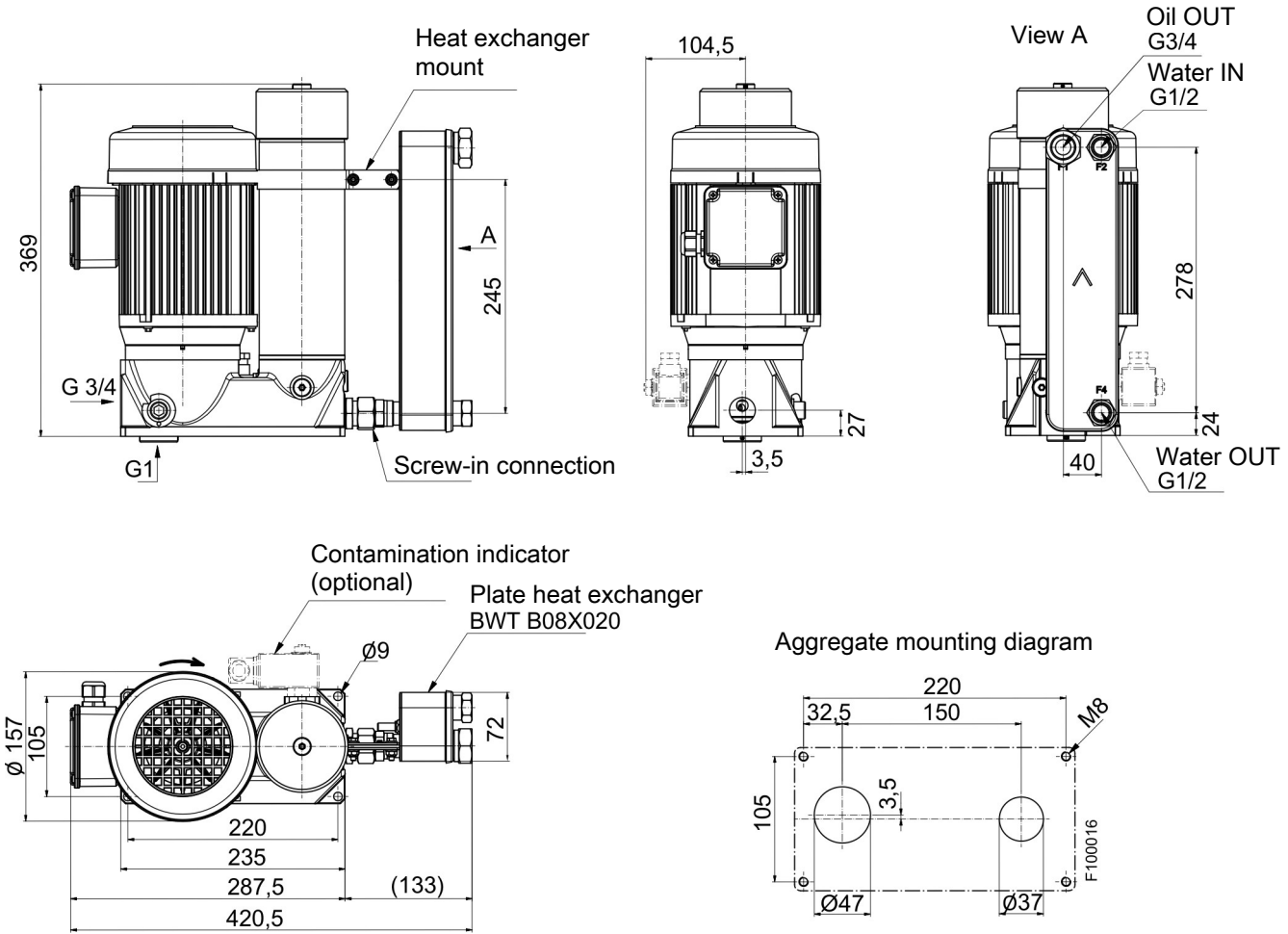
Please note:

Especially note the dimension of the suction pipe. The cross-sections should not be smaller than specified. In most cases, loud noise indicates the cross-section was reduced too much. Please refer to the notices in the operating instructions.

Wiring diagrams



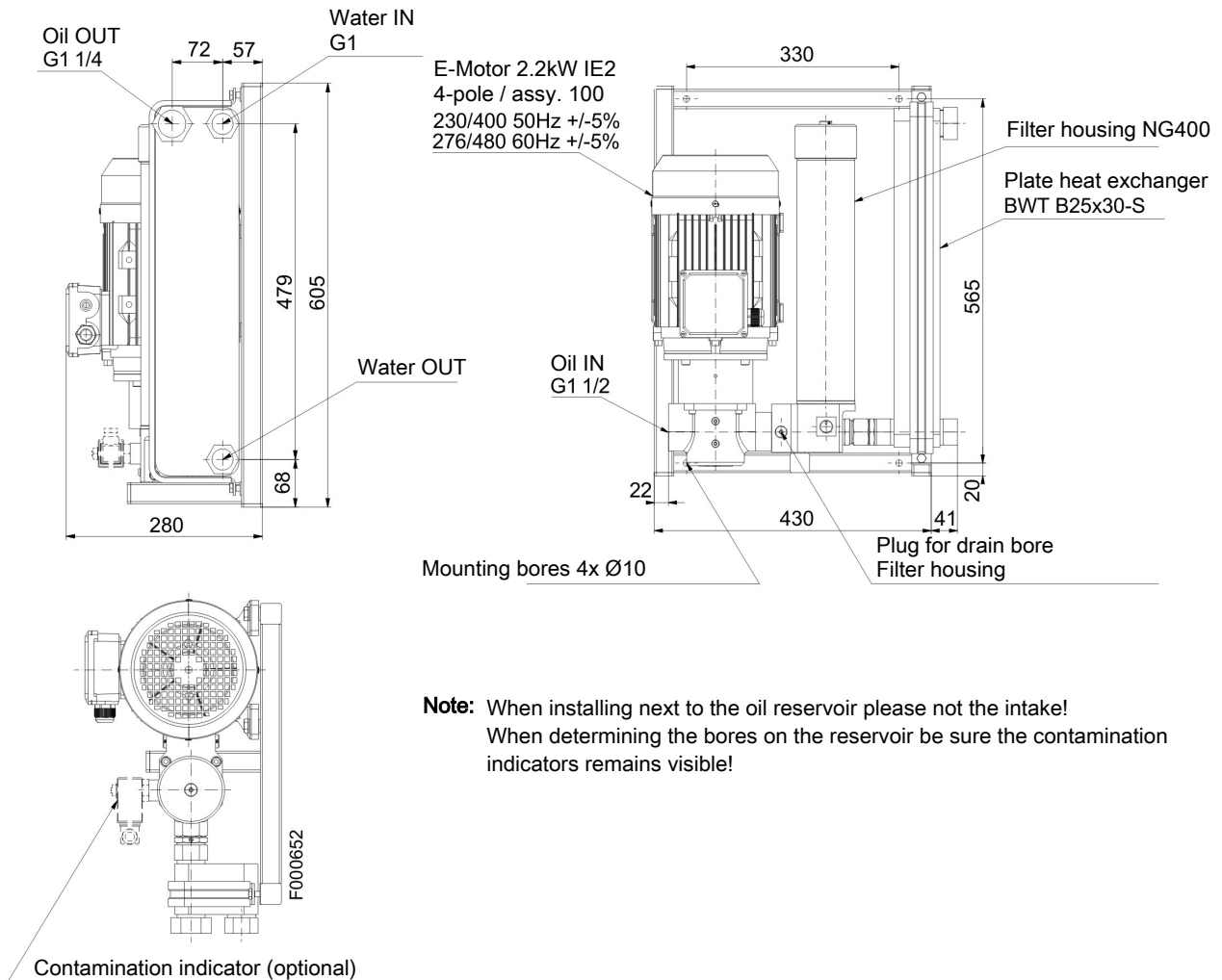
BKF 18 / BKF 30



Note: When installing next to the oil reservoir please not the intake!
 When determining the bores on the reservoir be sure the contamination indicators remains visible!

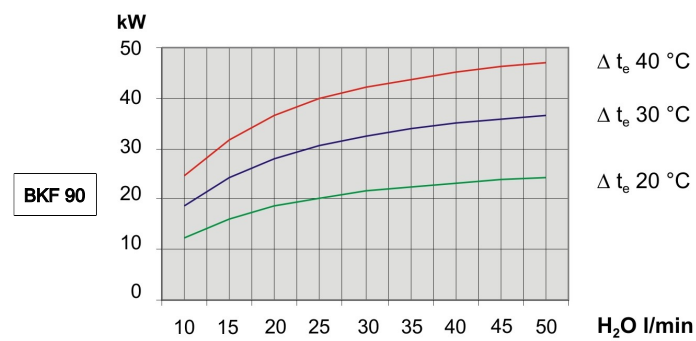
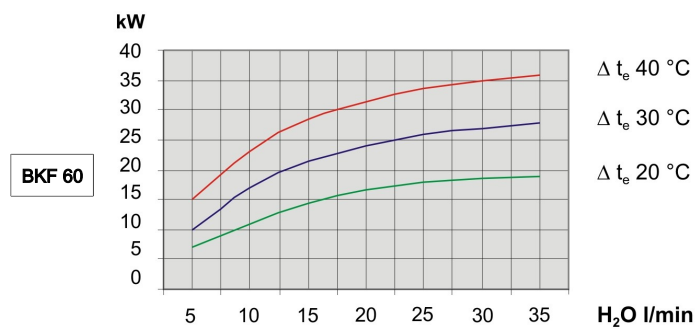
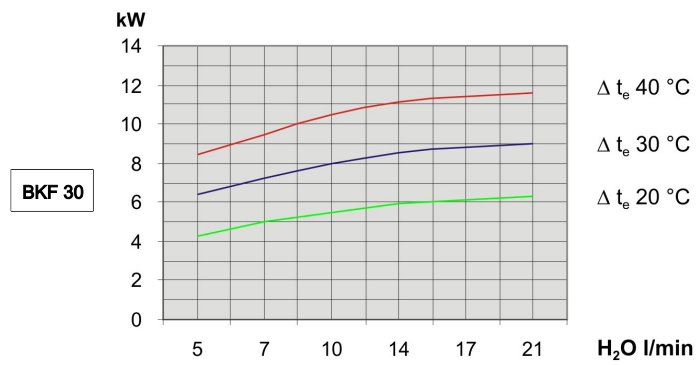
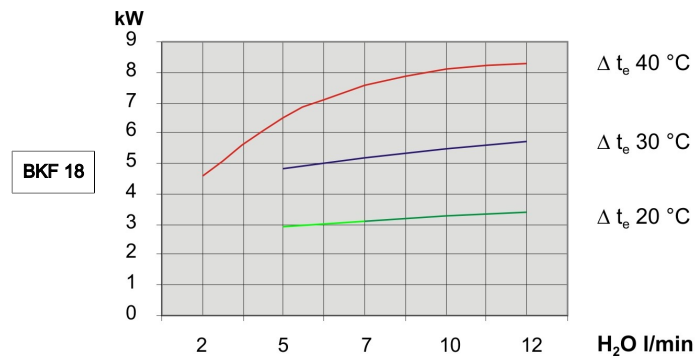
Type:	BKF 18-6-0.55	BKF 30-4-0.75
Motor power:	0.55 kW	0.75 kW
Number of poles:	6	4
Power input (400 V 50 Hz):	~ 1.7 A	~ 2 A
Suction lift:	2 m	2 m
Filter element pressure limit:	6 bar	6 bar
Display pressure contamination indicator:	2.2 bar	2.2 bar
Suction side connection:	G3/4 / G1	G3/4 / G1
Suction side hose:	DN 20 / DN 25	DN 20 / DN 25
Pressure side connection:	G3/4	G3/4
Pressure side hose:	DN 20	DN 20
Suction pressure:	-0.4 bar	-0.4 bar
For all aggregates briefly:	-0.6 bar	
Connection "Water IN":	G1/2	G1/2
Connection „Water OUT“:	G1/2	G1/2
Flow rate:	18 L/min	28 L/min
Max. feed pressure:	6 bar	6 bar
Weight:	approx. 20 kg	approx. 20 kg

BKF 60 / BKF 90



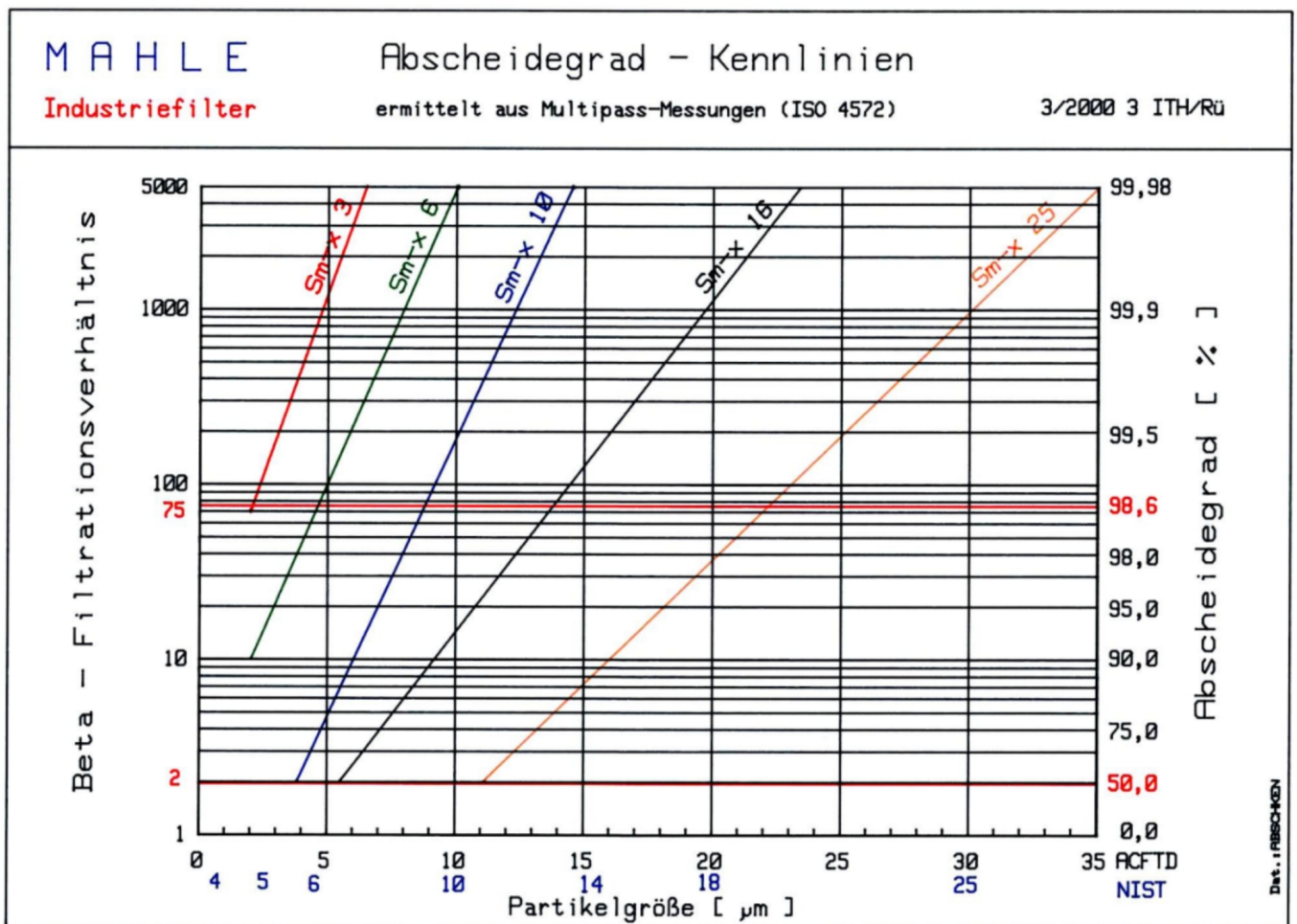
Type:	BKF 60-4-2.2	BKF 90-4-2.2
Motor power:	2.2 kW	2.8 kW
Number of poles:	4	4
Power input (400 V 50 Hz):	~ 4.6 A	~ 4.6 A
Suction lift:	2 m	2 m
Filter element pressure limit:	3.5 bar	3.5 bar
Display pressure contamination indicator:	2.2 bar	2.2 bar
Suction side connection:	G1 1/2	G1 1/2
Suction side hose:	DN 40	DN 40
Pressure side connection:	G1 1/4	G1 1/4
Pressure side hose:	DN 32	DN 32
Suction pressure:	-0.4 bar	-0.4 bar
For all aggregates briefly:	-0.6 bar	
Connection "Water IN":	G1	G1
Connection „Water OUT“:	G1	G1
Flow rate:	57 L/min	86 L/min
max. oil viscosity:	300 cSt	100 cSt
at max. operating pressure	8 bar	8 bar
Weight:	approx. 28 kg	approx. 28 kg

Cooling capacity curves



Selecting the filter fineness

Determining the contamination class per ISO 4406			System type	Recommend filter retention rate	Recommended element
>4 µm	>6 µm	>14 µm			
13	11	8	Highly reliable control systems susceptible to sludge accumulations; laboratory or aerospace	1-2	Sm-N2
14 16	12 13	9 10	High performance servo systems and high pressure systems with a long life; e.g. aviation, machine tool, etc.	3-5	Sm-x3 Sm-x6
17	15	11	High-quality, reliable systems: general machinery construction	10-12	Sm-x10
20	17	12	General machinery construction and vehicles; moderate pressure, moderate capacity	12-15	Sm-x16
23	19	13	General machinery construction and vehicles; low-pressure systems in heavy machinery construction	15-25	Sm-x25 / Mic 10



Ordering instructions

Off-line filters

Item no.	Type	Description
3902010	BKF 18	without contamination indicator NBR
3902110	BKF 18	mechanical contamination indicator NBR
3902210	BKF 18	electric contamination indicator NBR
3903020	BKF 30	without contamination indicator NBR
3903120	BKF 30	mechanical contamination indicator NBR
3903220	BKF 30	electric contamination indicator NBR
3906030	BKF 60	without contamination indicator NBR
3906130	BKF 60	mechanical contamination indicator NBR
3906230	BKF 60	electric contamination indicator NBR
3909030	BKF 90	without contamination indicator NBR
3909130	BKF 90	mechanical contamination indicator NBR
3909230	BKF 90	electric contamination indicator NBR

Filter elements

For type	Item no.	Description	Filter fineness	Purity class **
BKF 18 / BKF 30	3825003	N 0250 DN 3	3 µm	13/10
	3825006	N 0250 DN 6	6 µm	14/10
	3825010	N 0250 DN 10	10 µm	15/11
BKF 60 / BKF 90	3840003	N 0400 DN 3	3 µm	13/10
	3840006	N 0400 DN 6	6 µm	14/10
	3840010	N 0400 DN 10	10 µm	15/11

** Purity classes achievable per ISO 4406 for BKF 18/30 at V = 300 L and 24 h Circulation time (approx. numbers)

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