

Filtration with capacity   

# BELKI



## PRODUCT RANGE

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## OIL SEPARATORS

**Our name is the equivalent to the highest quality, always in stainless steel.  
 We have the means to obtain the highest degree of flexibility and customization.**

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### Oil separators

For separation of all types of surface oils from process fluids up to temperatures of 80°C. Can be applied to very different areas such as tooling machines, washing machines, effluent and so on.

The surface of the fluid is skimmed by an actively self-regulating tilting skimmer, without taking in air. The built-in pump is slow going and pumps the fluid through gently in order to keep the oil from being whipped into the fluid. The oil is separated from the fluid and collected in the oil container.

If there is tramp oil on the surface of the process fluid, this will damage the properties of the fluid and reduce the life time of the fluid. The oil will keep oxygen from getting into the fluid. The absence of oxygen gives excellent conditions for anaerobe bacteria growth and fungi. Sulfur in the oil and process fluid feeds this growth. If this is not stopped the fluid will be useless.

A BELKI oil-separator separates the tramp oil from the process fluid better and more securely, then competing products. It will prevent the growth of bacteria and fungi. Which will make the fluid last longer and work better. It will also improve the environment, by limiting waste.

Would you like to experience this effect, we will gladly install an basic model for testing on your tooling or washing machine. We can deliver models which process from 25 l/h to 10 m<sup>3</sup>/h



### BELKI Band-skimmer

The BELKI band-skimmer is a compact unit, primarily for use with coolants for tooling machines. Using a thin Teflon band, the oil is pulled up from the fluid and scraped from the band.

The band-skimmer is mounted on top of the coolant tank. The length of the band can be fitted to ensure that the band-skimmer can operate, even at great variations in level.

The BELKI Band-skimmer 51N is equipped with a decantation rigging. This rigging enables the band-skimmer to separate the fluid, which is skimmed, from the emulsion. This means that the coolant that follows the oil up into the band skimmer can be let back into the coolant tank. This is not an option on the BELKI Band-skimmer 51 NK, because of the small size, that on the other hand allows it to be mounted almost anywhere.

The band is available in widths of 50 or 100 mm and in effective lengths of up to 2000 mm.

## Technical data Oil Separators



### Type 211

Capacity	25 l/h
Surface	2 m <sup>2</sup>
Oil container w/ decantation	2,5 l
Connection	230 V / 50 Hz
Wattage	6 W
Material	Aisi 304
Unit weight	9,5 kg
Height	560 mm
Breadth	280 mm
Depth	150 mm
Temperature	max. 95°C

### Type 301

Capacity	100 l/h
Surface	5-7 m <sup>2</sup>
Oil container w/ decantation	5 l
Connection	230 V / 50 Hz / 3x400 V
Wattage	120 W
Material	Aisi 304
Unit weight	33 kg
Height	645 mm
Breadth	385 mm
Depth	270 mm
Temperature	max. 95°C



### Type 60S

Capacity	300 l/h
Surface	15 m <sup>2</sup>
Oil container w/ decantation	20 l
Connection	230 V / 50 Hz
Wattage	250 W
Material	Aisi 304
Unit weight	57 kg
Height	1070 mm
Breadth	660 mm
Depth	380 mm
Temperature	max. 95°C

### Type 200 LS

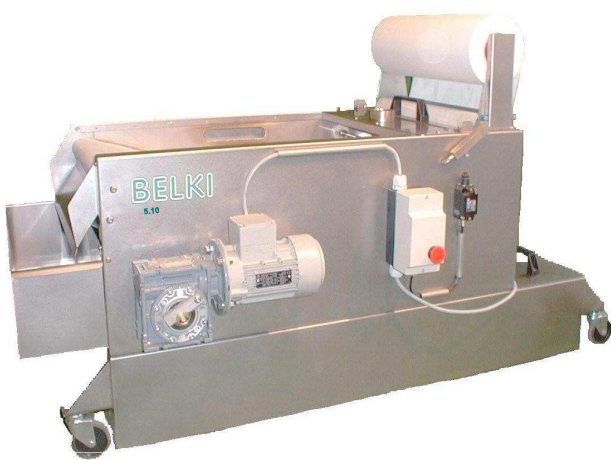
Capacity	500 l/h
Surface	25-35 m <sup>2</sup>
Oil container w/ decantation	20 l
Connection	230 V / 50 Hz
Wattage	250 W
Material	Aisi 304
Unit weight	120 kg
Height	1550 mm
Breadth	890 mm
Depth	433 mm
Temperature	max. 95°C



## Filtration

Our filtration program consists of Paper belt filters, Deep Bed Band Filters and Magnetic filters. We offer filters with capacity of up to 1000 l/min.

**"We have the equipment for your filtration needs."**



### Deep Bed Band Filters

The BELKI Deep Bed Band Filters is suited for filtering a wide variety of processing fluids, for example from de-greasing tubs, tooling machines or as pre-filtering of waste water.

As the filtration paper is rolled towards the top of the filter, the particles will be scraped off into the waste collection box and the paper will be rolled onto a cardboard pipe. This insures that the waste particles and the paper can be disposed of separately.

BELKI has a very wide product variety within the Deep Bed Band Filters. This program ranges from 40 l./ minute for the compact filters to 350 l. / minute. for the Deep Bed Band Filter Type 10.15

The Deep Bed Band Filter is designed in a way that ensures constant tension of the filter paper, this improves the filtration. The largest particles that can pass through are 20-40 µm.

If you need to have ferritic particles removed, which are smaller than this, we can install a Manual Magnetic Filter underneath the Deep Bed Band Filter.

### Magnetic Filtering

BELKI Magnetic Filters are the latest addition to our filtering program. This product provides filtering without a filter media!

This product is used for fine filtering of processing fluid, oil, grinding fluid, process oil, hydraulic oil, hardening oil and washing- and de-greasing fluid at up to 100 °Celsius.

This means that these filtering units are well suited for iron cast processing and grinding work. When working on iron cast items, a large quantity of very small graffit particles are released. The small size of these particles makes them very hard to filter successfully with a Paper belt filter and this is where the Magnetic filter proves it's worth.

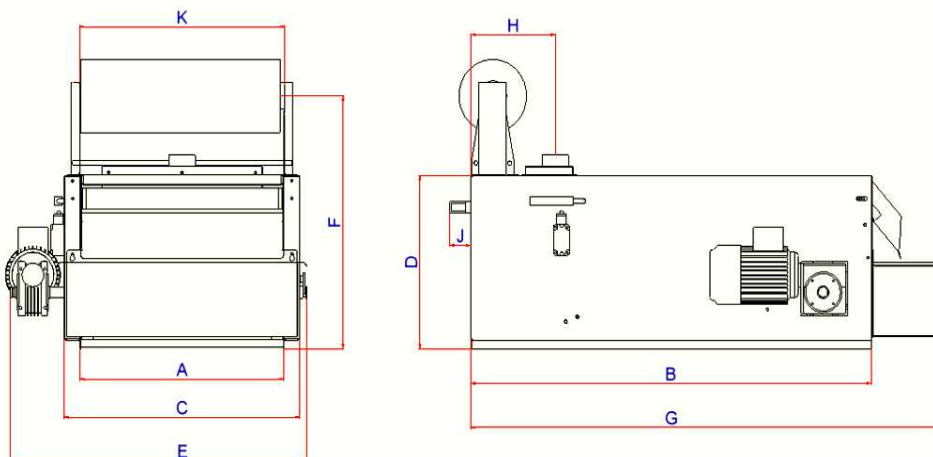
Even particles smaller than 10 µm will be filtered with this technique, which is based on very powerful Neo-dym magnets.

Neo-dym magnets collect the particles on the transportation band that the fluids flows across. As the transportation band moves forward the particles are taken along the band and at the end they are scraped off and fall down into a collection box.

**BELKI provides Automatic filters that can process from 250 to 1000 l/min.**

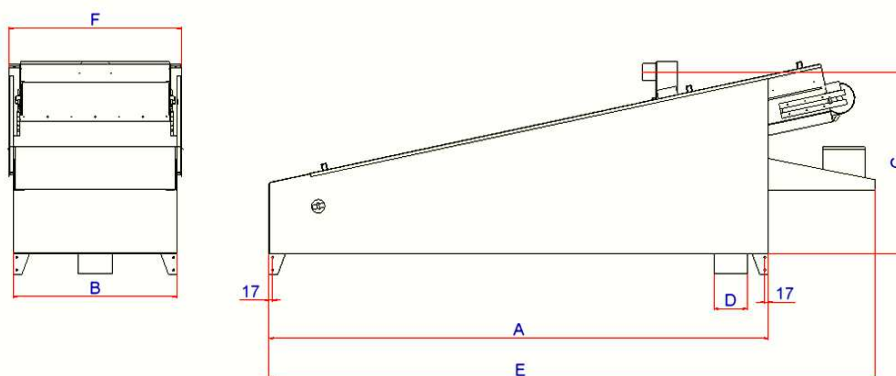


Capacities and dimensions for BELKI Deep Bed Band Filter 5.10-12.20



Type	Q (max. l/min.)	Main draw.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (mm)	K (mm)
5.10	150	33-200-000	510	1003	590	405	743	588	1179	212	52	507
7.10	225	32-000-000	710	1003	790	403	944	588	1179	212	52	707
10.15	350	15-500-000	1010	1506	1093	523	1246	708	1709	263	52	1007
12.20	500	72-001-000	1210	1946	1293	523	1446	708	2149	212	52	1207

Capacities and dimension for BELKI Automatic Magnetfilter 3.10A-7.20A



Type	Q (max. l/min.)	Main draw.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
3.10A	250	67-200-000	1004	386	609	Ø67	1397	427
5.13A	500	67-500-000	1254	586	663	Ø110	1617	627
7.20A	1000	67-002-100	2394	786	861	Ø160	2904	827
3.10M	200	14-001-100	977	336	478	Ø67	1080	383

## Centralized systems

**BELKI are leading on the field of providing thought-through centralized solutions for coolants filtration. Our products live up to high standards of craftsmanship and are, without exception, always in stainless steel.**

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**BELKI Centralized System gives a number of advantages:**

- the duration of the cooling and lubrication fluids is prolonged
- less interruption of working time, due to fluid changes
- lower cost of waste disposal
- lower consumption of cooling and lubrication fluids
- ensuring that all machines are running with the correct fluid concentrations
- the measuring of fluid concentration can be done at one place, for the entire unit of machines
- the risk of skin and mucous membrane irritation is lowered
- benefits both environment and economy
- automatic top up of fluid, no time consuming top up at each machine
- fewer thorough cleanings and fewer fluid changes because the fluid is fresh and clean for longer
- good flow ensuring constant circulation and filtration even nights, weekends and holidays. Independent of manufacturing.
- even and consistent flow, which ensures that particles are not washed through the filter paper during periods of high production intensity. Instead the filtration capacity is utilized constantly.
- a BELKI Centralized system is designed according to the customers need and is adaptable in countless way.

## Centralized system

**Profitable solutions through innovation and accommodation to the needs of each customer.  
We let the needs of our customer guide our innovative progress.**

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A BELKI Centralized System is constructed based on the needs and desires of our customers and is adjustable to many different conditions. According to the requirements of each company BELKI, in cooperation with the customer, will combine the elements that ensures the needs of each customer will be fully met.

### **Deep Bed Band Filter**

A BELKI Deep Bed Band filters able to filtrate up to 350 l./ min. In many cases 2 or 3 are mounted on a BELKI Central Unit. The fluid is first led through the Deep Bed Band Filter and then down into the tank of the BELKI Central Unit, which can be constructed to hold from 3 to 15 m<sup>3</sup>.

### **Manual Magnetic Filtering Unit**

BELKI has designed a unique system especially for machinery that handles cast iron. A Manual Magnetic Filtering Unit makes it possible to filter very small particles, that are too small to be caught by the Deep Bed Band Filter. The Magnetic filtering unit can be mounted directly under any Paper belt filtering unit, and will then collect all graphite particles that have passed through the Deep Bed band Filter. The graphite particles can easily be scraped off and collected with the enclosed scraper.

### **Coolant tank**

The BELKI Central Unit Tank plays an important role not just in storing the fluid but in the whole cleaning process. On the basis of many years of experience with the construction and making of Central units, we have developed a unique tank system which ensures that the fluid is lead through the tank at a slow pace. This optimizes the separation process. We even offer micro-flotation, that makes very small drops of oil rise to the surface of the fluid and allows it to be processed.

### **Oil-separator 200 LS**

A BELKI Oil-separator skims the surface of the cooling and lubrication fluid in a tank, with 2-4 floating tilting suction devices. These are placed at different areas, as the oil moves up. The patented design of these suction devices ensures, that only the surface is skimmed and lead through the oil-separator. Both oil and other particles floating at the surface are separated from the fluid in the Oil-separator. Even particles that are more heavy than water can float at the surface of the fluid, due to the surface tension, and the Oil-separator is constructed so that these objects will be caught in the cone shaped bottom, from where they can easily be disposed.



### **Automatic top up**

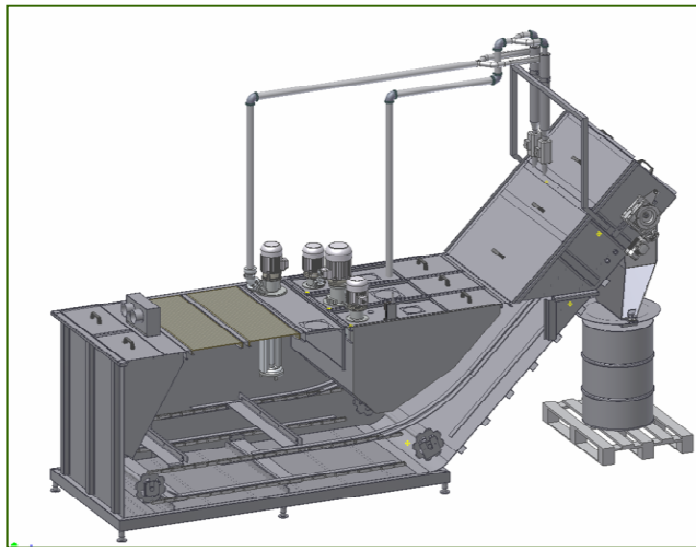
All BELKI Centralized Systems are equipped with an motor valve and mixing set. This automatically refills the Coolant.

### Centralized system for steel grinding operations

One of BELKI teknik's many effective centralized solutions is the sedimentation system with centrifugal separators.

This concept has a lots of advantages;

- Particles sediment immediately, and is scraped out of the tank
- Remaining particles are caught in the centrifugal separator
- The cleaned fluid is lead to a internal clean tank , from which it is supplied to the grinding machines.
- No consumables
- No maintenance



**BELKI Centralized system with sedimentation and centrifugal separators**

### Customized Solutions

BELKI teknik also offers Magnetic filtration on a large scale, such as this system for Magnetic filtration of 300 m<sup>3</sup>/h.



**System consisting of five Automatic Magnetfilters. Delivered to customer October 2008.**



## Suction solutions

**BELKI teknik offers a wide range of suction systems for our Oil Separators. Depending on tank size, level variations, the properties of the surface and liquid BELKI teknik is able to offer the right solution.**



The Actively Self-regulating suction systems moves up and down with the surface, and takes in exactly the same amount of fluid as the pump sucks up. If the inlet of the tilting skimmer is blocked by debris the skimmer will automatically tilt and the fluid is let in continuously. This is what we call Actively Self-regulation. BELKI teknik offers suction systems for all most all situations, concerning space and level variations. The suction system displayed here is the more commonly used, see our catalogue called 'Technical information—Suction'.



## Green cost reductions

Using BELKI teknik's filtration equipment will generate cost savings in manufacturing, and it will be more friendly to the environment. BELKI uses the nature own laws to our advantage:

- Gravity
- Magnetism
- The centrifugal force
- Differences in density
- Differences in particle sizes

And for that reason alone you can allow yourself to call it "GREEN SAVINGS"

The effects are important results such as:

- Recycling
- Longer tool life time
- Cleaner and healthier working environment, fewer sick days
- Easier cleaning
- Less waste

These results are all helping to a better environment, and saves money at the same time.

Effective production time for both machines and personnel will be increased, by reducing maintenance.

You can calculate your own situation using the model below. Find the interactive version at [www.belki.dk](http://www.belki.dk).

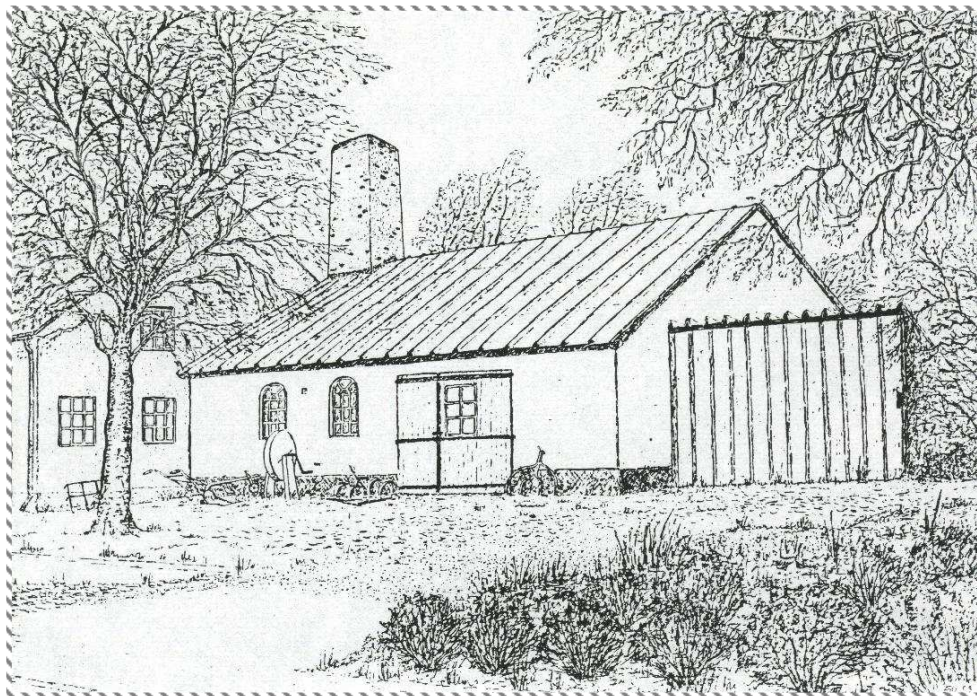
Your current solution:				New BELKI solution:			
Your current expenses changing coolant/lubricant				Example on expenses using new BELKI technology			
Enter your data below				Enter data below			
Size of tank in liters			200	Investment in €			2000
Wanted concentration in %			7	Depreciation in years			7
Number of changes per year			2	Interest rate %			7
Cost in € per liter coolant			7	Pay back time in years			2
Cost in € per work hour			60	Cost in € per work hour			60
Loss in €/production hour			133	Loss in €/production hour			133
Coolant or lubricant	liters/year	€ per year		Coolant or lubricant		€ per year	
Change of coolant	28	196		Coolant and spareparts		135	
Hours of work	hrs/change	€ per year		Hours of work	hrs/year	€ per year	
Changing coolant	8	960		Changing coolant	0	0	
Weekly maintenance	0.5	1380		Maintenance	2	120	
Loss of production hours	8	2128		Loss of production hours	0	0	
Subtotal		4468		Subtotal		120	
Others		€ per year		Others		€ per year	
Disposal costs		133		Disposal costs		0	
Transportation		40		Transportation		0	
Tools wear, your estimate		0		Tools wear		0	
Env. caused illness, your estimate		0		Environmental caused illness		0	
Others subtotal		173		Depreciation/year		286	
Total		4837		Avg. interest / payback years		70	
				Others subtotal		356	
				Total		611	

Your yearly green saving in €

4226

Your pay-back time in months

5.7



### **BELKI technique ApS – a capacity in filtration**

Many years of expertise, the market's biggest selection and tested quality products gives BELKI teknik a leading position in complete solutions for filtering. Whether it requires industrial equipment maintenance and cleaning of coolant, washing fluids or other process fluids.

We are a part of the process - from production to delivery – and will make sure that the equipment is installed correctly. Therefore we know the entire workflow and can find the right solution for every size and application. In close cooperation with our customers - or partners - we are constantly developing, with the future in mind. BELKI teknik will continue to be a capacity in filtration.

From the village blacksmith to visionary export business: When we today look out over more than 2000 m<sup>2</sup> of administrative and production premises in Rødkærsbro, it is hard to understand that the foundations for BELKI teknik was established in 1888 as a small village smithy.

In the 1960s the blacksmith moved to larger premises, where better facilities provided opportunities for the continued development of the company. In 1979 took over the manufacturer Ivan Skjellerup took over the firm and during the 1980s he designed the first paper band filters. It started the production and is the foundation of the company BELKI teknik is today.

During the 1990s, development continues and production of high quality filtration equipment in many applications and processes, and again there was a need for more capacity: In 1994 moved BELKI teknik to the current premises in Rødkærsbro.

Despite the physical growth and revenue growth the little old black smith remain, namely as an internal museum for customers and suppliers.





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