ESSELENT solutions

Q-Filter

- **Active Vacuum Belt filter**
- **Vacuum -200 mbar**
- **Capacity 15-30 m³/h**
- **Filtration down to 5µm**

Q-Filter® is the solution for the filtration of valuable fluids like aqueous cleaners and machine coolants. Integrate Q-Filter® into your process and the medium remains clean.

Unique:

The intelligent control system actively controls the filtration process and the pressure drop over the cloth. It constantly monitors the process parameters. This prevents compression of the filtercloth and promotes the formation of a filter cake. As a result you remove more dirt with less filter cloth, which makes the system very efficient.

The unique transport system ensures a trouble free installation and transportation of the filter cloth. You can choose from a wide range of qualities and types of filter cloth so you can use the most optimal for your application.

The perfect sealing and the controlled formation of a filter cake result in a much finer filtration. This way you remove more and finer dirt and you keep your medium even cleaner.

Your benefits: cost savings and product quality improvement.

Effective:	Low filter consumption through optimal control of the filtration process.
Efficient:	You get a much finer filtration due to perfect sealing and process control.
Energy efficient:	Significantly low energy consumption.
Economical:	Low operational cost and long medium life time.
Compact:	Extremely small space requirement (up to over 50% less than comparable filters).

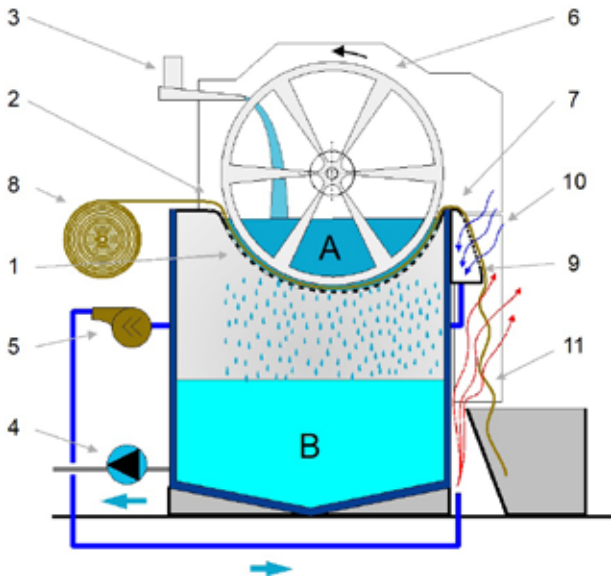
Functioning

The two chambers, A (dirty chamber) and B (clean chamber), positioned above each other, are separated by the filter cloth (2) which is supported by the sieve plate (1).

Polluted medium flows through the inlet (3) into chamber A and through the filter cloth into chamber B, where a pump (4) pumps off the clean fluid.

Dirt accumulates on the filter cloth and forms a cake, which causes the level in A to rise. If a previously set level is reached, vacuum pump (5) kicks in and creates under pressure in chamber B, causing the medium to be sucked through the cloth and preventing the level in A to rise any further.

As the filter cake on the cloth grows, the under pressure in chamber B is further increased until a set maximum. At this point the cloth is forwarded over a short distance by



turning of the wheels (6). Used cloth (7) comes out at the right while fresh cloth is pulled from roll (8), into the device. Then the cycle starts over again.

The used wet cloth runs over drainage box (9) where it is dried. The vacuum pump (5) pulls in air (10) through the wet cloth and the drainage box, pulling fluid out of the cloth. The fluid ends up in chamber B. To further dry the cloth, the exhaust air from the vacuum pump is blown from the bottom, up along the free hanging section (11) of the cloth.

User friendly - Reliable

The Q-Filter® is developed for industrial applications and full-automatic operation, without supervision and with minimal maintenance. If the cloth runs out you get a message well in time. You don't even have to interrupt the filtration process. Placing a new roll of cloth, even changing to a totally different type of cloth, can be done during normal operation without any problem.

The intelligent control system is the heart of the Q-Filter® and takes care of optimal functioning of the system and maximum support for the user. The user interface panel offers the user all required functionality.

- Clear instructions in the use of the equipment.
- Alarm messages for every possible problem.
- Display of important process variables.
- No user settings; completely self-tuning.

Sealing

Sealing at the edges of the filter cloth is particularly important and essential for efficiency. If the sealing is not tight enough, dirt will pass along the edges of the cloth, into the clean chamber. Q-Filter® has 4 full contact sealing lines, two on each side of the cloth.

A smart system

The unique and patented transport system feeds the cloth problem-free through the system, even at high vacuum and high flows. A wide range of varying types and qualities of filter cloth can be used without a problem and without the risk of tearing or perforations.

Placing a new roll of filter cloth is practically the only thing the user has to do. Feeding the cloth into the machine is very easy and semi automatically.

Separate from the cost for filtration materials, the cost for filtration are mainly determined by the disposal cost of the used cloth. Since this strongly depends on the weight, it is essential that the cloth is as dry as possible. Q-Filter® dries the filtercloth by cleverly using existing air flows without any expensive additions or extra equipment.

Due to an almost air tight construction of the clean chamber, the Q-Filter® only needs a small, low-energy, vacuum pump while the vacuum can be controlled optimally.

A view in the internal

Filter cloth, highest efficiency at lowest costs

An essential part in any filtration solution is the filter medium. The higher the efficiency of the filter cloth, the smaller the size of the captured particles and the more dirt will be removed. But, it also means higher filter cloth consumption and higher filtration cost.

Filter cloth consumption does not depend on the efficiency of the cloth only; it also very much depends on the combination of filter cloth and filtration equipment. Not all types of filter cloth are suitable for all types of filtration equipment. Even filter cloths with the same specifications and the same efficiency may perform totally different in terms of cloth usage.

We see it as our challenge to find the best type of filter cloth, in any application, which in combination with Q-Filter®, will give the highest efficiency at the lowest filtration cost. In simple words; remove as much dirt as possible with as little filter cloth.
With the expertise we have acquired over the years, through tests on site and in our own laboratory and through the many applications we have delt with, we are able to advise you in what filter cloth to use best for your application.

Surge tank (optional)

The surge tank is recommended to balance out non-continuous incoming flows from for example hydro cyclones, bottom valves or magnetic separators. The surge tank is positioned on top of the Q-Filter® and is directly connected to the inlet. An integrated screen prevents larger objects from entering the filter and causing damage. Objects, held back by the screen, can easily be removed through the access hatch.

In combination with a surge tank it is strongly recommended to use an additional base frame. In combination with a surge tank the Q-Filter® is equipped with a base frame that ensures that the additional weight of the surge tank and its content is transferred evenly to the machine frame.

Your benefits:

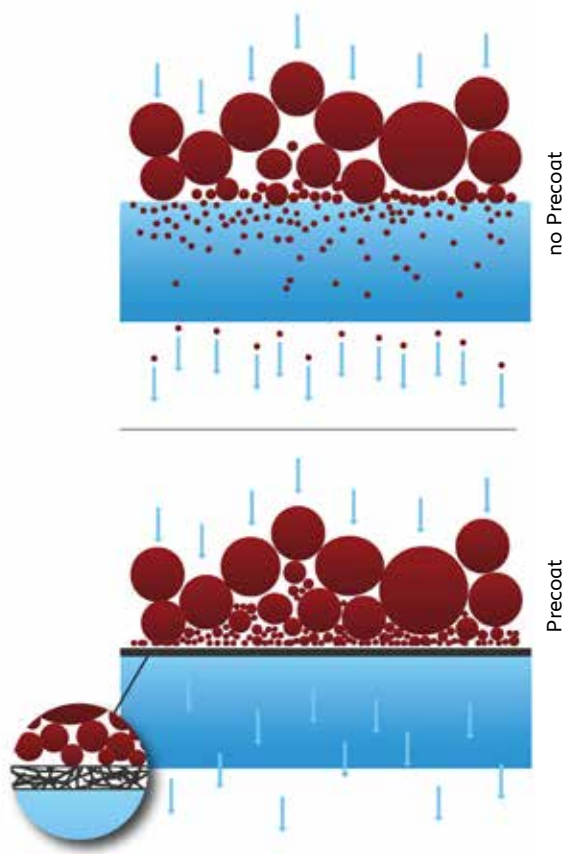
- higher efficiency of Q-Filter®
- reduction of filter cloth consumption

Precoat Filtration, for filtration down to 2µm (optional)

Precoat Filtration is a high-end filtration method for removal of small particles from contaminated media. Cellulose fibres are dosed added to the medium inside the Q-Filter® and form a thin layer on the filter cloth. This layer improves the filtration significantly because it enhances the formation of the so called filter cake. As a result, filtration down to 2µm will be achieved. It also prevents clogging of the filter cloth, caused by small particles. This allows filtration up to a size of 2µm with just a limited increase in filter cloth consumption.

Precoat filtration can be added by simply placing a standard module next to the Q-Filter®. All connections are available for easy integration.

The Precoat Filtration module is very easy to operate. The fibres come in paper bags and by opening the cabinet, one bag can be easily placed on the grid and clamped into position. Dosing the fibres happens automatically while the control system communicates with the Q-Filter®.



Specifications

Model:	QF150	QF300
Material:	ss 304	ss 304
length	1600 mm	1600 mm
Width	1250 mm	1750 mm
Height	1910 mm	1910 mm
Weight	550 kg	850 kg
Capacity	15 m³/h	30 m³/h
Width filter cloth	500 mm	1000 mm
Pump capacity	**	**
Power supply *	1 kW*	1 kW*
Vacuum capacity	-200 mbar	-200 mbar

* Without return pump
** Depending on application

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