

FILSTAR

made in Japan

Filter element less **FILSTAR** which has no filtering element:

No waste: No filter element to exchange

Maintenance free: Not necessary to exchange filter element

Running cost free: No replacement cost for filter

Five of the Merits of Filstar®

Cost

The price is comparable to industrial filters and less than multiple hydrocyclones. However, industrial filters repeatedly need the expense of replacement elements, manpower and down time to fit them. Also Filstar provides more cleared liquid and drier solid than the hydrocyclones.

Maintenance

Filstar is easy to fit and check. It demands little if any attention. Its unique, but simple design makes it clog free.

Positive Environmental Contribution

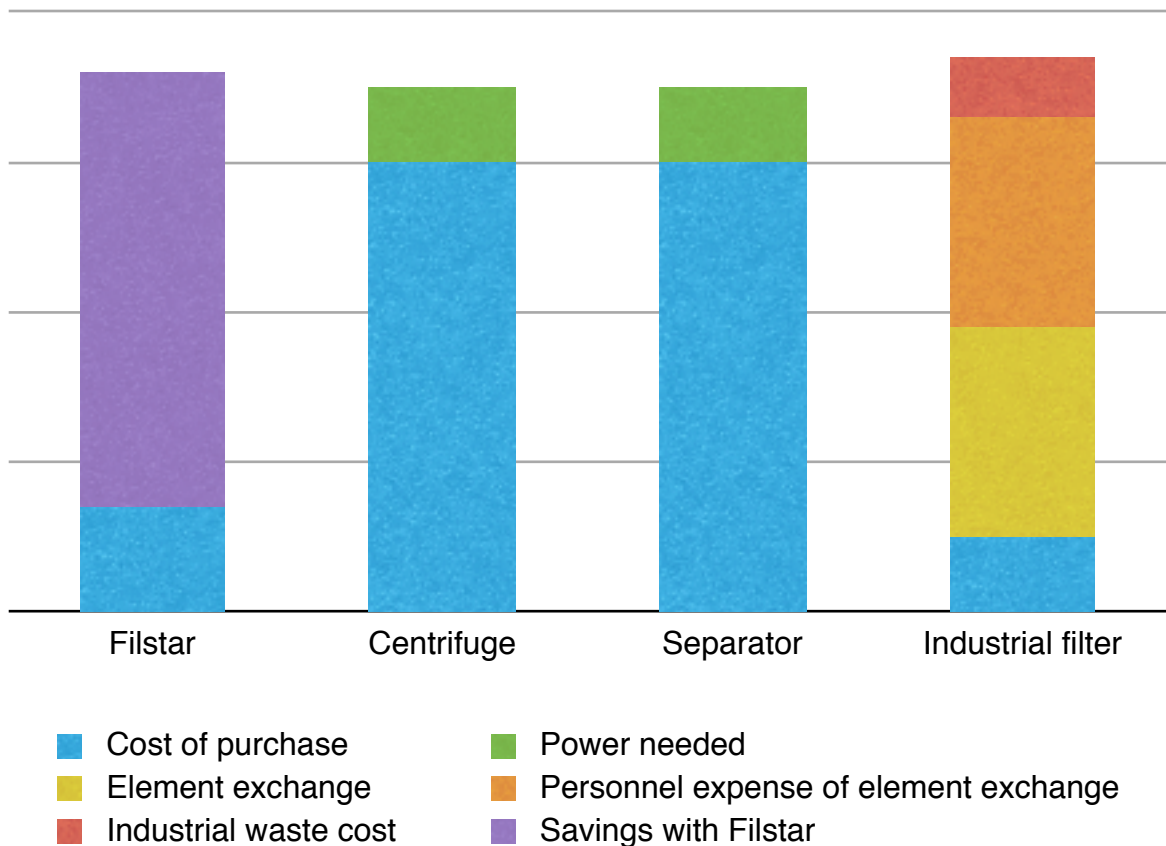
Solids leaving Filstar are free of an element; providing minimum volume waste. This is especially good for hazardous waste.

A Wide and Flexible Range of Filstar

90% to 98% separation. Solids from 10 micro to 2 millimeters or more. Liquid volume from 8 to 250 litres or more each minute. Different materials are available which match the liquid used.

Lifetimes

Filstar can be a pre-filter; extending the element life of a fine solids filter. Generally, Filstar will last as long as the attached



Running costs 10

Cheaper as there is no element to exchange.

Environment 10

Minimum volume solids when these are waste. No element for disposal.

Space Needed 10

Compact units

Maintenance 10

None required

Workability 10

No detachment is required after connection.

Efficiency 10

Optimum from the start

Running costs 5.5

On-going expense of element and its replacement.

Environment 1

Element and non retrievable useful materials add to waste.

Space Needed 5

Large as require an element.

Maintenance 2

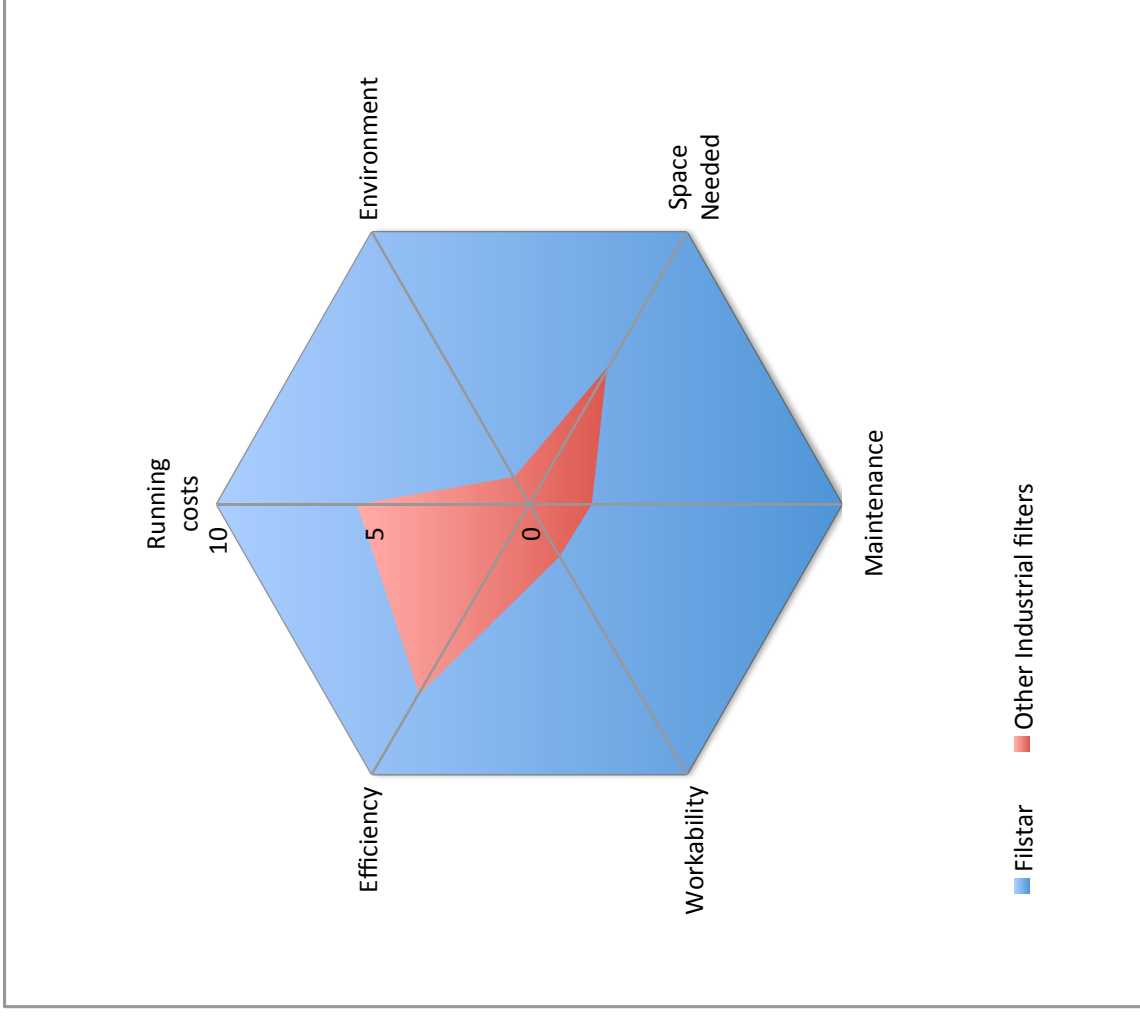
Element exchange can be troublesome.

Workability 2

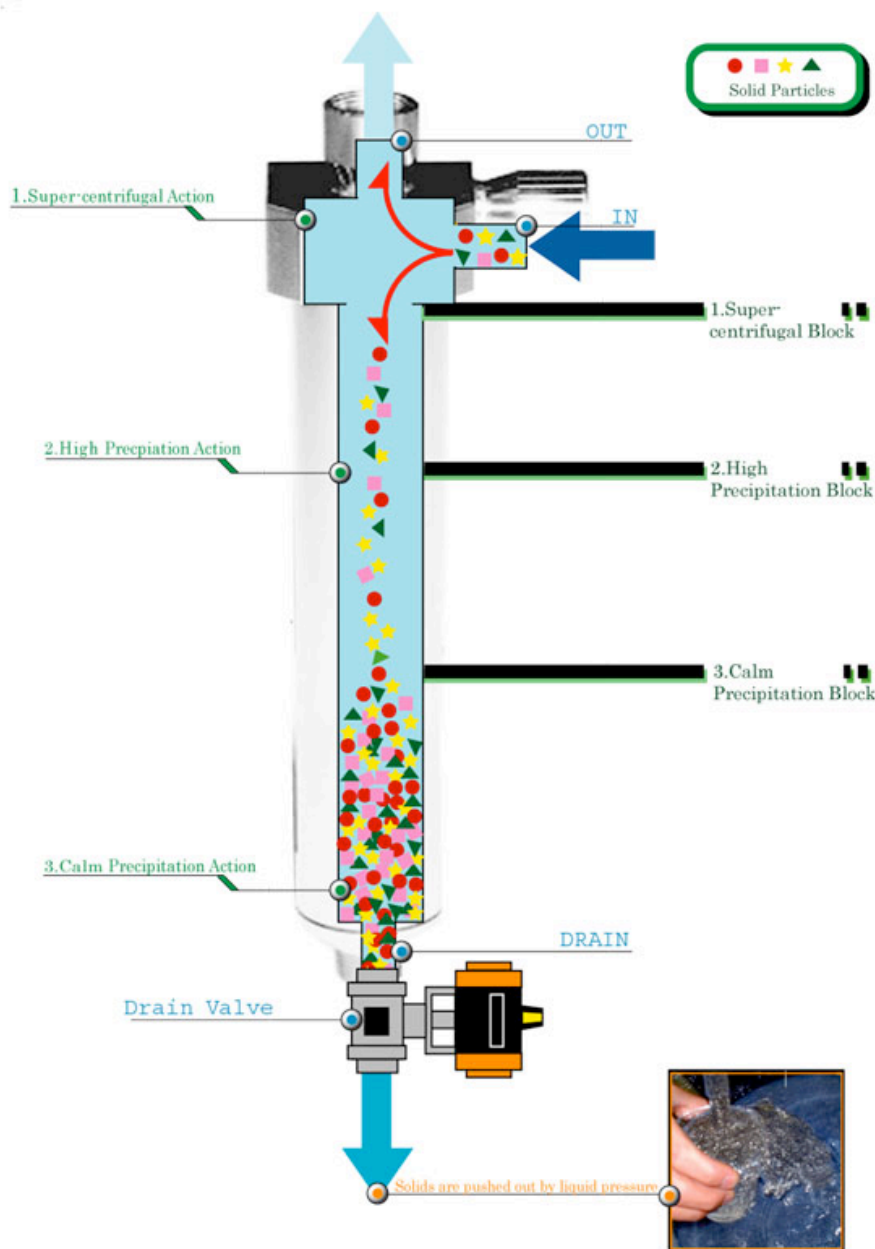
Clogging must be detected.

Efficiency 7

Lowered by reverse cleansing, parallel usage and so on.



FILSTAR has a very simple structure with no filter element, commercialized by **industria** based on its own patent, which consists of Three-block technology; Super-centrifugal block, High precipitation block and Calm precipitation block. FILSTAR has patent protection in Japan and other countries.



◆ 1. Super-centrifugal Block

Specially designed stainless steel block generates a centrifugal action and forces particulates in the suctioned fluid outside and downward to the High precipitation block, cleared fluid upward to the outlet nozzle.

◆ 2. High Precipitation Block

Particulates are driven downward due to specially treated surface of the High precipitation block, by which the high separation efficiency is guaranteed.

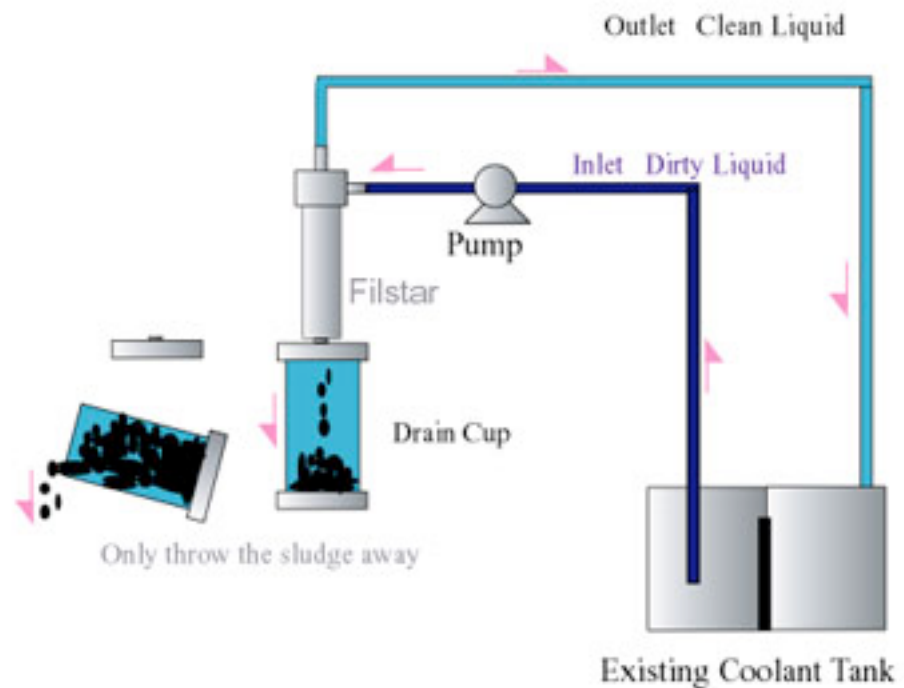
◆ 3. Calm Precipitation Block

Separated particulates settle in the Calm precipitation block. FILSTAR achieves the sedimental dissociation almost instantaneously, while it takes many hours under the normal gravity.

FILSTER PU (pump unit)



All-in-one package unit consists of a pump and FILSTAR:
By connecting two lines of the inlet and the outlet of All-in-one FILSTAR to the existing tank, highly efficient filtration can be realized easily.
Drain cup is attached to discharge the removed sludge.
Easy-maintenance solution management can be realized just after the installation.
FILSTAR pump unit



Suction of a used liquid followed by filtration at 10μ particle size, delivery of the cleaned liquid provides full-automatic operation only by switching on the unit.
Easy-maintenance solution management can be realized from the first day of the installation.

Features

The unit can be attached to the existing coolant tanks of the machine tools.

The removed sludge is accumulated in the attached drain cup.

Highly compact design is achieved. (200mmx900mmx1000mm)

Collection efficiency of more than 90% of particulates is available at $10\mu\text{m}$ to 4mm in size.

Flow rate is changable in the range of :15L - 50 L/min



Specifications of pump unit

Model

KS15-PU KSS20-PU KSM25-PU

Flow Rate

15~20L/min 20~30L/min 30~50L/min

Particle Size on Separation

10 μ m~2mm 10 μ m~3mm 10 μ m~4mm

Pipe size

15A 20A 25A

Dimensions

200mmx900mmx1,000mm

Power Supply

AC100V 50/60 or AC200V 50/60

Fluids

Water soluble cutting oil , Flushing Water , Water(Low Viscosity Fluids)

A proposal from industria (based on applied patents)

•The whole used solution is suctioned and filtered by FILSTAR.

To prevent the sludge precipitation in the tank and reduce solution make-up.

•The existing tank is always filled with the clear solution cleaned by FILSTAR.

To supply particulate-free (10 μ m or larger in size) and clean solution to the process

•Solution can be circulated between the used-solution tank and the existing solution tank without any large scale construction of new tanks.

To save cost and space

•The pump unit provides a clear solution by filtration at 10 μ m just after the installation!

To be free form maintenance

No sludge removing! No tank cleaning! No filter-element replacing!

1.Place industria's simple used-solution tank in the existing tank.

2.Set the simple used-solution tank beneath the outlet nozzle of the used solution in order to recover the whole volume.

3.Connect the outlet nozzle of FILSTAR to the existing tank and the inlet nozzle of FILSTAR to the simple used-solution tank.

4.Switching on CU/PU unit to start circulation the solution.

Suitable Industries for Filstar®

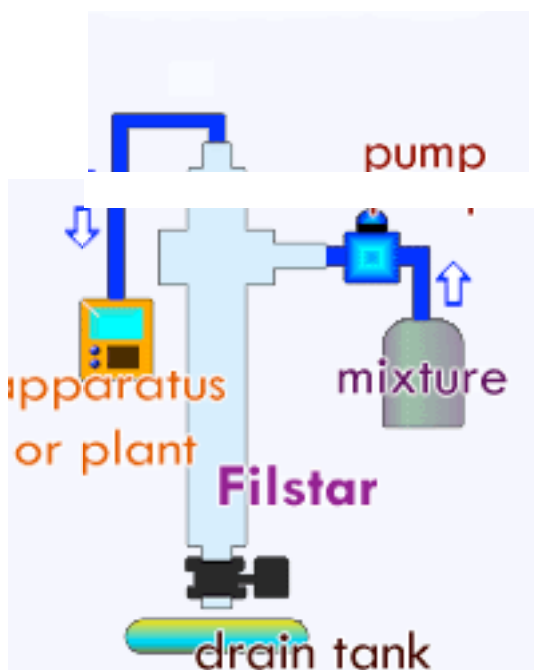
Filstar's technology improves and extends the ability to separate solids/ liquid mixtures. Generally, the three ways they can be used are as :

- a main high precision filter.
- an environmental recovery filter.
- a pre-filter.

Filstar saves on running costs and helps companies to improve their environmental measures to reduce industrial waste. This corresponds to ISO 14001. Filstar also responds positively to companies dealing with the rising costs of hazardous waste and the implications of the waste electrical and electric equipment directive.

Industries that can use Filstar include:

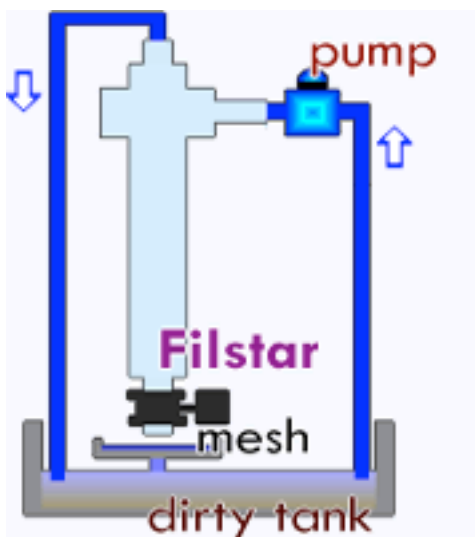
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|-------------------|--------------------|
| ○ pharmaceutical. | ○ photogaphic |
| ○ beverage. | ○ device |
| ○ food. | ○ water processing |
| ○ biotechnology | ○ vehicle industry |
| ○ semiconductor | ○ equipment |
| ○ chemical | ○ electrical |



Applications of Filstar®

The applications of Filstar are numerous and include the:

- pre-filtration of materials in medicine and science, as well as food and drink industries.
- recovery of machine cuttings of the processing, vehicle, engineering industries. This avoids the complications the cuttings present.
- filtration of environmental water. This may be from water used in explicit processing or from factory drainage.
- removal of impurities in the field of semiconductor, biotechnology and other industries.
- removal of foreign bodies from cleansing water and solvents in numerous industries.
- separation of hazardous waste with minimum volume in the chemical process industry.
- removal of unused reactant for recycling and productivity improvement in the chemical process industry.



Performing as a long-lived high class filter or strainer. Ideal for dirty tank liquid recovery and reuse; conserving resource.

Examples of Processes that use Filstar®

Many examples can be found. These include:

- **Factories** Industrial water, cooling towers
- **Metallic molds** Wire cuttings, grinder, grinding plate
- **Vehicle industry** Coolant, painting line, cleaning fluid
- **Steel** Cooling water, environmental water
- **Pharmaceutical** Pre treatment of distilled water, filtration of raw materials
- **Semiconductor** Glass processing, cooling tower, exhaust gas, pre treatment of distilled water

- **Machine tool** Maching, grinding plate, grinder
- **Electronics** Sludge removal, solder
- **High-class materials** Recovery of materials

- **Chemical** Sludge, washing equipment
- **Food** Industrial water, scrap removal