



Industrial Fluids Treatment

Separation technology from GEA
for operating cost optimization

Cost Reduction in Industrial Production Processes

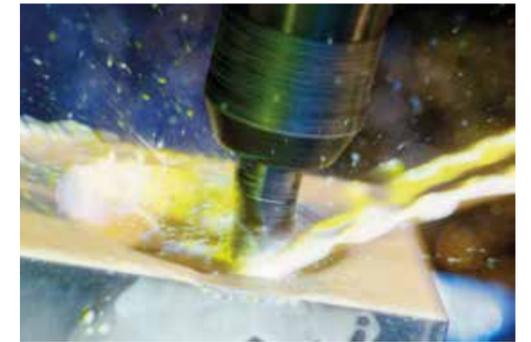
Proper Fluids Treatment with Centrifugal Separators

Fields of application for separators

- Treatment of cooling lubricants
- Treatment of gear, hydraulic and lube oils
- Treatment of washing liquids

Why costs are reduced

- Service life extensions of the liquids save procurement and disposal costs
- Efficient production processes thanks to shorter set-up times
- Longer service life of the machines, tools and bearings
- Greater availability of the tools, machines and bearings increases the productivity of the manufacturing processes
- Less scrap in the production thanks to improved surfaces and lubrication properties



Process Costs Under Control

Centrifugal Separation Technology for Long Service Lives of Operating Fluids

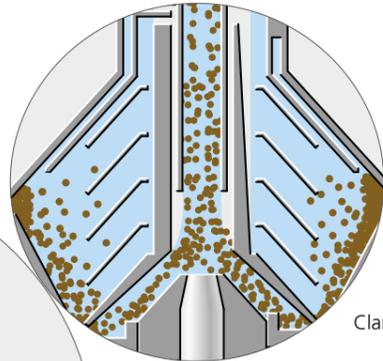
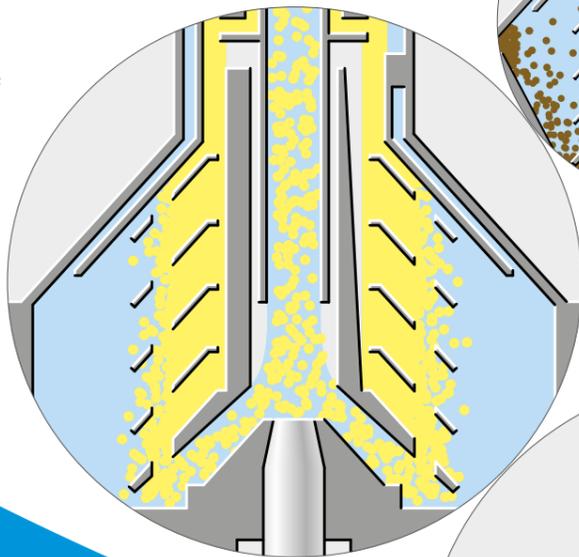
Centrifuges for cleaning industrial fluids in bypass reduces costs quickly and easily.

Range of applications for centrifugal separators

Centrifuges separate liquids from each other or clarify liquids from solids by using centrifugal force. They also separate a suspension into two liquids and remove the solids simultaneously. Separation takes place because of the density difference of the different phases.

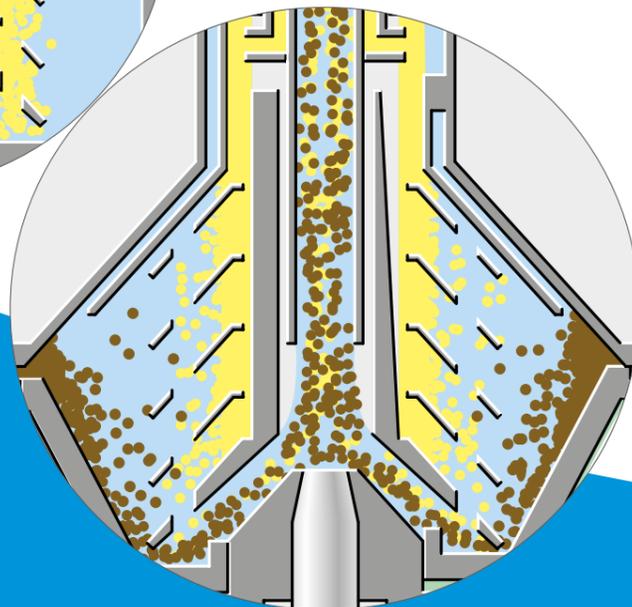
Fields of application of centrifuges

Separation of two liquids



Clarification of liquids

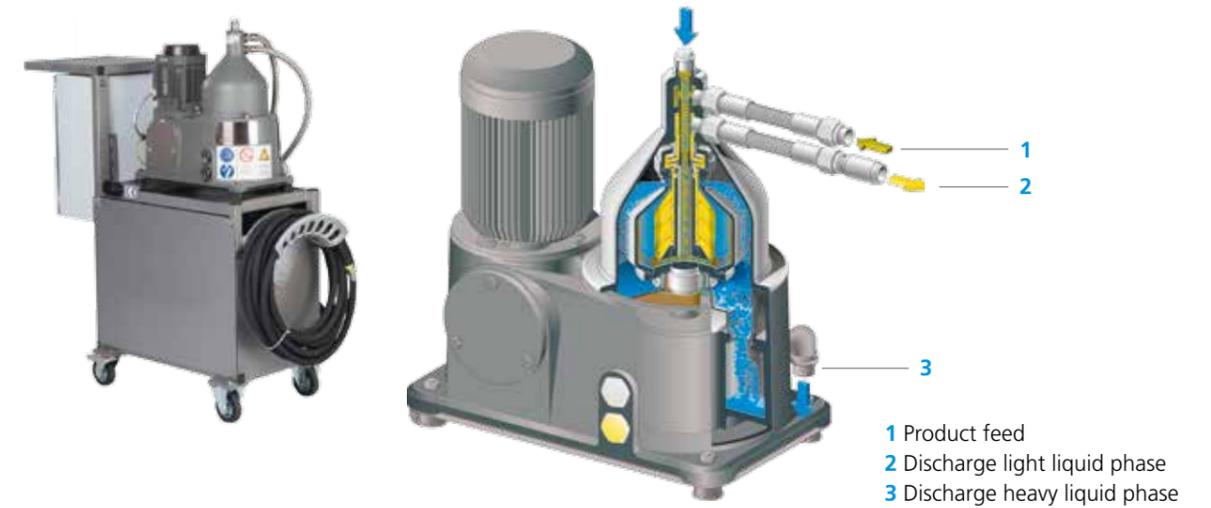
Separation of two liquids with simultaneous clarification



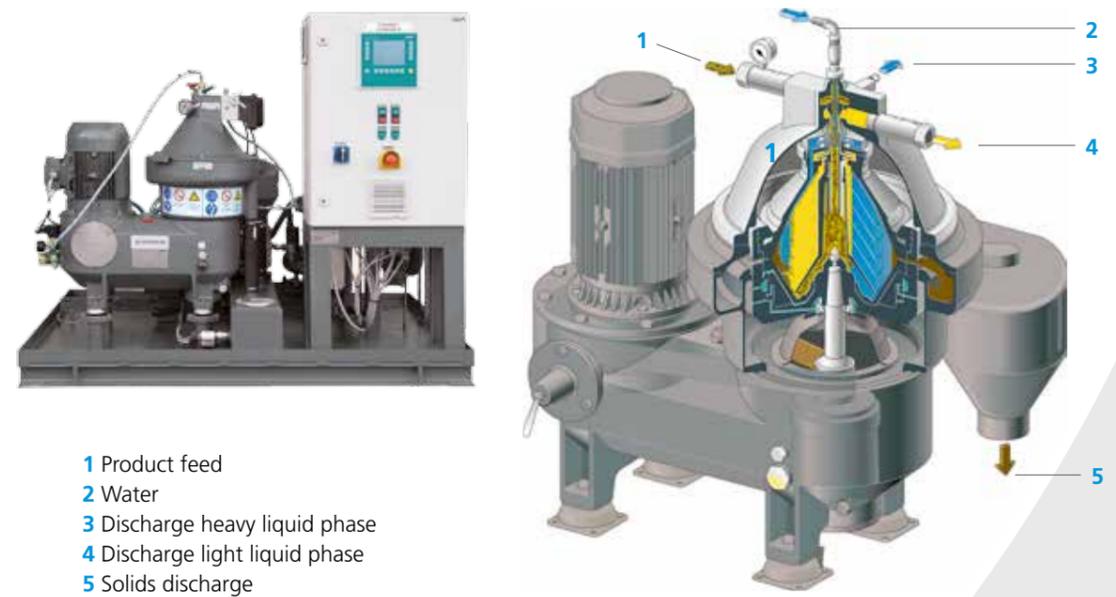
Separator Versions

GEA solid-wall separators	GEA self-cleaning separators
Clarification and separation	Clarification and separation
Low solids content	Low to medium solids content
Manual solids discharge	Automatic solids content discharge (total or partial ejection)

GEA solid-wall separators



GEA self-cleaning separators



Cleaning of cooling lubricants: Simply longer, simply better

Separators from GEA increase the service life of operating materials, reduce unplanned machine downtimes, promote hygienic production conditions and often pay off in less than one year.

Cooling lubricants need to be rid of impurities and tramp oils on a regular basis. The sooner and more reliably this happens, the more assuredly machine downtimes and unhygienic production conditions can be avoided. GEA makes safe and problem-free cleaning possible in the bypass to the circulation system. Disk separators are integrated into the production and ensure smooth operational procedures thanks to early partial flow cleaning. This extends the service life of the cooling lubricants used four or fivefold. This is just one of the reasons for the very short amortization period.

Benefits of using disk separators

Safe and smooth production thanks to:

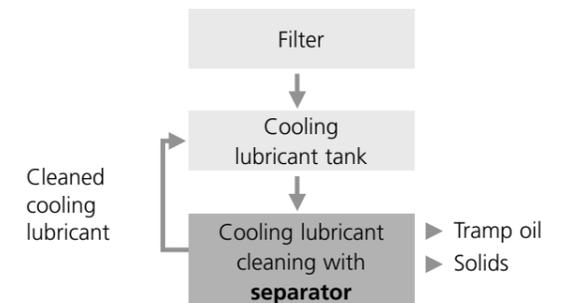
- Less machine downtime
- Longer service life of the machines
- Improved surface quality
- Less scrap
- Improved working conditions thanks to the minimization of health risks (e.g. skin irritation or respiratory ailments)
- Continuous production / Fewer bath changes

Service life extension (possibly by a factor of 5) therefore:

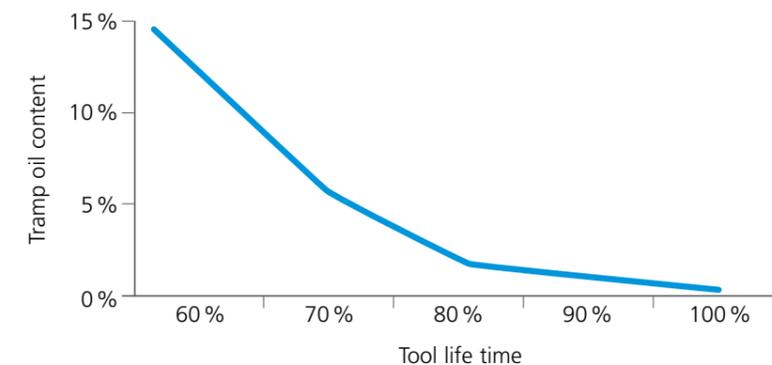
- Lower procurement costs for industrial fluids
- Lower disposal costs

Higher machine availability thanks to:

- Shorter set-up times
- Reduction in machine cleaning
- Protection of high-pressure pumps
- Staff productivity increase



Cooling lubricant treatment in the bypass to the circulation system



Tramp oils shorten tool life considerably. Separators reduce the tramp oil fraction to less than 1 % and extend the service life of the tools by a factor of up to 5.

Cleaner than clean

Removing Impurities from Washing Liquids

During the treatment of washing liquids, the separators from GEA provide key advantages when it comes to production. The overall cost savings of the separators are so great that their purchase usually pays off in less than a year.

GEA separators continuously remove particles which are carried in from tramp oils, thus making sure the desired cleaning effect is maintained and safeguarding continued production. Our separators clean the washing liquids in bypass during production. The result: Constantly high cleaning efficiency and considerably reduced needs for washing lye thanks to the significant extension to the service life. Here too, the centrifuges often pay off in less than one year.

Benefits of using disk separators

Safe and smooth production thanks to:

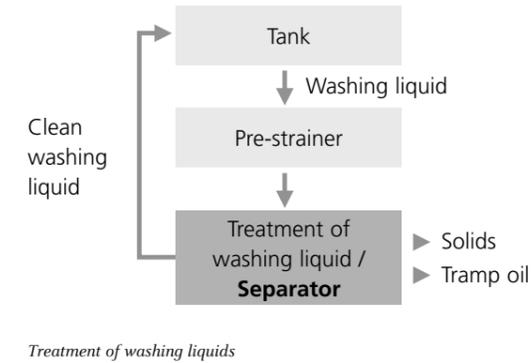
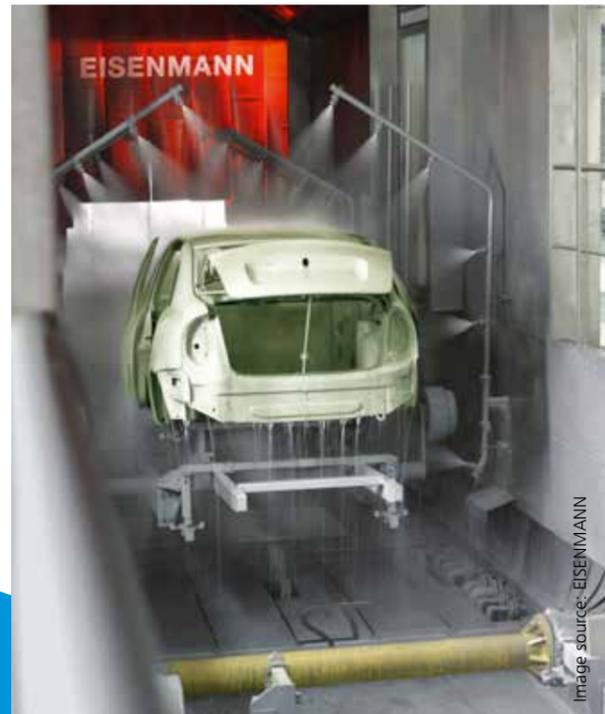
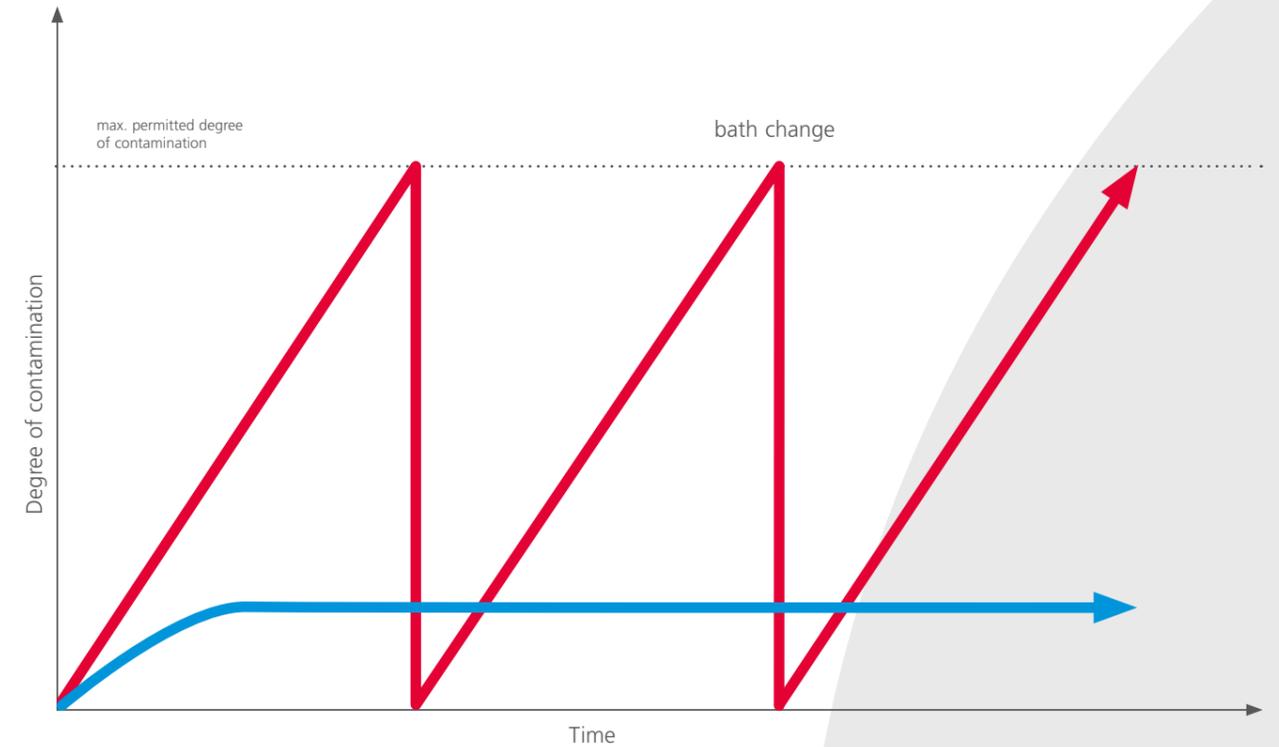
- Constant optimum washing performance
- Improved surface quality
- Less scrap
- Improved / more hygienic working conditions
- Continuous production / fewer bath changes

Service life extension (up to a factor of 5), therefore:

- Lower procurement costs for the washing liquids
- Lower disposal costs
- Lower personnel costs

Greater availability thanks to:

- Less downtime / fewer bath changes
- Reduced cleaning requirements



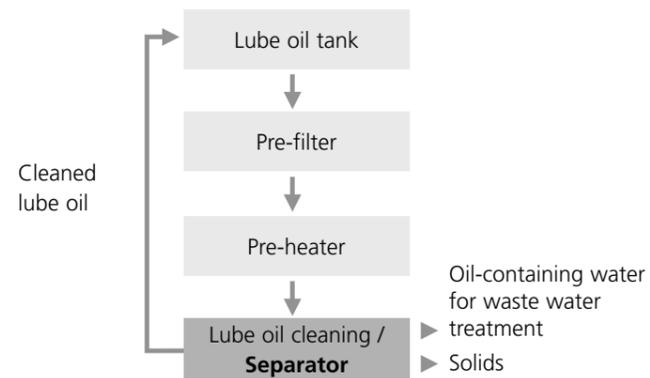
Clean washing liquids are a decisive criterion when it comes to high quality of end-products of components, for example in the automotive industry.

Smooth Operator – Treatment of Lube and Hydraulic Oil

To safely avoid corrosion, blockages and malfunctions in the systems, the continuous treatment of lube and hydraulic oil is recommended.

Centrifugal separation technology of GEA is also installed here in bypass and assures smooth operation. Metal particles of down to 1 µm and organic particles of down to 5 µm are safely separated. The lube and hydraulic oil treated this way achieves a purity of up to 99.9 percent by volume.

Here, the separator separates faster and more efficiently than, for example, a settling tank. Thus, the steel and paper-processing industry benefits from extended service lives in storage, improved machine availability and lower purchasing and disposal costs. Depending on the system, the separators can pay off after just a few months.



Lube oil treatment in the bypass to the circulation system

Benefits of using disk separators

- Service life extension of the oils used
- Lower reorder costs
- Lower disposal costs
- Lower costs for replacement investments
- Lower personnel costs

Higher machine availability thanks to:

- Less corrosion
- Extended service life in storage
- Reduced downtime and failure costs

Safe and smooth production thanks to:

- Constant optimum lubrication
- High operational safety
- Less scrap
- Consistently high oil quality

Greater oil purity allows, for example, steelworks to benefit from extended service lives in storage.



Product investigations

Product investigations specify the properties of a sample of the customer product which is to be separated. Here, the CPT can choose from a wide range of analytical methods, from the test tube centrifuge test all the way to investigations of the corrosion behaviour. The aim of product investigations is to provide an informed decision on the principle options of product processing treatment as well as on the feasibility of its technical implementation. This provides an initial estimate of investment costs.

Trials in the technical center

A trial in the Technical Center generates all of the important data on the final processed design of the production system by operating the centrifuges and the periphery, for the most part, like in the scheduled process. Not only does this result in the closer involvement of the customer, it also determines the machine type and size with investment costs, warranty data and scope of delivery.

Trials on the customer site

Alternatively, the customer can be provided with the loan of a machine which can be set up on-site at their location. In this case, the trials can, if desired, be supervised and supported by experienced CPT trial technicians.

Process developments

The world keeps on turning. New product developments stimulate demand. The CPT together with the product managers of GEA work out an entirely new process based either on the customer's specific requirements or on our own market analyses. The innovative solutions designed this way undergo thorough inspection and verification in practice, from the test in the lab to in-house pilot trials, all the way to machine and prototype testing on-site. Only then are they approved as market-ready.



Focus on Customer Solutions

Separators and decanters are not ready-made products. For optimum usage, they need to be specifically chosen and set up for the user's process management. The CPT (Central Process Technology) of GEA assists with this.





We live our values.

Excellence • Passion • Integrity • Responsibility • GEA-versity

GEA Group is a global engineering company with multi-billion euro sales and operations in more than 50 countries. Founded in 1881, the company is one of the largest providers of innovative equipment and process technology. GEA Group is listed in the STOXX® Europe 600 Index.

GEA Germany

GEA Westfalia Separator Group GmbH

Werner-Habig-Straße 1
59302 Oelde, Germany

Tel +49 2522 77-0

Fax +49 2522 77-1778

sales.germany@gea.com

gea.com