ЦЕНТРИФУГИ И ОБОРУДОВАНИЕ РАЗДЕЛЕНИЯ

ОСВЕТЛИТЕЛИ

Технические характеристики

Mineral Oil Separators OSE

Technical data | Continuous treatment of fuel and lube oils

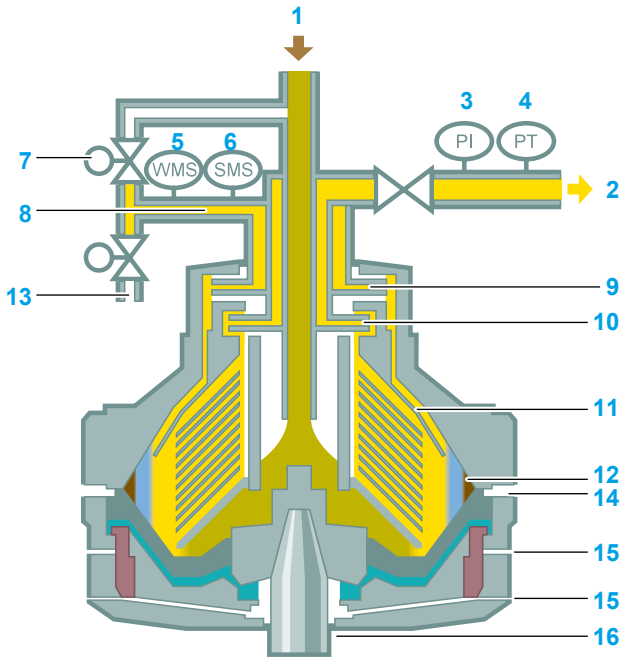
The OSE separators are equipped with a GEA **soft** stream inlet system for gentle product treatment. This results in opti-mum separating efficiency and higher specific capacities. The patented GEA hydro**stop** system separators enables controlled bowl ejections to be carried out at full operating speed.

Frame, hood and drive

The separators are of enclosed design and meet the requirements of the classification societies. The separators are driven by a 3-phase AC motor. Power is transferred to the bowl spindle via a centrifugal clutch and a flat belt. All bearings are splash-lu-bricated from a central oil bath.

Application

Mainly on board of ships, in power stations, industry and oilfield.



OSE…-0136-06
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OSE…-0196-06
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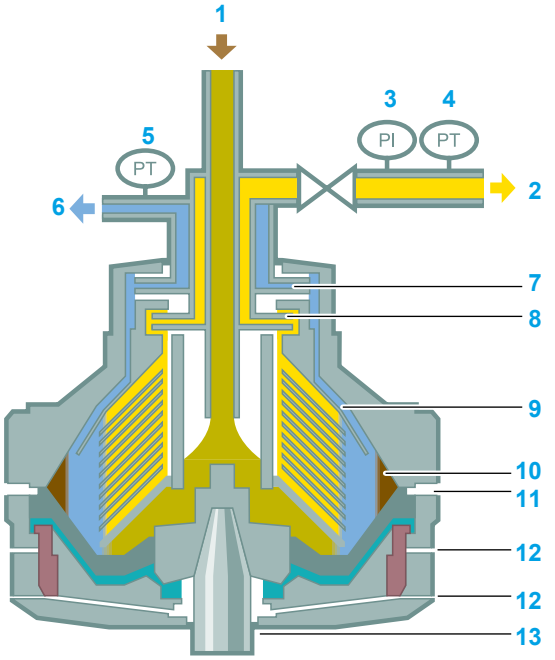
1 Dirty oil feed / displacement water feed 2 Clean oil discharge
3 Pressure gauge
4 Pressure transmitter
5 WMS sensor
6 SMS sensor
7 Solenoid valve (circulation)
8 Sensing liquid line
9 Centripetal pump, sensing liquid
10 Centripetal pump, clean oil 11 Separating disc
12 Sludge holding space
13 Dirty water discharge
14 Sludge discharge
15 Operating water discharge 16 Operating water feed



OSE…-91-067

1 Dirty oil feed / displacement water feed 2 Clean oil discharge
3 Pressure gauge
4 Pressure transmitter
5 Pressure transmitter
6 Dirty water discharge
7 Centripetal pump, dirty water
8 Centripetal pump, clean oil
9 Separating disc
10 Sludge holding space
11 Sludge discharge
12 Operating water discharge 13 Operating water feed

Separators OSE…-0136-067 / OSE…-0196-067 with GEA unitrolplus system

The centrifuges are equipped with a self-cleaning disc-type bowl. They are employed for clarification and purification in fuel oil (up to a density of 1.01 g / ml) and lube oil treatment plants. The oil is conveyed to the centrifuge by means of a separate pump. The feed (1) is via a closed line system. The clean oil is discharged under pressure (2) by means of a centripe-tal pump (10). The centrifuges operate without regulating rings.

GEA **unitrolplus** system

The separators with GEA **unitrol**plus system are provided with two monitoring systems:

- Water Monitoring System – WMS
- Sludge Monitoring System – SMS

Water Monitoring System (WMS) The small volume of liquid (8) which is branched off via the separating disc (11) and the sensing liquid pump (9) is monitored by the WMS sensor (5).
If the WMS sensor registers water, the solenoid valve (10) opens and the water flows off through the dirty water dis-charge (13). As soon as the WMS sensor-detects a change brought about by an increased proportion of oil, the solenoid valve (10) closes and the solenoid valve (**7)** opens intermitten . The sensing liquid flow (8) is recycled into the feed (1).

Sludge Monitoring System (SMS)

A small amount of product (8) is diverted via the separating disc (11). It is conveyed by the sensing liquid pump (9) through the SMS sensor (6) and is fed back into the feed line (1) of the centrifuge. If this flow of sensing liquid is interrupted by solids accumulated in the sludge space (12), the SMS sensor (6) transmits a pulse to the control unit and the automatic ejection program is initiated. The control and monitoring unit guarantees unsuper-vised operation “round-the-clock”.

Separators OSE…-91-067

The separators are equipped with a self-cleaning disc-type bowl. They are employed for clarification and purification in fuel oil (fuel oil up to a density of 0.991 g / ml) and lube oil treatment plants. The product (1) is fed in through a system of closed lines. The heavy liquid phase (6) is pressure discharged by means of a centripetal pump (7). The clean oil (2) is also discharged by means of a centripetal pump (8). The centrifuges operate with regulating rings for the heavy phase.

Materials of construction

- Frame: grey cast iron
- Hood: Silumin
- Main bowl parts: stainless steel

Standard equipment

- 3-phase AC motor
- Rubber cushions with welding plates
- Flexible feed and discharge lines
- Pressure gauge
- Pressure transmitter clean oil discharge
- Valve block for operating, filling and displacement water
- 1 set of commissioning parts
- Ejection monitoring
- Motor temperature monitoring

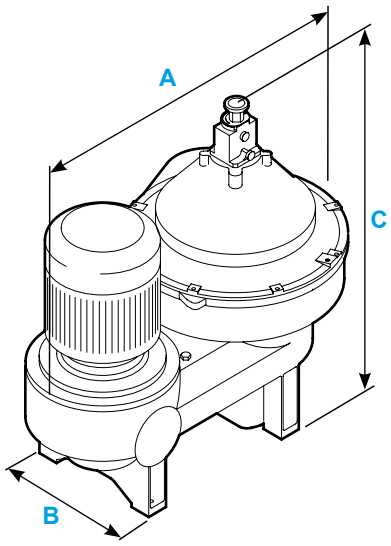
Additional equipment (available at extra cost, must comply with the specification of GEA West-falia Separator Group)

- Motor control
- Control unit for automatic operation
- Pump
- Prestrainer
- Preheater
- Automatic steam valve
- Shut-off valve
- Controls for electric heaters
- Set of tools
- Set of spare parts
- Vibrocontrol
- Product temperature monitoring
- Flow indicator
- 3 / 2 way valve

Technical Data Mineral Oil Separators OSE

Operating principles and constructional features

3-phase motor	OSE 5	OSE 10	OSE 20	OSE 30	OSE 40	OSE 80	OSE 120
Rating at 50 Hz	up to 4.0 kW	up to 4.0 kW	up to 7.7 kW	up to 11 kW	up to 18.5 kW	up to 30.0 kW	-
Rating at 60 Hz	up to 4.6 kW	up to 4.6 kW	up to 8.6 kW	up to 11 kW	up to 21.0 kW	up to 35.0 kW	up to 60.0 kW
Speed at 50 Hz	3000 rpm	3000 rpm	3000 rpm	3000 rpm	3000 rpm	1500 rpm	1800 rpm
Speed at 60 Hz	3600 rpm	3600 rpm	3600 rpm	3600 rpm	3600 rpm	1800 rpm	1800 rpm
Design	IM V1	IM V1	IM V1	IM V1	IM V1	IM V1	IM V1
Type of protection	IP55	IP55	IP 55	IP 55	IP 55	IP 55	IP 55
Centripetal pump							
Pressure	1.0 bar	1.0 bar	1.0 - 2.0 bar	1.0 -.2.0 bar	2.0 bar	2.0 bar	2.0 - 3.0 bar
Weights and shipping data							
Separator complete	150 kg (331 lb)	205 kg (452 lb)	320 kg (705 lb)	365 kg (405 lb)	1060 kg (2337 lb))	1620 kg (3571 lb)	2500 kg (5511 lb)
Case dimensions mm/inch (L x W X H)	1100 x 600 x 1000 (43 x 24 x 39)	1280 x 700 x 1030 (50 x 28 x 41)	1300 x 870 x 1030 (51 x 34 x 41)	1300 x 870 x 1030 (51 x 34 x 41)	1800 x 1000 x 1400 (71 x 39 x 55)	1800 x 1050 x 1600 (71 x 41 x 63)	2000 x 1500 x 2100 (79 x 59 x 83)
Shipping volume	0.66 m^3	0.92 m^3	1.17 m^3	1.17 m^3	2.50 m^3	3.00 m^3	6.00 m^3



Dimensions in mm (inch)

	A	B	C
OSE 5	760 (30)	401 (16)	759 (30)
OSE 10	846 (33)	544 (21)	880 (35)
OSE 20	1005 (40)	550 (22)	1009 (40)
OSE 30	1018 (40)	580 (23)	1015 (40)
OSE 40	1283 (51)	737 (29)	1288 (51)
OSE 80	1611 (63)	867 (34)	1503 (59)
OSE 120	1778 (70)	1190 (47)	1942 (76)

CLARIFIERS FOR BIOCHEMICALS

The self-cleaning GEA clarifiers for biochemical ensure high product quality and yield. According to model, they are designed to resist concentrated acids, high pressures and inflammable or even explosive substances.

The clarifiers are equipped with a disk-type bowl and movable sliding piston. The separation is fast and gently ensuring highest efficiency. The clarified liquid is discharged foam-free and under pressure by means of a centripetal pump. With very precise ejection systems which ejects the solids from the separator bowl at operating speed for a fully continuous operation and short payback periods. In many application areas of the White Biotech, developments have only just begun. To secure your investment, GEA clarifiers may be designed according to our customers' needs after laboratory tests with the original products of the customer

CLARIFIERS FOR MILK, WHEY AND CALCIUM PHOSPHATE

Our clarifiers are specifically designed for liquid-solid separation. The specific design of this machine enables it to achieve an optimum separation rate for impurities. They can be used for clarifying raw milk warm or cold.

Advantages of clarifiers to clarifying milk using filters
One of the biggest drawbacks of filters is the drop in flow rate over time because a thicker and thicker filter layer builds up. Running time is limited. The entire milk flow is passed through the filter layer. This allows bacteriological problems to arise due to entrainment; there is a risk of bacterial growth in the filter layer and thus reinfection of the milk. What is more, if there are cracks in the filter tissue, the clarifying effect is considerably reduced. Cleaning the filters after production is also an extremely laborious process.

Customer benefits
GEA generally supplies clarifiers with a hydrosoft feed system. This system combines the benefits of the GEA softstream and a hydrohermetic feed.

Adequate flow cross-sections mean low feed pressure
Optimum design means great flexibility with regard to feed quantity
No ribs in the feed chamber mean no shear forces – gentle product treatment
Hydraulic seal means no air trapped in product

Capacities
Milk or Whey

GEA ecoclean:
Milk or whey clarifying: 3,000 l/h - 15,000 l/h
MSE / MSI:
Milk or whey clarifying: 10,000 l/h - 75,000 l/h
MSC:
Clarifying capacity of DCP: 3000 l/h - 9000 l/h

CLARIFIERS FOR BEVERAGES

GEA clarifier for beverages are designed in hygienic design and allow for the reliable separation of the finest solid particles possible by the increased centrifugal acceleration. The gentle product feed by the hydrohermetic feed avoids shear forces on the product. The result is a more gentle treatment and an optimum clarifying effect, particularly for sensitive products. Oxidation pick up is prevented by the hydrohermetic seal. In comparison with mechanical seals, the hydrohermetic seal is completely wear-free and fully CIP-compatible. With patented GEA hydrostop system which ejects the solids from the separator bowl at operating speed for a fully continuous operation and short payback periods.

Automatic ejection control systems for optimized automation is available. Control systems are available to react to differing feed concentrations and define the right time for solids ejection.

CLARIFIERS FOR BLOOD PROCESSING

GEA clarifiers with hycon for clean room and low temperature applications.

GEA hycon achieves the highest concentrations of solids in an aseptic process. It unifies the advantages of chamber separators and self-cleaning separators, thereby completely fulfilling the high requirements of the pharmaceutical industry. The hermetic isolation of the product-contacting and the mechanical sections allows the user to create economical clean room conditions. A sterile process is also achieved by a fully closed, steam-sterilized system (SIP). The required careful handling of the product is conducted by the hermetic inlet and the gentle draining of the bowl at reduced speed. To achieve a high quality of the end product, the sanitary equipment of the process room is executed in the highest surface quality. Due to the suspended vessel concept, solids handling adapted by the customer is possible. This centrifuge system ensures a consistently high product quality under economical operating conditions

In some processes the temperature of the product must not rise or may rise only slightly. The compliance with a narrow temperature range of -3 to -6 °C is important for the process. In the GEA clarifying separators this is achieved with the hycon by direct nitrogen cooling. With this system, a controlled product temperature can be achieved with a tolerance of +/- 1°C.

CLARIFIERS FOR FOOD INGREDIENTS

Within protein recovery, clarifiers from GEA represent the recovery stage from the centrate from protein precipitation. This not only increases the yield of valuable protein; it also simultaneously reduces the COD value in the effluent. Higher yields combined with lower costs of effluent treatment – the recovery stage considerably increases the efficiency of the entire process. The new clarifier generation features the advantage of large equivalent clarification areas of the disk stack for optimum clarification particularly in conjunction with high throughputs. A centripetal pump discharges the clarified liquid foam-free and under pressure, which means that there is no oxygen pickup.

GEA clarifiers are also suitable for all algae concentration processes. The featured GEA hydrostop system makes for very high solids concentrations (up to 30 percent) and thereby maximizes product yield. With the GEA hydrohermetic feed system our clarifiers provide gentle product treatment of the sensitive cellular material. Corrosion-resistant materials for processing salt water algae are available, too.

GEA clarifiers for food ingredients are also CIP-capable. For cleaning purposes, they are flushed with normal media in the CIP method; the residues which are removed collect in the solids holding space of the bowl, where they are ejected. The ejection process generates an additional flushing effect in the disk stack, and this improves the efficiency of the chemical cleaning process.

If you prefer mechanical separation at the highest level you can get our clarifiers for food ingredients with an integrated direct drive instead of a flat belt drive. GEA direct drive achieves a considerable improvement in terms of effectiveness. Our innovative drive concept reduces friction losses by way of direct power transmission. The solution of integrating the drive in the separator has resulted in a reduction of space requirement by up to 35 percent. The integrated design does not use components such as a gear or belt drive. Additionally, the direct power transmission results in a much lower noise level, in conjunction with low-wear operation.

Features & Benefits
Best separation results
Food-grade design and FDA approved gaskets
CIP capable for highest hygienic demands
Gentle product treatment
Available in direct drive design

CLARIFIERS FOR PHARMA EXTRACTION

GEA clarifiers for pharma extraction are designed in accordance to GMP requirements. Low shear forces are acting on the product by the patented hydrohermetic feed and precise systems for controlled partial ejections. The clarifiers are suitable for fully automatic cleaning-in-place (CIP).

GEA clarifiers cover all processes of liquid-solid extractions, whether in one or more stages on the co-current, counter-current and cross-current principles.Centrifugal extraction by GEA clarifiers bear the following advantages:

Reduced operating costs, low solvent requirement. Higher overall yield by short contact times. Reduced investment costs by high stage efficiency minimizing the number of stages. Optimum throughput capacity with minimum space requirement. Higher overall yield with a significant improvement in substance interchange between the phases by avoiding backmixing. Higher overall yield qualities. Higher process security and availability.

CLARIFIERS FOR PILOT SCALE/ LAB SCALE

This clarifier has been designed for applications on a pilot respectively small production scale for batches between 15 to 300 litres.

GEA supports new developments in the pharmaceutical branch from the outset through continuous cooperation with universities, research institutes and industry. In this way, a rapid and individual response to current customer needs is assured at all times. With stand-alone machines or package units designed for pilot scales which guarantee a high yield of valuable substances and which operate trouble-free, efficiently, reliably and economically throughout a long service life, GEA supports the industry to set up new processes.

GEA clarifiers for pilot plans are available with hydrohermetic inlet for a gentle product feed and subsequently a high degree of vitality and protein activity.

Chemical CIP cleaning (CIP = cleaning-in-place) is available. It cleans process lines without the need to dismantle or open individual machines. The machines may undergo GMP pre-qualifications at our pharmaceutical test facility as an extra.

По вопросам продаж и поддержки обращайтесь:

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