Mineral Oil Separators OSE

Technical data | Continuous treatment of fuel and lube oils

The OSE separators are equipped with a GEA softstream inlet system for gentle product treatment. This results in optimum separating efficiency and higher specific capacities. The patented GEA hydrostop 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-lubricated from a central oil bath.

Application
Mainly on board of ships, in power stations, industry and oilfield.
OSE...-0136-067
OSE...-0196-067

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 centrifugal pump (10). The centrifuges operate without regulating rings.

GEA unitrolplus system

The separators with GEA unitrolplus 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 discharge (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 intermittently. 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 unsupervised 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 centrifugal pump (7). The clean oil (2) is also discharged by means of a centrifugal 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 Westfalia 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
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### Technical Data Mineral Oil Separators OSE

#### Operating principles and constructional features

<table>
<thead>
<tr>
<th>3-phase AC motor</th>
<th>OSE 5</th>
<th>OSE 10</th>
<th>OSE 20</th>
<th>OSE 30</th>
<th>OSE 40</th>
<th>OSE 80</th>
<th>OSE 120</th>
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</thead>
<tbody>
<tr>
<td>Rating at 50 Hz</td>
<td>up to 4.0 kW</td>
<td>up to 4.0 kW</td>
<td>up to 7.7 kW</td>
<td>up to 11 kW</td>
<td>up to 18.5 kW</td>
<td>up to 30.0 kW</td>
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<tr>
<td>Rating at 60 Hz</td>
<td>up to 4.6 kW</td>
<td>up to 4.6 kW</td>
<td>up to 8.6 kW</td>
<td>up to 11 kW</td>
<td>up to 21.0 kW</td>
<td>up to 35.0 kW</td>
<td>up to 60.0 kW</td>
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<tr>
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<td>3000 rpm</td>
<td>3000 rpm</td>
<td>3000 rpm</td>
<td>1500 rpm</td>
<td>1800 rpm</td>
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<tr>
<td>Speed at 60 Hz</td>
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<td>3600 rpm</td>
<td>3600 rpm</td>
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</tbody>
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#### 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

<table>
<thead>
<tr>
<th>Separator complete</th>
<th>150 kg (331 lb)</th>
<th>205 kg (452 lb)</th>
<th>320 kg (705 lb)</th>
<th>365 kg (805 lb)</th>
<th>1060 kg (2337 lb)</th>
<th>1620 kg (3517 lb)</th>
<th>2500 kg (5511 lb)</th>
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</thead>
<tbody>
<tr>
<td>Case dimensions mm/inch</td>
<td>1100 x 600 x 1000 (43 x 24 x 39)</td>
<td>1280 x 700 x 1030 (50 x 28 x 41)</td>
<td>1300 x 870 x 1030 (51 x 34 x 41)</td>
<td>1300 x 870 x 1030 (51 x 34 x 41)</td>
<td>1800 x 1000 x 1400 (71 x 39 x 55)</td>
<td>1800 x 1050 x 1600 (71 x 41 x 63)</td>
<td>2000 x 1500 x 2100 (79 x 59 x 83)</td>
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<tr>
<td>Shipping volume</td>
<td>0.66 m³</td>
<td>0.92 m³</td>
<td>1.17 m³</td>
<td>1.17 m³</td>
<td>2.50 m³</td>
<td>3.00 m³</td>
<td>6.00 m³</td>
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#### Dimensions in mm (inch)

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