Alfa Laval AFPX separator centrifuges were specially designed for extremely demanding separation jobs. Key features of the AFPX 517 centrifuge are its ability to handle high flow rates, high solids content and high-temperature processing. These functions make it the ideal choice to handle the tough conditions encountered in the animal and fish processing industries. In addition, the AFPX 517 centrifuge combines a high G-force, high sludge capabilities and automated operation.

**Applications**
The AFPX 517 was designed to discharge solids intermittently, while at the same time separating two intermixed and mutually insoluble liquid phases of different densities. The centrifuge comes in a series of optimized executions that are suitable for a considerable number of duties, including separating fish press water, stick water and extracts. Other applications include the purification of fish oil and liver oil, animal fat, peel oil, and similar products.

**Performance**
The actual throughputs depend on variables such as the amount and type of solids, the temperature, viscosity and degree of separation required. The following figures indicate the rate of performance, although no guarantees are given. Alfa Laval representatives will be pleased to provide you with further information.

<table>
<thead>
<tr>
<th>Separation - fish press water</th>
<th>25.000–30.000 l/h (110–130 US gpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purification - fish oil</td>
<td>14.000–18.000 l/h (60–80 US gpm)</td>
</tr>
<tr>
<td>Purification - animal fat</td>
<td>6.000–8.000 l/h (25–35 US gpm)</td>
</tr>
</tbody>
</table>

**Standard design**
The machine consists of a frame that has a horizontal drive shaft with clutch and brake, worm gear, lubricating oil bath and vertical bowl spindle in the lower part. The bowl is mounted on top of the spindle, inside the space formed by the upper part of the frame, the ring solids cover, the collecting cover, and the frame hood. The feed and liquid discharge system, including the paring disc pump for the heavy phase, also rests on this structure. All parts in contact with the process liquid are made of stainless steel. The bowl is of the solids-ejecting disc type with a hydraulic operating system for “shooting” (for automatic or manual operation). The electric motor is either of the controlled torque type or made for variable frequency drive. The VFD motor is provided with a protecting cap.

**Basic Equipment**
Concentrator or purifier parts, inlet and outlet devices, revolution counter, set of erosion-protective parts, illuminated sight glass box for light phase outlet, vibration switch, vibration-isolating base plate, flange motor, set of tools and standard set of spares.

**Optional Extras**
Starter equipment, frequency converter, discharge control panel, set of standard fittings, set of CIP valves and fittings, and serviceability package for online viewing of separator.

**Material data**

<table>
<thead>
<tr>
<th>Component</th>
<th>Material Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowl body, hood and lock ring</td>
<td>s.s. 1.4462 UNS S31803</td>
</tr>
<tr>
<td>Solids cover and frame hood</td>
<td>s.s. 1.4401 UNS 31600</td>
</tr>
<tr>
<td>Bottom frame</td>
<td>Cast iron, clad with s.s. 1.4301 UNS 30400</td>
</tr>
<tr>
<td>In and outlet</td>
<td>s.s. mostly 1.4401 UNS 31600</td>
</tr>
<tr>
<td>Gaskets and O-rings</td>
<td>Nitrile rubber</td>
</tr>
</tbody>
</table>
Operating principles
Separation takes place inside a rotating bowl. The feed is introduced to the rotating centrifuge bowl from the top via a stationary inlet pipe (1), and is accelerated in the distributor (2), which was specially designed to ensure smooth acceleration of the feed liquid (4). Leaving the distributor, the feed enters the disc stack (3). The separation into liquid–liquid–solids takes place between the discs, with the oil phase moving through the disc stack to the centre. When it reaches the centre, it is discharged through pipes (5) and ejected into the collecting frame. The water and heavy solids separated from the oil move to the periphery, and the water flows via channels in the top disc (6) to the paring chamber, where it is pumped out of the rotor by means of a built-in paring disc (7). In purification duties, hot water is fed into the inlet of the bowl before the process liquid is introduced. This water forms a seal around the outer edge of the top disc and thus eliminates high loss of light phase through the heavy phase paring disc. The solids collect in the periphery, where they are discharged intermittently into the solids collecting cover below the bowl. The solids are discharged by means of a hydraulic system, which forces the sliding bowl bottom (8) to drop down at preset suitable intervals, thus opening the solids ports at the bowl periphery.

Basic executions
Purifier AFPX 517XGV-14: Purifies the light liquid phase, which is the major part of the feed mixture.
Concentrator AFPX 517XGV-74: Purifies the heavy liquid phase, which is the major part of the feed mixture. The light phase becomes concentrated.

Utilities consumption
- Electric power at 30 m³/h: 29 kW
- Operating liquid: 0.3 l per discharge plus 10–100 l/h
- Flushing liquid per discharge: max. 18 l
- Cooling liquid for the lubricating oil: 100 l/h

Technical specification
- Hydraulic capacity: 50 m³/h (220 US gpm)
- Bowl speed: 4,135 rpm
- Motor speed synchronous 50/60 Hz: 1,500/1,800 rpm
- Centrifugal force inside bowl: max. 6,225 g
- Bowl volume: 55 l
- Sludge space volume: approx. 26 l
- Motor power installed: 37 kW
- Starting time: 10–12 min
- Stopping time, at 400 kPa brake pressure: 21–23 min
- Inlet pressure at 35 m³/h: 400 kPa
- Outlet pressure, oil: 0 kPa
- Outlet pressure, heavy phase: 600 kPa
- Sound pressure: 83 dB(A)
- Overhead hoist lifting capacity: min. 1,000 kg (2,205 lbs)

Connections
- Feed inlet diameter: 76 mm (3") SMS Union
- Heavy liquid outlet diameter: 76 mm (3") SMS Union
- Light liquid outlet diameter: 76 mm (3") hose connections
- Solids outlet: Flange 270 x 288 mm

Shipping data (approximate)
- Centrifuge incl. bowl and motor: 2,170 kg (4,800 lbs)
- Bowl weight: 820 kg (1,800 lbs)
- Gross weight: 3,425 kg (7,600 lbs)
- Volume: 10 m³

How to contact Alfa Laval
Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com

Alfa Laval reserves the right to change specifications without prior notification.