



X20

Skid-mounted centrifuge for heavy crude oil dehydration



Centrifugal dehydration of heavy crude oil

The Alfa Laval X20 centrifuge is a purpose-built, high-capacity process centrifuge. The design is an evolutionary development of the highly reliable Alfa Laval nozzle bowl disc stack centrifuge, which has been used for synthetic crude oil dehydration in Canada since 1978.

The X20 centrifuge is mounted on an offshore skid, complete with process and utility piping, instruments, valves and controls to form a functional process system. The system is suitable for use in hazardous areas on a Floating Production Storage and Offloading (FPSO) facility.

The X20 centrifuge can treat crude oils with an API down to 11.5. It can deal with considerable variations in feed composition and constantly obtain a pipeline specification oil quality. The need for demulsifiers and heat is greatly reduced compared with conventional technology.

Features and benefits

- Robust, compact design with automatic operation
- Easy maintenance, in which the bowl and bearing parts can be removed as a complete assembly on site
- The patented OPTIPHASER™ automatic oil/water interface system for rapid, easy on-line optimization of the separation process
- The patented OPTIFLOW™ inlet device for minimal droplet splitting of the feed
- Can easily be rebuilt for produced water de-oiling service
- The skid is built in accordance with Zone 1/Class 1 Div 1 specifications and complies with the ATEX regulations Zone 1 and 2.

The X20 can process up to 25,000 bpd (2,750 US gpm, 170 m³/h) of heavy crude oil with water content between 0 and 50%.

The OPTIPHASER™

The X20 centrifuge is delivered equipped with the OPTIPHASER™, a patented feature that ensures optimal separation and minimal oil losses to the water phase.

The OPTIPHASER™ balances the feed with sufficient water to obtain optimal separation and makes it possible to accept up to 50% water cut in the feed, at flow rates from zero to full flow.

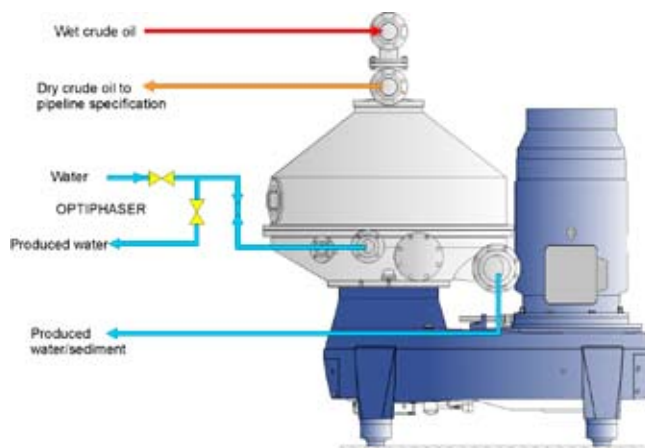
The OPTIPHASER™ also enables the operator to optimize process performance during operation.

Basic equipment

- A complete skid with the X20 centrifuge, drive motor, sample points, instrumentation and an operator panel
- Control and starter panel for safe area location
- Process and utility piping with flanged skid-edge process connections in accordance with ASME B16.5

Optional equipment

- COSMOST™ condition monitoring system
- Nozzle monitoring system
- Movable Cleaning-In-Place (CIP) unit
- Inert gas blanketing package mounted on skid
- Explosion proof control and starter panel mounted on skid



Main flow of X20.

- Enhanced erosion resistance
- Enhanced corrosion resistance
- Conversion kit for re-building into produced water de-oiling service.

Technical data

Skid length	inch (mm)	130 (3,300)
Skid width	inch (mm)	118 (3,000)
Skid height	inch (mm)	130 (3,300)
Dry weight	lbs (kg)	17,300 (7,850)
Operating weight	lbs (kg)	18,100 (8,235)
Sound pressure level ¹⁾	dB(A)	82

¹⁾ In compliance with ISO 3746.

Utilities consumption

Motor power installed	hp (kW)	200 (150)
Back-up water	gpm (m3/h)	130 (30)
Instrument air	gpm (NI/h)	0.1 (30)
Nitrogen (with inert gas blanketing option)	gpm (NI/h)	0.8 (180)

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