

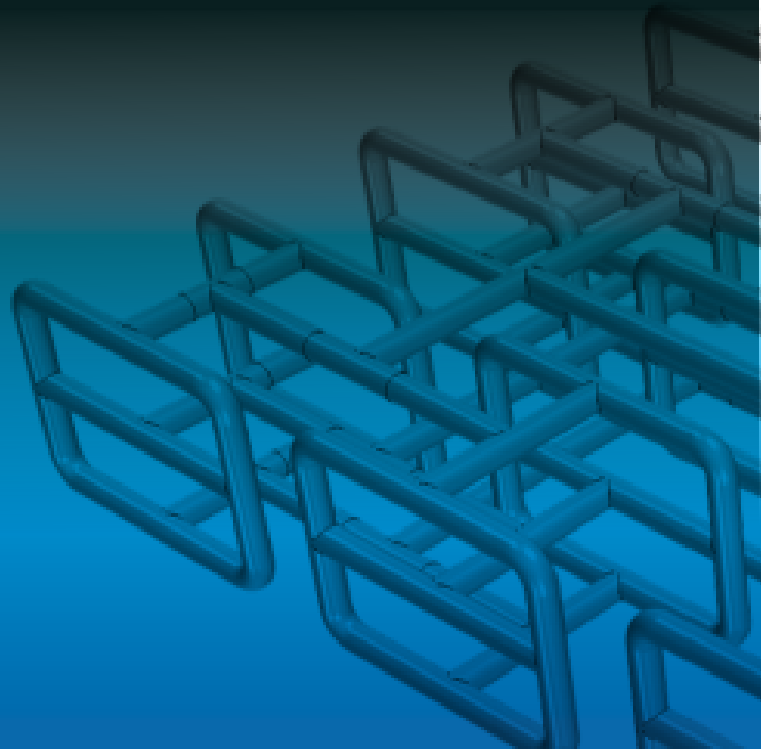


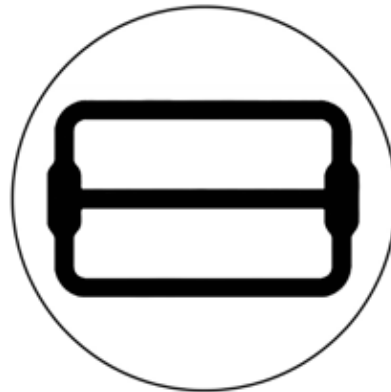
NEXT GENERATION FREE WATER IN-LINE SEPARATOR

SMART FOR LIQUIDS

2018

knockouter
 modelX





sustainable &
innovative

more than just a smart design...

Our team has designed and produced a serial of multiphase flow separators KNOCKOUTER MODEL X based on sophisticated hydrodynamic modelling.

Each phase has its own set of conservation equations, considering interphase interaction.

Dispersed particles (globules) model is based on predicting the transport of:

- particle number density;
- interfacial area density;
- dispersed phase volume fraction.

Particles change size due to breakup and coalescence as they interact with each other.

For breakup our hydrodynamic model considers the balance between disruptive forces (due to shear and turbulence) and restoring forces (due to surface tension) on the globule.

WATER KNOCK OUT SEPARATOR



Our products include:

- System design
- Production
- Additional equipment
- Automation Controllers and Monitoring



innovative

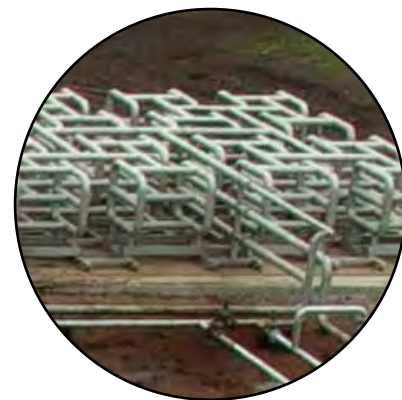
& smart design

Smart engineering approach, impressive experience in hydraulics and petroleum industry brought an idea to create a breakthrough product line for global oil industry. That's how MODEL X was born and its' performance exceeded all our expectations.

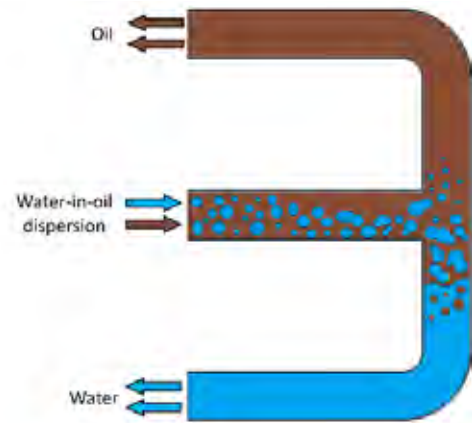
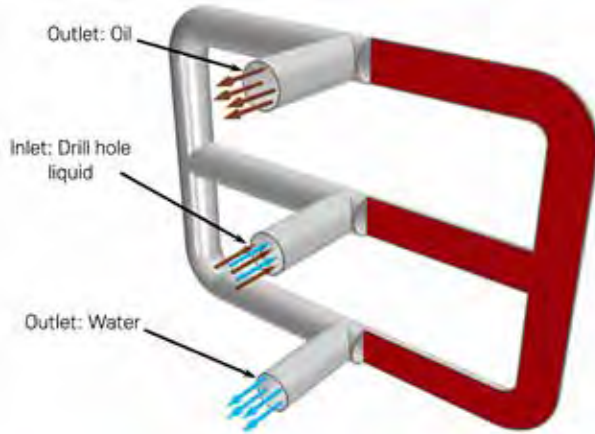
strong

pure physics

Simple design, no moving parts and modular production makes MODEL X the strongest separator ever built. Our customers enjoy simplicity and can be always sure that our separator never let them down.



MODEL X FEATURES



Standalone standard building module

Model X separator design incorporates a full-fledged line of standardized building modules each optimized for a specific range of working conditions and initial oil profile.

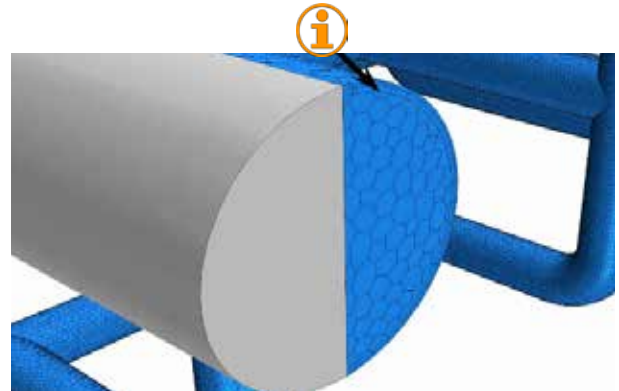
Highest separation rate

Unprecedented efficiency due to a combination of different treatment methods in a sole system including sophisticated coagulation and coalescence element with a unique ultra-effective gravity separation section.



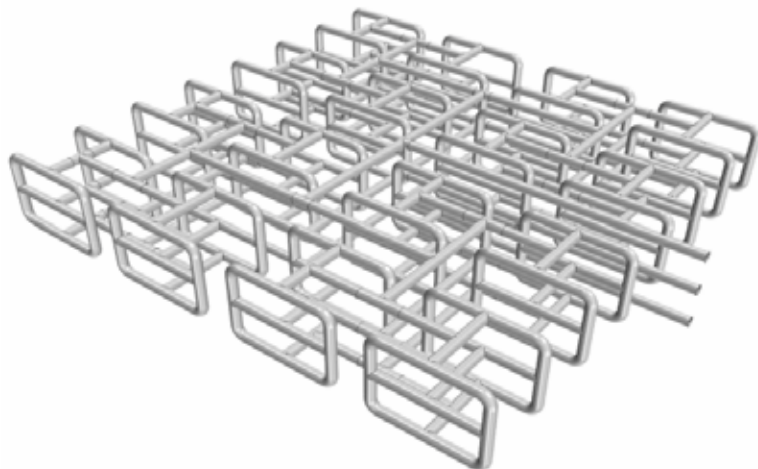
Cascade of pattern elements for increased efficiency

Although each standard module is designed to be a fully functional standalone block it is possible to further increase the separation efficiency by implementing cascaded structure of multiple pattern elements.



Modular design for quick scale up as liquid volumes grow

Just enough capacity right when you need it. There is no need to worry about the increase of the production rates. Modular design makes sure you always get enough capacity for a growing production. The initial system design allows one to incorporate step by step up to 32 standard modules in a single assembly.



- Design with fractal organized flows of liquid and gas is easy to manufacture, using pipes of different diameters and materials.
- Assembled from modules, the number of which depends on the required performance. Capacity range can be from 100 cubic meters/day up to 40,000 cubic meters/day and even more.
- Works when the water content is from 3% to 99%.
- Installation does not require significant costs, they can be installed in any location in the collection system without foundation and flare systems.

WATER MANAGEMENT

ideal solution for mature fields with a high water cut, scale, wax, H2S etc.

MODEL X is designed as a part of water management system and can be used as a single solution or as a part of the total water treatment system improving the whole process and enlarging capacity of existing separators. Additional equipment can be installed into MODEL X improving the water quality and oil quality straight at the well site before the water injector or the pipeline. MODEL X improves the efficiency of existing water treatment system and life-cycle of pipelines and other in-line equipment.

SMART SOLUTION

optimize and connect the well into integrated and controlled networks

MODEL X separator improves a crude oil quality straight at the well site before the pipeline. Possibility to transport only a crude oil through the pipeline reduces energy costs and improves the pipeline performance. Additionally, MODEL X allows to control the quality of injected water. Our solution makes a single well or a well cluster much smarter and allows monitoring the liquid production in more efficient ways. Access to other relevant liquid production data is becoming as simple as never before.

TECHNOLOGY IN DETAILS



DESIGN

simple but requires detailed engineering and good knowledge

Every and each separator is designed for certain well or well clusters taking into account present and future well conditions. The engineering part is a critical therefore we pay an extra attention for design.



VARIETY OF SYSTEM OPTIONS

highly flexible concept makes our system unique and suitable for

We are free to choose any pipe diameter, any pipe material taking into account well conditions, presence of scale and wax. Variety of available options makes integration into existing system riskless.



MODULAR DESIGN

modularity is a basic feature that guarantees the result in any case

Every module repeats the process supporting separation. In case of dramatic change and unexpected growth of liquid production our clients may simply add a few modules. Modules can be located nearby or in the distance.



PRODUCTION QUALITY

production process requires a very high quality control and

Own in-house engineering team and production guarantees that the end result is perfect. We cooperate with only proven pipe and fitting suppliers. Every weld is checked and the separation system passes few testes before the departure.



QUICK INSTALLATION

installation doesn't require large vehicles, cranes and takes only a

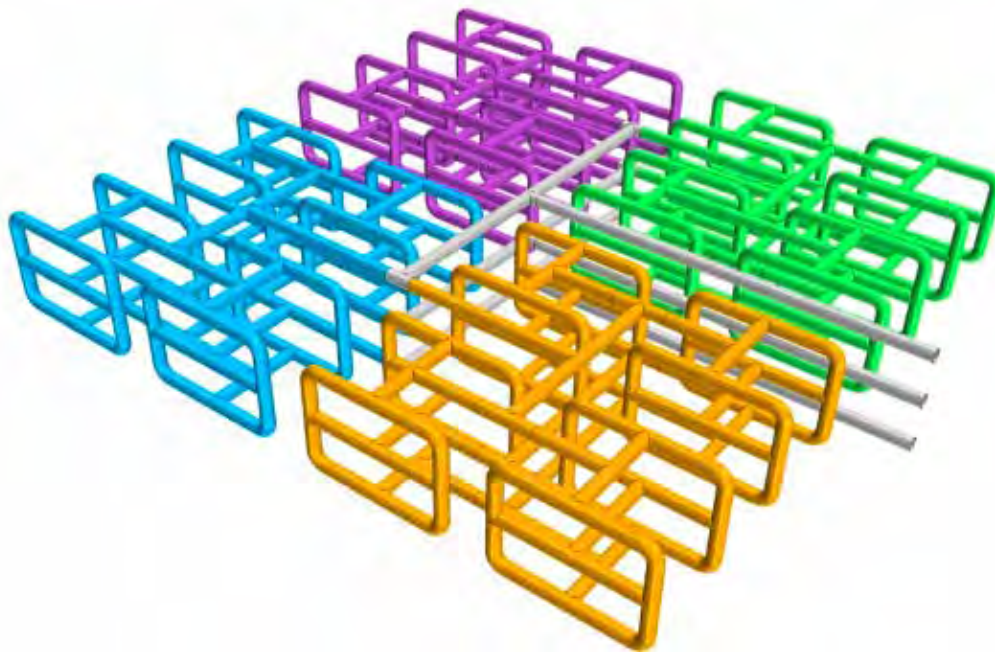
High level of engineering and quality of manufacturing allowed us to design a quick and simple installation at the well site. Installation can be done by any local authorized team.



PHENOMENAL EFFICIENCY

Model X is the most efficient separator in the world

Performance is guaranteed and supported by calculated quantity of modules. MODEL X is in average 10 times more efficient than any other known conventional separator in the world!



ADDITIONAL EQUIPMENT AND

**dosing, heaters, other in-line
equipment, solar panels, control**

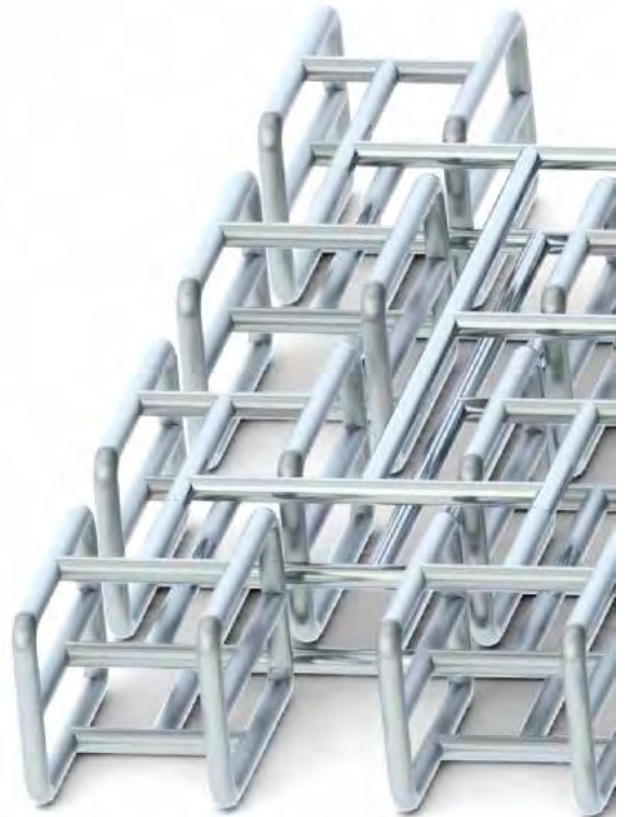
It is simple now to attach additional equipment, make changes in existing systems and get maximum out of our modular design. Work with liquids is now as simple as never been before.



PROVEN LOW CAPITAL AND MAINTENANCE COSTS

cost reduction in liquid

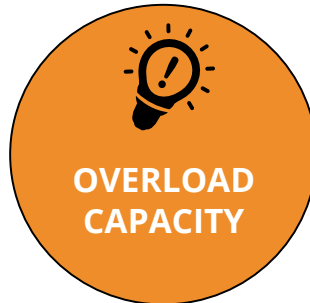
No moving parts, physical access to any part of the system, easy and quick procedures to clean the system



MODEL X ADVANTAGES



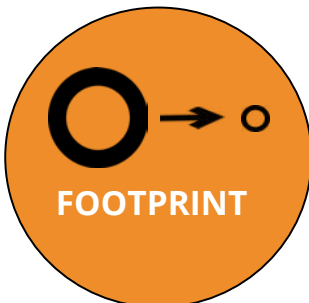
outstanding result in efficiency with all kinds of crude oil



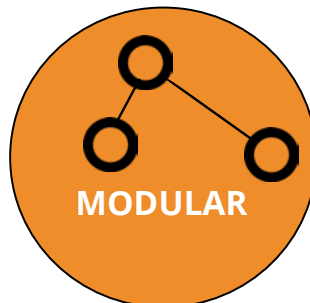
designed to sustain rapid increase in liquid production



when required just add extra module and/or equipment



small footprint allows to locate system nearly anywhere



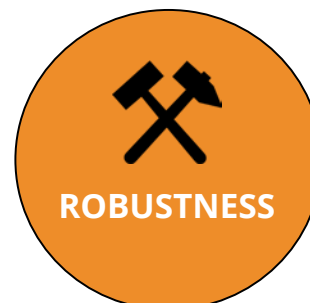
modules can be placed nearby, in the distance or on top of each other



a small footprint and modularity make Model X ideal for offshore projects



no other system can beat Model X in capital and maintenance costs



no moving parts, materials chosen for certain well conditions



easy access to the system at any point, repair kits available, simple to clean

APPLICATIONS



Mature fields

Model X separator can be installed at the time when oil production declines or at the latest stage of field development.



Water injector wells

Model X is a perfect solution for the well sites where water injectors are available nearby or in the cases when producers switched into water injectors.



Heavy fluids

The system is designed for operations with a low oil viscosity. The process is always adjusted to special well conditions.



Liquid quality

Model X is an ideal solution in those cases when liquid quality is a problem and liquids shall be treated straight at the well site. After separation liquids will be treated separately, providing a great cost reduction in dosing additional chemicals.



Well clusters, remote locations

Model X can be installed to support well clusters and reduce the impact to the main separation systems. In case of remote locations and availability of water injectors Model X is the simplest and the cheapest solution.



Offshore rigs

Due to the minimal footprint, separators are ideal for offshore rigs with growing water cut. System modules can be located at different parts of the rig or even on top of each other.



Turn-a-key solution



Production

Fully equipped in-house manufacturing. Trained personnel and fully certified production line to ensure the best manufacturing quality. Lower risks due to a comprehensive quality control and pass-through process supervision.



Installation

First-hand installation supervision, starting up and commissioning by skilled professionals. Sophisticated test and metering equipment for a precise on the site adjustment.



Training

Product knowledge trainings, technical and service trainings to deliver maximum knowledge and confidence. Become a process technology professional with our customized training courses.



Examples



The performance of liquid, m³/day – 500

Water cut, % - 99

Working pressure, MPa - 0,05 ÷ 4,0

Gas factor, m³/t - up to 50

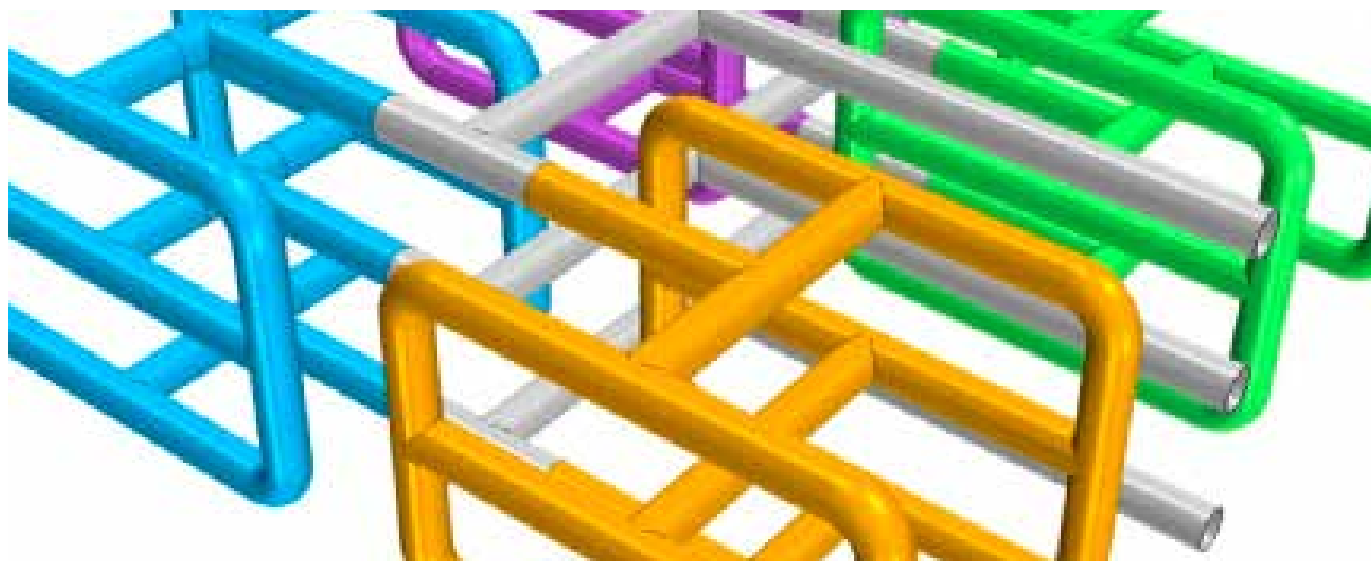


The performance of liquid, m³/day – 2846


Water cut, % - 83

Working pressure, MPa - 2,3

Gas factor, m³/t - to 100





 - for Innovation



IT'S TIME TO REDUCE COSTS,
INCREASE PRODUCTION
AND BE SMART



Exploring

the Vision

info@enegrow.com