

OIL & GAS PRODUCTION & TREATMENT TECHNOLOGIES



K-SEP™ SEPARATOR INTERNALS

SEPARATOR & ELECTROSTATIC TREATER INTERNALS, DESIGNS AND SOFTWARE



www.kirkprocess.com

3 DECADES OF EXPERIENCE DESIGNING OIL & GAS SEPARATORS



WE HAVE BEEN INVOLVED IN THE DESIGN OF THOUSANDS OF COST EFFECTIVE SOLUTIONS FOR THE INTERNATIONAL UPSTREAM OIL AND GAS INDUSTRY FOR OVER 30 YEARS

KIRK Process Solutions offers a range of specialist internals, design services and software to support your engineering and procurement activities for vessel sizing and optimisation, process performance prediction, and internals selection.

Our separation expertise is evidenced by hundreds of operational vessels installed world-wide, spanning the full spectrum of operating pressures and environments and featuring many state-of-the-art separation technologies and components in their design.

"... featuring state-of-the-art separation technologies..."



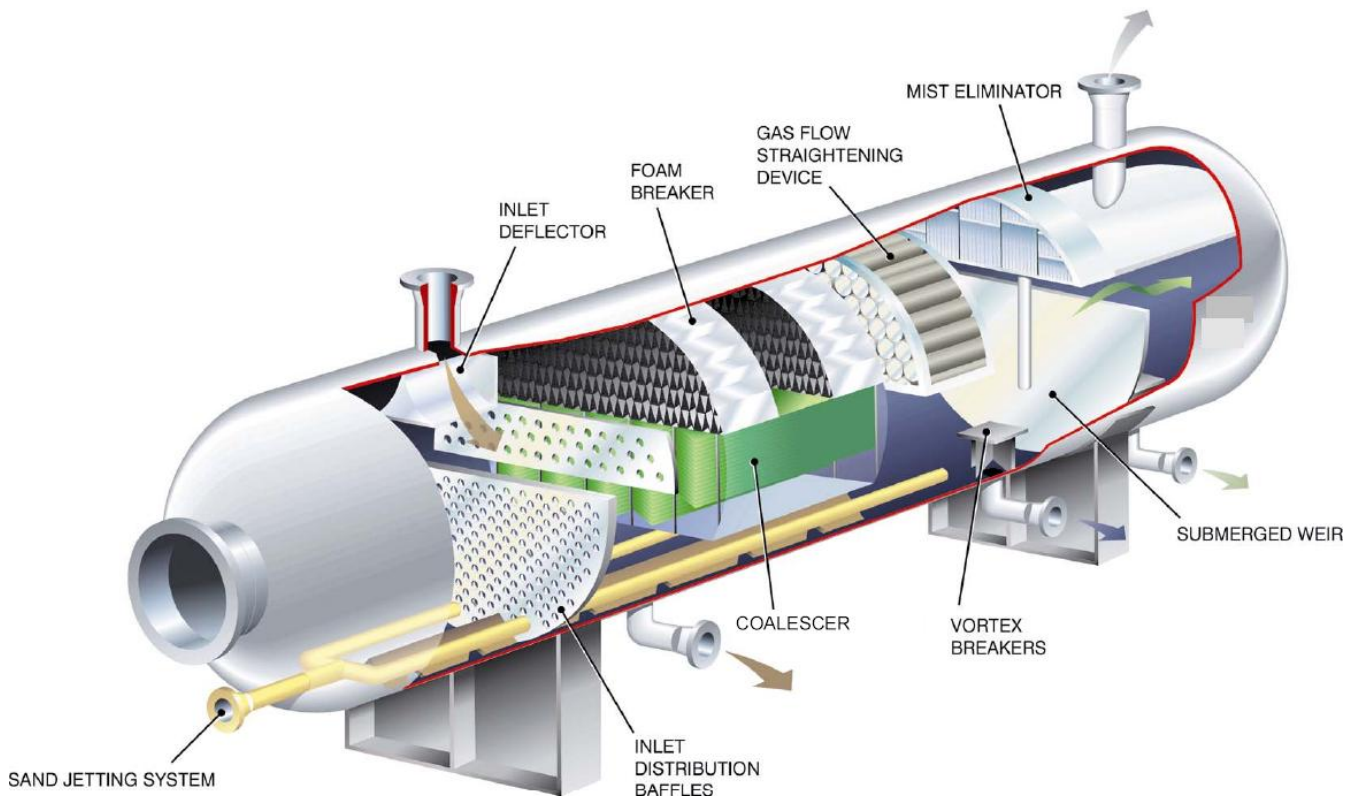
SEPARATION SYSTEMS INCLUDE

- ❖ Test Separators
- ❖ Production Separators
- ❖ Electrostatic Treaters
- ❖ Liquid/Liquid Coalescers
- ❖ Slug Catchers
- ❖ Cyclone Separators
- ❖ KO & FWKO Drums
- ❖ Flare Drums
- ❖ Compressor Scrubbers
- ❖ Pipeline Scrubbers
- ❖ Inlet Distributors
- ❖ Sand Removal Systems
- ❖ Coalescer Pack Designs
- ❖ Demister Sizing
- ❖ FPSO Modeling
- ❖ Performance Prediction
- ❖ CFD Studies
- ❖ Debottlenecking
- ❖ Audits & Verification
- ❖ SEP-Calc™ Software

CUSTOMISED DESIGNS TO DELIVER OPTIMUM SOLUTIONS



A TYPICAL PRODUCTION SEPARATOR for oilfield service is illustrated below, but the selection and optimisation of the appropriate internals is determined on a case by case basis.



HORIZONTAL SEPARATORS

- Inlet Deflectors
- Multi-Vane Distributors
- Perforated & Slotted Baffles
- FPSO Motion Baffles
- Wave Breakers
- Foam Breakers
- Coalescer Plate Packs
- Coalescer Mesh Pads
- Sand Jet Systems
- Mesh/Vane/Cyclone Demisters
- Vortex Breakers

VERTICAL SCRUBBERS

- Inlet Deflectors
- Multi-Vane Distributors
- Wire Mesh Mist Eliminators
- Vane Mist Eliminators
- Axial & Radial Cyclones
- Coalescer Plate Packs
- Vortex Breakers

ELECTROSTATIC TREATERS

- UniVolt, TwinVolt, TriVolt Grids
- Insulated Hangers
- Entrance Bushings
- Transformers
- Inlet Distributors
- Oil Collectors
- Sand Jet Systems

K-SEP™ INTERNALS MAXIMISE PERFORMANCE



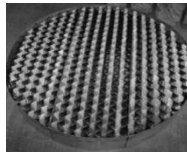
K-SEP™ Inlet Distributors



Multi-Vane Inlet Diffusers

An industry standard device for the effective distribution and momentum dissipation of incoming multi-phase feeds

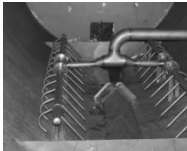
K-SEP™ Coalescer Packs



Plate, Matrix and Mesh Coalescers

To suit a range of coarse, fine and polishing applications in liquid/liquid separation duties

K-SEP™ Sand Jet Systems



Flat Jet Spray Systems

A proven arrangement for the effective removal of sediment and sand from the base of horizontal separators

K-SEP™ Mesh Mist Eliminators



Wire Mesh Demisters

A general purpose demister, available in a range of densities and wire diameters in metal alloys

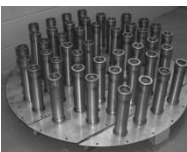
K-SEP™ Vane Mist EliminatorS



Vane Mist Eliminators

Higher liquid and gas loads are handled with vanes for horizontal and vertical gas flow or fouling applications

K-SEP™ Axial Cyclones



Axial Cyclone Mist Eliminator

An axial flow, swirl cyclone with very high capacity are available in stainless steel for liquid with solids removal

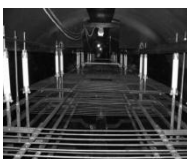
K-SEP™ Multi-Cyclones



Multi Cyclone Bundle

An effective device for the separation of high levels of liquids and / or solids in a single stage

K-SEP™ Desalter Grids



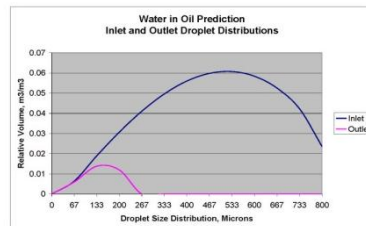
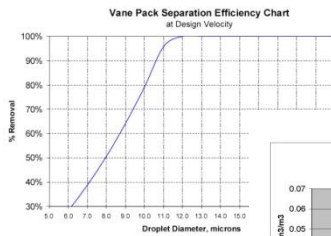
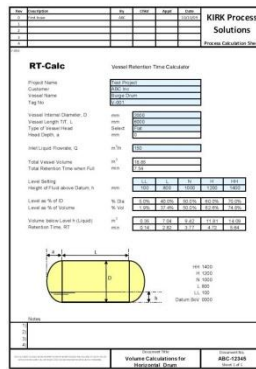
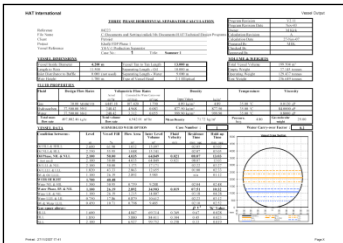
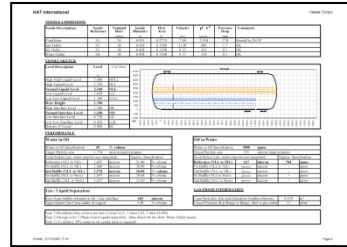
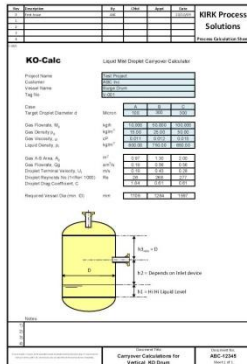
UniVolt, TwinVolt & TriVolt Grids

Using various arrangements it is possible to optimise the power and performance for most oil types

PROCESS DESIGN EXPERTISE & SUPPORT SERVICES



Using our proprietary **SEP-Calc™** software - which is available under license to our customers - we simulate the client's operating cases in a variety of separator arrangements to optimise the design concept, vessel size and internal components to meet the target performance characteristics.



TYPICAL CHALLENGES

- ✓ Multiphase feed
- ✓ Foaming crude
- ✓ Emulsions
- ✓ Incoming solids or sand
- ✓ Waxes
- ✓ Paraffin & Asphalt
- ✓ Heavy oil
- ✓ High viscosity
- ✓ Light condensate
- ✓ Low surface tension
- ✓ Small droplet sizes
- ✓ Low carryover specification
- ✓ Small footprint / weight

HOW WE MEET THE CHALLENGES

After initially simulating the operating cases using standard separator design methods we then carry out a series of incremental designs drawing upon a range of internals options to evaluate the performance improvements, finally optimizing the overall vessel and nozzle sizing to deliver the most cost-effective design to match target performance.

This expertise is also available to check or verify third party vessel sizing and performance claims.

CONTACT

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