



KASRAVAND

PROCESS SOLUTIONS



ABOUT US

KASRAVAND is a DESIGN and MANUFACTURING Company with high Engineering and Management competency.

We design & manufacture PROCESS PACKAGES such as FLARE GAS RECOVERY,TEG,MEG,WATER TREATMENT,OIL TREATMNET also we Design and manufacture FIX EQUIPMENT such as PRESSURE VESSELS, different types of SEPARATORS, FILTERS, QUICK OPENING CLOSURES, STONE TRAPS, STRAINERS, and PIG LAUNCHER / RECEIVER traps.

We have established ISO 9001:2008 QUALITY management system, PROJECT MANAGEMENT SYSTEM (Based on PMBOK Standard), OHSAS 18001:2007 HEALTH and SAFETY management system and ISO 14001:2004 ENVIRONMENTAL management system to ensure the highest QUALITY STANDARDS are achieved and that all projects are delivered on time to reach our CLIENTS SATISFACTION.

We also have close RELATIONSHIPS and CO-OPERATIONS with INTERNATIONAL and WORLD CLASS COMPANIES and make necessary PARTNERSHIP for special and technically COMPLEX PROJECTS.



WE CREATE IMPOSSIBLE

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FLARE GAS RECOVERY PACKAGE

KASRAVAND designs, manufactures and installs a FGRU (FLARE GAS RECOVERY UNIT) that absolutely fits customers' needs and gas characteristics. We can supply either a compressor (single or multi-stage sliding vane, or single stage liquid ring technologies) or a plug and play skidded Flare Gas Recovery Unit or even Eductor, one stage or multi stage type.

Our Flare Gas Recovery systems are designed to handle very harsh gases on the long run. Our maintenance costs are amongst the lowest in the whole market thanks to our capacity to adapt the material to the gas characteristics.



KASRAVAND follows the needs of its Oil & Gas customers and will shortly bring to market:

- A full FGRU package by latest EDUCTOR technology with low maintenance cost and easy operation.
- A fully monitored compressor that tells you when to carry out the maintenance (Oil, vanes, metallurgy check, etc...).

We use updated and latest version of standards and software to design the complete packages and follow latest maintenance and operation experience of installed packages.

GLYCOL DEHYDRATION

Glycol dehydration has stood the test of time as the preferred way to remove water from natural gas. The design of glycol systems such as **TEG / MEG / DEG**

is unique for each application as the overall package design will vary to meet the specified moisture content of the gas at the process conditions.



Ethylene glycols (mono, di and tri ethylene glycols) are commonly used for dewatering applications due to their ability to absorb water (hygroscopic liquid) and leave pipelines etc dry ready for carrying oil, gas, or produced fluids. GLYCOL WATER mixes (supplied in all ratios up to 80% MEG) can be used as a cheaper alternative to 100% Glycol, dependent on the amount of water expected in the line.

KASRASVAND custom designs and builds each system as a complete turn-key package with particular emphasis given to:

Discharge gas moisture content

- High gas dehydration capacity
- Minimum glycol losses
- Minimum power consumption
- Optimum plant efficiency and design integrity
- Compliance with SHEQ requirements



GLYCOL REGENERATION

KASRAVAND custom designs glycol regeneration packages to recondition glycol used for processes such as hydrate inhibition and gas dehydration.

The formation of gas hydrates can lead to significant production and safety issues in drilling operations as the solid hydrate material can plug flow lines and equipment.

Therefore, to suppress the formation of hydrates glycol, typically monoethylene glycol (MEG), is injected into the well.



The MEG that returns from the well is termed Rich MEG and contains significant quantities of water, dissolved salts and other contaminants. **KASRAVAND** custom designs glycol regeneration systems to strip the absorbed water, salts, and contaminants from the Rich MEG to produce Lean MEG that can be recycled to storage tanks and production wells.



MOL SIEVE DEHYDRATION

Molecular Sieve Dehydration Units work on the principle of adsorption. Molecular Sieve Dehydration units typically have higher initial capital investments than comparable glycol units but also are able to achieve very low dew points which are required for cryogenic plants. Additionally, Molecular Sieve Units can also handle large flow variations as well as higher inlet gas temperatures.

Where very low water dew points are required molecular sieve



dehydration is the preferred technology over glycol dehydration. Certain applications, such as LNG processing, are suited to the use of solid desiccant adsorbents like molecular sieves and silica gels.

KASRAVAND Custom designs and builds each system as a complete turn-key package with particular emphasis given to:

- Discharge gas moisture content and Optimized absorption cycles
- Reduced maintenance via the use of specialty equipment, such as Rising Stem Switching Valves Minimum power consumption, Optimum plant efficiency and design integrity Compliance with SHEQ requirements, Environmentally conscientious design.

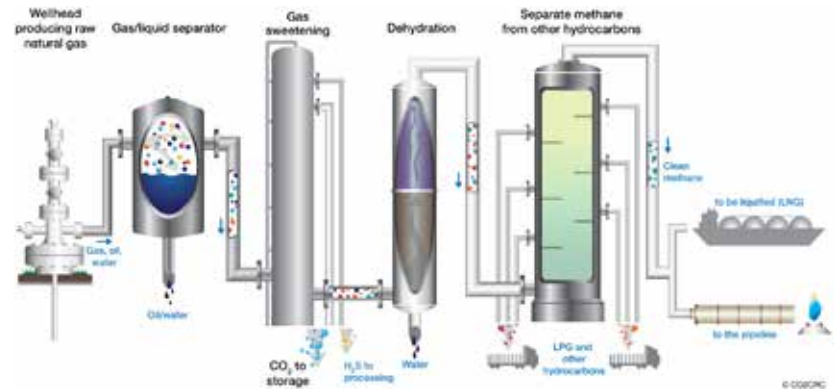


GAS SWEETENING

KASRAVAND offers a range of solutions to remove acid gas components (CO₂ and/or H₂S) from natural gas customized to meet each client's specific process requirements. The most common methods for acid gas removal are via amines, physical solvents, or membranes, the choice of which depends on the levels of impurities to be removed.

KASRAVAND works with major solvent suppliers to ensure each plant is optimized to:

- Meet sales gas CO₂ and H₂S specifications
- Remove impurities to minimize foaming
- Operating efficiency
- Materials compatibility
- Minimize solvent losses



If you do not wish to use proprietary solvents then **KASRAVAND** will optimize your gas sweetening plant for use with readily available, generic solvents.



CARBON CAPTURE PACKAGES

Whether you are looking for a small or large-scale Carbon Capture plant, **KASRAVAND** designs and builds each system as a complete turn-key package with particular emphasis on:

- CO₂ product quality
- Minimum solvent losses / Minimum utilities consumption
- Efficient integration with existing plant and processes
- Environmentally conscious design

The Carbon Capture technology employed by us can be retrofitted to virtually any exhaust gas system including coal or gas power stations, coal or gas-fired boilers, gas turbines, blast furnaces and cement kilns. The technology enables CO₂ to be



selectively absorbed from flue gas via contact with a regenerable solvent, which is specially design to selectively absorb CO₂ from gas streams.



FUEL GAS TREATMENT AND METERING

Fuel Gas Treatment packages are used in many applications to provide specific pre-treatment of gas feed streams upstream of various processes.

KASRAVAND has a well-established competency in providing optimized Fuel Gas Treatment packages customized to each unique application that includes a combination of equipment such as:



- Knock-out drums / Filter/coalescers / Heaters
- Pressure adjustment (reduction or compression)
- Gas metering
- Gas storage systems
- Condensate handling
- Emergency shutdown systems
- Vent and flare stacks / Process control systems

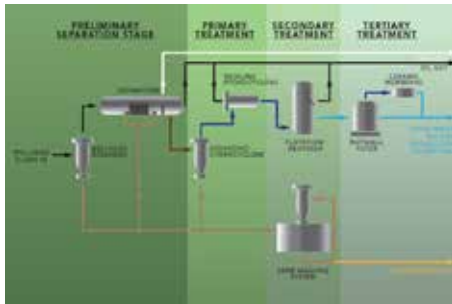




DEOILING HYDROCYCLONES

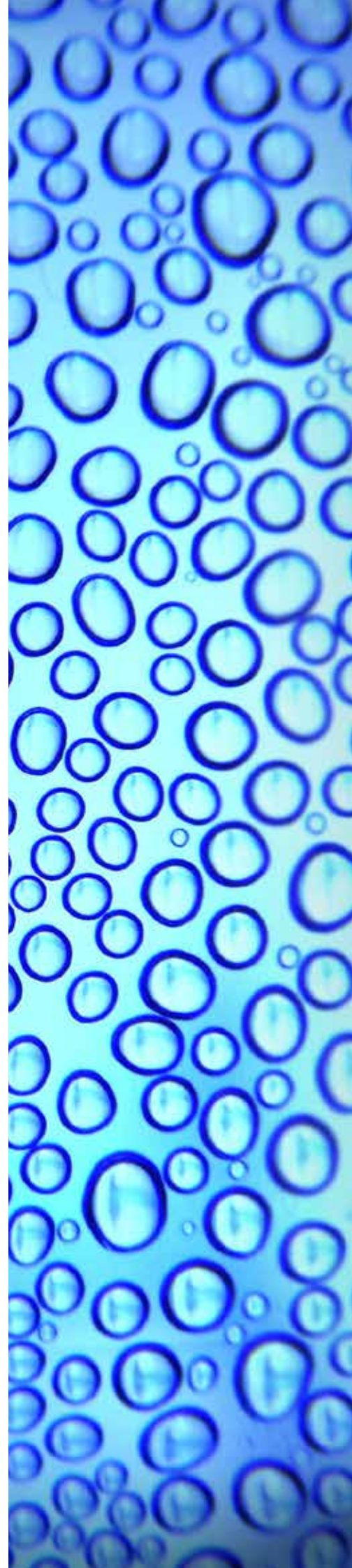
KASRAVAND's suppliers Deoiler Hydrocyclones are highly efficient in recovering oil from produced water and other process streams. Deoiler hydrocyclones have established themselves as standard oil recovery equipment as they are:

- Very compact
- Cost effective with low OPEX costs
- Low maintenance, as there are no moving parts
- Offer highly consistent performance
- Well-proven technology
- Suitable for use on floating systems



We offer Deoiler Hydrocyclones in the following range of materials so you can be sure that they are suitable for your application no matter how severe the service:

- Duplex stainless steel
- Super Duplex stainless steel
- tungsten carbide





CPI UNITS

CPI (Corrugated plate interceptor) or TPI (Tilted plate interceptor) separators are predominantly used in separation of free oil from effluent water or suspended solids for oily water treatment in an OWS (oily Water System).

The basic principle of difference in gravity between the phases (liquid – liquid or solid – liquid) is employed in an OWS in separation of the two phases. This phenomenon is defined as “Gravity Separation”.

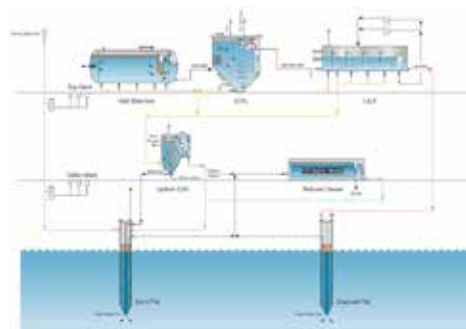
KASRAVAND CPI Units are designed to remove free oil and suspended solids from water as a primary stage of water treatment and utilize plate packs as the main separation device. The plate packs are designed with specific spacing and



alignment to allow solids to settle and fall to the bottom while simultaneously allowing oil drops to rise and coalesce, thereby reducing the oil and solids loading from the downstream water treatment train and smoothing out flow slugging .

The advantages of **KASRAVAND's** range of CPI Units include:

- Low operating and maintenance cost
- Proven robust and reliable design
- Pressurized or non-pressurized design
- Automated controls for unmanned operation

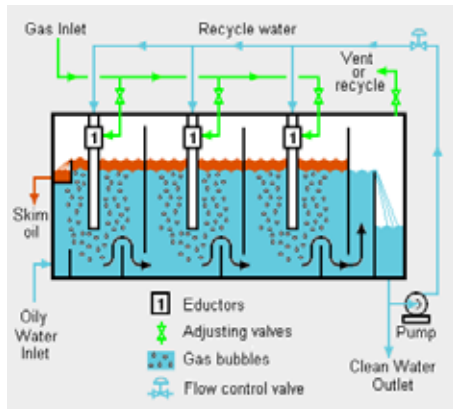




GAS FLOTAION

KASRAVAND specialize in the design & build of turnkey water treatment process plant; therefore non-standard equipment and specifications can be easily incorporated into full treatment packages. This ensures our clients requirements are met in the most efficient manner either by incorporating standard plant or a bespoke design.

The most common flotation separators in onshore produced water treatment are horizontal IGF types, generally multi-cell mechanical or hydraulic units. They have lower retention times than DGF and are therefore physically smaller, but generally have a much higher float recycle rate than a comparable DGF unit. IGF is efficient at elevated water temperatures, which are



often experienced at the wellhead. Without chemical addition, flotation units should remove particles larger than 25 microns. With chemical addition to coagulate the oil and solids, particles less than 10 microns may be removed.





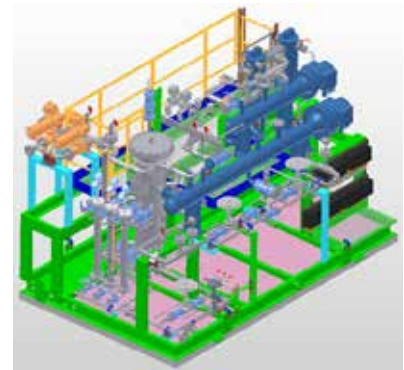
OIL TREATMENT

KASRAVAND offers a range of crude oil dewatering and desalting technologies that cover most typical processing requirements depending on the salt level required.

Following primary oil/water separation crude oil still contains residual amounts of water containing unwanted salts that need to be removed in order to avoid undesirable effects downstream such as fouling.

Our products include:

- Free water knock out drums
- Heater treaters
- Dehydrators
- Coalescers
- Electrostatic desalters
- Degassers



Following primary oil/water separation crude oil still contains residual amounts of water containing unwanted salts that need to be removed in order to avoid undesirable effects downstream such as fouling.

Automated Oil Treatment Packages are designed for gathering and treatment of fluids from oil producing wells by providing deep dehydration, desalting and oil vapor pressure reduction to achieve the required quality of marketable oil and that of separated water.

SEPARATORS & INTERNALS

KASRAVAND designs and manufactures different types of separators such as:

- Test Separators
- 3 Phase Separators (Gas/Oil/Water)
- 2 Phase Liquid Separators (Oil/Water)
- Flash Drums / Knock Out Drums (Gas/Liquid)
- Filter Separators (Gas/Liquid), (Gas/Solid)

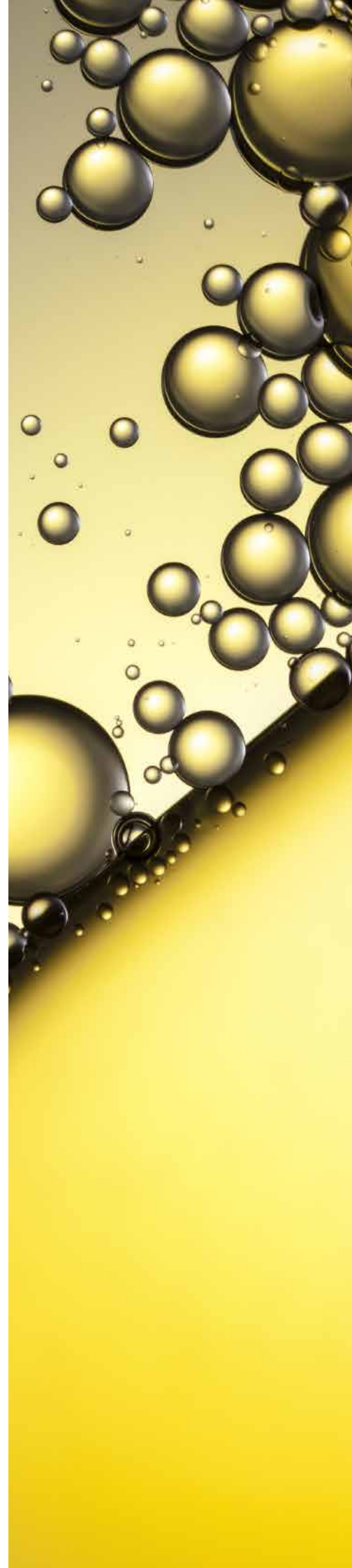
Our engineering department consists of capable and qualified engineers who are able to do process calculation and CFD modelling for different types of separators which can be 2 phases or 3 phases.

The **PROCESS** and **PERFORMANCE GUARANTEE** are provided for our separators.



KASRAVAND offers high efficiency internals that make desirable separation such as:

- Vane Type Mist Eliminator
- Cyclone tube
- Wire Mesh Mist Eliminator
- Inlet Devise
- Drained Meshpad Agglomerator
- Plate Pack Coalescers
- Swirl Tube Mist Eliminator





Head Office: Unit 63, Sadaf Tower, Shaikh Bahaei Sq., North Shaikh Bahaei Ave,
Molasadra St., Tehran, Iran.

Telefax: +98 21 88212776 - +98 21 88212350 - +98 21 88606251-2

Factory: No 11, Golbarg 11 St., Narenjestan Blvd., ShamsAbad Industrial Park
35th Km Tehran - Qom Highway, Tehran, Iran.

Telefax: +98 21 56233225 - 6

WWW.KASRAVAND.COM