

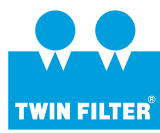


- Completion Fluids / Work-over Fluids / Gravel Pack
- Waste Water
- Frac Fluids
- Well Testing
- Pipeline Flushing



OIL AND GAS DRILLING

Service Company Guide



ENGINEERING YOUR SUCCESS.

Adding value to your drilling process.

From water intake to drilling.

Our Oil and Gas filtration division is known for its filter expertise within the oil and gas industry. We supply complete skid mounted systems as well as consumables to over 80 countries around the globe. We have an international team of specialists and are committed to provide first class technical support. We understand the specific needs within the onshore and offshore and therefore offer a specific rental filter unit fleet, next to our standard delivery program.

INTRODUCTION

To drill a well it takes millions of gallons of water. Water is the 'hydraulic' within the fracturing process used to release oil and gas deposits. To protect the formation from contamination the used water needs to be clean. Also disposal of waste water is a costly challenge for drillers. To protect the environment the discharged water needs to be extremely clean. Parker Twin Filter offers equipment for water treatment specially designed for the high demands of the oil and gas service industry.

COMPLETION FLUIDS

Clean completion fluids are essential to maximise the productivity of the producing reservoir. Dirt particles in completion fluids have major effects on the permeability of the reservoir which results in a significant reduction of the oil production and the lifetime of the producing well. Clean completion fluids can only be obtained by using the correct selection of filtration equipment and consumables. Diatomaceous Earth (DE) filtration is the most effective method for filtration of oilfield brines. Our Vertical Pressure Leaf filter unit or our Filter Press in combination with the Duplex Cartridge filter unit have proven to be the ideal solution.

FRAC FLUIDS

Flowback water (water that flows back from the fracturing process) is a mixture of fracking fluid and formation water. This water can be cleaned of chemicals and rock debris and reused to frac additional wells. Parker Twin Filter has a complete delivery program to filter the water before and after fracking. Once the chemistry of the water coming out of the well resembles the rock formation rather than the fracking fluid, we speak of produced water (for produced water we refer to our production brochure).

WASTE WATER

Operators are increasingly faced with waste water problems. Especially emulsified water does not easily separate under the influence of gravity and time. TwinZapp is a new field tested product that treats chemically emulsified water. It does not require any consumables (chemicals or absorption cartridges) and no specialist attention. The mobility of the system allows use on specific work-over projects (foam jobs) or platforms and production sites with temporarily troublesome production water.

WELL TESTING

Well Testing prevents clogging and erosion of downstream equipment. Parker Twin Filter provides a Well Head Sand Filter unit, which is designed to remove sand and other solid particles from well effluent. When needed the unit should be located right after the well and upstream the three phase separator.

The sand filter can be offered as a skid mounted unit, including frame, platform, lifting device (davit), valves, instruments and interconnecting piping with by-pass and drain.

PIPELINE FLUSHING

The Dual Cartridge filter vessel and the TwinOmatic can operate continuously and never interrupt your process. This is ideal for applications like pipeline flushing where pipelines can not be shut down for cleaning of filter equipment or cartridge change out.

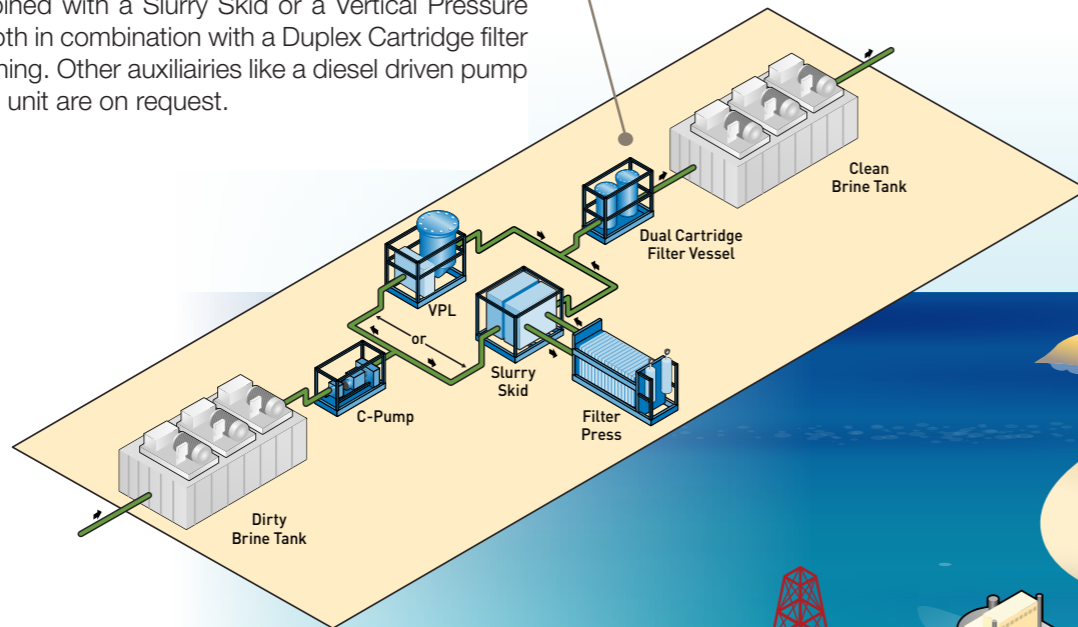


Completion Fluids / Workover Fluids / Gravel Pack

Clean completion fluids and brines are required for effective completion and maximum oil and gas production. They contribute to overall productivity.

Our solutions:

Filter Press (FP) combined with a Slurry Skid or a Vertical Pressure Leaf filter unit (VPL), both in combination with a Duplex Cartridge filter unit, for final fluid polishing. Other auxiliaries like a diesel driven pump and/or powder dosing unit are on request.

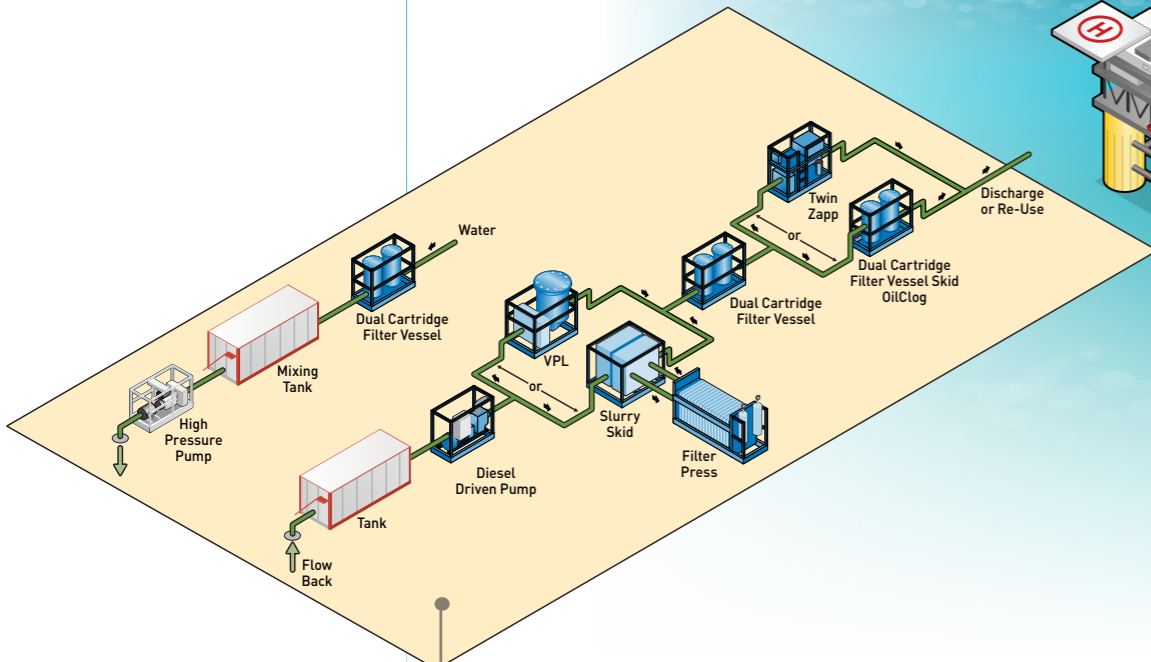
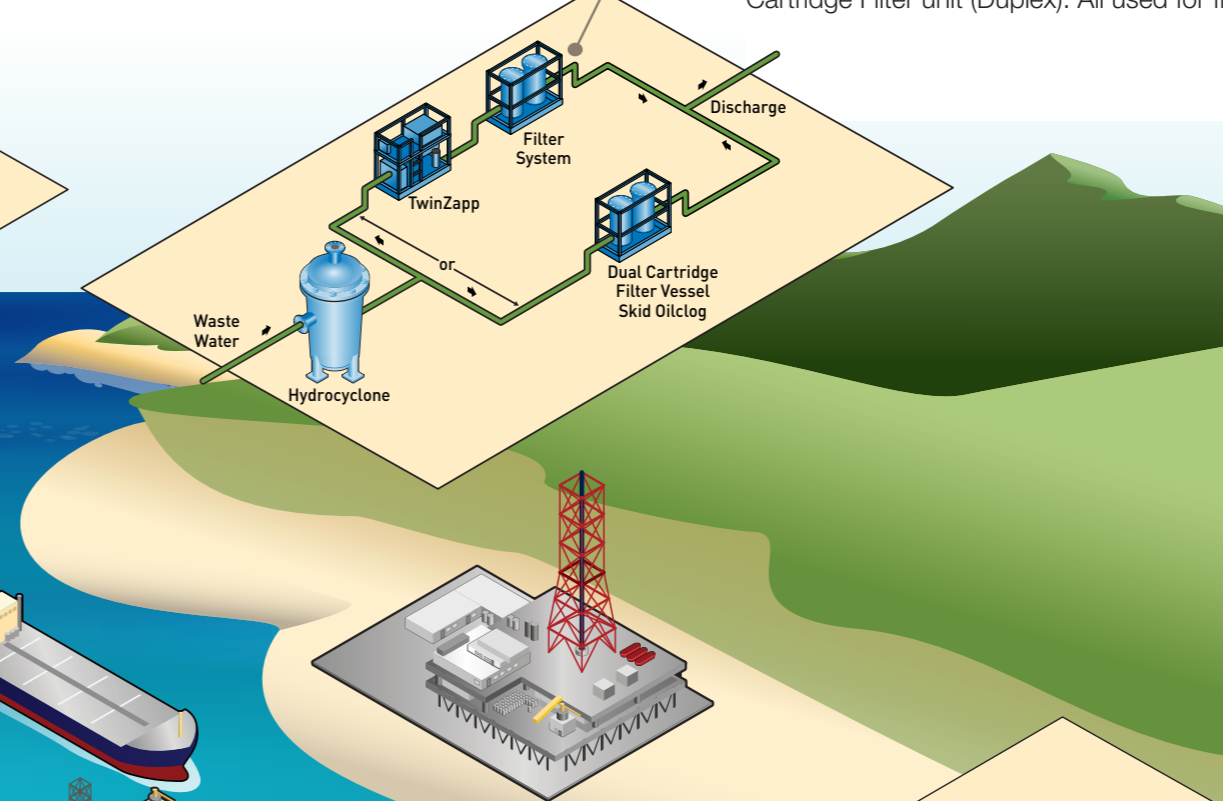


Waste Water

Waste Water treatment is necessary to make industrial waste water safe for reuse or release into the environment. Oil, greas, heavy metal, gasoline and other petroleum by-products are the most common contaminants. We have several solutions offering low discharge levels.

Our solutions:

Hydrocyclone, TwinZapp (treats chemically emulsified water) or a Dual Cartridge Filter unit (Duplex). All used for final fluid polishing.

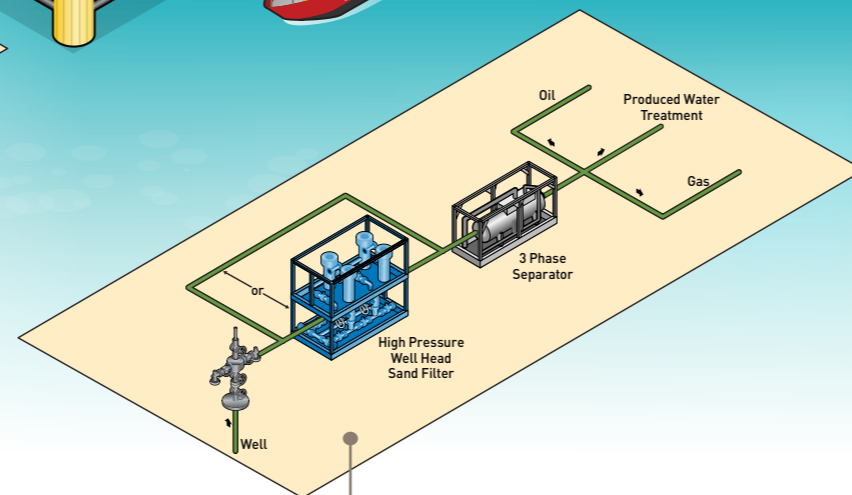


Frac Fluids

The fluid used for penetration of the formation must be clean and can not contain sand or other organics that can harm the process or the environment. To treat the used frac fluids (flow back) Parker Twin Filter also provides several solutions.

Our solutions:

A Dual Cartridge filter unit (Duplex) or a Filter Press (FP) combined with Slurry Skid or Vertical Pressure Leaf filter unit (VPL) and a TwinZapp. Other auxiliaries like a diesel driven pump and/or powder dosing unit are on request.

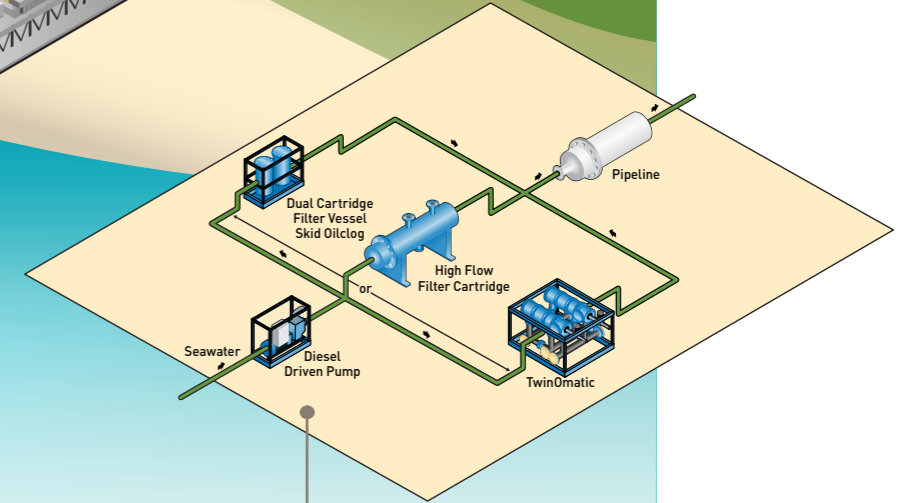


Well Testing

The purpose of Well Testing on development wells is to clean up and commission the well prior to its connection to the permanent production facility.

Our solutions:

High Pressure Well Head Sand filter (sand catcher).



Pipeline Flushing

Fuel lines, lube lines, oil transfer lines and hydraulic systems require clean piping and therefore regular flushing, to protect downstream equipment. Therefore one of the most important parameters in flushing is filtration. Parker Twin Filter offers filters as well as a rental filter unit fleet to meet your requirements.

Our solutions:

Dual Cartridge filter unit (Duplex), High Flow filter unit, Automatic Self Cleaning filter (TwinOmatic), Diesel Driven pump and other solutions.

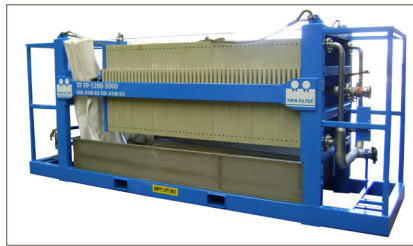
Products

Equipment



Duplex Unit - Dual Cartridge filter unit (TDW).
Offshore proof, skid-mounted filter unit that offers a cost effective way to clean most common oilfield fluids and fluid waste streams.

- Available as cartridge, bag and combination unit.
- Easy to operate lever and swingaway vessel lid.
- Different specifics (high pressure, high flow etc.) on request.



Filter Press - Heavy Duty DE filtration unit.
Specially designed for completion, work over and gravel pack fluids filtration.

- Pneumatic operated hydraulic system.
- Stainless steel cabinet and sluice pan.
- Low maintenance and easy to operate.



Vertical Pressure Leaf - DE filtration unit.
Self contained and equipped with all necessary auxiliaries.

- Efficient, quick, clean and environmental friendly cake discharge through closed system.
- Long filtration cycle and provides lowest possible NTU output.



Slurry Skid - To operate a Filter Press you require a Slurry Skid. Available as single and double unit.

- Double unit: compartments operate separately.
- Double unit: possibility to operate two Filter Presses.
- Single unit: economical and easy operation.



TwinZapp - Treatment of chemically emulsified water without consumables to below 5 ppm remaining oil content.

- No chemicals or adsorption cartridges required.
- Mobile system that allows work on platforms and work-over projects.
- 40-50% reduction of dissolved fraction (BTEX).



TwinOmatic - Automatic self cleaning filter unit.

- Electrically driven and controlled.
- Uninterrupted flow and continuous filtration during cleaning.
- Effective cleaning of total filtration area with minimal flush (less than 5% of total flow).
- Automatically initiated self cleaning process.

Consumables



Pleatflow - Absolute rated liquid filter cartridge (TH).

- Fully thermally welded, no glue or adhesives.
- Three layer construction, glass fibre support drain between polyester filter layers.
- High flow rate and low pressure loss.
- Filtration rating 0.5 - 50 micron.



Texflow - Nominal rated filter cartridge.

- High dirt holding capacity.
- High flow rate and low pressure loss.
- Wide chemical compatibility.
- Especially designed for the high demanding offshore industry.
- Filtration rating 2 - 50 micron.



Oilblock - Free and emulsified oil removal.
Absorbs and chemically binds hydrocarbon molecules into its interior matrix.

- 99% removal of oil in a single pass.
- Cartridge blocks after saturation and no hydrocarbons bypass possible.



Parmax - High flow absolute depth filter cartridge.

- Low pressure loss and high dirt holding capacity.
- Pleat geometry specifically designed for in-to-out flow direction.
- Horizontal and vertical set-up possibility.
- Large filter area - reduced cartridge consumption.
- Connection available as type
- Filtration rating 0.5 - 50 micron.



Maxguard - Absolute rated high flow filter cartridge.

- Fully thermally welded, no glue or adhesives.
- High flow rates per cartridge.
- Pleat geometry specifically designed for out-to-in flow direction.
- Large filter area - reduced cartridge consumption.
- Connection available as type 338 and bayonet.
- Filtration rating 0.5 - 50 micron.



TwinLite - Diatomaceous Earth used as filter aid for water treatment and completion fluids.

- High flow rate and low by-pass.
- Excellent stress crack resistance.
- High dirt holding capacity.

Parker Twin Filter



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