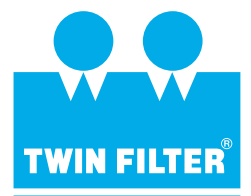


*We care,*



*we filter*



# APPLICATIONS

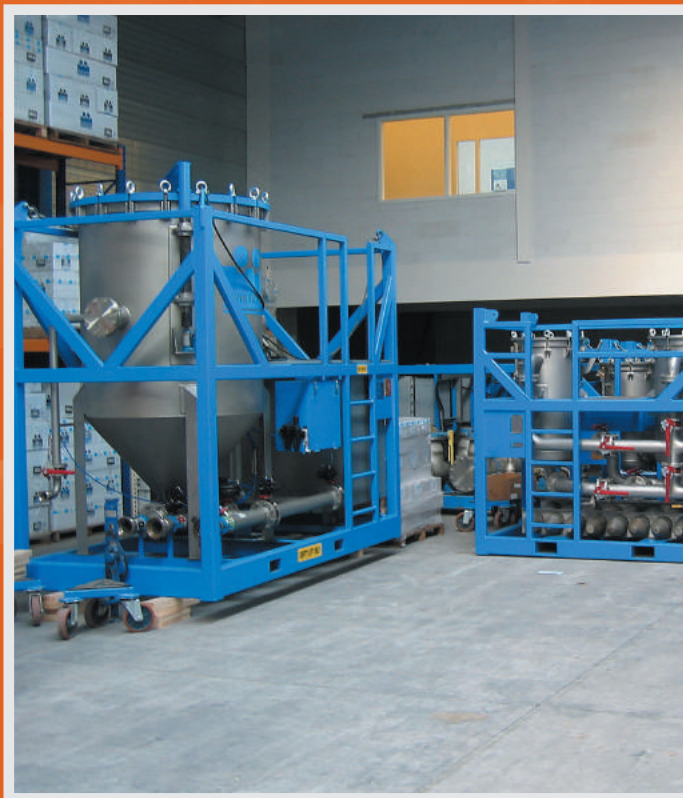
## COMPLETION FLUIDS

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 right 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 proved to be the ideal solution. For nearly two decades, Twin Filter has been designing, manufacturing and supplying complete filter packages, including equipment and consumables to all major oilfield service companies.

## SCOPE OF SUPPLY

- DE filter unit- Vertical Pressure Leaf (semi-automatic self-cleaning)
- DE filter unit - Filter Press
- Duplex cartridge Filter unit
- Combination VPL/DE - Duplex cartridge filter unit
- Bag filter unit
- Filter consumables (filter cartridges and DE material)
- Polymer shearing device
- C-pump (diesel driven)



## WATER INJECTION

The productivity of ageing oil wells can be significantly increased by the use of water injection. Statistics have shown that a reservoir produces just 37% yield during the first recovery. With enhanced recovery (water injection) the yield can be > 50%. The most important issue during oil production is to keep the matrix as clean as possible to achieve maximum yield.

Our engineers design and manufacture complete treatment systems that can be mobilised quickly and to suit the specific demands of the customer. The water injection treatment systems are guaranteed to deliver water 'to specification'.

## SCOPE OF SUPPLY

- Coarse filtration system with automatic self-cleaning filter or bag filter unit
- Polish filtration system with absolute filter cartridges or filter bags
- Multi Media Filters
- Chemical injection unit: pneumatically / electrically driven and controlled
- High pressure wellhead filtration with cartridge filter

## See product brochures for more detailed information





## PRODUCED WATER TREATMENT POLISHING

All fields produce water and condensate with the oil and gas during production. Produced water usually still contains a high level of dissolved and free hydrocarbons after the first separation and before it is discharged overboard or re-injected into the reservoir.

Twin Filter designs, engineers and builds complete systems that can achieve discharge levels < 1 ppm by using a unique absorption system. This system can also be used for removal of dissolved aromatic compounds, phenols, heavy metals and other contaminants.

Twin Filter supplies systems that make it possible to discharge on-site in an environmentally-friendly way, so it is possible to meet even the most stringent discharge requirements.

## SCOPE OF SUPPLY

- Bulk media system OilClog adsorption system
- Canisters OilClog adsorption system
- Cartridge OilClog adsorption system
- Coalescer system
- Voraxial

## SEAWATER INTAKE

Clean seawater is used in various Oilfield applications, i.e. water injection, cooling water intake, process water, ballast water, pre-filtration. Algae, sand, silt and other contaminants cause plugging and damage to installations and processes.

Twin Filter builds complete systems that are specially designed for the high demands of the offshore industry.

Twin Filter filter units are automatically self-cleaning, which guarantees a continuous flow without interruption and a 100% cleaning of the filter element.

## RANGE OF AUTOMATIC SELF-CLEANING FILTER UNITS

- Flow rates up to 4000 m<sup>3</sup>/hr per unit
- Working pressure up to 100 bar
- Design code: ASME VIII, PD5500
- Electrically or pneumatically operated
- Construction materials: 316L, 254 SMO, Duplex, lined carbon steel

## SCOPE OF SUPPLY

- Automatic Self-cleaning Filter unit
- Feed line intake screen
- Media filter
- Cartridge filter unit

## WASTEWATER TREATMENT

Twin Filter has developed a unique absorption system. This system removes, within a compact and cost-effective system, 99.9% of all dissolved, dispersed and emulsified oil from water. In addition to the hydrocarbons, the system will remove all heavy metals in one pass by absorption below non-detectable levels. This new technology can be applied in existing cartridge filter units and media filter vessels as used by all main service companies and oil companies.

Applications: Acid flow back, Displacement, Well test, Pipeline purge, Bilge water, Completion fluids water.

## SCOPE OF SUPPLY

- OilClog oil adsorption element
- MetalClog heavy metal absorption element
- Multi media filter
- Plate separator
- Filter cartridge
- Coalescer unit
- Automatic self-cleaning filter unit

## EQUIPMENT

For more than two decades Twin Filter has been successfully designing and manufacturing equipment for the oilfield industry. Our filter equipment is well known for its reliability, build quality and ease of operation. We supply equipment for temporary applications as well as permanent installations.

## TWIN FILTER OILFIELD EQUIPMENT

- Own engineering and production ensures maximum flexibility
- Simple & reliable construction results in easy maintenance & low OPEX
- Wide range of standard equipment means short delivery times
- Built to clients' specifications, equipment to suit your needs
- Straight purchase, buy/lease or rental of equipment
- Equipment built according to all international standards: ASME, DNV, ABS, ANSI, ASTM, ISO, NACE, API, etc.



## FILTER CONSUMABLES

In addition to equipment, we also manufacture filter cartridges especially for the oilfield industry. Our filter cartridges guarantee the clean fluids necessary for maximum reservoir protection and yield of the environment during operations.

- World-wide stocking
- Retrofits for all makes
- Client-specific production, plain label
- Large stock of standard cartridges, quick delivery

## SCOPE OF SUPPLY

- Absolute and nominal rated filter cartridge
- High-flow Magnum cartridge
- Stainless steel filter element
- Filter bag
- Oil adsorption cartridge
- Heavy metal absorption cartridge

## RENTAL SERVICES

Many reasons can be given for renting filtration equipment: no CAPEX, quick mobilisation, early production start, specific applications, testing to size a permanent installation or short-term jobs. We supply equipment for temporary applications as well as permanent installations.

## AVAILABLE RENTAL EQUIPMENT

- Cartridge filter unit
- Bag filter unit
- DE filter unit VPL 420 – 1200 sq.ft.
- DE filter press 600 – 1500 sq.ft. incl. slurry skid
- Single Cartridge filter vessel
- Automatic self-cleaning filter unit 15 – 2000 m3/hr
- Chemical injection units
- Media vessel
- Voraxial

All equipment will be supplied with up-to-date certificates, manuals and if required, one of our filtration specialists for training or start-up.





# TWIN FILTER

## OUR PROFILE

Twin Filter B.V. is a Dutch company, specialised in the design, engineering and production of filtration systems for a broad spectrum of industries, at home and abroad. Twin Filter, with its own manufacturing facilities, produces standard filter consumables for liquid, air and gas applications, along with custom build products for OEMs. In addition, with our own fabrication facility, we build standard or custom designed filter equipment.

Twin Inpres, a fully owned subsidiary of Twin Filter, is a world leader in polyurethane application equipment and technology. In addition, a full back-up service and technical support we offer.



## ABOUT THE OILFIELD DIVISION

Twin Filter Oilfield Division is part of Twin Filter BV. Twin Filter BV is an independent, 100% Dutch company founded in 1985. The Oilfield Division is active all over the world. We design and manufacture filtration solutions for the oilfield and petrochemical industries.

Our manufacturing facilities for equipment and consumables are strategically based in The Netherlands, close to Schiphol Airport and the Port of Rotterdam. Our engineers, with field experience, are constantly improving and designing new filtration solutions. Twin Filter is ISO 9001 certified.

The Oilfield Division is known for its problem solving. They provide filtration solutions and services for:

- Completion / Gravel pack fluids
- Workover fluids
- Water injection (water flood operations)
- Oily water clean-up
- Wastewater treatment
- Chemical injection
- Pipeline flushing
- Produced water treatment
- (Sea) water intake filtration

## WHY FILTRATION?

Costs of environmental protection are key issues for oilfield operations. Efficiency, reliability and maximum performance are of the utmost importance.

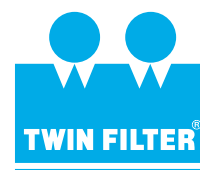
The main concern in oilfield filtration is to prevent reservoir damage. Many contaminants can plug off the reservoir / production zones during completion and water injection. Twin Filter will protect the reservoir from contaminants, including bacteria, scale, clay, rust, etc.

Current environmental laws are becoming more stringent and are aiming for zero discharge. Many waste treatment technologies will not meet the discharge levels of the future.

Twin Filter offers a solution for the removal of more than 99% of all hydrocarbons, heavy metals and emulsions from water streams.

Twin Filter provides total filtration solutions to the oilfield industry.

*Any time, any place*



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