

PECOFACET OFFSHORE SOLUTIONS



CLARCOR is a global provider of filtration products and services for the Offshore Industry. We offer the industry's broadest product range with more than 80,000 filter types, superb product quality, leading brands, extensive distribution network and technical expertise to serve customers worldwide.

CLARCOR provides Total Filtration from a single source by bringing together the products, experience and expertise of our companies to meet all your marine filtration needs. This collaboration insures that customers receive the best filtration and on-time delivery directly to each business location—to protect people, equipment and the environment.

CLARCOR offers the broadest array of filtration products, technologies and services to meet current and future Offshore Industry requirements. Our customers, worldwide, depend on CLARCOR filtration products to fuel their future.

CLARCOR provides unparalleled customer value with filtration solutions for water, fuel, oil, air and gas in every stage and aspect related to the Offshore field. We optimize equipment reliability and power output to reduce equipment downtime and unplanned power outages.

CLARCOR is positioned to meet your Total Filtration and service needs.

PECOFACET OFFSHORE SOLUTIONS

PECOFACET is the leading filtration and separation company serving the world's petrochemical, refining, marine, offshore and aviation industries. PecoFacet has earned worldwide recognition with more than 50 years of experience in the separation of solid-liquid, liquid-liquid, liquid-gas and solid-gas.



PECOFACET CARTRIDGES

PecoFacet cartridges provide efficient filtration of fluids in a wide variety of applications.

PecoFacet cartridges are manufactured using proprietary combinations of high performance filter media. Years of research and development have enabled PecoFacet to develop an expansive range of filter grades to meet the stringent requirements of marine applications.

Selection of media and vessel design determine the filter flow rate, dirt holding capacity, particle-size removal in one pass, overall cost of operation and initial investment.





MICROFILTERS AND BASKET STRAINERS



PecoFacet Microfilters and Basket Strainers have the following marine applications:

- Removal of solids and organisms at the water captation system.
- Protection of the pumping equipments of the ship cooling systems.
- Protection of meters, valves, control equipments and refueling systems pumps.

Designed as a first stage filtration process to remove solids such as rust, dirt, scale, granules and other particles commonly found in liquid process streams.

Vessels are available in carbon steel or stainless steel with several standard sizes designed to meet specific flow requirements. ASME Code, Section VIII construction, stamped and certified or "CE" marked.

Designed for 10.3 bar (150 PSI) at 121°C (250°F); higher pressure and temperature ratings available on request.

Flow rates up to 24,200 usgpm (92,000 l/min) and 5,300 usgpm (20,000 l/min) for Basket Strainers and Microfilters respectively.



PECOFACET FILTER WATER SEPARATORS



PecoFacet Filter Water separators are highly efficient and complete units designed to remove solids down to 0.5 microns and dispersed liquids from process streams.

Small size and weight, and small investment and installation costs. Low operating costs, with minimum and easy maintenance.

Installed in fuel treatment plants or gas-landing stations.

Designed to filter solids and separate two immiscible liquids. Using PecoFacet high quality coalescer and separator cartridges, the best liquids and solids removal is provided.

These quality PecoFacet products are designed for installations in petrochemical plants, refineries, power plants, bulk storage terminals, offshore production platforms, and many other industrial and marine applications.

Carbon stainless steel, CuNi construction.

ASME Code, Section VIII construction, stamped and certified or "CE" marked.

Designed for pressure and temperature ratings on request.

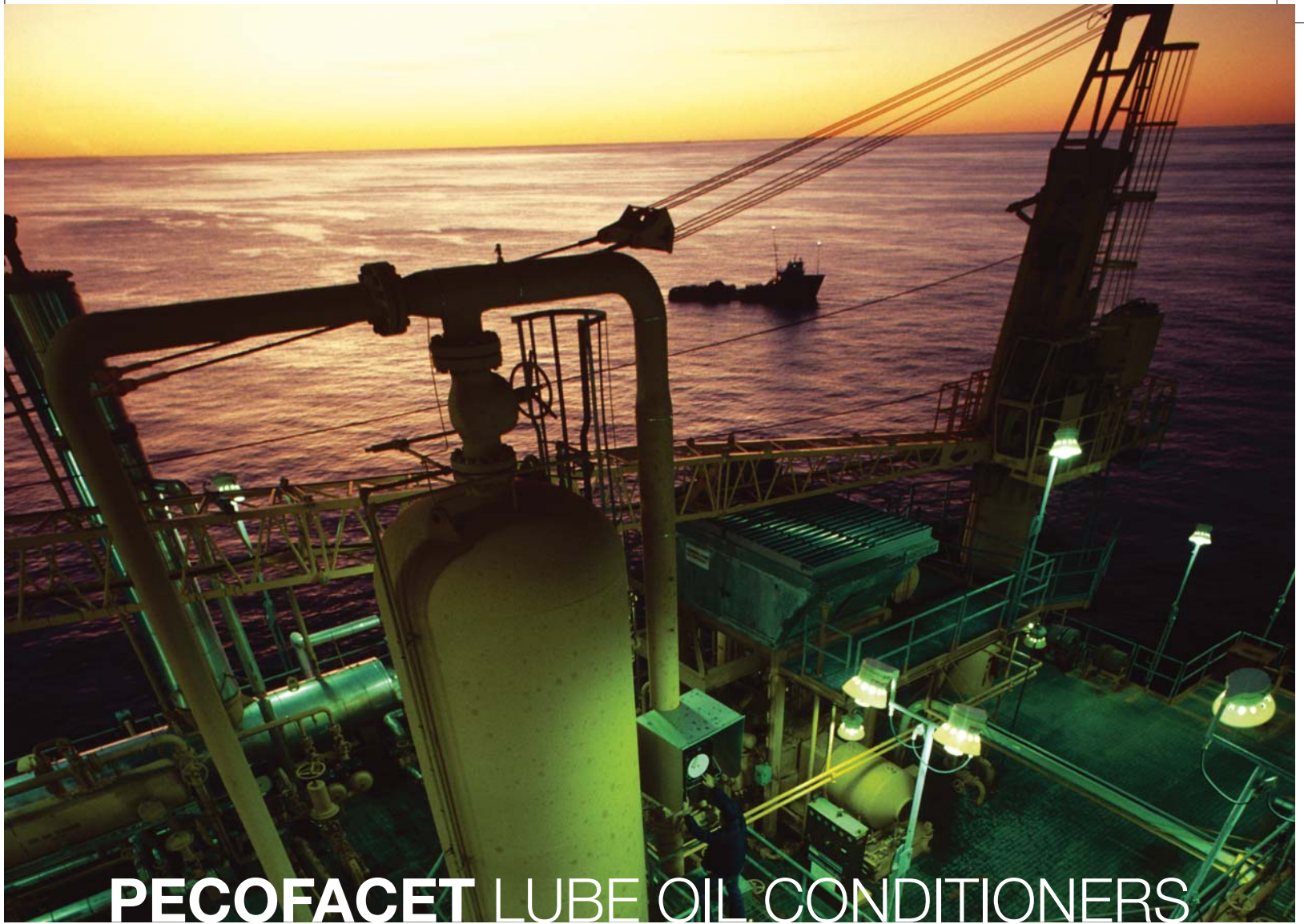


PecoFacet Automatic Filters allow a continuous filtration of diesel, oil and sea water with high contents of solids by granting an automatic sequential back-washing of the filtering elements.

AUTOMATIC FILTERS

Automatic cleaning occurs when set differential pressure is achieved, then a gear motor reducer rotates the cleaning arms, inverting the flow through filtration columns and discharging sludge outside by drain nozzle.

Flow rates from 220 to 53,000 usgpm (830 to 200,000 l/min.) retaining solid particles from 10 to 1,000 microns. Built in stainless steel or carbon steel.



PECOFACET LUBE OIL CONDITIONERS



PecoFacet Lube Oil Conditioner was designed to maintain the lube oil within the specifications of the engines and turbines manufacturers regarding the content in water and solids, extending the properties/life of such lube oil.

Turn-key solutions, supplied with all the components and accessories, ready to put into operation after an easy installation.

Built to ASME Code. Carbon steel or stainless steel construction. Explosion proof design (ATEX).

Removes free water up to concentrations lower than 20 ppm and solids larger than 5 micron.

Automatic operation, regulated through a PLC.

Flow rates from 10 to 18.5 usgpm (37.8 to 70 l/min.).

Its features make this equipment easy to use and maintain.

Every unit is tested before shipment to ensure the optimal levels of service/performance.

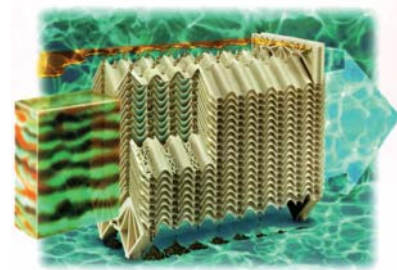


MAS Series, PecoFacet Coalescent Plates Oil Water Separators are designed to treat hydrocarbon water. These separators can be fed by gravity or pumped, carrying out separation by physical means, not requiring consumables and not having mobile parts, therefore no maintenance is needed and its operation is free of failures. Doubly Corrugated Coalescent Plates PecoFacet MPak[®] are installed inside the separators.

PECOFACET OIL WATER SEPARATORS



These plates are mounted in modular packs and provided with an adjust device against the vessel which insures that all the flow to be treated goes through the Plates. Optimal working range temperature of Plate Packs MPak[®] is 4 to 98 °C (40 to 208 °F). Each oil separator of the MAS Series can be equipped with adjustable skimmers to withdraw separated hydrocarbons. Optionally, they can also be provided with a storage chamber to accumulate separated hydrocarbons.





PECOFACET BILGE WATER SEPARATOR

Through continuous research and development programs and designs based on easy maintenance and maximum efficiency, PecoFacet has developed the new series of CPS BMKIII + EBM 14x bilge water separation units. This series combines the classic Coalescing Plates PecoFacet Mpak® technology with innovative membranes that accomplish high efficiency in chemical and mechanical emulsion breaking.

PecoFacet's units are compact and highly adaptable to the available space onboard. In addition they are lightweight and require little maintenance. Operation is easy because it is fully automatic; all functions are controlled through a PLC.

CPS BMKIII + EBM 14x equipment removes hydrocarbons in two stages. In the first stage, free hydrocarbon is separated from water through PecoFacet's patented coalescent plate packs. In the second stage, emulsions are broken by a membrane which removes emulsified hydrocarbon, reaching down an effluent with total hydrocarbon content of less than 15 ppm.

PecoFacet's CPS BMKIII + EBM14x has been tested, approved and certified according to the requirements of IMO MEPC.107(49).



PecoFacet potabilizers are designed to meet the need on board ship to treat the water from evaporators in order to produce suitable drinking water. This is achieved using the processes of re-hardening and sterilization.

This process consists of adding mineral salts to distilled water, in sufficient quantities to achieve a pH of between 7.5 and 8, always below -11°C (12°F).

Once the necessary mineral salts have been added, the water must be sterilized to remove the bacteria which have survived the process of evaporation. This sterilization is carried out using ultraviolet radiation. With this method, the water which is to be treated is passed through a chamber where it is subjected to radiation from U.V. generators. These generators are isolated from the water by means of a protective, isothermic casing. This is followed by a slowing down of their reproductive functions until the bacteria are totally eliminated.

PECOFACET POTABILIZERS

The distilled water, is passed through the generator's re-hardening filter, where the water flows uniformly through the bed of mineral salts and takes them up. In this way, the necessary re-hardening, or pH adjustment, is achieved.

Next, part or all of the mineralized water passes through the treatment chamber of the sterilizer, where it is treated using ultraviolet radiation.





PECOFACET SEWAGE SYSTEMS

PecoFacet Sewage Systems with integrated vacuum have been designed for the treatment of black waters (coming from W.C., urinals and hospitals) and grey waters (sinks, showers, laundry and galley) generated onboard ships. This treatment consists in the purification and later disinfection of waters in order to achieve a quality effluent meeting all legislative requirements. These plants treat sewage biologically, meaning they are of the active sludge, prolonged aeration, aerobic type.

PecoFacet STP plants are built in a single steel module to ease transportation and onboard installation. Meet MARPOL Annex IV Requirements, 8(1)(b) and 9.1.1 Regulations, as well as IMO Resolution MEPC-2(VI), CE Standards 96/98/EC and 98/85/EC; they do not generate sludge that should be later discharged.

Fully automatic operation driven by PLC.

Explosion proof design (ATEX).



PecoFacet has development equipments known for their rugged construction, with functionality and safety as key factors.

PecoFacet designs, manufactures and markets Helicopter Refueling Systems for the offshore market complying with the most stringent specifications and regulations of the customers and regulatory agencies, comprising basically:

- Portable Aviation Fuel Container Tanks
- Pumping and Filtration Unit
- Dispenser Unit

Transportable Aviation Fuel Container Tank is built in carbon steel or stainless steel up to 3,000 liters (793 USG) of capacity for working pressure of 2.5 bars (36 PSI) as ASME VIII Div. 1, designed and certified as DET NORSKE VERITAS CERTIFICATION OF OFFSHORE CONTAINERS and INTERNATIONAL MARITIME DANGEROUS GOODS CODE (IMDG).

Pumping and Filtration Units - module designed with a spill tray and weather protection cabinet, built in stainless steel, comprising all necessary components to achieve protection, pumping, filtration like basket strainers, pump, ATEX motors, Filter Water Separator as API 1581 5th Edition. ATEX Control Panel, Safety Light, etc.

Dispenser Unit - module designed with a spill tray and weather protection cabinet, built in stainless steel, with the required components that could be like as Volumetric Meter, PecoFacet Monitor Absorber Filter as IP 4th Edition, Electrical/Manual Hose Reel, Flexible Aviation Hose with the Nozzles to Overwing and Underwing supplies, Safety Elements, etc.

HELICOPTER REFUELING SYSTEMS

PecoFacet's experience assure cost efficiency, working reliability and confidence to protect the equipment installed on Offshore Platforms, Production Transport Storage, Floating Storage Units, Drilling Ships and Gas Exploration Field.





PECOFACET GAS FILTERS

PecoFacet Gas Filters are equipments designed to treat the gas coming from gaswells, but also the sour gas in the treatment plants aimed for the removal of solid contaminants and slug liquids.

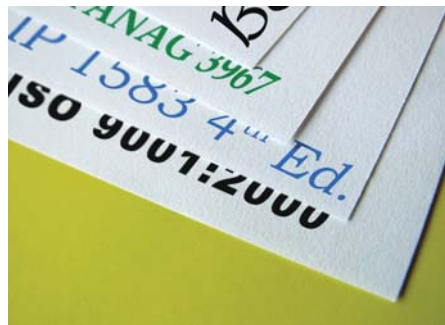
PecoFacet Gas Filters are simple and easy to maintain, normally supplied as skids with all the instrumentation needed for the perfect control and maintenance of the units.

They cover a wide range of compatibilities and offer solids retention capabilities from 0.3 up to 750 micron, with efficiencies from above 99.5% to 100%.

Flow rates up to 300,000 scfm
(500,000 Ncu.m/h)

Built to ASME Code, Section VIII construction, stamped and certified or "CE" marked, constructed of carbon steel or stainless steel.





- 97/23/CE
- AD 2000 REGELWERK
- AER M527
- API 1581
- API/IP 1590
- AQAP 2110
- ASME "U" STAMP
- BS
- CODAP
- DCSEA 5313
- DCSEA 5322
- DEF STAN 50 3/3
- DOD 1581
- DTM MEPC 2 (VI)
- EN-858-1
- IMO 33CFR159
- INTA 159111/159112
- IP 1583

PECOFACET QUALITY & APPROVALS

PecoFacet's business depends on its products and services being of the finest QUALITY. This commitment is reflected in the fact that PecoFacet was the first filter manufacturer to receive the ISO 9001:2000 and AQAP 2110 quality approvals. Today, PecoFacet holds more technical approvals for its commercial and military products than any company in the world.

- ISO 9001:2008
- MEPC 107(49)
- MIL-PRF-52308J
- R N STR 143-3
- RFPV
- STANAG 3967
- TL 4330-001
- UDT
- UNE 166002:2006
- VISION 2000

AQAP 2110
DTM MEPC 2 (VI)

BS
IMO 33CFR159

API/IP 1590

API 1581

CODAP

UNE 166002:2006

MEPC 107(49)

R N STR 143-3

DOD 1581

INTA 159111/159112

TL 4330-001

ASME "U" Stamp

IP 1583

Vision 2000

ISO 9001:2008

UDT

AER M 527

DCSEA 5322

MIL-PRF-52308J

DCSEA 5313

AD 2000 Regelwerk

RFPV

97/23/CE

DEF STAN 50 3/3

EN-858-1

STANAG 3967



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