

### CJC® Oil Filtration presents

# CJC® Filter Separator Solutions for separation of water, removal of particles, adsorption

of oxidation by-products and varnish from oils



80% of all oil related failures and breakdowns are caused by contaminated oil

# Your challenge

80% of all oil related failures and breakdowns arise due to contaminated oil - avoid expenses on repairs and oil changes

### In-line filters alone do not keep the oil system clean & dry!

Contamination of an oil system leads to various problems which can result in machine downtime, frequent repairs of equipment and reduced oil lifetime. All of which means inefficient production and unnecessary expenses spent on repair and oil change.



Water Contaminated Oil



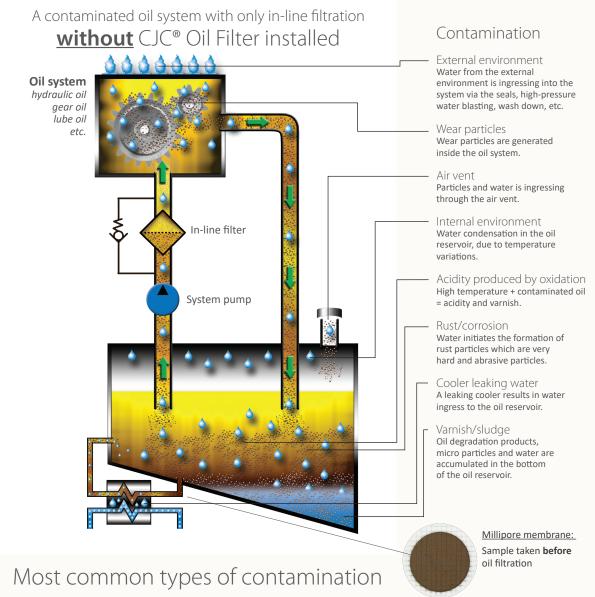
Abrasion



Corrosion/Rust

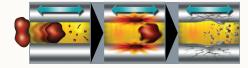


Resin/Varnish



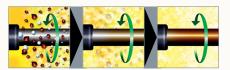
#### Particles (abrasive wear / grinding)

When clearance sized hard particles are wedged between movable metal parts, they destroy the metal surface further and can result in additional wear.



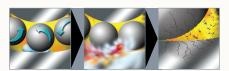
#### Oil degradation

Wear metal, water and high temperatures lead to oil degradation, which is the precursor of varnish. This results in sticky varnish that deposits on metal surfaces.



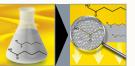
#### Water (cavitation & pitting)

Occurs in areas where water is present and oil is compressed; the water implodes, causing the metal surfaces to crack and release more particles.



#### Acidity

Acidity can be found in oil as by-products of oil degradation, combustion of gas or fuel, hydrolysis of Ester-based fluids etc. The amount of acidity in oil should be limited, since acidity



will cause chemical corrosion of machine components and shorten the lifetime of the oil, just to mention a few of the unwanted effects.

# Your natural solution

Clean & dry oil and guaranteed success through oil filtration - we offer highly qualified technical back-up

#### 1 Oil Filter - 4 solutions

Installing a CJC® Offline Oil Filter solution, you ensure clean & dry oil in you systems, removing both particles, water, acidity and oil degradation products - in one and the same process.



PTU 15/25



PTU2 27/27



PTU1 27/54



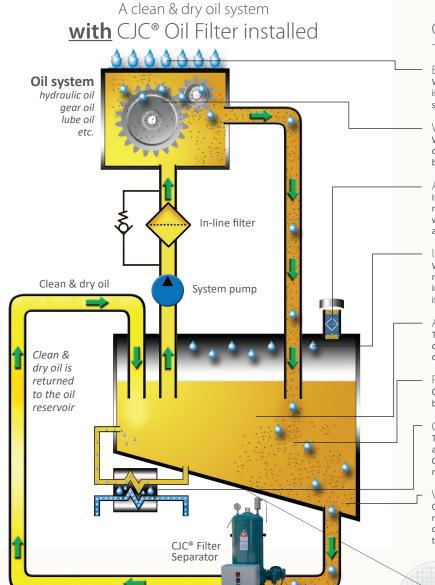
Thruster



PTU3 4x27/108



Marine Diesel Purifier



### Contamination - now under control

External environment Water ingress from the environment is continuously removed from the system with CJC® Oil Filters.

Wear particles Wear particles are still being created, but are removed by the CJC® Oil Filter.

Air vent Ingress of contamination can be reduced by installing a breather with fine filtration and water absorbing media (silica gel).

Internal environment Water still condensates in the oil reservoir, but with the CJC® Oil Filters installed, the water is removed before it reaches critical system components.

Acidity produced by oxidation The risk of developing acidity and oxidation by-products has been considerably reduced.

Rust/corrosion Contamination is still being created but is removed by the CJC® Oil Filter.

Cooler leaking water
The leaking cooler can be repaired
at scheduled overhauls as the
CJC® Filter Separator continuously
remove water in large volumes.

Varnish/sludge
Oil degradation products and
micro particles have now practically
disappeared from the bottom of
the oil reservoir.

Millipore membrane: Sample taken **after** oil filtration

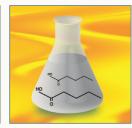
The most common types of contamination sources



Removal of particles Particles down to 0.8  $\mu$ m are retained in the filter mass



Separation of water The filter insert and coalescer element separates the water



Removal of acidity Special inserts neutralise acidic components in the fluid



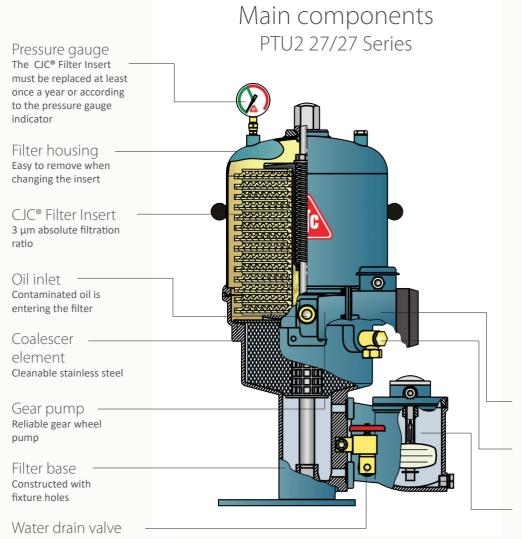
Adsorption of oxidation Sludge/varnish in the oil is attracted to the polar sites of the filter mass and is retained there

# Our product

CJC® Filter Separators - simple, efficient and low maintenance - will guarantee your success!

### Key features of the CJC® Filter Separators

The CJC® Filter Separators are offline depth filters for diesel, hydraulic and lubricating oils for all sizes of oil systems from 2 litres to above 200,000 litres. Our oil filters are installed offline, meaning they are non-system critical (e.g. machinery shutdown is not necessary when changing filter insert.)





the CJC® Filter Insert
The coalescing process starts in the filter
insert. On their way through the cellulose
fibres, microscopic water particles
aggregate into water droplets, sinking
down into the coalescing element



Separation of water in the CJC® Coalescing Element The droplets aggregate (coalesce) in the coalescing element and settle in the bottom of the housing and filter base

Electrical motor
Low energy consumption

Oil outlet

Clean & dry oil is returning to the reservoir and oil system

Automatic water discharge unit Simple, mechanical level control and discharge unit

### CJC® Filter Insert system

All CJC® Filter Inserts have a 3 µm absolute filtration ratio. The CJC® Filter Inserts are produced of **100% natural cellulose fibres** from sustainable resources - no metal, no plastic, no chemicals.

- Particles down to 0.8 μm are retained in the unique CJC® depth filter media (cellulose).
- Water is removed either by absorption or separation according to oil system requirements.
- Acidity can be neutralized with ion exchange resin media.
- Oil degradation products are removed by the attraction to the polar fibers.



Remember to change CJC® Filter Inserts
at least once a year in order to
ensure clean & dry oil
in your system!

### Modular build-up

The modular build-up of the CJC® Filter Inserts means that a CJC® Fine Filter can be designed to fit any applications and requirements



## Your benefits

Reduce your maintenance cost, fewer breakdowns, fewer oil changes - install a CJC® Filter Separator!

The cleanliness level achieved and maintained by oil filtration means that the predicted lifetime of machine components and oil is expected to be extended 2-10 times! The benefits that you can achieve when implementing CJC® Filter Separators will have a positive effect on many parameters such as:

### Financial benefits / Increased productivity

- Increased uptime
- Reduced maintenance budget
- Fewer unplanned breakdowns and stops of production
- Enhanced operational precision
- Leaking coolers can be repaired at schedule overhauls

#### Less maintenance

- Less wear and increased lifetime of components, oil and filter inserts
- Longer time between service intervals
- Enhanced operational precision



#### Lower energy consumption

- Lubricating capabilities remain intact
- · Reduced friction
- Reduced pressure drop over in-line pressure filters
- Viscosity index is kept stable and efficiency is maintained

#### **Environmental benefits**

- Fewer oil changes
- Reduced top-up of oil
- Less waist oil
- Reduced carbon footprint

-all advantages to the total economy!

#### Satisfied customers

#### MARINE

Mr. Bjørn Helge Amundsen Tech. Superintendent Gulf Offshore Norway, North Truck, Norway Application: Supply vessel / work boat Solution: CJC® Filter Separator PTU2 27/27



"After having tested nearly every piece of water removing equipment on the market in order to solve our water and contamination problem, we went for the CJC® Filter system, because it was simply the best. The filters did the job to our greatest satisfaction, removing particles, water and other waste products.

CJC® Filter systems for oil maintenance are a very good investment. The return of investment is very short."

#### **POWER**

Mr. Javier Gonzales
Mech. Maintenance Department
C.N. Vandellós II Tarragona, Spain
Application: Main Turbine, Nuclear Power Plant
Solution: CJC® Filter Separator PTU3 5x27/108

"We bought this filter as a substitute for a centrifuge to remove the large amount of water that is generated in the turbine at start-up. But, unexpectedly, we have gained more benefits. Before installing the filter it was necessary to clean the varnish deposits off the walls in the heat exchanger at each stop of the plant. Now we just look at the system to verify that it is clean. We have never seen the oil so clean. The reliability of the equipment is increasing with time."

#### MINING

Mr. Dave J. Gamble
Senior tribologist
Anglo American, South Africa
Application: Crusher
Solution: CJC® Filter Separator 27/108

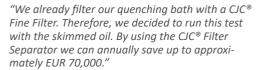


"The CJC® Filter will release benefits as reduced downtime for maintenance, greatly reduced wear and consequent failures, increased availability, utilisation and production. All together, this results in extended oil life time.

This filter can easily clean the oil according to my recommendations, which is 16/14 on this type of application."

#### **INDUSTRY**

Mr. Sylvester Kapias
Manager Heat Treatment
Nedschroef Altena GmbH
Application: Quench washing bath
Solution: CJC® Filter Separator PTU1 27/108



C.C.JENSEN will back you up

- we have 70 years of experience!

### C.C.JENSEN

### contact us today!



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