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 arise due to 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.

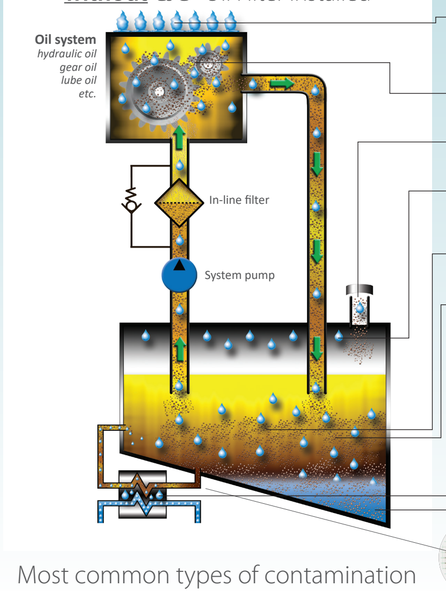

Water
Contaminated Oil


Abrasion


Corrosion/Rust


Resin/Varnish

A contaminated oil system with only in-line filtration **without** CJC® Oil Filter installed



Contamination

External environment
Water from the external environment is ingressing into the system via the seals, high-pressure water blasting, wash down, etc.

Wear particles
Wear particles are generated inside the oil system.

Air vent
Particles and water is ingressing through the air vent.

Internal environment
Water condensation in the oil reservoir, due to temperature variations.

Acidity produced by oxidation
High temperature + contaminated oil = acidity and varnish.

Rust/corrosion
Water initiates the formation of rust particles which are very hard and abrasive particles.

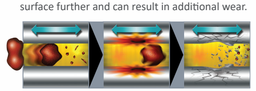
Cooler leaking water
A leaking cooler results in water ingress to the oil reservoir.

Varnish/sludge
Oil degradation products, micro particles and water are accumulated in the bottom of the oil reservoir.

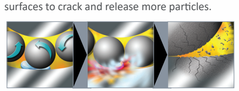

Millipore membrane:
Sample taken **before** oil filtration

Most common types of contamination

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.

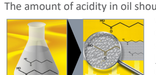


Water (cavitation & pitting)
Occurs in areas where water is present and oil is compressed; the water implodes, causing the metal surfaces to crack and release more particles.



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.

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

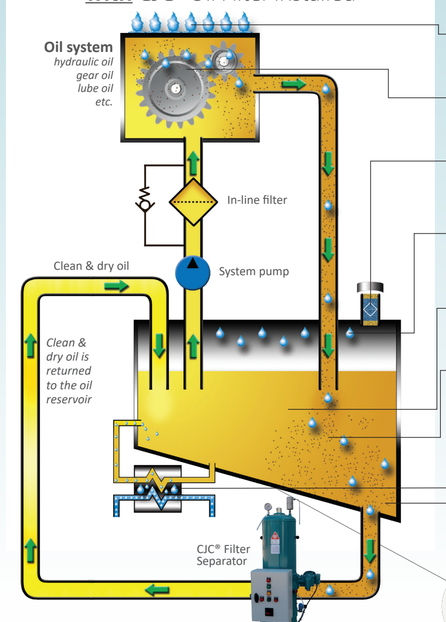

PTU1 27/54


Thruster


PTU3 4x27/108


Marine Diesel Purifier

A clean & dry oil system **with** CJC® Oil Filter installed



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.

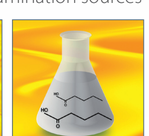
Varnish/sludge
Oil degradation products and micro particles have now practically disappeared from the bottom of the oil reservoir.


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

The most common types of contamination sources


Removal of particles
Particles down to 0.8 µm 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

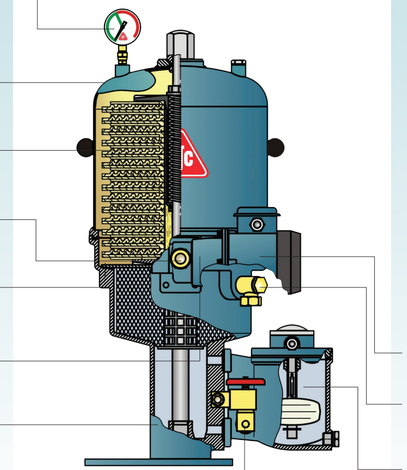
Our product

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.)

Main components
PTU2 27/27 Series



Pressure gauge
The CJC® Filter Insert must be replaced at least once a year or according to the pressure gauge indicator

Filter housing
Easy to remove when changing the insert

CJC® Filter Insert
3 µm absolute filtration ratio

Oil inlet
Contaminated oil is entering the filter

Coalescer element
Cleanable stainless steel

Gear pump
Reliable gear wheel pump

Filter base
Constructed with fixture holes

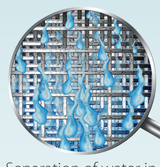
Water drain valve

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


Coalescing of water in 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

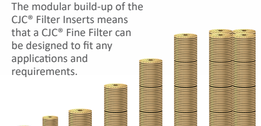
The CJC® Filter Insert system

All CJC® Filter Inserts have a 3 µm absolute filtration ratio and will remove particles, water, oil degradation products and acidity. 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.
- **Oil degradation products** are removed by the attraction to the polar fibers.
- **Acidity** can be neutralized with ion exchange resin media.

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

"We already filter our quenching bath with a CJC® Fine Filter. Therefore, we decided to run this test with the skimmed oil. By using the CJC® Filter Separator we can annually save up to approximately EUR 70,000."

C.C.JENSEN will back you up
- we have 60 years of experience!

C.C.JENSEN
- contact us today!

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