# CJC<sup>™</sup> Fine Filters

Solutions for removal of particles, water, acidity and oil degradation products from oils and other fluids - a must-have for your oil system!



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



# Your challenge

80% of all oil related failures and breakdowns are caused by contaminated oil - avoid expenses on repairs and oil changes

### Remember, in-line filtration alone is insufficient!

In-line filtration protects your oil system against larger particles, but CJC<sup>™</sup> Offline Oil Filters maintain your oil continuously clean and dry, free of also small and harmful particles using a constant pressure and flow. This is the best way to extend lifetime of components and oil, minimizing breakdowns. You get 24/7/365 oil filtration, even during system shutdown and with the market's highest dirt holding capacity.



Abrasion on gear



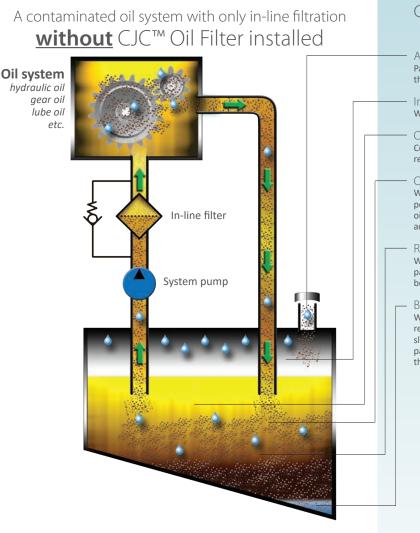
Pitting on bearing



Varnish on valve



Sludge in tank



Contamination

Air vent Particles and water ingress through the air vent and worn seals

Internal environment Water condensate in the oil reservoir

Oil reservoir Contamination is returned to the oil reservoir from the system

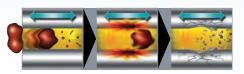
Oil degradation Wear metals, water and high oil temperature act as catalysts and lead to oil degradation. The result is dirty oil, acidity, sludge and varnish formation

Rust/corrosion Water causes formation of rust particles which separate out at the bottom of the reservoir

Bottom sediment Water settles at the bottom of the oil reservoir resulting in bacteria growth, sludge and oil degradation. Wear particles act as catalysts to speed up the varnish formation

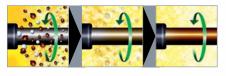
## Most common types of contamination

**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.

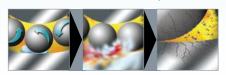


#### **Oil degradation**

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



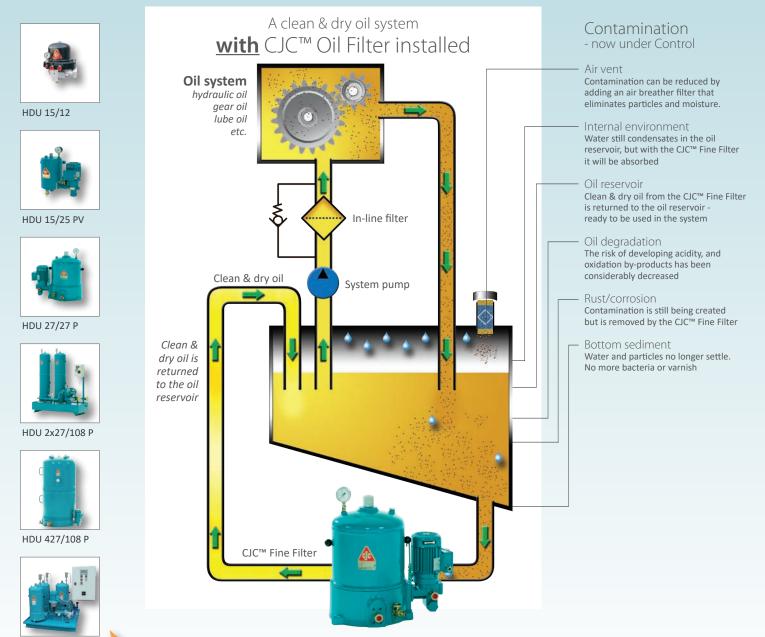
will cause chemical corrosion of machine components and shorten the lifetime of the oil, just to mention a few of the unwanted effects.

# Your natural solution

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



Installing a CJC<sup>™</sup> 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.



Marine Lube Oil Purifier

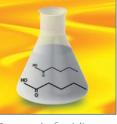
### The most common types of contamination sources



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



Absorption of water The cellulose fibres in the filter mass absorb the water



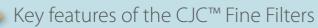
Removal of acidity Special inserts neutralise acidic components in the fluid



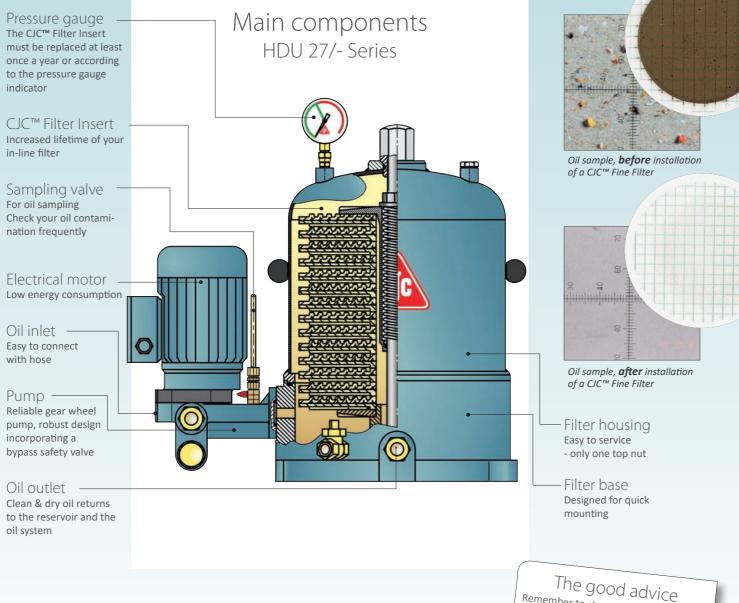
Adsorption of oxidation Sludge/varnish in the oil is attracted to the polar sites of the filter mass and is retained there

# Our product

CJC<sup>™</sup> Fine Filters - simple, efficient and low maintenance - will guarantee your success!



The CJC<sup>™</sup> Fine Filters are offline depth filters for hydraulic and lubricating oils, to all sizes of oil systems from 2 litres to above 200,000 litres. Our oil filters are installed offline, meaning they are not system critical (e.g. machinery shutdown is not necessary when changing filter insert.)





All CJC<sup>™</sup> Filter Inserts have a 3 µm absolute filtration ratio. The CJC<sup>™</sup> 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<sup>™</sup> depth filter media (cellulose).
- Water is removed either by absorption or sepa-ration according to oil system requirements.
   Acidity can be neutralized with ion exchange
- Acidity can be neutralized with ion exchange resin media.
- Oil degradation products are removed by the attraction to the polar fibers.



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

### Modular build-up of the CIC<sup>™</sup> Filter Inserts means that a CIC<sup>™</sup> 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™ Fine Filter!



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<sup>™</sup> Fine Filters will have a positive effect on many parameters such as:

#### **Financial benefits**

- Increased uptime
- Reduced maintenance budget
- Fewer unplanned breakdowns and stops of production
- Enhanced operational precision

#### Less maintenance

- Increased equipment reliability
- Less wear and increased lifetime of components and oil
- Longer lifetime of in-line filter



#### Lower energy consumption

- Lubricating capabilities remain intact
- Reduced friction

#### Environmental benefits

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

#### -all advantages add to increased profit!

**Satisfied customers** 

WIND: Mr. Jason de la Tova, Wind Turbine Specialist,



Windward Energy, USA: *"Your oil filters are worth their* weight in gold!"

#### MINING:

Mrs. Leanne MacAdams, Reliability Engineer, BHP Billiton Iron Ore, Australia:



"This project successfully reduced the contamination level in the crusher to below the target cleanliness level. This has significant impact on the life of the wear components in the crushers."

INDUSTRY: Mr. Medir Lecha, Maintenance Chief, RUFFINI, S.A., Spain:



"After knowing C.C.JENSEN Filters and having installed them on our injection machines, we have got the suitable oil quality and reduction of yearly unplanned stops from 18 to 2 times." MARINE: Mr. Ivan Seistrup, Vice President, Maersk Supply Service, Denmark:



"Clean Oil is a Must!

The investment optimises performance, reduces the risk of errors and breakdowns, and saves maintenance costs!"

POWER: Jørgen Brix Andersen, Studstrupværket, Elsam. Denmark:



"Oil analyses show, we have achieved cleaner oil, after we have installed CJC<sup>m</sup> Oil Filters on our 8 coal mills. The need for oil change is gone, and the risk of a breakdown in the bearings has been extremely reduced. An oil change cost € 3,230 per gear."

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

# C.C.JENSEN - contact us today!





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