



Diesel Engine Lube Oil Filtration

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The lube oil of a diesel engine is constantly contaminated by combustion blow-by debris and metal particles. The smaller combustion particles damage the oil, accelerate oxidation and thereby lead to decreased TBN, increased viscosity and oil change. However, most harmful to the engine parts are the solid 3-15 μm particles, causing wear, blockage, fatigue and bore polishing in bearings, liners, camshafts etc.

The factory mounted full-flow filters are always coarse, filtering in the range of 25 μm , only gives very little protection as less than 2% of the particles in an engine lube oil is 25 μm or larger.

When filtering diesel engine lube oil it is very important that you take the high contamination ingress into consideration. You have only two options: centrifuges or filters with extremely high dirt holding capacities.

When used right, the centrifuge can remove particles smaller than the mechanical filter is able to. However, only if it is adjusted very accurately, which rules out self driven centrifuges. Due to improved dispersant additives in the oil, the oil has to be heated for the centrifuge to be effective. This has a negative effect on oil life time and increases running costs.

Comparisons show that centrifuges are 2-3 times more expensive than the equivalent CJC™ Filters; both in purchase - but also in running costs.

By using a cellulose filter element it is possible to remove both combustion debris, particles and water at normal working temperature. On top of this the cellulose filter insert reduces the problem with liner lacquering.

The largest CJC™ Off-line Fine Filter has a dirt holding capacity of 160 kg. and an internal surface of more than 18 m². This ensures you service intervals of up to 12 months, and during this period no additional service is needed.

Furthermore, the large surface makes it possible to absorb large amounts of oxidation products (resin).

In the following dimensioning table the dirt holding capacities of various size filters are listed.

Engine kW	CJC™ Fine Filter	Dirt Holding Capacity
> 500	HDU 27/54 PM	20 kg.
500 - 700	HDU 27/81 PM	30 kg.
700 - 1200	HDU 27/108 PM	40 kg.
1200 - 1800	HDU 2x27/81 P	60 kg.
1800 - 2400	HDU 2x27/108 P	80 kg.
2400 - 5000	HDU 427/108 P	160 kg.

Fuel: Gas oil M1/Marine Diesel Oils M2-3



Results:

Tests show that using a CJC™ Fine Filter on your engine will prolong the life of your engine parts by four times or more. Contact us if you would like to see copies of the test documentations.

Photos and text:

Photo 1:

CJC™ lube oil fine filter is installed on the Irish fishing vessel Atlantic challenge.



Photo 2

Installation diagram of offline filter on diesel engine

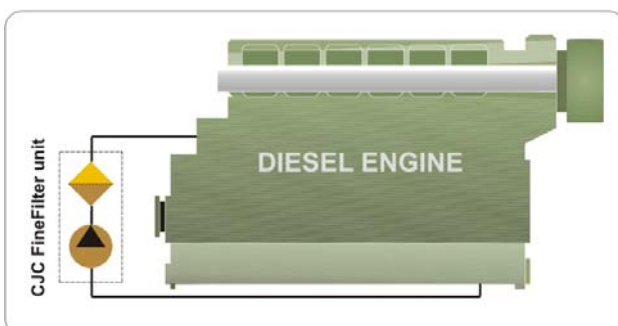


Photo 3:

Cut drawing of CJC HDU 27-27 Fine Filter.

