

# CJC® Filter Inserts, type AK

Specially designed for filtration  
and removal of humidity from low viscosity oils

Product Sheet



## CJC® AK FILTER INSERTS

The CJC® AK Filter Inserts are based on the standard A Filter Inserts, but extra dried and vacuum packed, so the cellulose filter media contains no humidity. It is designed with fine filtration, high dirt and water holding capacity in mind, resulting in a low cost for removing one kilo of contamination from oil. Due to the relatively high-pressure loss compared to other CJC® inserts, the AK Filter Inserts are primarily used for low viscosity or warm oils, where below 50 ppm of humidity content is required. The AK Filter Inserts remove all four contamination types in one and the same process: particles, water, varnish, and acidity. The AK Filter Inserts are used in CJC® Fine Filters HDU series.

### Used for maintenance of below applications:

- Transformers
- Tap changers
- Small hydraulic systems

## CONTAMINATION CAPACITY

Based on field experience we have observed that the total Dirt Holding Capacity (DHC) is dependent on shape and density of particles and other variables within an oil system.

When saturated, the total weight of accumulated contamination depends on the application, the combination of contaminants, as well as the density of the captured contamination.

Contamination Capacities	Size		
	15/25	27/27	38/20
Solids, kg	2	4	4
Water, ltr	0.75	1.5	2
Varnish, kg	1	4	4

## COMPONENTS

CJC® Filter Inserts consist of cellulose bonded discs, **made of 100% natural cellulose fibres from sustainable resources; no plastic, no metal, no chemicals.**



## DISPOSAL OF USED CJC® FILTER INSERTS

CJC® Oil Filters are green solutions, and at C.C.JENSEN one of our objectives is caring for the environment. Therefore, please arrange proper disposal of used filter inserts in accordance with your own local legislation.

## IDENTIFICATION

To order the AK Filter Inserts, please use:

### Article No.:

- 1 x AK 15/25: PA5600321
- 1 x AK 27/27: PA5600313
- 1 x AK 38/40: PA9500301
- 1 x AK 38/60: PA9500302



AK 15/25



AK 27/27



AK 38/20

## FILTRATION TECHNOLOGIES

### ► Oil filtration degree

*Particles can be removed according to the illustration below \*)*

For offline oil filtration, the dirt holding capacity is paramount because the offline process will have time to remove contaminants, unlike in-line filtration. Our focus is on removing the smallest and most harmful particles.

### ► Oxidation and oil degradation products

The cellulose material retains oxidation by-products, resins, sludge, and varnish. The huge surface area of the filter media removes contamination through absorption and adsorption. By effectively removing contaminants we can slow down the rate of oil degradation.

### ► Water removal

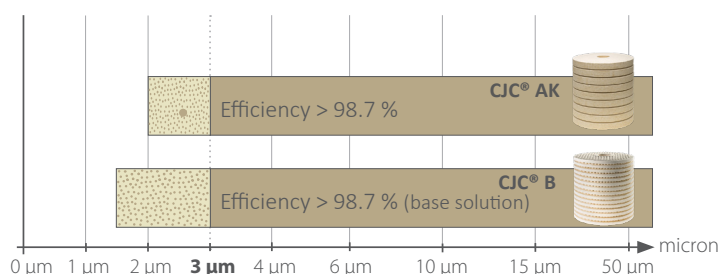
The extra dried Filter Inserts will be able to keep the water in oil content at very low levels (below 50 ppm in mineral/synthetic oils). All three stages of water (dissolved, emulsions and free) will be absorbed by the cellulose fibres.

### ► Acidity stabilisation

Acidity is a natural part of the oil degradation process and will be retained by the CJC® Filter Insert using the absorption technology.

### \*) Oil Filtration Efficiencies - Particles

CJC® Filter Inserts



#### CJC® AK Filter Insert:

- Maintains low humidity content in oil
- Very low cost per kg removed contaminant
- Best for low viscosity oil

#### CJC® B Filter Insert: (base solution)

- best balance between fine filtration efficiency and high dirt holding capacity

# BENEFITS in general

Product Sheet



## C.C.JENSEN DEPTH FILTER EFFICIENCY TEST

CJC® Filter Inserts are designed to last for one year, therefore testing of a high density depth filter for a few hours does not make sense. The C.C.JENSEN test is inspired by a modified ISO 16889, using finer test dust (UFTD), which resembles real dust and wear particles better than the coarse MTD test dust used in the standard Multi-pass test - designed for thin pleated filter media. The test modification also includes a much longer test time to get close to a real-life application scenario. The main advantage of CJC® Filter Inserts is the huge surface area, which distributes the oil flow and particles evenly and ensures stable low velocity for optimum retention of contamination. The large filter mass makes this unmatched high dirt holding capacity possible.

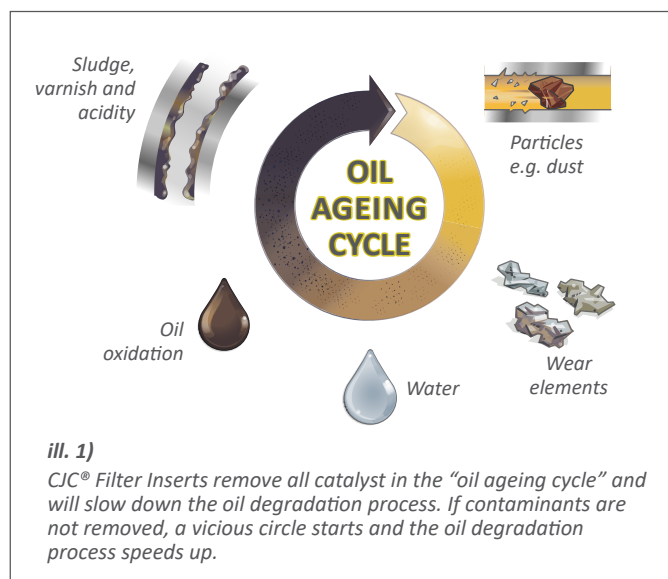
## DIRT HOLDING CAPACITY CREATES VALUE

Competitive Filter Insert costs divided by dirt holding in kg:

3-micron filtration	Example 1	Example 2
Filter Insert type	Competitive pleated filter	CJC® cellulose depth media
Cost of element vs. Filter Insert	1 x €	4 x €
Dirt holding capacity	0.100 kg	4 kg
Cost per kg removed contamination	10 x € per kg	1 x € per kg

## SLOW DOWN OIL AGEING

By removing all four contamination types (particles, water, acidity, and varnish), the CJC® Filter Inserts can slow down the oil ageing process and prolong the oil lifetime (see ill. 1). CJC® often results in 2-5 times longer oil lifetime, leading to considerable savings and reduction of CO<sub>2</sub> emissions. Field experiences show that removing particles of 3 µm and below with CJC® Filter Inserts has a significant effect on oil and component lifetime.



## YOUR BENEFITS WITH CJC®

CJC® Filter Inserts have the highest dirt holding capacity on the market due to special cellulose-based material. Furthermore, the unique construction of the bonded discs, creates a large filtration area (see ill. 2) resulting in reduced costs of ownership. The CJC® Filter Inserts are a modular design, which allows them to fit any applications and requirements.

### 1. The CJC® Filter Insert features:

- a. Depth media of moulded cellulose.
- b. Highest Dirt Holding Capacities (DHC).
- c. **100% natural cellulose fibres from sustainable resources; no plastic, no metal, no chemicals.**



### 2. Removal of contaminants, 4-in-1:

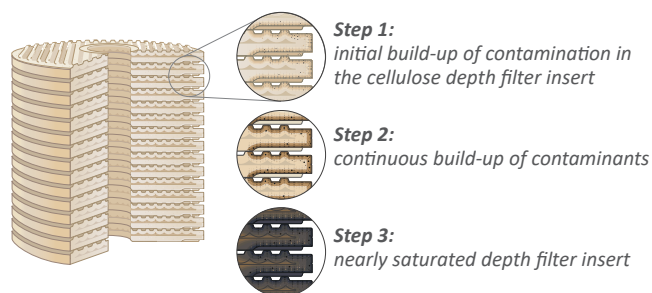
- a. **Particles:**  
Lifetime of both oil and component are increased considerably.
- b. **Oil degradation products:**  
Avoid sticking valves, lacquering, and varnish on metal surfaces.
- c. **Water:**  
Reduce the risk of micro-pitting, bacterial growth, sludge etc.
- d. **Acidity/TAN:**  
Reduce oil ageing and wear on equipment.

### 3. OEM requirements

Experience and application knowledge of C.C.JENSEN ensure that CJC® solutions can meet specifications from OEMs on oil cleanliness.

All helping to minimise further degradation of the oil.

## CJC® DEPTH FILTRATION EFFICIENCY



ill. 2)

This graphic describes the technology and the efficiency of depth Filter Inserts removing contaminants by adsorption & absorption.

## MAINTENANCE RECOMMENDATIONS

To achieve the highest possible oil cleanliness level, the CJC® Filter Inserts need to be changed at least once a year. Because of accumulated oil degradation products (oxidation, acids, and varnish) no matter what the pressure gauge indicates the used Filter Inserts should be replaced annually. Leaving filter media in service for longer than one year will result in decreased oil filtration efficiency and increased risk of breakdowns and component wear.