

CJC® Filter Inserts, type BNK

Specially designed for filtration of insulating oil

CJC® BNK FILTER INSERTS

CJC® BNK Filter Inserts are based on the technology of the CJC® B Filter Insert type, but are extra dried and vacuum packed, ensuring there is no humidity in the cellulose media. Additionally, the BNK is fitted with a 30 micron strainer in the centre hole for added safety. The BNK is specially designed for insulating oils and it removes all four contamination types in the same process: particles, water, acidity, and varnish.

This Filter Insert is used with the CJC® Fine Filters HDU series.

Used for the maintenance of the below oil types and applications:

- Tap changer insulating oils
- Refrigerator compressor lubrication oils

CONTAMINATION CAPACITIES

Based on field experience we have observed that the total Dirt Holding Capacity (DHC) is dependent on the 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
Solids, kg (lb)	2 (4.4)	4 (8.8)
Water, ltr (gal)	0.75 (0.20)	2 (0.53)
Varnish, kg (lb)	1 (2.2)	4 (8.8)

COMPONENTS

CJC® Filter Inserts consist of cellulose bonded discs **made of 100% natural cellulose fibres.**



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 for proper disposal of used filter inserts in accordance with your own local legislation.

IDENTIFICATION

To order the BNK Filter Inserts, please use:

Article No.:

- 1 x BNK 15/25: PA5601338
- 1 x BNK 27/27: PA9501342
- 1 x BNK 2x27/27: PA9501345



BNK 15/25



BNK 27/27

FILTRATION TECHNOLOGIES

Oil filtration degree

*Particles can be removed as shown in 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.

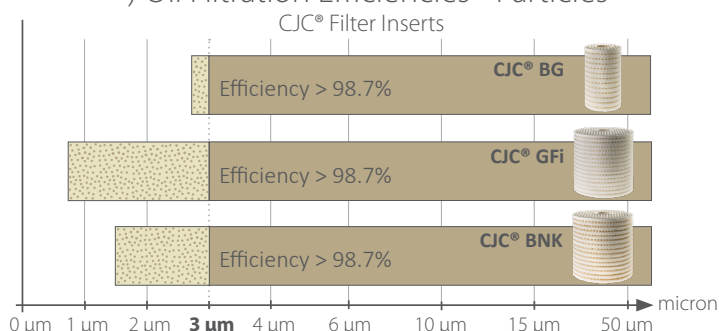
Water removal

The extra dry filter insert will keep humidity in oil at very low levels. 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® BG Filter Insert:

- low pressure drop
- compact, for high viscosity oils

CJC® GFi Filter Insert:

- very high efficiency for small particles
- more advanced fibre technologies
- lower dirt holding capacities
- high pressure drop

CJC® BNK Filter Insert:

- best balance between fine filtration efficiency and high dirt holding capacity
- maintains low humidity in oil
- strainer in the centre as added safety



BENEFITS in general

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.

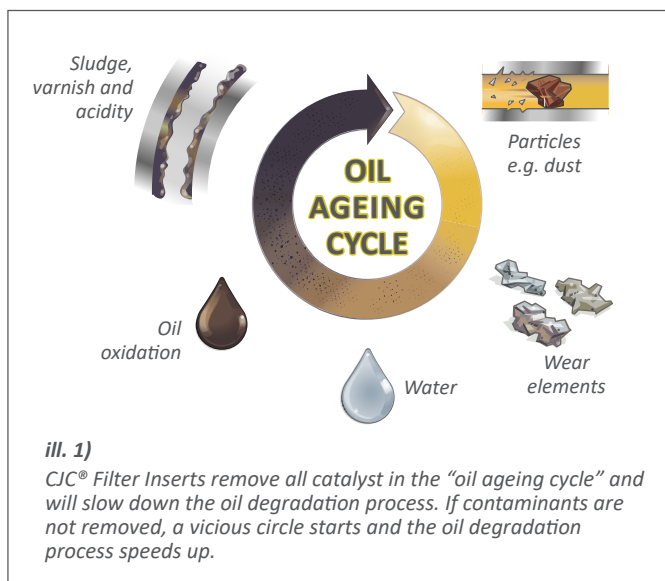
DIRT HOLDING CAPACITY CREATES VALUE

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 CO₂ 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.**



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

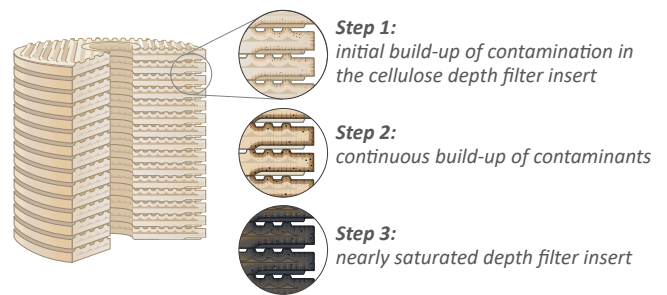
- a. **Particles:**
Lifetime of both oil and component are increased considerably.
- b. **Oil degradation products:**
Avoid sticking valves, lacquering, and varnish on metal surfaces.
- c. **Water:**
Reduce the risk of micro-pitting, bacterial growth, sludge etc.
- d. **Acidity/TAN:**
Reduce oil ageing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

