



CJC Application Study

Quench Oil System

THE PROBLEM

Oil in quenching plants is exposed to very high rate of contamination ingress. The typical types of contaminants are:

Solid Particles: Dust, metal particles and rust are invariably introduced into the quench oil together with the parts to be hardened.

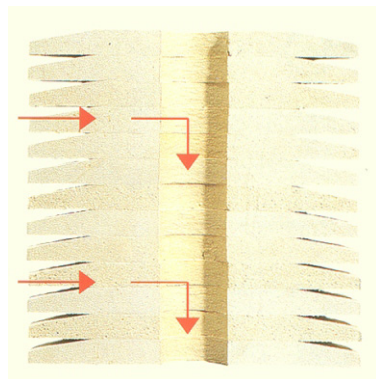
Water: Introduced through condensation or cooler leakages.

Oxidation Deposits (resins): In combination with the frequently very high temperature of the quench oil, the above contaminants will accelerate the decomposition of the oil and resin-like deposits will form. This will, in turn, severely reduce the efficiency of the oil coolers, the aqua-alarm system and the quenching process in general.

Cracking Deposits (resins): When large molecules are exposed to heat and even small amounts of oxygen, they crack into small particles. These deposits tends to stick to the surfaces of the quenched parts, making subsequent cleaning and machining difficult.

THE SOLUTION

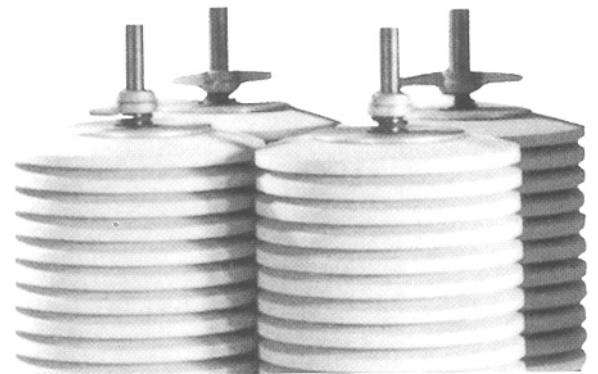
The CJC™ Fine Filter combines 3 µm absolute filtration with absorption of water and resinous deposits.



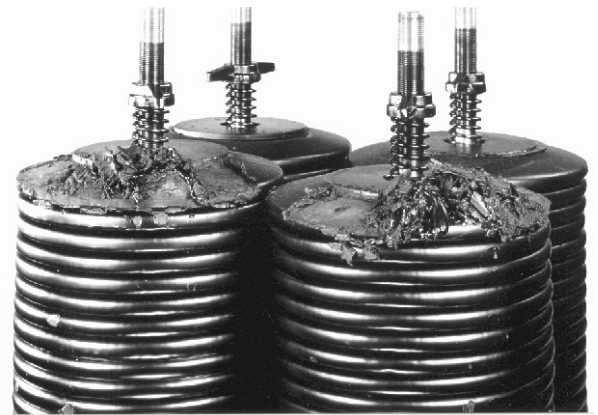
All CJC™ Filter Elements are true depth filters made from semi-chemical cellulose. The long filter passage (from the outside and inwards) ensures long service life and low operation costs.

THE SYSTEM

CJC™ Fine Filter type HDU 427/108 MZ with CJC™ Filter Insert type F 27/27 (3 µm abs.).








Before filtration



After filtration

THE RESULTS

-  Cleaner washing baths, and thus extended service intervals and reduced post-quenching treatment of the hardened parts
-  Easier tank cleaning
-  Improved surface quality on treated parts
-  Extended oil replacement intervals
-  Reduced risk of fire due to reduced water content (water absorbed in filter insert).

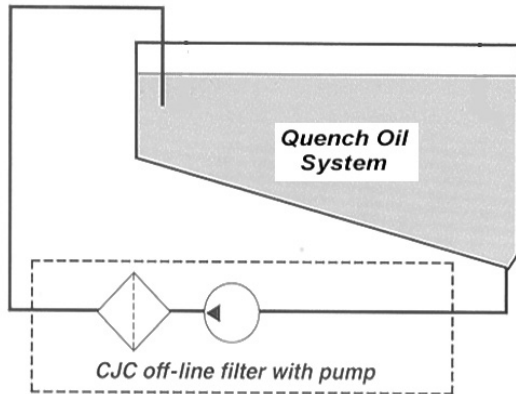


CJC Application Study

C.C.JENSEN

Quench Oil System

THE INSTALLATION



Because of the continuous ingress of dirt into a quench oil system the CJC™ Fine Filter must be a stationary unit, connected as shown on above drawing, and in operation 24 hours a day.

DIMENSIONING TABLE

System Volume max.	CJC Fine Filter Type	Insert Volume	Dirt Holding Capacity	Pump Flow
2,000 ltr	HDU 27/108 MZ	48 ltr	16 kg	200 ltr/h
4,000 ltr	HDU 427/54 MZ	96 ltr	32 kg	300 ltr/h
8,000 ltr	HDU 427/81 MZ	144 ltr	48 kg	600 ltr/h
10,000 ltr	HDU 427/108 MZ	192 ltr	64 kg	800 ltr/h
20,000 ltr	HDU 727/108 MZ	336 ltr	112 kg	1,500 ltr/h

The CJC™ range of products also includes equipment for particle and water removal from skimmed quench oil (from washing baths), enabling the re-use of the oil.

SERVICES INTERVALS



An HDU 427/108 unit requires replacement of the filter insert after approximately 6 months in operation.

In the case illustrated above, the theoretical dirt holding capacity of the CJC™ Unit of 64 kg turned out to be an impressive 160 kg in real life.

The main features of the CJC™ Filter Insert are:

- Particle removal down to 3 micron
- Water absorption
- Resin absorption



C.C.JENSEN

C.C.Jensen A/S * Løvholmen 13 * DK-5700 Svendborg * Denmark
Phone: +45 63 21 20 14 * Fax : +45 62 22 46 15 * E-mail: filter@cjc.dk