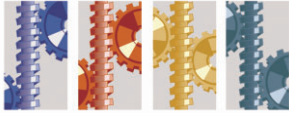




OIL FILTRATION SYSTEMS

# CJC™ Application Study

## Quench Oil - Open Bath Quench System



### INDUSTRY

*Application Study  
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### CUSTOMER

Metso Drives Oy, Finland.  
Contact Person: Sami Lehtonen.

### THE SYSTEM

Open bath quench oil system for large gear wheels. **Oil volumes:**40,000 and 90,000 litres. **Oil:** Mobiltherm FD.

### THE PROBLEM

Rapid deterioration of oil leading to short lifetime of oil. Sludge formation between gear teeth leading to uneven hardening and reduced component surface strength. Black spots on metal surfaces from burned oil molecules leading to regular and expensive cleaning of both surface threatened parts and oil reservoir.

### THE SOLUTION

#### CJC™ FineFilters:

- 1 HDU 3x427/81 MZ-EPQTV with 18 CJC™ FilterElements F2x27/27. Pump: MZ 32-4 1,920 (L/h).
- 2 HDU 2x427/81 MZ-EPQTVY each with 12 CJC™ FilterElements F2x27/27. Pump: MZ 21-4 1,260 (L/h).

Efficiency: 3 micron abs., 0.8 micron nom.  
Dirt holding capacity per F 2 x 27/27: 8 kg.  
Total dirt holding capacity for the systems: 480 kg.

### THE TEST

After installing one HDU 2 x 427/8 L MZ-EPQTVY on the existing 40,000 L system sludge was removed as soon as developed. All problems with uneven hardening disappeared. No black spots were visible on parts after operating the filter for a few days only.

### THE RESULT

So far, oil lifetime has doubled and oil analyses showed no signs of a need for change. From that it can be expected that no cleaning of oil reservoir is necessary. Calculating the payback time of the investment showed that the prolonged lifetime of oil paid the investment within the first 2 years. Taking into consideration the other obvious benefits Metso Drives Oy decided to invest in additional CJC FineFilters when building a new 90,000 L quench oil bath. The new bath was operating one year prior to installation of the FineFilters.

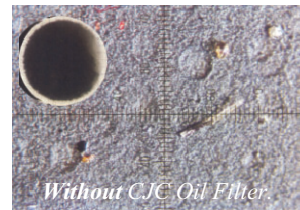
After only 2 days of operating the filters on this system all problems with uneven surface hardening, black spots on parts and sludge formation disappeared.



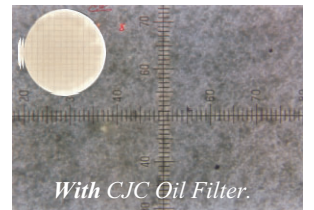
*Mr. Pekka Korhonen at Metso Drives Oy, with the HDU filtration unit for their 90,000 litre system.*



*Changing the first set of elements in the HDU 2 x 427/81 MZ-EPQTVY on the 40,000 litre system*



*Without CJC Oil Filter.*



*With CJC Oil Filter.*

*Membrane filter analyses of the quench oil before and after installation of FineFilters.*

