

Tire Curing Press, Vulcanization, Hydraulic Oil CJC® Oil Filtration

CUSTOMER SAVINGS & BENEFITS

By installing a CJC® Filter Separator and a CJC® Fine Filter with a CJC® Oil Contamination Monitor, the following benefits were obtained:

- Reduced oil consumption by 24,000 litres per year
- 47,000 EUR saved per year on new oil
- **Reduced carbon footprint**



A French tire manufacturer producing tires for e.g. mining haul trucks.

CUSTOMER

A French tire manufacturer producing tires for e.g. mining haul trucks. Their production plant is specialized in producing large tires (20.5-49 inches / 52-124 cm) for heavy duty machineries like mobile construction and mining equipment, as OEM and replacement tires.

SYSTEM

37 tire curing presses utilizing a steam cooking system.

System: 4 hydraulic groups
Oil type: Hydraulic oil AZOLLA ZS 46
Oil volume: 3x1,500 & 1x2,000 liters, total 6,500 ltr.

PROBLEMS

The customer wanted to reduce the costs related to the purchase of new hydraulic oil. The oil was heavily contaminated with particles, sludge, and water from the vulcanization process, where overheated steam can ingress into the oil. Due to this, every month about 2,000 liters of oil were wasted including leaks.

SOLUTION

40 oil recovery drums (200 litres each) and various 1000 ltr. IBCs were used to collect the waste oil. A **CJC® Offline Filter Separator PTU3 27/54** with CJC® Filter Inserts BLAT 27/27 (flow rate 120 L/h) was installed to remove water from the oil. Furthermore, a **CJC® Offline Fine Filter HDU 27/108** with CJC® Filter Inserts B 27/27 (flow rate 960 L/h) for removal of sludge and particles. Oil samples and an online particle counter **CJC® OCM15** were verifying the efficiency of this oil filtration process, with ISO codes as low as 15/12/6.

RESULTS

Oil volume recycled per month: 2,000 Liters, 24 m³ per year. The hydraulic oil is now clean and free from humidity and particles. Oil consumption was reduced by 24,000 litres per year. The recycled oil showed oil properties and cleanliness similar to or better than new oil!

FINANCIAL BENEFITS

The oil is now recycled resulting in annual savings of 47,000 EUR on new oil.

ENVIRONMENTAL BENEFITS

Lower carbon footprint due to recycling of the oil, resulting in reduced oil consumption.



CLEANING PROCESS

Step 1 - Collection in 200-liter drums



40 oil recovery drums of 200 litres on retention are arranged in the basement. (1 per press, 2 at the end of the line, 1 mobile).

Step 2 - Decantation in 1000 ltr. IBCs



The "waste" oil is transferred to 1,000 litre IBCs. The bottom sediment of sludge and free water is purged regularly via the drain valve of the IBC containers.

Step 3 & 4 - CJC® Oil Filtration



Solutions:

- A **CJC® Filter Separator** for removal of water from the oil, treatment for 1 week.
- A **CJC® Fine Filter** for removal of particles and sludge from the oil, treatment for 1 week.
- The **CJC® Condition Monitoring Unit OCM 15** verified the oil cleanliness of the recycled oil. Photo of the panel indicates an example of a very fine cleanliness level - ISO Code 15/14/12.

Step 5 - Oil Sampling

Extract of samples	Sample 178
Viscosity	45.0
Water content, %	0.00
TAN	0.73
Particles ISO 4406 (1999)	15/12/6
Diagnostic	✓

An example of one of the oil samples - **AFTER** CJC® Oil Filtration.

