



Hydraulic Oil Sand-Lime Brick Press

CJC® Application Study

Application study
written by:

Jens Wojtusch
Karberg & Hennemann
GmbH & Co. KG
Germany

SYSTEM

Sand-lime brick press type 1200 J
Manufacturer: Dorstener Maschinenfabrik
Oil: approx. 3,800 L, SRS Wiolan HLP-D 46

PROBLEM

During the processing of sand-lime brick, a huge amount of extremely fine particles occur, which can enter the oil system and contaminate the hydraulic oil. With a cleanliness class of 24/22/19 (according to ISO 4406) the oil doesn't match the required oil cleanliness of the manufacturers for highly sensitive valve technology – required ISO Code of 20/18/15 for the main valve and 17/15/12 for servo valve (Bosch Rexroth). The massive clogging and various failures with the proportional valves as well as frequent replacements of pressure and cooling filter led to increased maintenance costs and numerous production losses. Despite oil change, filtration of the entire oil volume and the installation of a new return filter (filtration degree of 3 µm), the oil was contaminated again within six months. The problems with proportional valves and short filter service life increased once again.

SOLUTION

CJC® Oil-Care System 27/54 with integrated depth filter insert for continuous oil care in an independent, secondary off-line circuit (24/7).
Filter material: 100 % cellulose (renewable raw material)
filtration degree: 3 µm absolute, 1 µm nominal
Capacity: dirt up to 24 kg / water > 1.8 l

RESULT

Despite the immense and permanent dirt ingress – i. a. of a serious leakage in one of the hydraulic cylinders – the CJC® Oil-Care System reduced the particle content within a very short time. The content of particles > 4 µm decreased in total by 99.31 %. The result of the significant improvement of the oil cleanliness:

- Pressure and return filter (cooler):**
The filter service life of each in-line filter was extended from 2 up to 4–6 weeks.
Savings per six months: approx. 2,250 EUR
- Proportional valves:**
The valve technology operates highly reliable, no clogged valves anymore. Avoiding unscheduled downtimes and production losses.
- Oil cleanliness:**
The oil has not to be replaced once again.
Saving: approx. 3,800 EUR (1 EUR/Litre)
The lifetime of oil and components are estimated extended by a factor of 3 up to 7 (source: Noria Corporation).



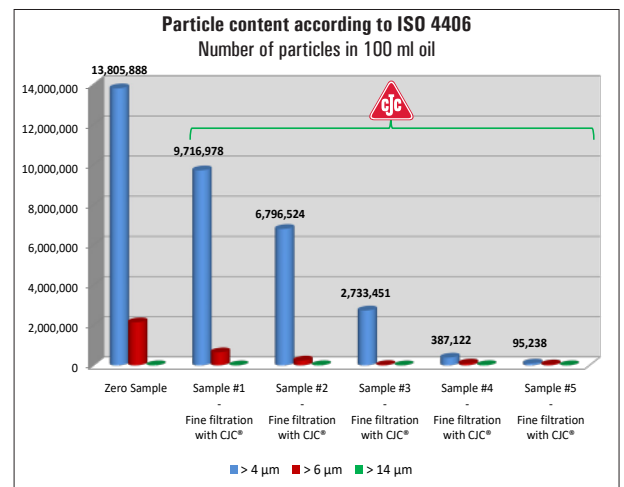
Photo, above: CJC® Oil-Care System installed on sand-lime brick press

Photo, right side: Very good visible the huge amount of extremely fine particles, which occur during operation and can enter the oil system.

RESULT

	FINE FILTRATION WITH CJC®					
	Zero sample	Sample #1	Sample #2	Sample #3	Sample #4	Sample #5
Particles > 4 µm	13.8 Mio.	9.7 Mio.	6.7 Mio.	2.7 Mio.	387,122	95,238
ISO Code 4406 *)	24/22/13	24/20/12	23/18/14	22/15/11	19/17/14	17/16/13

*) Further information on cleanliness classes are available on request.



Because of the convincing results and the high savings potential, also the remaining three sand lime brick presses were equipped with CJC® Oil-Care Systems.

The payback period of the CJC® Oil-Care Systems was less than one year.