



CLEAN OIL
BRIGHT IDEAS

Application Study
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CJC™ Application Study

CUSTOMER

Shenhua Guohua (Dongtai, China) Wind Power Co., Ltd.

SYSTEM

GE 1.5S Turbine, Winergy gearbox, 1 planetary gear, 2 parallel stages, $i=90.302$

Oil Type: Castrol A320

Oil Volume: 220 L

PROBLEM

The gear system was heavily contaminated with solid particles, oxidation products and water. To obtain a life time of 20 years on the gears and bearings, the oil had to meet a contamination level of ISO 17/15/12 or better with a water content below 500 ppm.

SOLUTION

CJC™ Filter: HDU 15/25 PV

CJC™ Filter Insert: BG 15/25, 3 μm absolute filtration degree

Pump flow: 120 L/h

Dirt holding capacity: 1.5 L

TEST

Oil sample no. 1 was taken when the CJC™ Filter was installed on the wind turbine.

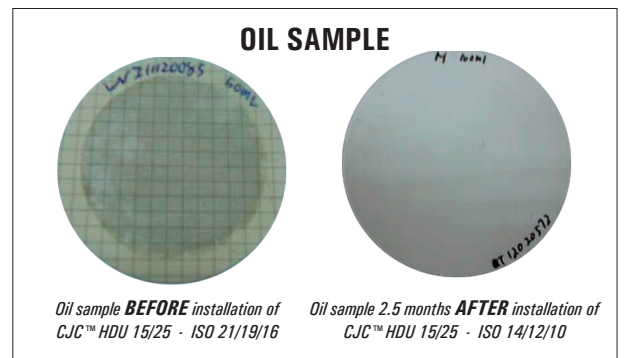
Oil sample no. 2 was taken after 2 weeks with the CJC™ Filter in operation.

Oil sample no. 3 was taken after 2.5 months with the CJC™ Filter in operation.

RESULT

After 2.5 months operation with the CJC™ HDU 15/25 PV Fine Filter, the ISO code **was reduced 7 classes**. The water content was reduced to 135 ppm. The oil cleanliness improvement will result in **4 times the life time of gearbox and bearings!**

Gear Oil GE 1.5S, Wind Turbine Gearbox



RESULT

Filtration time	0 hour	2 weeks	2.5 months
ISO Code	21/19/16	19/18/14	14/12/10
2 μm particles	1,500,000	375,000	12,000
5 μm particles	375,000	195,000	3,000
15 μm particles	48,000	12,000	750
Membrane color	Dark	Light	White
Water, ppm	516	286	135

pr. 100 ml

