



CLEAN OIL
BRIGHT IDEAS

CJC™ Application Study

Application Study
written by:

Marcelo Gonzales L.
C.C.JENSEN Chile
&

Alexander N. Andersen
C.C.JENSEN A/S

In co-operation with:

BHP Billiton
Minera Escondida, Chile



Installation year:
2006/2016

THE CUSTOMER

BHP Billiton, Minera Escondida, Chile

SYSTEM

System: Primary crusher,
Fuller-Traylor gyratory crusher
(FLSmidth)

Oil Type: ISO VG 320

Oil Volume: 4,000 L

Crushing capacity: 6,000 ton/h

PROBLEM

The crusher was subject to large dirt and contamination ingress from the environment, which resulted in breakdown of the dust seal and breakdown of oil-lubricated components. The ISO codes were seen as high as 25/23/22.

This led to shutdown every second month and other challenges like:

- oil change on avg. every 60 days of 4,000 L. oil = 6 shutdowns per year
- unplanned breakdowns of critical components
- high running costs

Each oil change means 8 hours shutdown - a total of 48 hours shutdown.

Despite the almost daily inline filter changes, the oil still had to be changed too frequently.

SOLUTION

Installation of a CJC™ Fine Filter HDU 427/108 containing 16 off CJC™ Filter Inserts type B 27/27 - with a dirt holding capacity 64 kg - eliminated the problems.

RESULT

The CJC™ HDU 427/108 Fine Filter removes up to 150 kg of dirt every two month. The continuously operation of the CJC™ HDU 427/108 kept the contamination out of the oil system. This led to increased oil lifetime and reduced cost for component change.

After the CJC™ Oil Filter was installed, the inline filter consumption was almost eliminated and three out of four of oil changes were avoided.

Avoiding shutdown costs of 10,600 USD per hour for each stand still, resulted in a direct impact on the bottom line.

**Productivity was increased significantly,
87% less downtime and annual savings of
up to 445,200 USD**



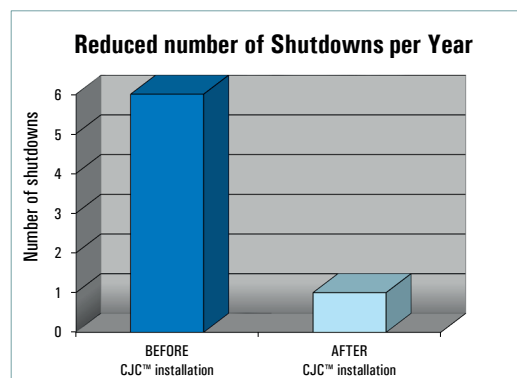
CJC™ Fine Filter
HDU 427/108 installed



Dirty and saturated
CJC™ Filter Insert



A used inline filter



FINANCIAL SAVINGS

Type of Costs	BEFORE CJC™ installation	AFTER CJC™ installation	TOTAL
Oil consumption	24,000 litres	4,000 litres	83% reduction
Waste oil handling	19,200 USD	4,800 USD	Savings: 14,400 USD
Shutdowns: 10,600 USD / hour - Stand still - Oil replacement - Cleaning - Service	6 shutdowns of 8 hours each = total 48 hours	1 shutdown of 6 hours	87% less downtime Savings: 445,200 USD
Spare parts	3 cylinders & plates	1 cylinder & plate	
	3 main bushings	1 main bushing	