Optimizing oil maintenance for significant savings

Your guide to more cost-effective truck oil maintenance

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What are the most important metrics of a mining truck? Uptime and reliability. Because if your truck doesn't work when you need it to, no other metric matters.

Maximizing uptime is critical for optimizing output, but the rough operating environments of the mining industry pose a persistent problem for trucks: these conditions are inherently dirty, which creates a serious maintenance challenge.

Tiny dirt particles, water and varnish find their way into each truck's lubrication systems causing premature gear oil changes, component failures and unplanned downtime – with costs that can be driven into the millions for some mining operations.

Oil contamination accounts for 80% of all oil-related failures in lubrication systems. Fortunately, C.C.JENSEN is 100% committed to helping you deal with this, more cost-effectively and sustainably.

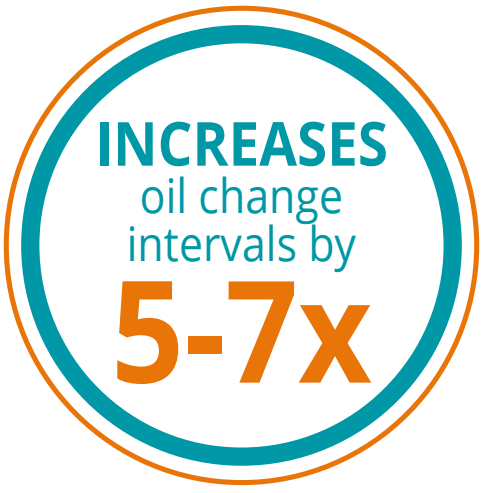
This guide introduces the CJC® Mobile Flushing Unit (MFU) for filtration of gear oil, but that is just one part of a whole range of filtration solutions designed to raise your uptime and lower your costs.

How does dirty and contaminated truck oil impact your profitability?

- Severely worn components and system failure
- Downtime and lost production
- Unbudgeted replacement of parts
- Frequent oil changes
- Frequent replacement of in-line oil filters

How do CJC® Oil Filtration programs help?

- Extend oil lifetime by 5-7 times
- Extend overhaul intervals by 50%
- Increase fleet availability



Three ways to start saving thousands

1. Fewer oil changes

A single ultra-class truck uses over 4,000 litres of oil across its various systems. Due to contamination, all that oil is dumped and replaced as often as every 2,000 hours of operation.

But that oil is still good and can be cleaned and maintained. By using offline oil filters at each planned maintenance, those oil drain intervals can be extended by 5-7 times. For the largest haul trucks, that is equivalent to saving over 10,000 litres of oil annually – **which adds up to over USD 60,000 per truck per year.**

2. Extended overhaul intervals

Oil change intervals are set by manufacturers because as oil gets dirty, wear on components such as planetary gears accelerates, and their life expectancy drops. Keeping oil cleaner for longer extends the life of those expensive parts.

Typical overhauls occur every 12,000-18,000 hours, depending on the oil system. Our customers have reported that, by using offline oil filtration solutions, they have doubled the length of time before overhauls are needed – effectively cutting them in half.

As an example, the rebuild cost per final drive can cost upwards of USD 100,000. With extended rebuilds the calculated savings are at least USD 6,400 per truck per year.

So, extended rebuilds, combined with reduced use of oil, **now adds up to USD 66,400 of savings per truck per year.**

3. Less downtime

Unplanned downtime can be the most expensive setback for mining operations. Some mines estimate that processing disruptions can cost upwards of USD 240,000 per hour. Therefore, maintaining fleet availability is critical.

Not all downtime is avoidable. But offline oil filtration has reduced downtime-related operating costs for mines by as much as USD 13,600 per truck, bringing the **total savings to USD 80,000 per truck per year.**

For a fleet of 60 trucks, typical for some customers, **the potential annual savings are upwards of USD 4,800,000 with reduced oil usage of over 640,000 litres** – which is also good news for the environment.

Why drain when you can maintain?

CJC® Mobile Flushing Unit

The CJC® Mobile Flushing Unit (MFU) is a world-class solution for ensuring trucks and other mobile machinery are constantly operational, avoid unexpected breakdowns, prevent premature component wear and save on frequent oil changes.

When it comes to quick and effective filtration of thick gear oils, the CJC® MFU exceeds expectations for systems such as planetary gears and differentials. Used globally from the coldest parts of Canada to the warmest regions in Australia it has proven ideal in rough environments such as the mining sector.

To optimize oil filtration, it automatically adjusts the flow based on oil temperature and viscosity and uses a built-in oil contamination sensor to monitor the oil cleanliness level during the entire filtration and flushing process.

Benefits

- Extends oil life by 5-7 times – reducing maintenance costs
- Reduces component wear due to regular flushing of systems
- Industries' lowest cost per kg dirt removed
- Helps monitor and log oil cleanliness
- User-friendly, mobile and easy to operate

SAVE OVER
10,000L
of oil per truck per year

Case studies: CJC® Mobile Flushing Unit (MFU) at work

Caterpillar 797 haul trucks in the Canadian oil sands

Challenge
The drivetrain of a 380-ton truck is under tremendous stress; proper lubrication of its gears and bearings is critical. Various factors compromise the oil's cleanliness, including dirty and wet ambient conditions, wear, contaminated bulk oil, and residual debris from machining and servicing of internal parts. This all leads to the oil being dumped and replaced every 2,000 hours or fewer.

Benefits
Because of the extreme operating requirements the oil is expensive and replacing it can cost upwards of USD 15,000 per truck, as often as four times per year.

This customer operates over 100x haul trucks. By employing the CJC® MFU at regular planned maintenance intervals, oil service life was extended by 50% which translated to savings of USD 1.5 M per year. And that didn't include other benefits such as extending overhaul intervals and reducing failures or replacing parts.

Haul trucks and track dozers in South Africa Colliery mines

Challenge
Two sizable mines in South Africa merged. The cost of the massive haulage and dozer machinery used in these mines runs into the thousands. Harmful coal dust and other abrasive particles, combined with the air moisture, constantly threaten to contaminate the oil, risking costly downtime, repairs, and oil refills.

Benefits
Since introducing CJC® MFU filtration units, two of which were adapted for use on equipment too large to be trammed out of the pit, the mine has substantially reduced machine wear and tear. This has resulted in component lifetime almost doubling, equipment availability improving by up to 22% and significant money saved by maintaining rather than draining oil and other lubricants.

The system also saved notable time and money when a dozer transmission was submerged in pit water. Without the unit, the entire transmission would have needed to be removed and the filtration outsourced to an external partner. This would have taken 10 days instead of three and cost more than USD 50,000.

Applications of the CJC® Mobil Flushing Unit (MFU)

For earth moving equipment

- Trucks
- Shovels
- Loaders
- Dozers
- Excavators

About CJC®

We care for you

Established in 1953, C.C.JENSEN is an international, family-owned company that has become the global leader in oil maintenance. Headquartered in Denmark with 12 subsidiaries and over 50 distributors worldwide, we offer a unique range of CJC® Offline Oil Filters covering tailormade solutions for all system volumes – removing particles, water, acidity and oil degradation products (varnish) from hydraulic oils, lube oils, gear oils, diesel fuels and more.

See what you can save

With CJC® Offline Oil Filters installed you ensure continuous clean and dry oil, increase uptime, and extend component and oil lifetime, resulting in savings on your maintenance costs. All of which leads to reduced environmental impact due to many litres of waste oil saved every year.

Our CJC® Filter Inserts are made of 100% natural cellulose fibres from sustainable resources. That means no metal, no plastics and no chemicals.

C.C.JENSEN

Contact us today

Find your local contact at **www.cjc.dk/contact**

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