

Metso

Offline oil filtration solutions



- Maximum uptime of your equipment with clean oil
- Avoid oil changes

Crushers

Oil contamination

Challenge

Oil contamination causes approximately **80%** of all system failures and reduces equipment reliability!

Extreme contamination of the oil systems with particles and water causes critical downtime and high replacement costs for these cost-intensive components.

Contamination takes the form of insoluble materials, dust particles, sand and rubber (hard contaminants), oil degradation products such as varnish, resin and oxidation residues (soft contaminants) and water. The smallest particles, (below 5 µm), free water and deposits from oil degradation products are often responsible for defects.

Oil contamination causes approximately 80% of all system failures



Dirty and clean Metso filter inserts.



Dirty and clean oil samples, before and after oil filtration. The filter inserts have absorbed the contamination from the crusher oil, and an oil change has now been avoided.

Removal of contaminants

Why choose Metso offline oil filter?

By installing the Metso offline oil filter and keeping the oil clean, the majority of all problems related to contamination can be prevented.

Applying the Metso offline oil filter to your crusher, will give you the following benefits:

- increased uptime for production machinery
- extended oil lifetime
- keeping the oil clean
- low consumption of lubricants
- savings in inline filters
- extended service life for crusher & lubrication components
- less system failures due to purified oil in the system

Oil is continuously kept clean and free of contamination.

Maximum uptime of your equipment
- with clean oil

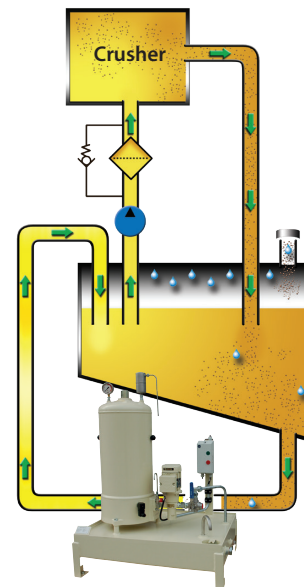
Avoid oil changes

Nordberg® HP & GP Series™ cone crushers

Filtration principle

The **Metso offline oil filter** is used for oil maintenance, generally as an offline filtration system in continuous operation.

Metso offline oil filters have very large dirt holding capacities. The systems are almost maintenance free and have a very low cost of operation.



Metso offline oil filter for stationary crushers.

Success story

Filter installation on crusher lube oil Clean oil and clean system - after only 3 weeks

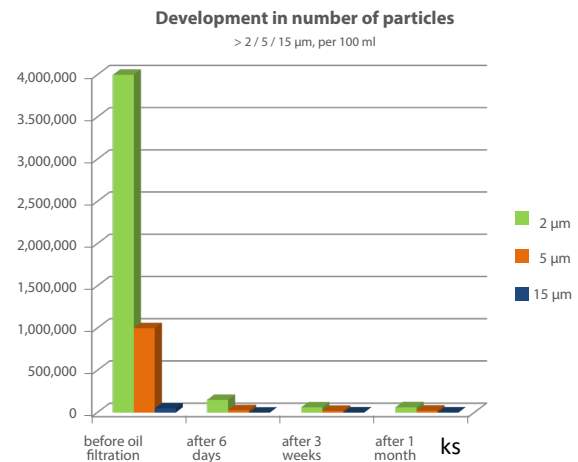
Site: NCC Roads Oy, Ohkola,
Saharintie, Finland
System: Nordberg® GP300
Oil type: Teboil Sypres 150
250 ltr
Filter type: Metso offline
oil filter 27/54
Insert type: 2 x B27/27

Before installing the Metso offline filter, crusher had been operating several thousands of hours.

The contamination level before installation of the Metso offline oil filter was very high, having an ISO level up to 22/20/15.

After only 6 days of filtration, contamination level was reduced significantly.

After 3 weeks filtration the oil and system is clean and the ISO cleanliness level is kept stable at 16/15/11.



After oil filtration:

- ISO level was reduced from 22/20/15 to 16/15/11
- Clean oil and clean system after only three weeks of oil filtration

Success story

Oil changes no longer needed!

On a crusher installation in Norway, four units in total were equipped with Metso offline oil filters in 2009.

Test sample analysis were carried out every 3,000 hours.

Typically, the oil changes were carried out after 2,000 hours, but after installation of the Metso offline oil filter, no oil changes were needed, only top-up and scheduled oil analysis.

After oil filtration:

- No oil changes needed
- 14,000 ltrs of oil saved on four crushers during



Clean oil is returned to the crusher tank after oil filtration.

Nordberg® HP, GP, MP & MX Series™ cone crushers

Oil Filter Selection Guide

Crusher type	Oil type	Oil filter type	Metso Filter inserts	Filter dimensions
Mobile and Stationary crushers Types: Hydraulic oil Oil volume: < 500 L	Lube oil ISO VG 150-220 cSt Hydraulic oil ISO VG 46-68 cSt	 Metso Offline oil filter 15/25 PV	 Metso Offline filter insert 1 x 15/25	470 x 393 mm (wxh) (+ 245 mm free height)
Stationary crushers Lube oil volume: 200-500 L Types: GP100, GP100S, GP11F, GP11M, GP200, GP200S, GP220, GP300, GP300S, GP330, GP550, GP500S, HP100, HP200, HP3, HP300, HP4, HP400, HP5, HP500, HP6, MX series	Lube oil ISO VG 150-220 cSt	 Metso Offline oil filter 27/54 PV	 Metso Offline filter insert 2 x 27/27	1099 x 810 mm (wxh) (+ 600 mm free height)
Mobile crushers Lube oil volume: 200-500 L Types: NW100GPC, NW220GPD, NW200HPD, NW330GPS, NW300HPS, NW550GP, NW500GP, LT220D, LT330D, LT Special Projects	Lube oil ISO VG 150-220 cSt	 Metso Offline oil filter 27/54 PV	 Metso Offline filter insert 2 x 27/27	940 x 550 mm (wxh) (+ 600 mm free height)
Stationary crushers Lube oil volume: 500-1,600 L Types: GP7	Lube oil ISO VG 150-220	 Metso Offline oil filter 27/108 P	 Metso Offline filter insert 4 x 27/27	836 x 1,633 mm (wxh) (+ 600 mm free height)
Stationary crushers Lube oil volume: 1,000-2,000 L Types: HP800, MP800, MP1000	Lube Oil ISO VG 150-220-320- 460 cSt	 Metso Offline oil filter 427/54 MZ	 Metso Offline filter insert 8 x 27/27	1412 x 1330 mm (wxh) (+ 600 mm free height)



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