

Permanent By-Pass Filtration Unit for Hydraulic Oil Information

Study case:

Regular hydraulic oil change with change of primary filters in hydraulic system according maintenance interval.

Why to go for the By-Pass Oil Filtration:

The By-Pass Oil Filtration unit extends the life time of the hydraulic system as well as extends the oil change interval, and primary filter change interval.

How it Works:

It works through a Secondary By-Pass Filtration unit with its own pump connected independently to the hydraulic system of the machine. It operates when the engine is running without effecting the operation of the machine.

Benefits:

Extension of Oil Change interval. (2 – 3 times.)

Extension of Primary Filters lifetime. (2 – 3 times.)

Removal of water and mechanical contamination (metal abrasion, silicates, dust, sand etc.)

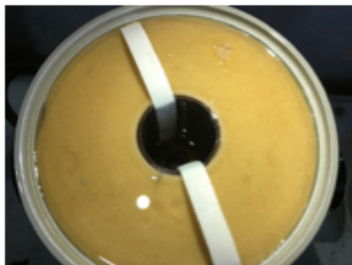
Slowdown of Oil Degradation (acidity, antioxidant ...)

Cost savings related with buying less oil and with the reduction disposal of waste oil.

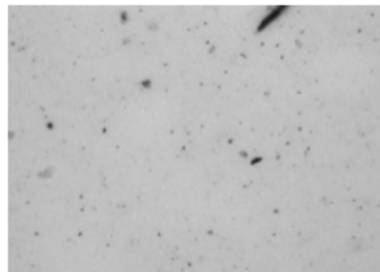
Reduction in general wear and tear. Extending the lifetime of the hydraulic System.

Reduction in repair costs and downtime. (up to 50 %).

Environmentally friendly conditions. Make the planet green again. Less oil waste.



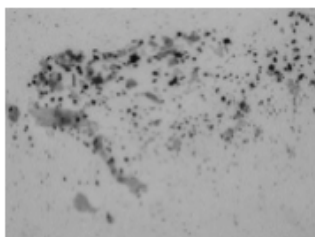
FILTER ELEMENT IN PROCESS



REFEREBCCE (NEW) OIL
Rando HD 68 **NAS 9**



HYDRAULIC OIL BEFORE
FILTRATION AND AFTER



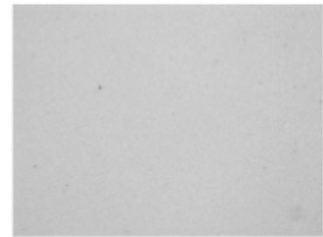
WITHOUT FILTRATION
12409 HOURS
22.03.2018
NAS 9



WITH FILTRATION
12485 HOURS
25.03.2018
NAS 7



WITH FILTRATION
14326 HOURS
16.07.2018
NAS 4



WITH FILTRATION
15945 HOURS
31.10.2018
NAS 6

Study case on Empty container handlers ECH hydraulic system in period over 7 months

No.	Sample	Viscosity 40°C mm²/s	Cleaness class NAS 1638	Water content ppm	TAN mgKOH/g	Low- temperatur e phenolic antioxidant % wt	IR Spectrum (oil degradation)
0.	Rando HD 68 (reference)	67,18	NAS 9	51,2	0,63	0,22	OK
00.	ECH 127 (KALMAR) 12 409 engine running hours without filtration 22.3.2018	63,12	NAS 9	112,8	0,85	0,20	low oxidation Ester additive
1	ECH 127 (KALMAR) 12 485 engine running hours with filtration 25.3.2018	63,51	NAS 7	111,2	0,85	0,20	low oxidation Ester additive
2	ECH 127 (KALMAR) 13 068 engine running hours with filtration 2.5.2018	64,19	NAS 5	70,5	0,86	0,20	low oxidation Ester additive
3	ECH 127 (KALMAR) 14 326 engine running hours with filtration 16.7.2018	64,77	NAS 4	90,1	0,89	0,20	low oxidation Ester additive
4	ECH 127 (KALMAR) 15 945 engine running hours with filtration 30.10.2018	66,07	NAS 6	110,2	0,91	0,19	low oxidation Ester additive

By-Pass filtration unit in use on Empty container haler in Sea port.



Final Recomand:

Using of the permanent by-pass filtration unit with unique filter media gives you the opportunity to postponed the oil change interval up to 3 times from regular oil change by keeping the chemical properties of the oil in balance. As a secondary benefit is the less usage of primary filters, longer lifetime of the whole hydraulic system, minimize breakdowns and extending of the lifetime wear, which gives you a big economical benefit.