

Original DEUTZ parts

DEUTZ Oil Diagnosis



The engine company.



OIL AND ENGINE DIAGNOSIS LOG

		Diesel engine	Gas engine
Total operating hours	Bh	3552	4530
Oil residence time	Bh	510	1501
Wear			
Iron	ppm	66	7
Lead	ppm	2	2
Copper	ppm	5	1
Tin	ppm	3	<1
Chromium	ppm	17	7
Aluminium	ppm	5	2
Nickel	ppm	<1	1
Contaminants			
Silicon-foreign	ppm	17	14
Soot	%	2.4	–
Water	%	0.08	0.02
Antifreeze		not detectable	–
Fuel	%	1.5	–
Oxidation	A/cm	–	17.5
Nitration	A/cm	–	0.2
Internal pH value		–	5.3
Oil condition			
Base number	mg KOH/g	14.9	5.1
Acid number	mg KOH/g	–	1.5
Viscosity 40 °C	mm ² /s	114.8	135.5
Viscosity 100 °C	mm ² /s	17.3	14.0
Viscosity index		166	100
Sulfated ash	%	1.79	–
Wear coefficient	over Normal	30%	10%
Possible causes of increased wear (using forecast system with customer feedback):			in %
• Air intake system, engine wear caused by ingress of sand or dust			69%
• Wear of engine components, not caused by oil contamination			20%
Note: Wear of components containing chromium, e.g. top piston ring			

BENEFITS

- Early identification of possible engine failures (e.g. wear by dust ingress)
- Reduction in machine downtimes
- Extended engine service life
- Cost-effective diagnosis instead of costly repairs
- Overall lower maintenance costs
- Optimised oil change intervals with different oil stress possible
- Reduced oil consumption, less waste, protection of the environment
- Early identification of excessive oil contaminations
- Precise quantitative measured values
- Informative documentation
- Effective statistical evaluation

SCOPE OF TESTS

Scope of investigation	Diesel engine	Gas engine
Wear metals	Iron, Chromium, Aluminium, Copper, Lead, Tin, Nickel	Iron, Chromium, Aluminium, Copper, Lead, Tin, Nickel
Contaminants	Silicon, Sodium, Water, Soot, Antifreeze, Fuel	Silicon, Sodium, Water, Boron, Antifreeze
Oil condition	Viscosity 40 °C/100 °C, Base number, Sulfated ash, Viscosity index (VI)	Viscosity 40 °C/100 °C, Internal pH value, Oxidation, Nitration, Acid number, Base number, Viscosity index (VI)