

As we reflect on the progress we have made during 2006, it is natural to consider the invaluable contribution of our customers to our continued success.

Please accept our sincere thanks for your valued support and may you and your families enjoy a peaceful festive season and a prosperous New Year.



WEARCHECK APPOINTS FOREIGN REPRESENTATIVES



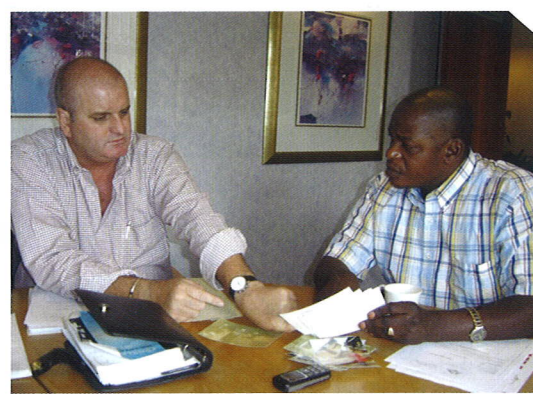
WearCheck has appointed representatives and distributors in two African countries and one in the Middle East.

WearCheck's representative in Botswana, Michael Moalosi.

Michael Moalosi, who has years of experience in oil analysis and lubrication, will look after Wear-

Check's interests in Botswana. He is based in Gaborone.

Chacha Kalala, also a businessman with impeccable lubrication credentials, will do the same in the Democratic Republic of Congo (DRC) and central Africa.



Chacha Kalala and WearCheck's Keith Finlayson discuss plans for the development of WearCheck's oil analysis service in the DRC.

Both men run their own lubrication and service companies.

In Saudi Arabia, Dave Cantrell of trading company, KAT, is geared to supply WearCheck kits in the region and continues to promote oil analysis locally.

WEARCHECK RESPONDS TO CUSTOMER FEEDBACK

Whilst most customers rated the different elements of WearCheck's service as either excellent or good in the recent customer service survey conducted, the management team has reacted immediately to responses from those customers who were disappointed with the frequency of visits by WearCheck staff.

Says managing director Neil Robinson, 'We have already appointed two new customer support staff - Clinton Knott who will operate from our Kempton Park

office and Mike Havemann who is based in Middelburg - and are in negotiations with another.'

'As our customer base expands it is essential that we listen to feedback from our customers to ensure that we continue to offer the highest levels of service for which WearCheck has become known.'

Read about Clinton and Mike under Making Headway on the back page. Comments from satisfied customers and the winner of the lucky draw prize are featured on page 5.

OIL ANALYSIS SAVES R1,9 MILLION AND RESTORES FAITH IN EQUIPMENT



Lourens Swanepoel (right), director of ELB Equipment's after market division, and WearCheck's Wade de Chalain discuss the positive results of a recent oil analysis exercise.

A condition monitoring exercise conducted for a customer by EL Bateman Equipment in Boksburg recently, saved the company nearly R1,9 million in potential engine and component failure costs and restored the client's faith in his equipment.

'This was an unusual situation,' said Lourens Swanepoel, director of ELB Equipment's after market division. 'We had sold 20 front end loaders and other equipment to a company with a substantial contract to excavate and haul ore on a coal mine.'

'The customer under-estimated the effect that the hostile operating conditions would have on the machines and the level of maintenance needed to counteract this and, when problems started arising, they questioned the quality of the equipment,' Swanepoel said.

'We were convinced that what was needed was more proactive maintenance and, in an effort to get to the root of the problem, we consulted Wade de Chalain at WearCheck.'

A decision was taken to conduct intensive sampling - on all the engines, hydraulic units and pumps - for analysis by WearCheck

This was not an easy task as all sampling had to be completed off the mine site,' said Swanepoel. 'However when all the samples had been taken, John Evans of WearCheck pulled out all the stops and the analysis and diagnosis was virtually completed overnight.'

The oil analysis reports showed that oil changes were long overdue on some units and many needed urgent attention. Beginning with the most critical, an ELB team together with the customer's maintenance staff, took the drastic action of draining the oil on all of the units and replacing all the oil filters.

Shortly afterwards, on WearCheck's advice, they then took a second batch of oil samples from the components whose earlier results had been critical, to monitor the situation.

'Amazingly, we had halted the decay,' said Swanepoel. 'We were unable to save one engine which failed directly after the sample had been taken but, through our prompt action, we prevented the failure of another six engines with a value of R180 000 each and about ten hydraulic units and pumps with an average value of R80 000, resulting in a total saving of R1,88 million. When you compare this with the oil analysis costs of R20 000, the return on investment was outstanding.'

'There is a possibility that the lives of the machines could have been reduced because of the level of deterioration before action was taken, but the client now has a good proactive maintenance programme in place and there should be no further problems of this nature.'

'They are completely sold on the benefits of oil analysis and have signed up on the WearCheck programme,' Swanepoel said.

'We recommend that all of our customers use WearCheck. The ideal scenario is that they deal directly with WearCheck and keep us informed. In this way everyone benefits.'

WEARCHECK TROPHY FOR BEST KZN TRANSPORT DEPOT

WearCheck diagnostic manager John Evans presented the WearCheck trophy to the Maritzburg North region of the KZN Department of Transport at their annual conference in the Drakensberg in September.

The trophy is presented annually to the division that manages their oil analysis programme best. The winners are selected based on KPI's (Key Performance Indicators) measuring the number of actionables, feedbacks returned and repeat problems.

'If you reduce repeat problems, you will reduce overall

problem samples,' said the department's chief engineer, Mark Pistorius. 'This will lead to improved plant availability and cost savings.'

'We use oil analysis at all our depots', said Mark. 'Without it you are driving blind. It gives us an insight into what is going on inside the equipment and provides an early warning of any problems.'

The conference was attended by about 70 people, including all of the department's mechanical supervisors from depot foremen upwards, as well as the directors, cost centre managers and head office mechanical staff.

WEARCHECK PARTICIPATES IN MAN BIO FUELS SEMINAR



Wade de Chalain

WearCheck technical consultant Wade de Chalain was invited to be part of a panel of five speakers at a one-day seminar held by MAN Truck and Bus, Isando in August on the compatibility of bio diesel fuels with oils in European technology trucks.

The seminar was organised by MAN's marketing support manager, Ian Carmichael, and was attended by 20 members of MAN Truck and Bus's national senior sales team.

Wade covered South African fuels relative to oil analysis and failures, while MAN's Naas van der Walt spoke on the background of bio diesel development and its impact on MAN products.

The other speakers were Manuel Marnitz, a post graduate German engineering student whose specialisation is European bio diesel research and legislation; Sasol's Nico Esterhuyzen on the development of bio diesel and local legislation; and Engen Oil's Jimmy Hay who covered oil classification.

'Bio diesel is currently a hot topic,' said Wade. 'We are keeping a close eye on the government's efforts to regulate the industry, as well as maintaining ongoing dialogue with the OEM's to keep at the forefront of new developments.'

DID YOU KNOW?

- WearCheck International processes more than 2 million samples a year
- WearCheck USA heads the list with 439 000
- WearCheck Africa is a close second with 408 000
- Next is WearCheck Canada with 380 000
- The other six member companies make up the balance.

PRAAT ONS AFRIKAANS?

Dit is 'n algemene wanopvatting dat ons personeel in Pinetown, anders as in ons Johannesburgse takkantoor, nie Afrikaans magtig is nie.

Om in Afrikaans in Pinetown gehelp te word, kontak: Lorain de Bruin vir NetCheck/databasis navrae Daan Burger of Quinton Verster vir diagnose navrae Kay Meyrick vir kliente navrae

FILTER ANALYSIS PROVIDES VALUABLE DATA

Don't throw away the evidence. Cut the filter open and send the filter folds to WearCheck for microscopic analysis. The filter section is agitated with solvents to extract the debris, which is then deposited onto a filter membrane for examination under a microscope. A detailed analysis report together with a photograph of the magnified debris is sent to the customer. WearCheck filter kits are available in any quantity.

Product code: WFK

BUSINESS CONNECTION

Earlier this year, KZN sales co-ordinator Charmaine Thumbiran was selected to speak about WearCheck at a Durban Chamber of Business B2B lunch.



Charmaine Thumbiran

Charmaine attends these functions regularly as she believes they offer valuable networking opportunities. Her selection as a speaker in August proved an excellent opportunity for her to inform a wide cross section of business people about the benefits of WearCheck's oil analysis service.

MAKING HEADWAY

LAB MANAGER

Chemist Paul Swan who joined the WearCheck laboratory four years ago, has been promoted to laboratory manager.



Paul Swan

Paul completed his BSc at the University of Natal and his Master of Science in Chemistry at the University of Cape Town. Whilst studying for his degrees, he was involved in scientific research into anti-malarial drugs and practical demonstrations in pure and applied chemistry for second year students.

He is now responsible for running the Pinetown laboratory. This involves maintaining optimum sample throughput within the parameters of WearCheck's quality and environmental management system, as well as method development, instrument calibration, equipment maintenance and the management of staff, training and recruitment.



by John Evans,
WearCheck diagnostic
manager

By definition the viscosity of a fluid is the measure of the resistance to flow, or internal friction, of the fluid. Viscosity changes with temperature so the temperature at which the viscosity was measured must always be specified. When testing oils WearCheck measures the kinematic viscosity. The unit is expressed in mm^2s^{-1} which is known as a centistoke (cSt).

There are a number of ways the viscosity of an oil can be affected when used in lubricated systems.

It can be lowered by changes to the base oil through thermal cracking of oil molecules or shear thinning of VI improvers. Additions to the base oil through contamination such as fuel, refrigerants, solvents and incorrect oils can also lower the viscosity.

It can similarly be increased by changes to the base oil via polymerization, oxidation, evaporative losses and formation of carbon and oxide insolubles. Additions to the base oil through contamination such as water, aeration, soot, antifreeze or incorrect oil can also raise the viscosity.

These changes in viscosity can have detrimental effects on the lubricated system and cause subsequent wear and potential failure. It is therefore imperative to detect changes in viscosity, and the cause thereof, if using oil analysis to increase machine life and productivity.

Industrial oils are generally specified at 40°C and automotive oils at 100°C. But what temperature should the viscosity be measured and trended at? WearCheck measures the viscosity at 40°C for all components and at 40°C and 100°C for engines. 40°C is used as it is a more cost effective method and the results obtained are more than sufficient for detecting problems in most components except engines.

Multigrade engine oils contain viscosity index improvers (VII). These are additives, usually high molecular weight polymers, which reduce the tendency of the oils' viscosity to change with change in temperatures. The Viscosity Index (VI) is an arbitrary scale used to show the relative magnitude of viscosity changes with temperature. Higher VI oils have less change in viscosity with temperature.

Viscosity at 100°C is measured on all engines as this is their operating temperature. It is therefore useful to determine changes in viscosity at the engine's operating temperature and determine the cause. It allows us to determine whether the engine oil is a multigrade/monograde. (Multigrade engine oils have higher VIs than monograde oils). It is also useful in determining VI improver sheardown when used in conjunction with the viscosity at 40 °C.

As good as it is to measure viscosity at 100°C, we cannot ignore the viscosity at 40°C. The 40°C viscosity test is best for early detection of oil degradation and breakdown as bigger changes are detectable for smaller amounts of degradation or contamination. It is also easier to determine what oil is in use.

In conclusion both viscosity measurements have their place in an oil analysis programme, whether used on their own or in conjunction with each other.

Definitions:

Kinematic viscosity: A fluid's resistance to flow, under the force of gravity, at a specified temperature.

Viscosity Index (VI): An arbitrary scale used to show the relative magnitude of viscosity changes with temperature.

Viscosity Index Improver (VII): Lubricant additive, usually a high molecular weight polymer, that reduces an oil's tendency to change viscosity with change of temperature.

What temperature should viscosity be measured and trended at?

40°C	100°C	Both
Best for early detection of oil oxidation and thermal failure (e.g. volatility)	Best for detecting VI improver sheardown	Best for identifying changes in viscosity index
Best for detecting viscosity influence of water, fuel, and refrigerant contamination Best for detecting wrong oil in use	Best for high operating temperatures	Best for applications where multiple objectives are in place
Best for low-cost field monitoring of used oils		

OUR CUSTOMERS COMMENT

These are some of the comments made by customers about WearCheck in the survey conducted recently:

- As a managerial tool you could not ask for better.
- Great experience. Has saved me thousands in failure claims and extended warranties.
- Professional and go the extra mile.
- Saved a good number of vehicle components over time.
- In a nutshell, EXCELLENT. I changed my Cummins KTA50 engine norm from 25 000 to 30 000 hours.
- Since submitting our samples to WearCheck we can arrange to change our pumps, gearboxes, motors, fans and any other units at prearranged times such as shutdowns, so that we don't lose production. This is a cost saving and also gives us time to order our spares such as bearings, gears, bushes and any ancillaries and arrange for quicker turnaround time.
- I have been using WearCheck for the last 20 years and have been totally satisfied with the service provided.

When asked to name one selling point if recommending WearCheck to a friend or associate, these were some of the responses.

- Very professional service, providing quick, reliable and unbiased oil analysis information on which appropriate corrective and preventive decisions can be based.
- To prevent a major failure that will definitely save you money and down time.
- You will at all times know the condition of all component's sampled, and this gives you absolute peace of mind and inside information on what you sampled.
- Customer support, accuracy of test results, clarity of diagnosis.
- Accuracy, quick response time, friendly staff, excellent knowledge.
- WearCheck is a life saver (it has saved a few engines in our company).
- Major component analysis (huge savings).
- Turn around time excellent.
- Only a pleasure to deal with the company.

LUCKY DRAW PRIZE WINNER



Congratulations to Dave Bellingan (right) of Skycare Maintenance in Johannesburg who won the lucky draw prize of a Samsung Digimax V6 digital camera valued at R3000! He is pictured here with WearCheck's Daan Burger. Many thanks to everyone who participated in the customer service survey.

LUBE TIP

KEEP IT CLEAN

If simple precautions are not observed, contamination of lubricants with subsequent damage to machines can occur during storage or during transfer of oil or grease from the original container to the dispensing equipment, or to the equipment being lubricated.

Pumps, oil cans, grease guns, measures, funnels and other dispensing equipment must be kept clean at all times and covered when not in use. Where operating conditions justify them, centralized dispensing or lubrication systems that keep the lubricants in closed systems and, therefore, protected against contamination, are highly recommended.

- Courtesy of Noria Corporation

From Table Mountain to Timbuktu . . . and from Argentina to Afghanistan

Samples come to WearCheck from across the globe, with recent locations being Mali in north west Africa, Nigeria, Afghanistan, Dubai and Argentina.

Requests for copies of WearCheck Technical Bulletins continue to be received from all over the world – most recently from a trading company in Singapore and from John Deere in Pune-Maharashtra, India.

Vegetable garden for rural school

WearCheck has donated R1 000 worth of books on vegetable gardening and a tank for the capture and storage of rain water to Thabela High School in the Valley of a Thousand Hills as a first step towards helping this rural school establish a vegetable garden. Once the garden is up and running, the fresh produce will provide nutritious meals for the pupils or be sold to raise funds for the school

EMPLOYMENT OPPORTUNITIES

If you are interested in employment opportunities at WearCheck, please visit our web site: www.wearcheck.co.za/careers.htm

There is a current vacancy for a diagnostician and applications for this post are welcome. More details can be found on the web site.

CUSTOMER SUPPORT TEAM EXPANDS



Clinton Knott



Mike Havemann

Clinton Knott joined WearCheck as technical support/sales representative at the beginning of December to provide customer support in the Gauteng area.

Clinton qualified as an earth moving plant mechanic in 2004 after completing an N4 diploma in mechanical engineering at Congella Technical College in Durban. He served his apprenticeship at Grinaker-LTA in Boksburg, working on a wide variety of machines and sites, including Ceres Dam in the Cape, several Durban townships and Maguga Dam in Swaziland. In 2001 he was transferred to the technical services department where he travelled extensively, testing equipment. He also spent a year in Zambia.

After nine years at Grinaker, he joined Quarry Cats for two years, as manager of the rolling stock on a successful crusher site, furthering his experience

with earthmoving machinery – particularly Liebherr and Western Star models.

Clinton is eager to apply his broad knowledge and expertise to helping WearCheck customers maximise their oil analyse programmes.

Mike Havemann started as WearCheck's Mpumalanga technical and sales consultant in October.

Based in Middelburg, Mike will focus on WearCheck's mining clients in the province. He speaks fluent English, Afrikaans, Zulu and Fanagalo.

Mike has solid local experience of the mining industry, having worked for Arnot Collieries for 20 years. Joining them as an electrician, he worked his way up to general engineering supervisor, before being asked to start their condition monitoring department in 1996. This was the beginning of a long and mutually rewarding relationship with WearCheck which has ultimately led to Mike's joining the company.

TRAINING BOOSTS PRODUCTIVITY

WearCheck's specialised training courses help customers gain maximum advantage from their oil analysis programme. They have proved highly successful in changing attitudes to oil analysis, giving staff a thorough knowledge of how the system works and renewed confidence in their ability to work smarter. The result - a general improvement in the effectiveness of the maintenance programme with fewer mistakes, increased productivity and cost savings.

WearCheck Course	Kempton Park	Pinetown
NetCheck: Software	12 February, 11 June, 15 October	12 March, 13 August
WearCheck 1: Oil analysis orientation	13 February, 12 June, 16 October	13 March, 14 August
WearCheck 2: Understanding oil analysis	14 February, 13 June, 17 October	14 March, 15 August
WearCheck 3: Report interpretation	15 February, 14 June, 18 October	15 March, 16 August
WearCheck 4: Management	16 February, 15 June, 19 October	16 March, 17 August

The WearCheck courses are full day and cost R 1500 plus VAT with the exception of Course 4 which is half day and costs R550 plus VAT. For bookings phone Wendy Holiday on (011) 392-6322.

WearCheck also runs Machinery and Lubrication (MLA) courses in joint venture with the ABB School of Maintenance. For more information and bookings phone Lisa-Anne Fairley at ABB on (011) 236-7342.

If you would prefer to receive future issues of Wearcheck Monitor and Technical Bulletin via e-mail instead of in printed form, please e-mail a request to: support@wearcheck.co.za

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