

# SEASON'S GREETINGS



Neil Robinson, managing director

I would like to extend a big thank you to our customers and staff – your loyal support throughout 2018 is much appreciated. From all of us at WearCheck, we wish you a happy, relaxing time over the coming festive season, and best wishes for next year.

At WearCheck, we have had a full and busy year – we opened a new lab in Namibia, our technicians conducted oil analysis customer training in many locations, we were certified as a Level 2 BBBEE contributor, our ISO 14001:2015 certification was renewed after assessment, we launched a range of environmentally-friendly business practices, one of our employees – Sizwe Ndlovu – celebrated 40 years with WearCheck, several of our Mobius training courses were approved for CPD points and WearCheck India's ISO 17025 certification was renewed after annual assessment. 2019 promises to be a bumper year, as we launch our transformer training courses, and watch this space for information about an exciting business acquisition by WearCheck – details available early next year.

## LABS OPEN OVER CHRISTMAS

Please note that WearCheck is dedicated to being available all year, and we will therefore remain open throughout the festive season to process samples. Staff in our Middelburg, Johannesburg and Pinetown laboratories will be available to facilitate samples throughout the Festive Season. On 24<sup>th</sup> December we will close at lunch time.

Best wishes for 2019.

## WEARCHECK INDIA TEAM EARNS 17025 CERTIFICATION

WearCheck's branch in Chennai, India, recently underwent a stringent annual inspection for their ISO 17025 recertification assessment and passed - with flying colours.

An on-site evaluation was conducted by an external quality consultant, who spent two full days checking everything from record maintenance to test capabilities and everything in between.

According to the ISO website, 'ISO/IEC 17025:2005 specifies the general requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods.'

National manager for WearCheck India Nissar Ahamed, is proud of his team for maintaining the strict international standards in condition monitoring, that are required in order to qualify for ISO 17025 ratings. 'With this rating,' says Nissar, 'our customers can rest assured that our laboratory operates to internationally-accepted quality standards.'

## Christmas Cheer

For many years, WearCheck has supported the children of St Vincent's orphanage in Mariannhill with a range of different CSI projects, and this year was no different. The children were given a delicious snack pack each, and various items were donated, including much-needed school shoes. Money for the project was donated by WearCheck staff members, and the company matched what was collected from the staff.



Merry Christmas! The children at St Vincent's orphanage in Mariannhill and staff from WearCheck Pinetown celebrate the donation of items such as school shoes and other essential goodies as well as a yummy snack pack for each child

# ISO 14001 CERTIFICATION FOR ENVIRONMENT

WearCheck recently underwent a successful ISO14001:2015 surveillance audit.

ISO 14001 recognises international standards implemented by companies to manage their environmental responsibilities, which is very important to WearCheck in line with their earth-friendly work ethics.

WearCheck was first awarded ISO 14001 certification in January 2005.



*WearCheck quality administrator Prinda Narasi shows off the company's ISO 14001 certificate, which was renewed once again after recent external evaluation*

## WEARCHECK NOW A LEVEL 2 BBEE

WearCheck is proud to announce that the company has just been rated as a Level 2 BBEE contributor.

*WearCheck sales developer Kay Meyrick proudly displays the company's new Level 2 BBEE certificate*



## Rowan retires

Diagnostician Rowan Maartens has retired after serving at WearCheck for 36 years.

Rowan's career began in 1982, when he joined WearCheck as a diagnostician. He diagnosed an impressive 2,5 million used oil samples in the three and a half decades he was with the company.

In 2014, Rowan reached the 2 000 000 samples milestone, which placed him among the **top few diagnosticians in the world**, if not the **first person ever**, with this incredible number of diagnoses to his name. Now THAT is impressive.

Managing director Neil Robinson wished Rowan well. 'Thank you, Rowan, for your loyal service to WearCheck and our customers, and also to the condition monitoring industry.'

Rowan plans to spend his golden years enjoying his free time.

*Diagnostician Rowan Maartens recently retired after spending 36 years with WearCheck. We thank you for your loyal service and wish you well for the future, Rowan*

## You talk, we listen...

Our annual customer survey was recently conducted, and we sincerely thank the people who took the time to give us feedback. Your answers are critical to how we re-shape our business services going forwards.

WearCheck sales developer Kay Meyrick extends her gratitude to customers for the positive feedback. These are some of the replies from our valued customers:

'It has been 11 years now using WearCheck, so far [this] has done wonders for our company.'

'Overall, WearCheck provides an excellent service.'

'Keep up the good work.'

'WearCheck helps us to be on top of premature failures and prevent unnecessary expenses.'

'I would only like to thank WearCheck for their assistance.'

'Very professional.'

'I always encourage my friends to use WearCheck for condition monitoring.'

'WearCheck has been a major factor in my passion to do my own maintenance on my vehicles.'



*Lucky winner! Wendy Bester of Universal Equipment had her name drawn out of the hat to win the lucky draw prize for customers who completed WearCheck's customer survey 2018. Here, Wendy accepts her cash prize in PE from Leon Marshall, WearCheck's Eastern Cape representative*

## Planet-friendly option

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By John Evans, diagnostic manager for WearCheck

Limits are not used at WearCheck and never have been. This has arisen from a philosophy that views diagnosis as a holistic process. Limits certainly have their place and value, however, in the real world their applicability is somewhat limited, and it is trend over time that is important.

The factors that could influence the validity of a wear limit include, but are not limited to: make, model, application and severity, environment, operator skill, age of machine, period the oil has been in use, oil consumption, maintenance practices, oil brand and grade, fuel type and quality. If we could assume an average situation for

all these parameters, then the usefulness of wear limit tables would be greatly improved – unfortunately, the average ‘machine’ does not exist.

To take the most obvious example of how limits may be affected, let’s look at the effect the period the oil has been in use has on wear readings. 50 ppm may be unacceptable after 5 000 kms, normal after 10 000 kms and suspiciously low after 20 000 kms. Period oil in use (POIU) has a critical effect on the meaning of wear readings. Double the POIU and you approximately double the amount of wear and probably the level of contamination and oil degradation too. This figure always needs to be factored into the diagnosis, particularly at very high and very low POIU where the effect is more pronounced (the relationship is only linear over a fairly narrow range).

There is always a bit of guesswork involved in diagnosis due to lack of information supplied by the customer. Statistical analysis shows that in the case of POIU, 20% of all samples have no POIU, 15% are estimations and 10% are blatantly wrong.

In terms of making a holistic diagnosis, all equipment details, all customer supplied information, all laboratory data, equipment history and knowledge of the customer are considered. Also, what is considered is not just the laboratory results in isolation, but in relation to each other. Example (quite a common one): in an engine, 60 ppm silicon in the presence of 30 ppm aluminium would indicate severe dirt entry (critical sample) but 120 ppm silicon in the presence of 10 ppm aluminium would indicate silicone sealer (normal sample).

Ratios of wear metals are also considered – 50 ppm iron and 15 ppm lead in an engine are probably okay (all other parameters being typical). However, 25 ppm iron and 15 ppm lead is not. The lead is high *in relation to* the iron reading and something is not right. This is the biggest danger of a wear limit as it only considers laboratory results in isolation.

It has been shown time and again that identical pieces of equipment, of similar age, in the same environment, doing the same job etc, etc, etc, do not always behave in an identical manner. A trend of between 30 and 40 ppm iron that jumps up to 75 ppm probably indicates a problem, while a trend between 50 and 60 jumping to the same value does not – although most of the other influencing parameters may be very similar. In this situation, it is the *trend* that is important rather than the absolute values.

Contamination and oil degradation are slightly easier to deal with in that they are very much less dependent on the make and model of the component although the *type* of component is still important. 60 ppm silicon (due to dirt entry) is going to cause havoc in an engine irrespective of any make, model, age, application etc. However, 60 ppm silicon is probably okay in a differential.

In order to make an accurate diagnosis, all the data supplied – both by the customer, the laboratory results along with the diagnostician’s knowledge of the operating conditions – need to be considered as one big, integrated picture. Then, all the trends of all the data points need to be looked at holistically before an assessment can be made on the health of the machine and its lubricant. Remember, the trend is your friend.

## ENGINE ATTENTION

Diagnostician Quinton Verster was invited by Cummins to present the benefits of condition monitoring to a group of matric pupils as part of their recent work experience programme.

Specialist engine manufacturers Cummins have been customers of WearCheck for many years. Keeping the engines running smoothly with only planned maintenance and no surprise component failures is a crucial element of Cummins’ quality practice, therefore a good preventive maintenance strategy is key.



WearCheck diagnostician Quinton Verster outlines the benefits of condition monitoring to a group of Clairwood High School matrics who recently visited engine manufacturers Cummins in Durban

## TRANSNET TRAINING



A group of Transnet employees recently underwent oil analysis training at WearCheck’s Pinetown office. The training course was conducted by WearCheck training consultant Jan Backer (back row, third from right)

# OUT AND ABOUT

## WearCheck at Windaba

Showcasing the very latest oil analysis and condition monitoring techniques at Windaba 2018 was WearCheck's transformer maintenance division.

Burgeoning growth in Southern Africa's renewable energy sector is a result of the universal need to develop alternative power sources, and WearCheck is well positioned to provide predictive monitoring for the industry.

WearCheck technicians highlighted how power-generating equipment can be transitioned into optimum performance with minimum maintenance costs by investing in condition monitoring.



The WearCheck team at Windaba (from left to right), Ian Gray, Des Rodel, Steven Lumley and Philip Schutte



Lubrication specialists Valvoline sent a team for condition monitoring training with WearCheck's technical manager Steven Lumley (fourth from left). Also on this course was a team from Fleetgard, a division of Cummins that supplies filtration for Valvoline

## SMOOTH OPERATION

Valvoline manufactures synthetic lubricants and additives, including motor oils, gear oils, greases, anti-freeze, automatic transmission and others. Valvoline is the approved supplier of engine oil to Cummins.

WearCheck is proud to announce that we have signed a partnership agreement with Valvoline to do their oil analysis in Africa and the Middle East.

Says WearCheck's technical manager Steven Lumley, 'Condition monitoring training adds value to an operation in several ways. As well as aiding maintenance staff to keep machinery running at optimum output, thereby maximising their investment in the oil analysis programme, the training course give enhanced insight to product developers. For example, Cummins and Valvoline have indicated that they will use the information from the condition monitoring courses to fine-tune their engines and lubricants at the developmental stage, adapting design and composition to help minimise future wear.'

## ELECTRA MINING 2018

WearCheck had an expo stand once again at the popular Electra Mining expo in Johannesburg recently. Technical staff were on hand to discuss condition monitoring, and this year the stand also had some novelties – expo guests were given free WearCheck popcorn and could choose a key. The lucky key opened a treasure chest containing WearCheck prizes every single day.



A delighted Jacques Prinsloo of Sasol was one of the daily winners whose lucky key unlocked the prize in the treasure chest on the WearCheck stand at Electra Mining 2018



WearCheck staffers Johann Reiners (left), Juliane de Beer and Philip Schutte were at Electra Mining 2018



Isaac Mabaso of WearCheck was standing by to discuss oil analysis at the expo



Johann Reiners (right) of WearCheck chats to a guest about condition monitoring at the Electra Mining 2018



Quentin Gustav von Kleist (left), Chris Hattingh and Dennis Swanepoel (right) all of WearCheck, were at Electra Mining 2018

**UPCOMING EXPOS:** Watch out for WearCheck at Mining Indaba in Cape Town on 4 – 7 February 2019

## PROMOTION FOR PATIENCE



*Sello Patience Mokoena*

Sello Patience Mokoena has been promoted to laboratory supervisor at WearCheck's Specialty Laboratory (WSL) in Johannesburg.

Patience began her career at WearCheck in 2015 initially as a volunteer, just looking to gain work experience. After just two days of volunteer work, she was offered a temporary lab technician post, which soon became a permanent post.

With professionalism and dedication, Patience has worked her way up to become laboratory supervisor of the WSL.

## A mine of information



*Quentin Gustav von Kleist*

In July, Quentin Gustav von Kleist joined WearCheck's team in Johannesburg as a technical support consultant. Quentin brings with him a wealth of experience in the preventive maintenance arena, with particular knowledge of the mining industry and related components.

Prior to joining WearCheck, Quentin spent many years working in India for zinc and lead mines such as Hindustan Zinc, where he maintained mining machinery and repaired inoperative components. Armed with certification in the fundamentals of lubrication and oil analysis, Quentin and his team ensured that a large and varied range of equipment in the mines operated at peak performance, including dump trucks, loaders, drill rigs, raised bores, beamers, cutters, drill rods, stabs and more.

Quentin is already firmly-established in the WearCheck team that is on hand to assist customers with any technical support queries.

## Accounting for Thabani



*Thabani Dlamini*

Thabani Dlamini is WearCheck's accounts assistant and holds a BTech degree in cost management accounting. He is currently studying for his certificate in CIMA.

Before joining the WearCheck family at the end of 2017, Thabani served as finance assistance at a medical company.

At WearCheck, he is responsible for many accounting processes, including processing invoices, controlling manual delivery

notes, updating credit limits and more.

Thabani works in a slightly unusual situation, as he is currently the only man in a department of six ladies!

## WELCOME, BIANCA!



*Bianca Louw*

Bianca Louw recently joined the WearCheck family as the data capturer at the WSL (WearCheck Specialty Lab). She is primarily responsible for uploading data from samples that have been tested in the lab onto Giza, the computer software that manages the database.

Bianca, who is currently in the process of completing her diploma in analytical chemistry, began her career as a junior quality technician for an international coffee processing company before joining WearCheck.

## PLANNING THE ROUTE

A well-oiled business has many units that function together effectively, similar to the way gear teeth engage with each other.

Keeping the cogs turning effectively at WearCheck is an active management review committee, which meets often to facilitate dialogue about all facets of the business and mapping the road ahead for the company.

The team met at the Pinetown offices recently.



*Pictured at a recent management review meeting were (from left) Neil Robinson, John Evans, Phillip Croucamp, Eddie Perumal, Michelle Padayachee, Prinda Narasi, Philip Schutte, Steven Lumley, Scott Sowman, Ian Gray and Meshach Govender*

# PRODUCT PICK

WearCheck has produced an informative document on condition monitoring, and in the coming months, different sections will be featured in the Monitor newsletter. We kick off this month with oil analysis and laboratory tests.

## OIL ANALYSIS

The analysis of used oil adds value to an operation by serving as a cost-reducing predictive maintenance tool.

The concept of analysing an oil sample from a machine or component is like that of taking a blood sample from a human body – the results determine the health status of the unit. WearCheck's experienced diagnostic team then recommends how to rectify any abnormal findings.

WearCheck's programme analyses for wear, contamination levels and oil condition in any oil-wetted component or oil filter found in equipment used in a wide spectrum of industries, including the electrical, maritime, mining, earthmoving, construction, road transport and aircraft sectors.

### The programme is simple:

The customer purchases a WearCheck oil sampling kit, takes an oil sample from their machine/component and returns the sample in the bottle to the nearest WearCheck depot.

WearCheck laboratory staff then analyse the sample, the results are interpreted, and a report is generated for the customer.

### The process

A representative sample of oil from a lubricated component undergoes scientific tests – both chemical and physical – in a laboratory, and the results are interpreted by a team of experienced diagnosticians.

### The diagnosis of the used oil analysis serves three purposes:

1. To monitor the health of the oil
2. To monitor the health of the machinery being lubricated by the oil
3. To measure levels of contamination

## LABORATORY TESTS

The exact tests carried out on a sample are determined by the type of machine, the component and the type of oil. The tests are designed to measure applicable combinations of the following:

- Wear metals
- Contaminants: dirt, water, fuel, soot, coolant
- Additives
- Cleanliness rating
- Viscosity at 40° and 100°C
- Acid level
- Water, in parts per million, by Karl Fisher titration
- Total base number (TBN)
- Total acid number (TAN)
- Analytical ferrography
- Oil filter analysis

### Reports

Reports contain the analytical results, an interpretation of the results, recommendations on machine and oil conditions, and various checklists from our highly-qualified and experienced diagnostics team. Reports are available in a range of formats, including print, fax, SMS, email as well as via WearCheck's Mobile App and WearCheck Online – a web-based system which enables customers to create charts and graphs to track the test results.

## RS TECHNICIANS ACE THEIR CAT CERTIFICATION

Four more of WearCheck's RS (reliability solutions) technicians recently passed their CAT certification through the Mobius Institute, which is a worldwide provider of education in reliability improvement, condition monitoring and precision maintenance. This follows the ten WearCheck technicians who gained their CAT certification earlier this year.

WearCheck is the certified Mobius training centre for Africa, and courses are run for WearCheck customers anywhere, any date, on demand.

Technicians who gained their CAT 111 certification are Alastair Mac Gillicuddy and Roeloff Hoffmann, while those who earned their CAT 11 certification are Reinier Kalp and Stephanie du Plessis.

CAT 11 students underwent a compulsory 18-month practical experience, followed by four days of lectures and a full day examination. CAT 111 students had to complete a 36-month practical experience, lectures for four days and examinations.

Vibration database setup and fault analysis are the predominant

focus of both CAT 11 and CAT 111. The training sessions are practical and hands-on, enabling the technicians to hone their skills and progress to the next level.

Dennis Swanepoel – WearCheck reliability solutions consultant, Mobius trainer and CAT 1V graduate – is extra proud of his latest graduates. 'Congratulations, everyone!'



Roeloff Hoffmann, reliability solutions technician from WearCheck in Limpopo, earned his CAT 111 certification



These reliability solutions technicians from WearCheck successfully earned their CAT 11 certification: (from left) Reinier Kalp from Springs and Stephanie du Plessis from KZN



WearCheck managing director Neil Robinson is very proud of the company's low staff turnover and congratulates long-serving staff members. 'We appreciate people who spend many years with the company, as they have excellent knowledge of our customers, and this experience enables us to provide outstanding customer service.'

## QUARTER CENTURY FOR CHARMAINE



*Sales co-ordinator Charmaine Thumbiran has worked at WearCheck for 25 years*

In the world of wedding anniversaries, 25 years is celebrated as the "silver" anniversary. This is how many years Charmaine Thumbiran has spent with WearCheck – a quarter of a century.

Charmaine's career with the company has centred around sales and customers. Since she joined WearCheck in 1993, her role always included liaising with customers.

Over the years, she has worked her way up to the position of sales co-ordinator for the company. While she is based in the Pinetown-based head office of WearCheck, Charmaine looks after a sales team that is based in many locations where the company has a presence.

'The memories of the last 25 years at WearCheck certainly can be described as a 'silver' – most of them have a silver lining indeed!' laughs Charmaine.

## 15 YEARS FOR SARAH



*Sample room assistant Sarah Mothibedi has worked with WearCheck for 15 years*

15 years ago, sample room assistant Sarah Mothibedi joined the WearCheck family in Johannesburg in the position of cleaner. However, she was always interested in the work her colleagues were doing in the laboratory, and once her cleaning tasks for the day were done, she spent time with the laboratory staff, watching and learning what they were doing. Today, she looks after the sample room in WearCheck's Johannesburg laboratory, part of the team that ensures that the samples are processed correctly.

## A DECADE OF DEDICATION

WearCheck's most valuable resource is the team of people that work for the company – they are what keep the wheels turning smoothly and they are the ones who give our customers great service, who ensure that our lab results are consistently reliable and world class, and who continue to promote the benefits of a good condition monitoring programme.

We congratulate these WearCheck workers who have clocked up 10 years with the company. Thank you for your commitment and loyalty to the WearCheck family.

- Branch Manager - WTCS Cape Town **Gert Nel** has worked at WearCheck for 10 years
- Technical manager **Steven Lumley** has worked at WearCheck Pinetown for 10 years
- JOAL Laboratory Supervisor **Reshma Soojan** has worked at WearCheck Isando for 10 years
- DP Admin Clerk **Sivagamie Govender** has worked at WearCheck Pinetown for 10 years
- Cleaner **Thokozani Mbambo** has worked at WearCheck Pinetown for 10 years
- Laboratory Assistant **Nelisiwe Thabethe** has worked at WearCheck Pinetown for 10 years
- Reliability solutions technician **Roelf Reyneke** has worked at WearCheck RS Witbank for 10 years
- WSL Customer Support/Admin **Pretty Lepheane** has worked at WearCheck Isando for 10 years
- Lubrigard technical consultant **Christian Hattingh** has worked at WearCheck Johannesburg for 10 years
- Customer Support Assistant **Vasthie Naicker** has worked at WearCheck Isando for 10 years
- Reliability solutions technician **Marius Grobler** has worked at WearCheck RS Richards Bay for 10 years

# WEARCHECK 2019 TRAINING COURSES

Venue	Oil Analysis 1: Understanding oil and its analysis	Oil Analysis 2: Report interpretation
	Two full days	One full day
Gauteng	12-13 February	14 February
Middelburg	12-13 March	14 March
Cape Town	7-8 May	9 May
Rustenburg	11-12 June	13 June
Bloemfontein	16-17 July	18 July
Pinetown	13-14 August	15 August
Namibia	10-11 September	12 September
Gauteng	15-16 October	17 October
Northern Cape	12-13 November	14 November

Oil Analysis One covers two full days and costs R6 660. Oil Analysis Two and the NetCheck course cover one full day each and each costs R3 450. All courses include course material, refreshments, giveaways and certificates. Prices exclude VAT and are subject to change.

For more details on course content, view Training at [www.wearcheck.co.za](http://www.wearcheck.co.za). For bookings contact Michelle van Dyk on [training@wearcheck.co.za](mailto:training@wearcheck.co.za).

## ON-SITE TRAINING

All courses can also be presented at the customer's premises for a minimum of ten delegates.

## WearCheck also offers two more on-site courses:

- WearCheck Practical (in English or Zulu), a half day course costing R860 plus VAT per delegate
- WearCheck Customised – oil analysis for workshop technicians, a full day course costing R3 000 plus VAT per delegate.

For on-site training, there may be an additional charge for the lecturer's travel and accommodation, if needed.

## ARRANGE A TRAINING COURSE NEAR YOU

Training courses can also be arranged in any of the following areas: Bloemfontein, Cape Town, Kimberley, Makopane, Middelburg, Nelspruit, Port Elizabeth, Rustenburg, Steelpoort, Botswana, Namibia, Tanzania (Mwanza), Zambia (Kitwe).

## RELIABILITY SOLUTIONS TRAINING COURSES

Mobius training is offered in 153 countries, and is recognised the world over as the standard for reliability solutions technicians. Mobius courses are run by WearCheck on demand. Costs include the examination fee for CAT I and II, and are as follows:

## Mobius courses are run by WearCheck anywhere, any date, on demand. They include:

One day vibration analysis awareness, Two day laser alignment, Two day balancing, Three day CAT I, CAT I exam, Four day CAT II, CAT II exam, Four day CAT III, CAT III exam, Five day CAT IV.

An added bonus is that when you complete Mobius reliability solutions training courses at WearCheck, you can now earn CPD (continuing professional development) points – this was recently approved by the South African Institute for Mechanical Engineers (SAIMEchE).

Note: the condition monitoring overview courses do not include any training material, and a minimum of six candidates is required for all training courses. For information on pricing and scheduled dates, please visit <http://www.wearcheck.co.za/training/mobius-training>

To book a Mobius training course, please contact Christene on [christenef@wearcheck.co.za](mailto:christenef@wearcheck.co.za) or call WearCheck Johannesburg on (011) 392-6322.

## HIGHLIGHT YOUR SUCCESS

If oil analysis has helped prevent a major failure or saved your company money, we would like to feature this in Monitor. Our writer will contact you for the details and will write the article for your approval. Simply email [prinda@wearcheck.co.za](mailto:prinda@wearcheck.co.za) and we will contact you.

## TECHNICAL BULLETIN TOPICS?

Is there a particular subject you would like to see featured in a Technical Bulletin? Simply email your suggestion to [prinda@wearcheck.co.za](mailto:prinda@wearcheck.co.za). Before you do this, why not check out the more than 60 titles already available on the web site: [www.wearcheck.co.za/info/Technical Bulletins](http://www.wearcheck.co.za/info/Technical%20Bulletins)

## JOINING TOGETHER TO SUPPORT THE PLANET



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### Head Office KwaZulu-Natal

9 Le Mans Place,  
Westmead, KZN, 3610  
PO Box 15108,  
Westmead, KZN, 3608  
t +27 (0) 31 700 5460  
f +27 (0) 31 700 5471  
e [support@wearcheck.co.za](mailto:support@wearcheck.co.za)  
w [www.wearcheck.co.za](http://www.wearcheck.co.za)

### Gauteng Office

30 Electron Avenue, Isando,  
Gauteng, 1600  
t +27 (0) 11 392 6322  
e [support@wearcheck.co.za](mailto:support@wearcheck.co.za)



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### South African Branches

Cape Town +27 (0) 21 001 2100  
Port Elizabeth +27 (0) 41 360 1535  
East London +27 (0) 82 290 6684  
Bloemfontein +27 (0) 51 101 0930  
Rustenburg +27 (0) 14 597 5706  
Middelburg +27 (0) 13 246 2966  
Steelpoort +27 (0) 71 269 1332  
Kuruman +27 (0) 82 802 3072  
Mokopane +27 (0) 81 013 2162  
Witbank +27 (0) 82 878 1578

### International Branches

DRC: +243 819 595 822  
Ghana +233 (0) 54 431 6512  
India +91 (0) 44 4557 5039  
Mozambique +258 (0) 84 697 7006  
Namibia +264 (0) 64 221 551  
UAE +971 (0) 55 221 6671  
Zambia: Lumwana +260 (0) 977 622 287  
Zambia: Kitwe +260 (0) 212 210 161  
Zimbabwe: +263 4 446 369/71



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