

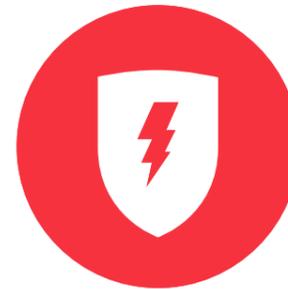


MADE TO MEASURE.
WITH MAXIMUM
SAFETY.



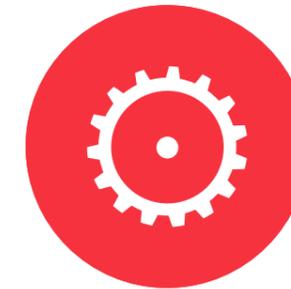
MORE THAN JUST SAFETY. PERFECTION TO THE LAST DETAIL.

STAHlwille VDE TOOLS - When work has to be carried out on live components, safety is paramount. That applies whether maintenance work is due on transformers in a power station, on high-voltage batteries in an electric motor vehicle or the power supply in a family home. The new STAHlwille range of VDE-compliant tools makes a noticeable difference to safe working - perfection in form and function - from the socket to the torque wrench, from ergonomics, materials and craftsmanship through to application-specific transport and storage. Our uncompromising approach to accuracy, demanding standards of safety and pace-setting functionality are the foundations on which every single STAHlwille product is based.



SAFETY

STAHlwille tools lay the foundations for the highest achievable standards of safety and dependability for professionals. With their well-thought-out ergonomics and renowned bolt-tightening accuracy, they guard against incorrect operation and slippage and make safe bolted connections. The VDE range even permits completely safe work on live components up to 1,000 volts, which is especially valuable and a life-saver in situations in which the power supply cannot be interrupted. Last, but not least, the Tool Control System and QuickRelease feature are essential in safety-relevant tasks where loss of a tool can be a serious hazard.



ACCURACY

STAHlwille products have always been the reference standard in the market in terms of their accuracy. At the point of contact with the fastener they guarantee precise, uniform force transmission and minimum wear & tear. In torquing tools, they boast a measuring deviation that has set new standards. All this is made possible by our uncompromising commitment to Germany as a manufacturing location. At three facilities, we develop and produce tools using state-of-the-art processes, from drop-forging through to the high-tech production of torquing tools.



FUNCTIONALITY

In developing its products, STAHlwille places great store by extremely efficient working methods - in every work process. The high standard of functionality provided by STAHlwille tools ensures they are the perfect connecting link between the user's hand and the fastener. Down to the last detail, they are designed to perform as required under all production and maintenance conditions, even in difficult circumstances such as confined spaces. At all times, they provide the full functionality intuitively and dependably.

RECOGNISING TRENDS. RESPONDING WITH SOLUTIONS.



The interview: Winfried Czilwa, Chief Executive Officer



Why does STAHLWILLE need a VDE range? Why does the market need a range of VDE tools from STAHLWILLE? What is special about this range? A meeting with Winfried Czilwa.

Mr Czilwa, regarding a VDE range of tools from STAHLWILLE, is that necessary?

Most definitely, yes. Both from an entrepreneurial point of view and the needs of the market – tools that protect their users against electric shocks can penetrate new markets. As a company, we would be neglecting our duty if we were to ignore this opportunity. On the other hand, we are not just offering yet another set of VDE tools. Our range of VDE-compliant tools is typical for STAHLWILLE – and is of far greater benefit to our customers than the products offered by the competition – in particular our torque wrenches,

that now allow the customer to adjust the tools themselves on-site without having to send them in.

Let's stay with the new markets. Where do you see the main field of application for VDE tools?

Speaking from a technical viewpoint, wherever there's electricity. As we all know, power generation is being reinvented. Ever larger sums are being invested in renewable energy forms, in particular in Germany. Power generation will, in future, become more decentralised. We see increasing numbers of photovoltaic systems on house roofs, in the countryside the number of wind turbines is steadily increasing. At the same time, the existing modern power stations, whether gas or coalfired, are likely to remain on-line for some time to come to maintain the base load. In total, what this means is that, in future,

there will logically be a far greater demand out in the field for tools that are insulated against electric shocks. This is not restricted to Germany. And we haven't even touched on electric mobility yet.

You see requirements increasing in that sector as well?

I would not want to discount that possibility – it will depend on exactly how it is implemented, technologically speaking. The fact is, the German government has already committed itself to a systematic expansion of electric mobility. The State-subsidised incentive to buy electric or hybrid vehicles has set the wheels in motion. Volkswagen has vowed to launch a new electric vehicle every year and raise the proportion of electric cars on the road to 25 per cent within a few years. BMW is driving the development of hybrid vehicles forward, as is

Mercedes-Benz. Even sports car manufacturers such as Porsche are investing in hybrid technology. These developments taken together will result in increased numbers of switchgear systems and distribution points – so, besides the vehicles themselves, there will be a corresponding increase in indirect demand for VDE tools. Some countries are already several steps ahead of us. The Norwegian government, for example, is already working on a way of prohibiting the registration of new petrol and diesel vehicles after 2025. If you cast your eye over the street, and see Segways and Pedelecs, this can only mean one thing: electric mobility is a vitally important trend.

Exactly how does STAHLWILLE recognise trends like this?

We have our ear to the ground, or rather the market, and have always

done so. We are in direct contact with our customers across all the hierarchical levels. Our application engineers listen closely and absorb any stimuli they can pick up from their contacts on the customer side. Our sales staff and management do the same when they meet customers. There is, understandably, a tremendous exchange of ideas at trade fairs, conventions and, of course, during our training courses.

But aren't there already enough VDE tools on the market?

I agree that there are a lot of VDE

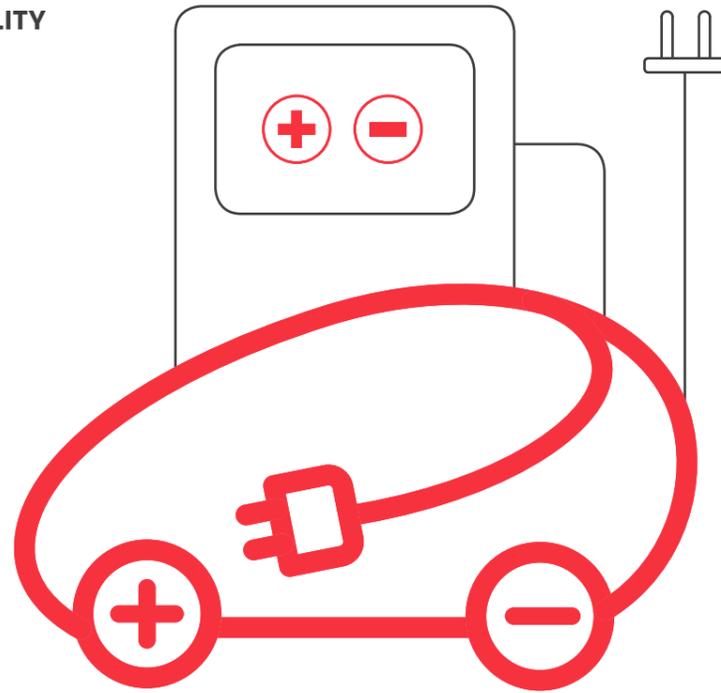
» MORE THAN JUST ANOTHER SET OF VDE TOOLS ON THE MARKET. «

tools available. But none of those

come close to what we can offer. Right from the outset, we agreed that any VDE tool made by STAHLWILLE must meet far tougher standards and be of much greater benefit to customers and end users. And we have done just that. We asked ourselves, is it really necessary to scrap a VDE torque wrench as soon as the insert tool is damaged? Or is it absolutely necessary to send a torque wrench back to the supplier for adjustment? The result of this approach was that we developed a VDE torque wrench with interchangeable insert tools that no other manufacturer will be able to emulate in the near future. Not only that, it is possible to adjust the wrench oneself on-site without having to send it back for testing. And all these benefits are part and parcel of a broad range of VDE tools. No, our VDE range of products is not just another set on the market. It is the only really unique set in the market.

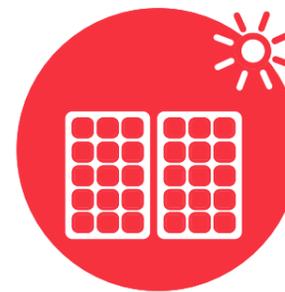
READY FOR INNOVATION. TOOLS FOR TODAY AND TOMORROW.

ELECTRIC MOBILITY



STAHLWILLE has been firmly established within the automotive industry for many decades. Leading manufacturers place their trust in premium tools from STAHLWILLE in Wuppertal when it comes to manual bolt tightening and quality control in production environments and workshops. STAHLWILLE already has optimised solutions available for our electromobile future: our new VDE tools combine protection against voltages up to 1,000 volts with unparalleled efficiency, productivity and durability in a way never before seen.

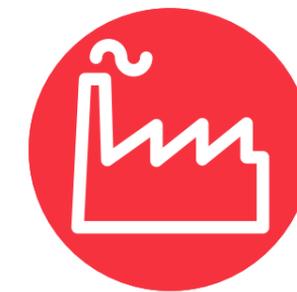
The key issue is high-voltage technology. The issue of safe handling of hybrid or full electric cars and other electrically driven vehicles is a topic of lively discussion at car dealerships and repair shops. This development is being fuelled additionally by the offer of financial incentives for electric vehicles and advances in the provision of recharging stations. As a result, companies are training their staff in dealing with high-voltage systems. However, knowledge of the dangers and corresponding statutory precautions is only a starting point for occupational safety. Use of VDE-compliant tools is equally crucial since they provide increased safety and can even make the difference between life and death.



SOLAR POWER

After wind energy and biomass, photovoltaic solar power systems are the third largest source of renewable energy in Germany. No less than 1.3 gigawatts were generated in this way in 2015.

In 2015, Germany generated more than 16 per cent of all the solarpowered electricity in the world. After China, this was the highest for any country. But all these solar energy systems – whether out in the country or on house roofs – have to be installed, maintained and connected to the power system by qualified electricians. VDE tools are an essential aspect of their work in these environments.



INDUSTRY

In many sectors of industry, there are innumerable bolted joints for which VDE-compliant tools are either prescribed or recommended.

Whether for stationary or mobile generators or a production line: in industrial environments, nothing can work without electricity. As a consequence, this means that, when maintenance work is required, handling or dealing with live components is hard to avoid. The only safe way to deal with this situation is to use VDE tools.



POWER GENERATION

Where electrical energy is generated, fed into the public grid or stored, there are, inevitably, live connections. A case for VDE tools.

Whether it is fossil fuels or a renewable energy source, a classic power station or a wind farm, these energy sources all have one thing in common. Wherever electrical energy is present, special precautions are essential. A comprehensive selection of VDE tools that make no compromises in terms of safety, efficiency or ergonomics, are an indispensable aid.

READY FOR ANYTHING. STAHLWILLE'S VDE RANGE OF TOOLS.

More than just another VDE set of tools, on principle – this was the self-imposed objective when we started developing the new, insulated and certified tools to bear the STAHLWILLE brand. The challenge was to implement the »VDE principle« in such a way that the tools permit working on live components up to 1,000 volts without in any way compromising ergonomics, efficiency, durability or user-friendliness. STAHLWILLE's VDE range consists of more than 130 items and includes everything an electrician will need in this context in a day's work – but at a standard of accuracy and quality and including details that will not be found in any other VDE tool kit. Open-jaw spanners, fine-tooth ratchets with two drive sizes, torque wrenches, pliers & cutters and many sockets and screwdriver sockets – STAHLWILLE's VDE range of tools leaves nothing to be desired.



// VDE pliers & cutters



// MANOSKOP® 730 VDE



// VDE fine-tooth ratchets



// VDE single-ended open-jaw spanners



// VDE screwdriver sockets



// VDE sockets



// VDE screwdrivers DRALL+



// VDE sockets

STAHLWILLE PRODUCT DEVELOPMENT. ANYTHING BUT ACCIDENTAL.



STAHLWILLE's VDE range of tools reflects the best traditions of this quality manufacturer from Wuppertal, Germany. Right from the outset, the company made a point of thinking through how the markets would develop in future and incorporating additional benefit for the user.

No compromises in quality. Implementing ideas that are unique in the market and providing answers today for the requirements of tomorrow – these are principles embraced by STAHLWILLE in a way no other company in the market can. The latest expression of the high standards we set ourselves is the new range of VDE tools, which shows clearly that it is the finer details that make the difference between a good tool and the best tool. These are the details that are created in the course of the focused, tried-and-tested development

process that STAHLWILLE has been applying for many years.

The decisive »more« factor

At STAHLWILLE, the quality of both the production and product development are certified to ISO 9001. This means that the operational development process takes place within clearly defined paradigms – from the definition of the initial idea, analysis of the target group and pricing through to approval of the development, the design concept and prototyping. So what is the difference between us and other enterprises? Quite simply, a bit more of everything. After all, throughout each of these steps, the STAHLWILLE team is guided by the company's philosophy of premium quality all the way. How can we improve an existing product in such a way that end users are given a decisive benefit in their

Uncompromised safety. The requirements of the standards for STAHLWILLE VDE tools:

-  **10,000 V | dielectric breakdown**
Every product is tested at 10,000 volts. For maximum safety.
-  **10 seconds | non-flammable**
Built to safeguard lives. Even when subjected to flames for 10 seconds, the tool remains safe.
-  **200 cm | impact-resistant**
The insulation survives a fall from a height of two metres. Reliable in any situation.
-  **50 kg | resilient to loads**
After 168 hours at 70 °C and a tensile load of 50 kg, the insulation and the tool are still a firmly bonded unit. Safety even under extreme conditions.



Daniel Otto
Director
Product Development and Marketing

STAHLWILLE's objective has always been to think ahead and develop the best possible solution in the market. To achieve that aim, we have to listen closely and elicit exactly what the end user wants – and then convert that into a concrete solution.

To us, product development is far more than getting a product ready for the market. Product development begins even before the idea is defined. We allow ourselves to be guided by a permanent desire to develop better tools and are constantly on the

look-out for potential optimisation and innovation, and answers to the question about which direction application engineering is actually moving in. For us as an enterprise this is extremely important. Not only because it enables us to offer our customers premium tools with unique designs and functionality, but because this approach secures the long-term existence of our enterprise. Unceasing innovation is the best guarantee for this – in particular at a time when our world is changing faster than ever before.

day-to-day work, however small that benefit may be? How can we refine an ergonomic design that is already good to make using the tool even more agreeable and even more strain-free? How can we show, starting with the recognisable, high-quality design and tactile feedback, that this is not a DIY product but a carefully designed tool for the discerning craftsman or woman? These are typical questions that are dealt with in-depth in our project teams. A key advantage is that STAHLWILLE is not an enormous conglomerate but a medium-sized enterprise. Short communication paths are the order of the day, rather than long-winded approval processes.

Dialogue with industry and researchers

STAHLWILLE is proud to be able to call on a broad network of contacts. Ideas and suggestions are not only generated within the company, they are passed to us by end users and customers, through application consultants, sales or management, or as a result of mutual visits or at trade fairs or conventions. The company has reliable partnership arrangements



MANOSKOP® 730 VDE Perfect symbiosis.

On the outside, a carefully thought-through VDE shell, inside tried-and-tested technology: no need for manual reset to zero – wear-free flexible rod instead of a compression spring. The system is virtually wear-free.



VDE insert tools
Safe. High-grade. Robust.
Easily exchangeable VDE ratchet insert tool.

with large industrial concerns in Germany, universities and colleges of applied sciences, material research institutes and innovative start-ups. Together, we expand our horizons to consider what solutions customers and users of tomorrow will really need. STAHLWILLE is actively involved in the Industry 4.0 project (the fourth industrial revolution) and is developing specific scenarios to elicit the applications for handtools that are likely to be required in the industrial manufacturing environments of the future. This is also how the VDE torque wrench came into being – existing models on the market simply left too much to be desired.

OUTSIDE VDE. STAHLWILLE AT HEART.

Well-thought-out, down to the last detail – STAHLWILLE's VDE range of tools features in-house developments that, once again, demonstrate why the company has earned the global reputation over the years of being recognised as a pace-setting innovator in terms of tool design and application engineering. In-house developments and creative, customer-orientated features that pursue one aim: securing maximum accuracy, safety and efficiency. All the time, uncomplicated, for the benefit of the end user.

AS - drive



AS-DRIVE

STAHLWILLE sockets are equipped with the AS-Drive* profile, which permits high transmission of forces to the flats of nuts and bolts without damaging them. No longer will you have to worry about stripping the corners off nuts and bolts.

* Anti-Slip drive

80

FINE-TOOTH RATCHETS WITH 80 TEETH

Eighty teeth provide a tight ratchet angle of only 4.5° – facilitating efficient working in confined spaces. In contrast to conventional fine-tooth ratchets, no less than eight teeth engage at once here, ensuring maximum load capacity and, at the same time, smooth action and durability.



TRIGGER CAMS

The wear-resistant flexible rod system enables exact tightening of bolted joints long-term. It is no longer necessary to reset the tool to zero, as with conventional spring-based systems. This saves time while, at the same time, increasing safety through more accurate bolt tightening.



QUICKRELEASE

The QuickRelease technology ensures insert tools cannot be inadvertently lost – while permitting rapid, safe tool changes.



TWO-COMPONENT CONVEX HANDLE

The two-component convex handle has that special feel-good factor and fits snugly in the hand, due to the special shape. This enables strain-free working and optimum force transmission.

WHEN THINGS GET HOT, IT KEEPS COOL.

MANOSKOP® 730 VDE – For work in environments where there are live cables or components, the double-insulated plastic sleeve on the MANOSKOP® 730 VDE does not merely house tried-and-tested STAHLWILLE precision. It is, at the same time, part of a concept that is both revolutionary and unique around the world: this torque wrench allows end users to calibrate and adjust it themselves where this becomes necessary – without dismantling it. It is even possible to change the ratchet head without having to recheck the insulation. And as if that were not enough, there are such invaluable features as the QuickRelease safety lock that ensures the insert tools are firmly attached, and the wear-resistant click system for long-term accurate readings. MANOSKOP® 730 VDE – simply unrivalled.

QUICKRELEASE.

The ratchet insert tool can easily be switched from clockwise to anticlockwise use. With QuickRelease safety lock that enables rapid tool changing but protects against lost tools.

INTERCHANGEABLE RATCHET INSERT TOOL.

The only insulated torque wrench with a ratchet insert tool that users can exchange themselves (9 x 12 mm). Additional insert tools on request.



±3 PER CENT.

Extremely low display deviation of only 3%.

QUICKSELECT.

Proven QuickSelect setting of torque and an additional ring scale that allows fine adjustment.

RAPID ADJUSTMENT WITHOUT DISMANTLING.

End-users can easily readjust the tool themselves – without having to send it in and have it retested.



80 TEETH, UNFAZED BY 1,000 VOLTS.

VDE fine-tooth ratchets – Since their launch, fine-tooth ratchets by STAHLWILLE have gone from strength to strength. Hardly surprising, when you think that the 80 teeth mean the ratchet angle is a tiny 4.5°, which allows the craftsman or craftswoman to apply exactly the right amount of force, even in confined spaces. Now, the same technology is available in line with VDE requirements. Both the 3/8" and 1/2" versions retain the compact shape, outstanding functionality and ergonomics of STAHLWILLE fine-tooth ratchets, and provide optimum protection against live voltages in accordance with VDE standards.



A DRIVING FORCE.

Available for the two most common drives: 3/8" and 1/2".



EFFICIENT.

Eighty teeth provide a tight ratchet angle of only 4.5° – facilitating efficient working in confined spaces. In contrast to conventional fine-tooth ratchets, no less than eight teeth engage at once here, ensuring maximum load capacity and, at the same time, smooth running and durability.



SAFE.

The QuickRelease technology ensures insert tools cannot become inadvertently disconnected and lost – while enabling rapid, safe tool changes. The release button is always located on top to prevent accidental actuation while working.

ROBUST.

Well protected under the VDE shell are the tried-and-tested, dependable, durable STAHLWILLE mechanical systems for maximum load capacity and durability.

ERGONOMICALLY DESIGNED.

Rapid, strain-free working without repositioning – in any direction, thanks to the oval 360° convex handle.

HANDY.

Familiar STAHLWILLE user-friendliness and ergonomic design blended with VDE-compliant protection.

FULL POWER. SHOCK-FREE.

Set of VDE tools in a carry-case – A mobile companion for all professionals who need access to optimum VDE diversity. On the outside, shiny satin-finish aluminium and a sturdy plastic cover in characteristic VDE red. Inside, 48 precision tools from STAHLWILLE's VDE range. From the fine-tooth ratchet with the QuickRelease function and 3/8" drive, crucial sockets and extensions through to a wide range of screwdrivers, pliers & cutters and extensive accessories for a safe work environment.

MANOEUVRABLE.

As well as the ergonomically designed carrying handle, this case also features a removable telescopic handle and sturdy rollers, providing even greater mobility.



HIGH-GRADE FINISH.

All-round aluminium edges, rugged hinges and easy-to-operate latches provide maximum compatibility with day-to-day work scenarios.

RECOGNISABLE.

VDE at first sight: red livery prevents mix-ups.

WEIGHT-SAVER.

Resilient plastic construction keeps weight to a minimum but effectively protects the tools inside reliably against external influences.



VERSATILE.

And what's inside is equally impressive. The case contains a comprehensive set of tools for the most popular applications.



