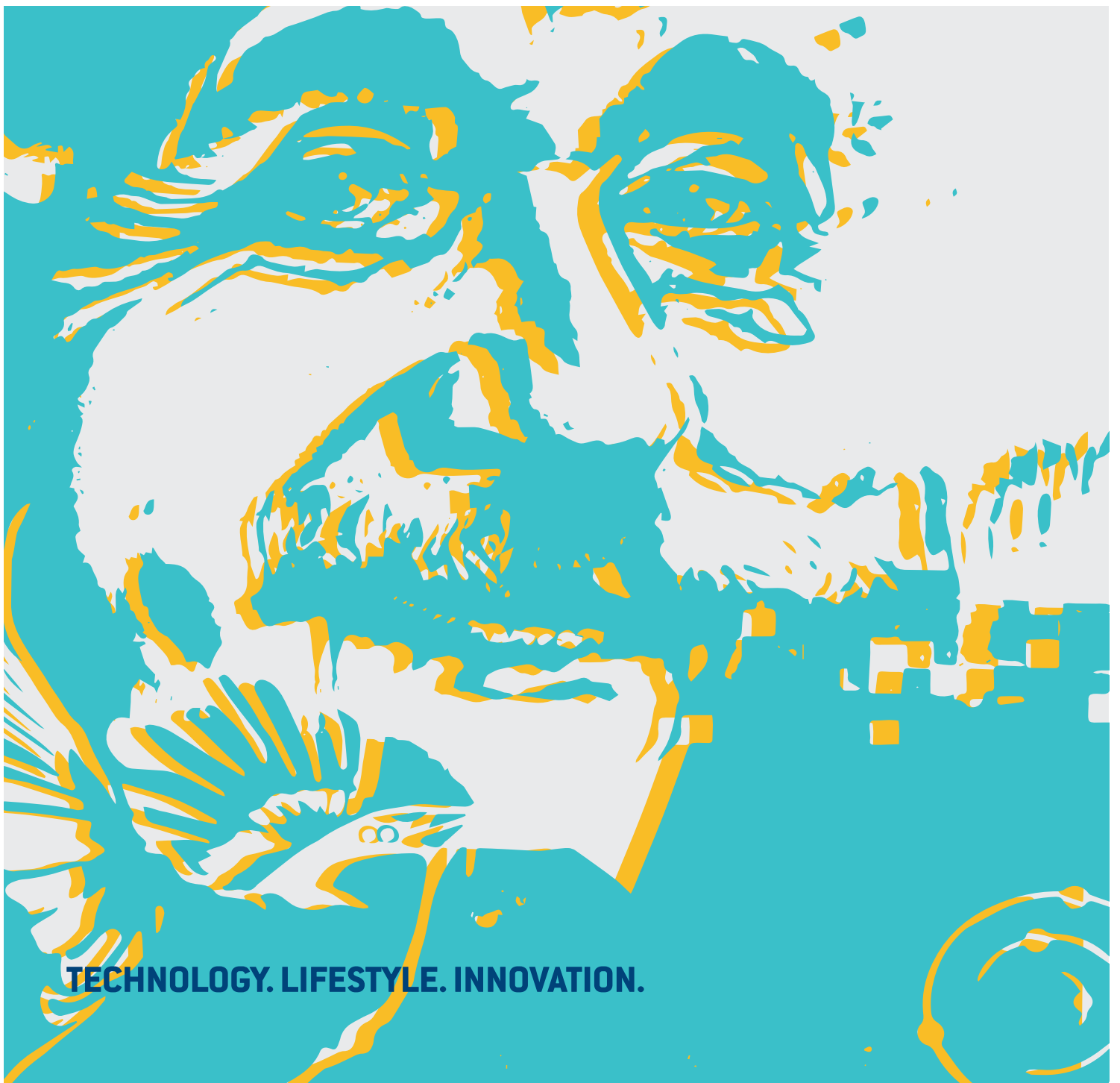


EDITION 2/2021



VIEWPOINT.

THE TTV MAGAZINE FOR CUSTOMERS AND FRIENDS OF THE COMPANY.



TECHNOLOGY. LIFESTYLE. INNOVATION.

OUR CORE COMPETENCE FIELD OF SLIDING BEARINGS.

WIDE RANGE OF PRODUCTS FOR GLOBAL MARKET LEADERS AND SPECIAL CUSTOMERS.

With our second competence field of sliding bearing technology, we have developed a wide-ranging and in-depth product portfolio, and we have been supplying these components to customers all over the world for many years as a market leader in their various industries. We are very proud of this, and it drives us to work on our performance day after day. The best example of this is the qualified application advice provided by our technical sales team, which allows us to provide our customers with a suitable solution in no time at all.

ttv sliding bearings are used in all sectors, and they have proved effective in classic applications through to situations involving complex challenges such as heat, cold, dust, dirt and moisture – with an extremely long service life and excellent reliability. Depending on the purpose of the application, various material combinations consisting of solid bronze, cast iron and steel as well as sintered copper and sliding layers are used in order to guarantee maximum service lives.

By dividing our product range into six different categories, we give our customers quick access to the various solutions, and we have clearly summarised all of the relevant detail information and technical specifications on our website.

Wrapped sliding bearings

- Wrapped dry sliding bearings (PTFE)
- Wrapped dry sliding bearings (POM)
- Wrapped sliding bearings (CuSn8)
- Wrapped sliding bearings with solid lubricant

Solid lubricant sliding bearings

- Sliding bearings in three variants, made from solid bronze, cast iron and steel

Turned solid sliding bearings

- Solid brass sliding bearings with oil grooves

Bi-metal sliding bearings

- Bi-metal sliding bearings in five different variants

Sinter bronze and sinter iron sliding bearings

- Three variants for classic applications ranging from electric vehicles to mechanical engineering

Plastic sliding bearings

- High-strength sliding bearings impregnated with oil or reinforced with nylon

Automotive special parts

- Special solutions for shock absorbers in vehicles



Engineering Solutions

If a special application is not covered even by the wide range of products that we have in stock, our team of Engineering Solutions specialists will be happy to help.

Having standard products available immediately is great, and of course covers a wide range of day-to-day applications. But customers are increasingly relying on our expertise in developing solutions for the creation of products with increased service lives, resistance and quality and that are perfectly tailored to their application-specific requirements. This is why we

have an experienced team of specialists from the specialist departments of technology and engineering. When it comes to customer-specific solutions, we leave no stone unturned. Based on the analysis and the resulting preferences regarding material properties, material composition and design, we develop solutions that keep their promises even under extreme weather conditions.

Take advantage of our solutions - whether as available standard.





EXTRAORDINARY PROCUREMENT SITUATION ON THE GLOBAL MARKET.
OUR TEAM IS WORKING HARD TO FIND SOLUTIONS FOR YOU!

Last year, right in the first phase of the pandemic, who would have been able to predict how 2021 would turn out? Who would have imagined that there would be any momentum or business development with all of the challenges we'd been facing for many months?

Full capacity by spring

From as early as March, our production sites were all well-utilised all the way through to October/November. By this point, it was already clear that there would be supply problems and material shortages, as we have previously discussed in edition 1/2021 in our Blickpunkt magazine.

The obstruction in the Suez Canal showed for the first time just how strong the connection is between functioning supply and logistic chains, and this was highlighted by additional temporary obstructions at major Chinese ports. A lack of container and freight capacity lead to delays in the transportation of goods, while prices and air-freight occupancy rates went through the roof. Today, capacities are overbooked and air-freight rates have reached unprecedented levels.

Delivery times of over 12 months

Growing order numbers with shorter and shorter intervals have led to full capacity utilisation for over 12 months over the entire procurement and production chain. Demand can no longer be met on time, and we do not expect the situation to ease before the first quarter of 2022.

Initial price adaptations have already been implemented over the entire market as a result of this situation. Nevertheless, huge demand has meant that the flow of incoming orders has not stopped. This also means that it will not easily be possible to avoid or reactivate second or third productions.

Spiralling prices reaching a grotesque level

After being in business for over 30 years, we are now for the first time facing spiralling prices with price increases of 100% for some products. Unfortunately, this is affecting the entire market, and we are orienting all of our capacities towards organising products for our customers. Our sales employees from the Trade, Industry and Automotive teams are working

intensively on solutions for our customers day after day.

Situation expected to ease over the course of the following year

The shortages on the world markets will probably still be a reality for us as we enter 2022, as current forecasts do not expect the situation to ease until the middle to end of next year.

The consequences of this will be felt not only by the manufacturing industry and B2B trade, but will also be noticeable to end consumers.

Experts are already predicting bottlenecks for Christmas trade. Items that will be particularly affected include popular electronic items such as smartphones, tablets and games consoles but also products such as printers, dishwashers and cooling appliances impacted by the chip shortage. Even manufacturers and specialist retailers of products such as electric bikes are suffering as a result of the current situation – even normal wear parts such as chains, sprockets or tyres

have long delivery times depending on the design.

Keep calm and work on solutions

As an experienced player on the international procurement stage, what remains for us is to simply keep calm despite the hectic situation and the serious problems being faced by our customers, and to continue working on individual solutions.

Harald Nitzschke, Managing Director at ttv, explains the situation as follows:

„Our team remains highly motivated even during this time, and we see every customer bottleneck as a challenge to find a good, but often unconventional, solution. Only together will we be able to overcome this situation!“

WALTERSCHEID POWERTRAIN GROUP.

LEADING ATTACHMENT SYSTEMS AND DRIVE SOLUTIONS FOR AGRICULTURAL MACHINERY.

Founded in 1919, the Lohmar-based company Walterscheid is one of the real insiders in the agricultural industry. Thanks to decades of experience in manufacturing, Walterscheid technology can now be found in agricultural machinery by all renowned manufacturers. With over 2000 employees, nine production sites in Germany, Italy, the USA, China, Brazil and Japan as well as seven successful brands, the Walterscheid Powertrain Group is a successful player on the global market.

Based on its tried-and-tested components such as cardan shafts, hitch systems and couplings, the company develops tractor attachment systems and compete drive systems whereby an integrated overall concept is created by the shaft train, the overload protection and the gearbox, for example.

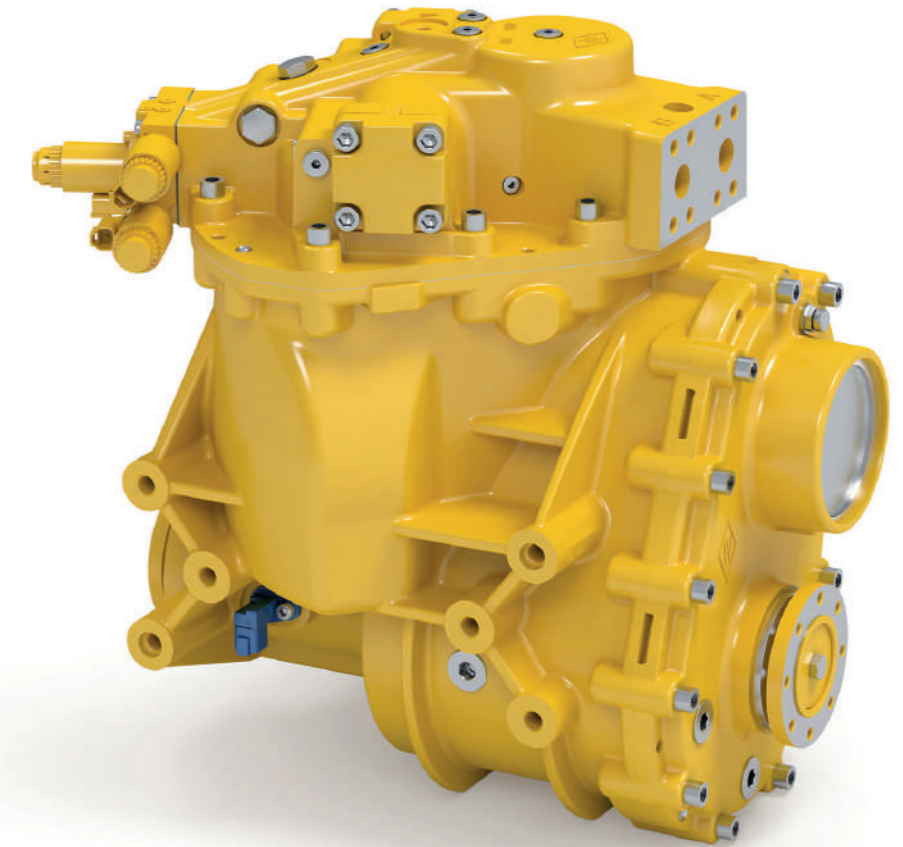
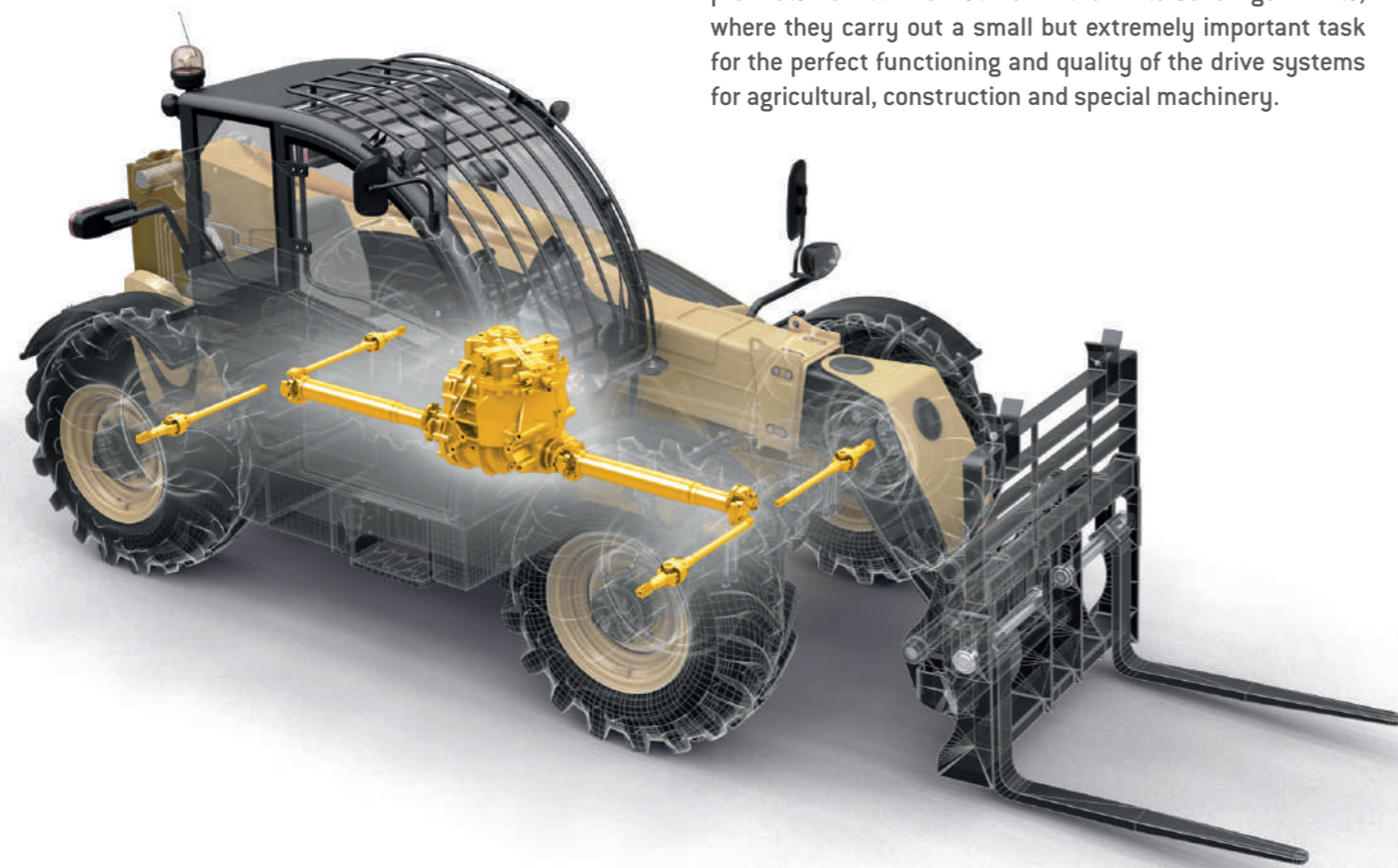
Technology from Walterscheid is always optimally tailored to the various application areas. This consistent application focus ensures extremely high levels of economic efficiency and functionality, as there are no interface losses and no

modifications are required. This allows the company to guarantee the strong performance, long service life and complete reliability of all its product solutions for its customers all over the world.

The company philosophy is characterised by thinking and acting in way that focuses on sustainable development at all levels of the company. The company's goals do not focus on short-term trends and quick economic success, but rather on future-proof strategies and concepts. This allows Walterscheid to achieve a Balance between economic success and a responsible approach to resources, employees, customers and business partners.

ttv is a strong supply partner for Walterscheid in the area of sealing technology.

The partnership was established around 10 years ago, and has been significantly stepped up since 2018. These days, it covers products such as end caps, O-rings, X-rings, shaft sealing rings, bearing seals and gamma sealing rings. The products from ttv are installed in the Walterscheid gear units, where they carry out a small but extremely important task for the perfect functioning and quality of the drive systems for agricultural, construction and special machinery.



Katrin Wolf,
Regional Buyer Europe at Walterscheid, also recognises this potential:

„What we really appreciate about ttv is its excellent reliability and on-time processing of the agreed orders, as well as its special skills in developing application-specific solutions. That's why we're looking forward to expanding on our collaboration with challenging new projects.“

This will be achieved thanks to excellent material quality and a range of coordinated product details using special seals, among other solutions. For ttv Managing Director Harald Nitzschke and Industry Sales Team Leader Volker Hirsch, the company's partnership with Walterscheid is extremely important.

Walterscheid's quality standards and sustainability philosophy are the perfect fit for our company, says Harald Nitzschke, who wants to expand on the partnership over the next few years.

One of ttv's distinctive strengths is its Engineering Solutions department, which develops and produces applicationspecific and customer-specific product solutions. The best example of this is the end cap with a special bore hole that was designed as a special solution for Walterscheid.

There are also concrete new solutions that are already in the testing phase. Shaft sealing rings and end caps with aluminium and sealing lacquer on the external diameter are set to be ordered shortly.



GRAFFITI ART IN THE NEUEHEIMAT.

WORKING WITH ALBERT EINSTEIN, MARTIN LUTHER KING AND FRIDA KAHLO.

The NEUEHEIMAT in Illertissen presents itself as an unusual site that combines work, life and leisure. And according to ttv Managing Director Harald Nitzschke, this type of space would not be complete without artwork as an inspiring element.

The first major work of art is a piece by young graffiti artist Philip Walch from Laupheim, who was commissioned to design a wall measuring over 7 x 3 m in the ttv administrative area. The idea of the portraits of Albert Einstein, Martin Luther King and Frida Kahlo arose from the brief of designing a piece of art relating to people with impressive life achievements.

Despite her physical and mental suffering, Frida Kahlo became one of Mexico's most important painters, and has been officially recognised as a national treasure. Right from an early stage, she took a stand against racism with revolutionary zeal, and highlighted her indigenous roots.

Martin Luther King is always linked to a political statement that remains relevant to this day. He is one of the outstanding representatives in the non-violent fight against oppression and social injustice and between the mid-1950s and the mid-1960s, was the most well-known spokesperson for the African American Civil Rights Movement in the US.

And last but not least, Albert Einstein, who was born in Ulm and who was one of the most important theoretical physicists in the history of science and the most well-known scientist of modern times worldwide. His research into the structure of matter, space and time and into the nature of gravity brought about significant changes to the previous Newtonian world view.

We spoke to Philip Walch about his art and the particular motivations in creating his work.

Philip, who came up with the idea of the philosophical trio as a theme?

So it was after creative conversations with Harald Nitzschke that we jointly arrived at the idea for this approach. After all, we didn't want it to be art for art's sake; it needed to stimulate and inspire people working in the building as they go about



Sabrina Karer, Illertisser Zeitung

their day-to-day work.

How do you visualise the creation of a piece of this size?

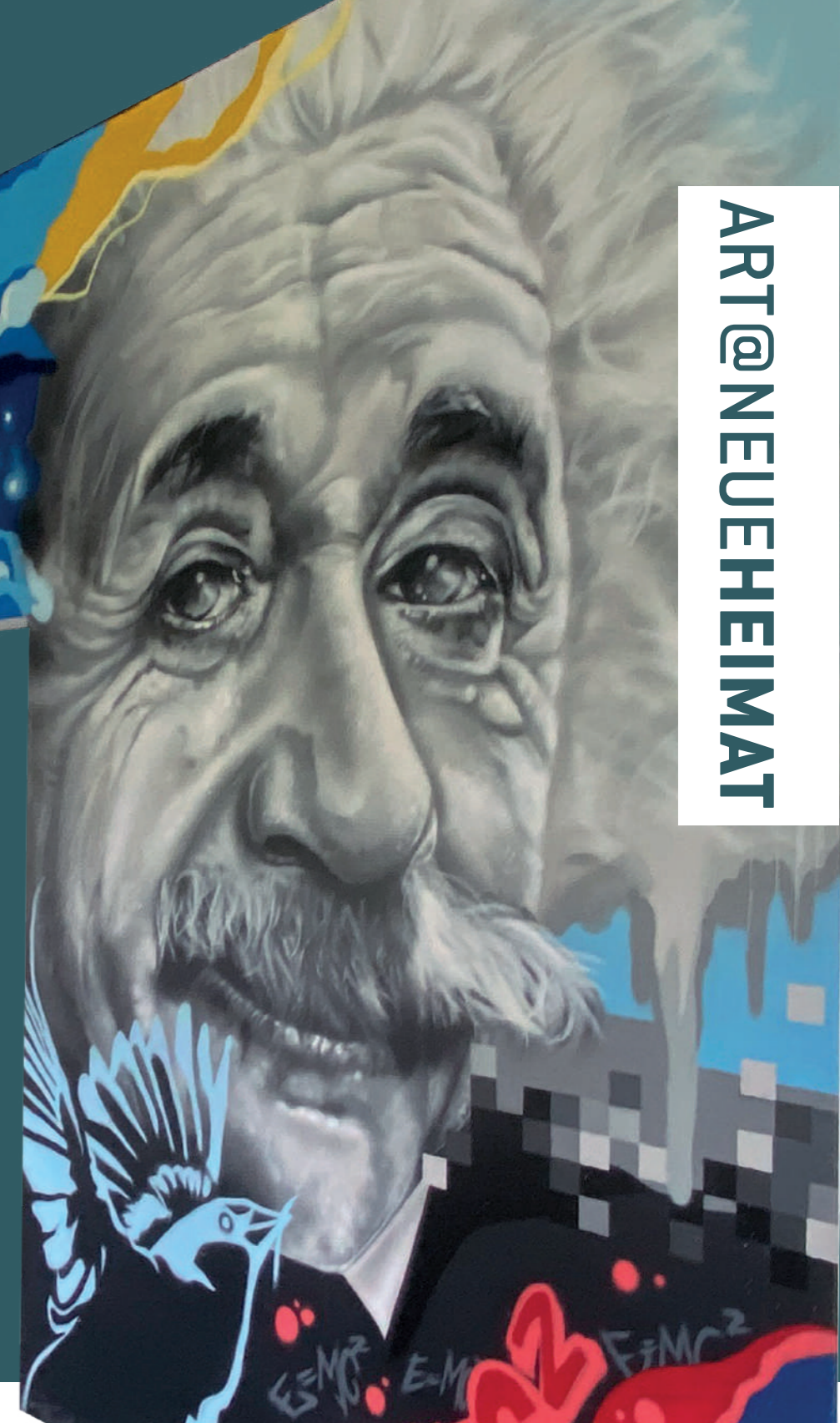
The idea comes from a sketch in several layout stages, and once approved by ttv, I projected it onto the wall in the original size. This quickly provided a good impression of the impact and the dimensions. With other commissions, I work either freehand or using grids. It took me around one and a half days per portrait to complete the graffiti piece in the NEUEHEIMAT.

And how do you then go about spraying the graffiti?

The actual graffiti process is carried out using a range of very different spray techniques. I usually start by applying the darker colours and then the lighter colours, and I work from top to bottom in order to avoid paint splatters. Additional accents in red, yellow and blue create fascinating contrasts with an unbelievably surreal radiance in this artwork in the NEUEHEIMAT. When creating the piece, it was beneficial to be able to work during the shell-construction phase, Philip adds with a grin.

Philip, tell us a bit about how you got into graffiti...

I've been graffitiing for around 10 years, and like a lot of my graffiti colleagues, I started doing it as an exciting hobby. In terms of the techniques and my art, I'm self-taught, and my skills develop with every piece. My works have been receiving more and more attention over the past year, and there's been a big increase in the number of commissions from companies, municipalities and private art enthusiasts. This pushed me to go self-employed in spring, and I now work under the artist name of Stone Graffiti.



ART@NEUEHEIMAT

Do you have any particular preferences when it comes to themes?

No, every commission gives me a lot of creative freedom. From Disney cartoon characters in children's rooms through to set designs and finally this latest piece, a huge graffiti piece for the Neu-Ulm public library, there's a bit of everything.

And as we've already heard, you'll soon be working on another commission in the NEUEHEIMAT?

Yes, this commission is from the advertising agency that's

been working for ttv for many years. The VMA will also be relocating to the NEUEHEIMAT at the end of the year, and wants to have a large artwork in its section of the building.

We are all very excited to see the work that VMA creative genius Hannes Spindler and Philip Walch come up with. Whatever the design, it's sure to really enhance the NEUEHEIMAT.



Training Manager Anika Blum (top left) with the team of apprentices. Leon Feist is not on the photo.

OUR JUNIOR OFFICE AND WAREHOUSE LOGISTICS TEAM. TRAINING FOR A FUTURE WITH AN INTERNATIONAL APPROACH.

Our company is focused on a high level of growth, and has laid the very best foundations for this with its relocation to the NEUEHEIMAT. Our apprentices will also benefit from the excellent infrastructure at the new site.

There are a wide range of fitness-related facilities, and there will in the future be freshly prepared cuisine for a healthy diet. Super-fast Internet, a paperless office and state-of-the-art

workstations with height-adjustable desks will help support the young workforce in their day-to-day work.

They will be directly supported by the team leader for each department, meaning that they will be gaining knowledge right from the source. Team events such as those relating to sustainability will also help to communicate the company values, and keep motivation high among the apprentices.

Office management specialist

Length of apprenticeship: 3 years

During this apprenticeship, the apprentices will go through all of our departments, from purchasing through to accounting and sales. At the end of their three-year course, they will be fully equipped to take on responsibility in a modern company.

- Lara Thanner 2nd year
- Gabriela Pujal 2nd year
- Irem Özdemir 1st year
- Eileen Schulz 1st year
- Christian Stirner 1st year

Wholesale and foreign trade specialist

Length of apprenticeship: 3 years

Purchasing goods from all over the world, planning and monitoring delivery deadlines and developing logistical processes - this is what's in store for Amina Müller's future. But her exciting job description also includes market and procurement analyses.

- Amina Müller 2nd year

Warehouse logistics specialist

Length of apprenticeship: 3 years

Looking after incoming goods, coordinating deliveries, and initiating, loading and packing orders – this is the varied and demanding day-to-day work at ttv. This is because our automatic small parts warehouse requires good computer skills.

- Leon Feist 3rd year
- Christian Rauhhaus 2nd year
- Abdulkader Bazet 1st year

SOCIAL SPONSORING PROJECT.

“HUMAN RIGHTS” ANNUAL CALENDAR AT A SCHOOL IN ILLERTISSEN.

Over recent years, people have been horrified time and time again as a result of terrorist attacks all over the world. These attacks are often motivated by extremism and bigoted attitudes that can also be found in our society. Students attending the history project seminar at Kolleg der Schulbrüder school are making a stand against this.

The Kolleg der Schulbrüder in Illertissen is a secondary school of the Schulwerk of the Diocese of Augsburg in Illertissen, in the district of Neu-Ulm. As a Catholic school, the institution tries to base its teaching on a Christian world view and understanding of humanity, and to inspire students to align themselves with Christian beliefs and values.

It is with this teaching position in mind that the calendar project was launched, with the major topic of human rights at the centre of the creative work. A group of students developed motifs aimed at the prevention of extremism and radical attitudes that violate human rights.

Every motif in the any-year calendar raises awareness of our values, thereby carrying out an important task in every human being's day-to-day life. This is one of the main reasons that the students were awarded a recognition award for the calendar as part of the “1945 end of the war in Bavaria” regional competition.

We sponsored this project together with other companies, and we are delighted to see the excellent commitment of these young people.



The calendar can be ordered from us free of charge:
Frau Celina Römer / roemer@ttv-gmbh.de



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