WEIGH UP

There is one Thing about True Flexibility: It Knows no Limits Advantages of Wipotec Weigh Cells

E-Commerce Parcel Sorting Automation Made Easy Customised logistics solutions

Track & Trace Paves the Path to the Future Pioneering work with TQS





WIPOTEC CUSTOMER MAGAZINE

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/What a Year!

By Theo Düppre Founder and CEO Wipotec Group

ver the past 12 months, as in the months before that, the pandemic had a significant impact on the course of our business and it's most likely to stay that way in the future too. Of course, this impact continues to affect each and every one of our employees and their responsibility to fight the pandemic. Without their presence and commitment, success and a secure future will fall by the wayside. These have been exciting times for you and us. So, what's been happening in the last few months?

Vaccine manufacturers need Wipotec technology

Wipotec has come through the crisis very well so far. This is hardly surprising because our checkweighers check the correct filling volume in vaccine vials very accurately and very quickly. What's more, machine constructors all over the world rely on Wipotec's weighing technology and we have supplied an exceptionally large number of our Weigh Cells to China and many other countries where vaccines are bottled and filled. Despite all the restrictions affecting travel activities, trade show cancellations and contact restrictions, we were extremely well prepared for this increase in demand. As a result, we increased our sales by 15% compared to the previous year in spite of the ongoing pandemic crisis. That's more than impressive.

Increasing parcel volumes thanks to the pandemic

As Covid resulted in restricted business hours and restrictions on the ability to go out, postal and delivery services anticipated a significant increase in parcel volumes, due not least to the rapidly rising number of online Internet orders. They were and continue to be driven mainly by people's global experience of numerous lockdowns. As a result, we experienced increased product demand in the Mail & Logistics sector. This is because Wipotec supplies systems that help to calculate how parcels can best be stowed on trucks and aircraft. This in turn triggered a large number of orders, especially in the USA.

We are unable to produce in a home office

Working from home has been a big issue during the pandemic. We, however, are a production company, a machine constructor with international customers. Without exception, all our machines, which are shipped worldwide, are produced in our central production facility in Kaiserslautern. Made in Germany. Of course, we have relied more on video conferencing and virtual Wipotec and energy self-sufficiency: This is climate protection in its most immediate and direct form!

meetings during the pandemic, but all digital efforts notwithstanding: assembly is just not possible in the home office. As a prospective customer, however, you want to see our machines in operation and, more specifically, at work where their precision and speed can be demonstrated and easily seen. As a customer, I need personal "contact" with the machine; I want to be able to touch it, inspect it. So the trade shows will also be back with their exhibition spaces. We're really looking forward to this and the people we'll meet there. In the meantime, we and our prospective customers are left with the Wipotec Show Truck. The 13-metre exhibition vehicle offers companies the chance of their own private trade show right on the company's premises.

November 2020: Cyber attack on Wipotec's computer networks

As if the pandemic wasn't already challenging enough, in November 2020 Wipotec reported a cyber attack on its computer infrastructure. We therefore had to cope with a three-week outage of all our IT systems and had to do everything manually. It was only because our IT department noticed the Saturday evening attack in time and immediately initiated effective defensive measures that the company was spared further disastrous losses. Nevertheless, we incurred a loss of millions of euros; we had to rebuild our network and establish new structures which cost us another few months. The fact that our customer projects didn't suffer much in the process is due only to the fact that many of our employees initially worked Saturdays and Sundays to make up for any overtime and impending delays. And all this in spite of and at the same time as the pandemic! I am very, very grateful to our employees.

Covid: Rising to challenges

As far as Covid is concerned, Wipotec was better organised and a lot faster at decision-making than the country's government and politicians. Our crisis management would have allowed us to have our employees vaccinated much earlier than the regulations finally enabled us to. Once this was the case, we had the vaccinations carried out over several weekends. With more than 800 employees in Kaiserslautern, we recorded only eight cases of Covid. However, we are making better use of the time and continuing to develop our key technologies with the greatest possible speed – for example, researching even safer thermoformed packaging and its inspection so as to reliably guarantee the best before date of food.

Not merely lip service:

How Wipotec deals with the environment

Anyone who knows Wipotec or me, knows that alternative energy concepts, self-sufficiency in particular, are matters very close to my heart. This is climate protection in its most immediate and direct form! We now heat and cool (!) exclusively with geothermal energy, we also use solar power and are almost at the point of self-sufficiency. All we're missing now is a good electrical energy storage system. We'll tackle that as soon as there are solutions that don't rely on lithium. The sooner, the better because Wipotec continues to grow, and not just internationally with new branch offices in Singapore and Madrid.

Construction stage no. 14: Construction is underway again

We are building again at the central production site in Kaiserslautern. The area being built on will soon grow by 10,000 m² to more than 40,000 m². Once the Wipotec Academy has been completed and opened, the company's own machining department will undergo significant expansion. Wipotec currently employs around 1,200 people worldwide, more than 800 of them in Kaiserslautern. We have more than 30 trainees here on site, plus 25 students of dual degree courses at the Technical University of Kaiserslautern who we only recently supported with a large sum of money. Is there a better way, as a company, of investing money than funding the next generation of employees locally?

If you'd like to know more about our convictions and our position, take a look at our new Responsibility section on the Wipotec Group website. We have brought together all the content on the topic of corporate social responsibility in one place.

Let me wish you every success with your ventures. I hope you enjoy reading the magazine. And stay healthy!

Theo Düppre

Dear Customers,

We have now learned to live with the pandemic, but we will probably never get used to it. We're doing everything possible to get it under control. Vaccination helps!

However, there are other problems which will force us and you to strike out in new directions in the new year. The lack of technology components and the limited availability of "base materials", such as aluminium, plastic, stainless steel, ... it's a list that keeps on growing.

We're doing everything we can to circumvent these shortages. We will also continue to defend our motto "There's no such thing as impossible" to meet your delivery dates and technology requirements.

We are still the fastest growing company in our region. If we disregard the rise in the number of our employees, our growth is probably most visible in the increase in interior floor space at our central production site in Kaiserslautern. This year, with what is now the 14th construction phase, Wipotec will grow by 10,000 m² to a massive 40,000 m². We had already purchased the land for this three years ago – foresight pays off.

In this edition of our Weigh Up magazine, we show you yet again how our customers use our solutions – in the logistics services sector, in the pharmaceutical sector and in the quality assurance of milk powder. We report on checkweighers, X-ray inspection and applications in the postal and intralogistics sectors.

Last but not least: The trade shows are coming back. Next year at the latest, I hope to see you at ACHEMA, Anuga FoodTec or one of the many other European or overseas trade shows.

Stay interested, it's worth it!



Theo Düppre Founder and CEO Wipotec Group

Newsflashes

/Wipotec Show Truck

The Wipotec Show Truck 2021 in figures:

- Approx. 50,000 kilometres travelled
- The longest tour covered 11,000 km through Spain
- In total, the truck made more than 100 visits to companies
- On average, there were 4 people on site per visit
- There were 3 blown tyres
- 6 countries were visited
- Around 400 qualified visitors were given advice

/Social Project A Big Heart for Dogs

Animals also need support. That's why Wipotec employees constructed an exploration platform for dogs at the Kaiserslautern animal shelter. It can be used to selectively improve the behaviour of dogs that are difficult or impossible to rehome, thus improving their chances of placement. The energetic efforts of 10 "assembly specialists" were responsible for creating a multifunctional wooden training platform in the grounds of the animal shelter in the course of a single day. All the materials and tools required for the build were organised in advance and provided on site on build day. The exploration platform, designed by Wipotec employees as part of the social project day and built on their own initiative at the Carl Hildebrand animal shelter, provides the dog trainers and educators at the shelter with a variety of training opportunities for their charges. In this context, "HuKo" or dog skills is a dedicated project in Rhineland-Palatinate and Saarland. Its aim is to improve the behaviour of problem dogs by means of intensive training.

The exploration platform is both an amusement park and an adventure playground for dogs; it provides trainers with the opportunity to develop a training program individually tailored to the dog.

#WipotecShowTruck

WIPOTEC

Having to negotiate ramps, a sniffing corner, sandpit and chew ropes on the exploration platform helps trainers to work with dogs in a fair and non-violent way, while also involving the dog's reference person. In this way, further progress can be made over time and the animals' well-being can also be increased.

In recent weeks, it has only been possible for visitors and those interested in adopting to visit the shelter by appointment. Despite Covid-19, the animal shelter has placed many animals in good hands, including dogs that have been successfully socialised with the help of the exploration platform – to the delight of all Wipotec employees for sure.



Wipotec employees design and build an exploration platform





/Fachpack in Nuremberg

Fachpack, the European trade fair for packaging, technology and processes, marked the start of trade fair time again for Wipotec after a break of almost two years.

The restart at the end of September brought Wipotec a record number of visitors and at the same time was the premiere for live streams directly from the exhibition booth. Three times a day, they reported live on weighing technology and weighing systems, provided information on the latest developments and trends in the field of inspection technologies, and demonstrated the use of the displayed machines.

/Sales New Appointments

In parallel with the global expansion of sales, two top sales positions at Wipotec were refilled this year:

Georg Drakos was appointed Sales Director Germany on 1st June 2021. Prior to this, he held a sales position as Business Development Manager X-ray Technology. Georg lives with his family near Stuttgart and his favourite travel destination is Nepal. The Drakos family has sponsored two siblings from a mountain village in the landlocked country. This enables the children to go to school in the capital, Kathmandu. Next dream destination: Tibet!



Georg Drakos, Sales Director Germany



Antonio Palomo, Sales Director Spain

Antonio Palomo took over the position of Sales Director Spain on 1st June 2021. Prior to this, he was already working as Area Sales Manager in the Spanish branch. His family best likes to relax in Madrid; in the winter they go skiing and in the summer they travel to Minorca. When the sun's shining, there's also a motorbike beckoning. Antonio's dog is his best jogging partner. His favourite place: Cadiz!

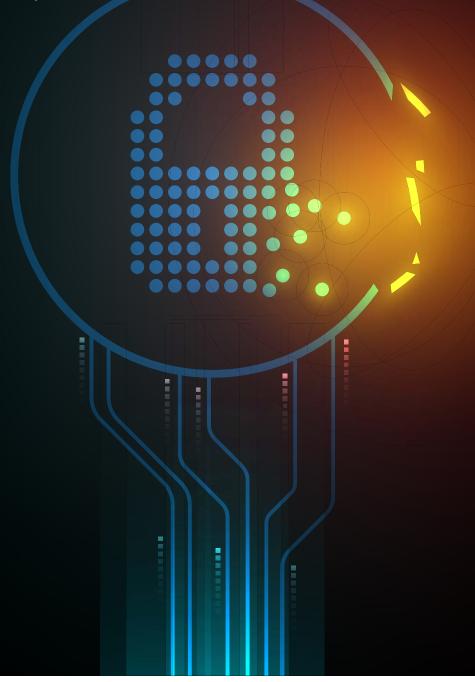
Both managers have many years of experience in the industry. This year, Wipotec's international sales team has grown by more than 20 employees worldwide.

The management of the Wipotec Group would like to wish Georg Drakos and Antonio Palomo and the new members of their teams every success as they start in their new positions. The management is looking forward to an excellent working relationship.

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Cyber Attack on the Wipotec Group

Why a plan is necessary.



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ovember 15, 2020: The day Frank Serr, IT Manager at Wipotec, will probably never forget. On that Sunday morning, monitoring systems of the IT infrastructure reported the parallel failure of several services at the same time. A subsequent system check caused Serr to spring into action immediately. Just a few moments later, he switched off all systems that could be shut down remotely. A short time later on site, he shut down the rest of the system. That day, the IT infrastructure of the Wipotec Group became the target of a massive cyber attack.

Ransomware attack detected

As it quickly turned out, the attack was an Egregor ransomware attack. The complex malware designed specifically for cyber attacks, which encrypts user systems and their data, has been used against companies in many industries since it first appeared in September 2020. It was also used in this case to extort a ransom that was to be paid for surrender of the cryptographic keys. Only these keys render the attacked system fully capable of running again.

According to Jens Kühn, CTO of Wipotec, such attacks happen all over the world every day. "No company, regardless of its size, is immune to them. Tradespeople, medium-sized enterprises, large corporations – they can hit anyone." There's no such thing as one hundred percent protection; new attack methods are constantly being developed. And they're always one step ahead of the defence strategies. There was never any question of a ransom payment for Wipotec. The police and other authorities were involved from the outset and notified about all steps.

Keep calm, get a clear view

Early on Monday morning, the employees were in for a surprise; quite a few had already been notified at the weekend or, like the IT team, had already been on site on Sunday. In the meantime, all connections to the outside world had been cut and the entire IT system had been shut down. It turned out that rapid shutdown of the entire system over the weekend meant that only a limited area was affected by the malicious routines' encryption processes. Nevertheless, it was not permitted to switch on a single IT system throughout the company. At this point, no-one knew to what extent end systems or clients had already been infected with malware.

War room as command centre

An external company specializing in cyber attack defence and response was brought in and a communications, command and operations centre was established. To keep the workforce informed, coordinate measures and align recovery efforts, the senior managers were brought together each day to jointly No-one could imagine a car wash for computers.

> Jens Kühn CTO Wipotec Group

determine the next course of action. It turned out to be a stroke of luck that the internal communication (telephone system) was not affected. Its loss would have considerably hindered or complicated the exchange of information. Additional temporary protection was installed on all terminals. The software logs and detects all abnormalities on the systems and in the network. What's more, the authorities involved accepted these tools as forensically suitable tools for the preservation of evidence. Without a police-approved procedure for preserving evidence, it would not have been possible to resume business operations.

Long complete failure feared

As Frank Serr reports, depending on the situation and the damage, companies affected by a cyber attack must fear an extended complete failure of their IT. It can take several weeks or even months until all systems are restarted. The decision made at Wipotec was to pursue an alternative strategy. All affected applications were transferred to a protected area where gradually, under supervision and using forensic analysis software, it was possible to get them running again. Data analysis was used to examine company data for signs of economic crime (fraud detection). Its aim is to expose and provide evidence of foul deeds in internal company application systems. Of course, it was also important to answer the crucial questions: How could this happen, which systems are affected, and what measures are required to ensure the fastest and above all the safest possible restart? Securing digital evidence gained from the forensic analyses revealed that the Wipotec infrastructure had initially been infected with components of the malware as early as the beginning of 2018. The malware then became active in the autumn of 2020 and initiated company-wide encryption of the data and systems which is how the attack first became visible. The long-term strategy of system recovery was designed to completely rebuild the entire IT infrastructure. >>



Frank Serr Head of IT Wipotec

Conventional protection products are unable to cope

Conventional protection products for malware detection are unable to cope in cyber attacks because attacks of this type mostly use Windows on-board resources. In this way, the attackers remain under the protection systems' radar and are not detected by them. Only continuous 24/7 monitoring and Al-based analysis of events, log files and network activity provide robust evidence of suspicious activity within an attacked IT infrastructure. Services of this type are called managed detection and response (MDR) systems and are among the latest technologies to protect companies from cyber threats.

Installation of a car wash

The workforce will probably remember the Wipotec car wash for a very long time. All computers, clients and terminals such as laptops and all workstations in the company had to go through it. All terminals were cleaned in terms of software and restarted from scratch in the "car wash". The support at Wipotec from our own but "non-specialist" IT staff was impressive. CTO Jens Kühn, describing the measures taken after the attack, says, "Here, of course, we benefitted from the fact that we have a very large number of IT-savvy, experienced employees in the development and technology section who supported us over a very long period during operational recovery of the IT landscape."

Damage assessment

According to Frank Serr, the damage assessment revealed that parts of the file repository were affected, as well as file servers and the mail system. The intranet platform was also no longer capable of running. Parts of the backup system were targeted and destroyed by malware in the very first wave. Since the malware's encryption routines want to remain undetected for as long as possible, they only run "on a low flame" so to speak, and thus consume few resources. They therefore need a certain amount of time to carry out their work of destruction and to undermine the existing security routines – time during which, as happened at Wipotec, monitoring routines were able to kick in and prevent maximum possible damage. Customer access was not affected at any time, just as no malware was found on the terminals or the company's own production systems.

In the meantime, those responsible for the attack have been identified and caught – more specifically, the extortionists' sales team responsible for skimming off the ransom monies. The actual developers and programmers of the malware remained undetected.

Need for employee creativity

From the time of the attack, the supply of materials to production was only guaranteed for a few days. Only the software of the fully automated warehouse management system knows exactly where each part is stored. So in the end, it came down to the creativity of the employees on site. Short-term material requirements were recorded and documented on paper again, and the systems in materials management were operated manually and from memory. "Waste paper", archived lists and withdrawal logs from the past were suddenly in very high demand again. Despite the complete IT failure, this meant that production was able to continue. In the final analysis, at no time were there any restrictions on deliveries with regard to customer machines and spare parts.

A plan should be in place

What lessons can be learned from such an attack? No-one – neither private individuals nor companies – can protect themselves completely and with one hundred percent certainty against cyber attacks. Increasingly sophisticated attacks and threats therefore require permanent monitoring of the entire IT infrastructure. There is always a residual risk. However, you can make sure that there's a plan in place and that you're prepared should your company become the target of a cyber attack. This includes defining responsibilities in advance, ensuring effective backup and recovery strategies, and effectively and permanently raising the awareness of all employees. And having a high-performance car wash handy just in case.

/ Entering the Third Dimension — Sales at Wipotec

A few words with Fred Köhler, Managing Director and CSO of Wipotec

echanical engineering graduate Fred Köhler started his professional career as an officer candidate in the Navy. After working in marine propulsion engineering, jig construction, programming of aircraft software and in the field of linear robot systems, he became self-employed as a management consultant for medium-sized enterprises. Previously tasked by Wipotec CEO Theo Düppre with assessing, structuring and ultimately optimising the company's overall processes, Fred Köhler took over as Sales Director at the beginning of 2017.

Mr Köhler, looking at your examination of the overall processes at Wipotec, we're interested in the sales aspects. What did you discover in 2015?

First of all, impressive growth that continues to the present day. No company in the Kaiserslautern region has grown and is growing as fast as Wipotec. The structures in sales, however, were unable keep pace with this growth. There was no uniform and, above all, systematic approach. Customer liaison and support varied from country to country. The focus was on the many opportunities instead of a structured approach. This meant there were country-specific successes that were related to the particular approach but which didn't always take all product sectors, or business units as we call them, into account to the same extent.

How did you cut through this knot?

With a matrix organisation! On the one hand, today we have the business units here which provide our technology to all country organisations or the Sales department there and on the other hand, the country organisations which sell all the products in their country. This also clearly regulated who does what and how the interfaces between the parties involved are defined. The majority of all customers want a single point of contact to manage all their affairs.

> Fred Köhler CSO Wipotec Group

When you talk about interfaces, do you mean cooperation?

Exactly! Many of our customers, and we're talking about hundreds of companies here, operate supraregionally, which means they run plants in several countries. They include global corporations with several billion in sales and dozens of plants. It's impossible for a single sales unit to serve such customers; a top-down/bottom-up approach is needed. This is a global approach, rather than one from the perspective of a single region or country. We see this as the third dimension of our sales matrix - key account management, with responsibility for its customer groups, for all products in all countries. We're currently building this team globally. At the same time, we're focusing on the most important global accounts. This is where the cooperation of our sales teams is paramount. It's about global contracts, the product range offered, standardisation - all topics that go far beyond a local approach. >>

Wipotec solutions represent innovation and state of the art technologies.

> Fred Köhler CSO Wipotec Group

Is this also what customers want? Central handling of interests, even if they're only locally based?

It's impossible to give a blanket answer to that. Even key accounts differ significantly in some cases. Let me give you an example: A medium-sized key account with 30 to 40 production sites worldwide, whose subsidiaries have previously operated decentralised procurement, discovers that its product quality differs locally. It will standardise engineering specifications, perhaps issue recommendations to suppliers. Others have a short list with preferred suppliers. Others, in turn, give their subsidiaries a free hand.

So does the approach depend on the customer?

Yes, the question is always: Does the global approach of key account management have a chance or do we pursue a purely local approach? This is where the size of the company and the industry also come into play. Often there's also intensive cooperation with purchasing departments, with R&D departments, and customer-specific adaptations are developed. This doesn't alter the fact that the majority of all customers want a single point of contact to manage all their affairs.

Doesn't this create potential for conflict? If customers are treated individually and differently because you approach and respond to them locally and individually?

No, because the contracts with key accounts apply worldwide, to all subsidiaries. This lays down the ground rules for a start. In addition, all technical issues, even if they have been developed locally, always and without exception end up in Kaiserslautern. From there we work out technical standards with the companies, with headquarters in the driving seat. There is no decentralised project planning, no local technical design or technical construction without central responsibility. Of course, there is intensive international discussion within the sales department here where everyone learns from each other.

How are the regions developing, the Asian market specifically?

Wipotec is also showing strong growth there. Last year, we opened a branch office in Singapore where previously Asia was served exclusively by Germany. We have been represented in China since 2015. Our key accounts expect us to be

represented by a service team and partners in Southeast Asia too, i.e. in the countries east of India and south of China. In Southeast Asia, the Covid-19 situation is trailing ours with a certain delay; with all the disadvantages that rising infection rates and the associated lockdowns and travel restrictions entail.

But we are also making progress with expansion in Europe. In Spain, we opened a second branch office in Madrid, following our first local country office in Barcelona. Overall, the global sales force grew by more than 20 employees last year

So we're still talking about strong growth? Or is there more?

We're talking about much more than growth. A company like Wipotec which is showing such strong growth has to change. We understand this as a culture of change. And so there are stages during which you change, and with which you introduce changes. This applies to structures, processes, equipment and tools. We've been serving customers on all continents of the world for some time now and we're in the midst of transforming ourselves into a global company. The corporate language is a visible example. For communication outside Germany at management level and between subsidiaries, English is now the language of choice because English is understood by most company employees.

And what's stayed the same?

One fact has not changed and it still offers a huge market advantage, in our opinion it is actually a unique selling point: our unmatched flexibility and technical innovation. Wipotec develops and builds customised machines, even if the quantities delivered in the meantime have increased to such an extent that we could easily be mistaken for mass production manufacturers. The market, and in this case the big customers, set standards and we meet them so perfectly that we have risen to become



Fred Köhler CSO Wipotec Group

the market leader in key areas. For our part we've set innovation-based standards, with our Weigh Cell technology for example. Thanks to this technology, our brand essence has become inseparably linked to our ability to innovate.

You're talking now about the Weighing Technology division.

Yes, or if you like, about our other major customer group, the machine constructors, or the OEM sector. Our success story is also based on the fact that our Weigh Cell technology has made massive inroads into the worldwide construction of packaging and filling machines, as well as other types of machines that require in-process weighing technology. Countless machine constructors all over the world rely on Weigh Cells from Wipotec! This means a huge and still growing number of references in corporations, production facilities and production lines.

What does the central production site in Kaiserslautern mean to you?

This site is essential to us. We were just talking about English as a corporate language. Do you actually know which phrase has a very special ring to it in English for our customers? Made in Germany. Originally introduced in the UK at the end of the 19th century as protection against supposedly cheap and inferior imported German goods, the label is now regarded by many consumers as a seal of quality for products from Germany.

For our customers, particularly in Asia, but also in Central and South America, today this phrase is a quality statement that they associate with our machines which have been developed, designed and produced exclusively in Kaiserslautern. Wipotec solutions represent innovation and state of the art, synonyms for the latest or highest level of technical development. And that's how it's going to stay, promise. ▲

/The Consequences of Covid: **A Year without Trade Shows**

Three quarters of all trade shows planned in Germany in 2020 and 2021 were cancelled due to Covid, and the situation was pretty much the same all over the world.

ore than 20 cancelled trade shows last year alone were listed on Wipotec's international website – every cancellation a major challenge for the company. Trade shows are the central starting point for business opportunities, they are used to acquire customers and enable informative product presentations in front of an audience. According to a survey¹, so far the trade show cancellations have resulted in tangible economic losses for over 40% of the companies affected.

The trade fairs are leaving, the Show Truck is coming!

What alternatives remain if personal contact with the customer is lost due to cancelled or postponed trade shows? If all opportunities to present innovations and new machines to an interested audience are missing? For Wipotec it was clear – if the customer couldn't come to the company's trade show booth, then Wipotec would go to the customer: digitally via the Internet, via social networks or quite simply by road. In this case, we mean with the new Wipotec Show Truck. An entire truck, full of innovative solutions, ready for demonstration on customer products that were brought along.

Weighing and inspection technology on tour

The Show Truck was on the road in Germany for over three weeks this year, followed by an eight-week tour of other European countries. Prospective customers had 17m² of exhibition space on which to experience the most accurate weight determination using checkweighers which they could try out on the spot. There was also an X-ray inspection solution ready for use on the 13 metre long Show Truck. It could also be tested live on site using customers' own products and test kits provided. Companies that took advantage of this opportunity experienced their own private trade show right on the company's premises.



X-ray scanner and checkweigher can be tested on the Show Truck

The important thing was personal contact

The Wipotec Show Truck, designed as a "rolling in-house trade show": many visitors took the opportunity to discuss proposed solutions to their problems with the specialists and experts on board. Not a complete substitute for a trade show as far as Wipotec's overall portfolio was concerned, but a welcome chance for anyone who wanted and was able to take advantage of it to find out about the latest developments and trends in the field of inspection technologies. Just like at a real trade show booth – documentation, information, machines close enough to touch, in real operation or at least demo mode, demonstrated by application specialists. The best part of this was that the Show Truck could and still can be booked exclusively and free of charge.

Using social networks

Wipotec marketing, especially the heads of the business units, made increasing use of social media in "show-less" times to circulate content and make it findable. LinkedIn above all, a network for maintaining existing customer contacts and making new business connections. With over 700 million members, >> Virtual alternatives are not everything – the trade shows are coming back.



Wipotec Show Truck on tour



Production of a webcast on the topic of checkweighing

this platform is the number one worldwide among business networks. On LinkedIn, Wipotec creates content laboriously and exclusively for this channel. The articles posted reach out to specialists and employees of companies that use or want to use the relevant inspection technologies. In addition, details are published of in-house events that may be possible again now at the central production site in Kaiserslautern and information about upcoming trade shows at which the company will have a presence. And, of course, articles about industry-related business solutions from partners, and invitations to conferences and advanced training events related to Wipotec's inspection solutions.

Webinars and webcasts

The pandemic not only had a massive impact on the international trade show business; it also put paid to business trips. Face-to-face meetings, seminars at customers' premises, presentations, conferences, seminars were all history. And so the era of webinars and webcasts arrived. Webinars are interactive seminars conducted over the internet which enable two-way communication between presenter and participants. In addition, Wipotec increasingly offered webcasts, live content streamed on the internet similar to a television broadcast. Here too, participants are given the chance to ask questions during the broadcast. The content of these formats is compiled for specific groups of participants. One webcast, for example, focused on the production and packaging of drugs in solid dosage forms, and another concentrated on the weighing, labelling and serialisation of baby food. Well over 2,000 participants in the webcasts sends out a clear message.

Video clips, whether product videos or presentations, also prove their worth, especially in times when personal contact with customers is missing. More expensive to produce than printed material, Wipotec video productions with their balanced mixture of information and emotion convey valuable content, enrich the company's web portal and increase the acceptance and reach of mailings or postings on social networks.

Restart of trade shows

In Autumn 2021, there was a restart of trade shows for Wipotec, starting with Fachpack, the European Trade Show for packaging, technology and processes. Fachpack was held in Nuremberg at the end of September. Is that the end of webcasts, webinars and videos? No, says Wipotec, and it is not alone in this decision. The pandemic has permanently changed the way we communicate, work, organise ourselves and make decisions. During these times, we learned to make greater use of other channels and forms of communication and we increasingly rely on virtual meetings. For this reason, hybrid trade shows will no longer be a rarity.

But even the trade shows are coming back. No matter how much effort is made to offer virtual alternatives, they nowhere near achieve the "punch" of a face-to-face trade show. Companies know this and visitor numbers at the first trade shows to be held again demonstrate this impressively. Whether it's networking, interpersonal exchange, face-to-face conversations or simply sharing a cup of coffee – the digital formats leave a lot to be desired. And so Wipotec is looking forward to LogiMAT, PackExpo East, Modex, ACHEMA, AnugaFoodTec... in fact to all the trade shows in the coming year. See you there! ▲



Theo Düppre, founder of Wipotec, Prof. Dr. Marco Rahm, Head of the Department of Electrical Engineering and IT, and Prof. Dr. Arnd Poetzsch-Heffter, President of the Technical University of Kaiserslautern, at the formal opening of the Competence Centre for Inspection Technology in summer 2021

/**No-one wants** a Major Disaster

Contamination and other disasters: TU Kaiserslautern demonstrates competence

uality controls are "crucial to survival" for food manufacturers. The Competence Centre for Inspection Technology at the Technical University of Kaiserslautern is conducting research into how these controls can be optimised. It centres around an X-ray inspection system donated by Wipotec.

Teamwork is trumps

The Competence Centre for Inspection Technology is both a workplace and a research platform. The university's research groups come from the subject areas of Cognitive Integrated Sensor Systems, Theoretical Electrical Engineering, Communications Engineering and Microelectronic Systems Design. They collaborate closely with Wipotec's development teams. The various tasks are derived from the capabilities of the X-ray inspection technology. And that's quite a challenge. An X-ray inspection system enables a detailed examination of products, even if they are already packaged. But the packaging can also be inspected and any defects detected.

Major disaster: contamination

It can happen to anyone. It's a major disaster for any manufacturer if food has to be recalled because of contamination by foreign bodies, such as glass splinters. Consumers are exposed to significant risks. Reputations built up over decades are permanently shattered in just a few short days, consequently shaking the consumers' confidence in products. So there is huge interest among all food manufacturers in reliably detecting product contamination. At the Competence Centre, several teams from the Technical University are researching how X-ray inspection systems can help with this. They are also looking at speeding up these processes using special image processing hardware.

Quality assurance of the packaging

There are sometimes long distances between producer and consumer. It is therefore immensely important and crucial to quality that packaging of food for transport is suitable and highly effective. To this end, the Competence Centre is conducting research into X-ray inspection techniques that can check food packaging. Has the product been properly packaged? Product inclusions in the area of the sealed seam, for example, may compromise the seal. This in turn jeopardises the freshness and shelf-life of products: damaged packaging can cause food to spoil prematurely. The faster and more conclusively image processing routines detect product inclusions on the X-ray images, the more reliably the quality assurance processes run. The same applies to food labelling, i.e. labels and printing on the packaging. Are they in the right place, is the printing legible? Fast image processing routines help here too. The teams in the Competence Centre are working jointly on further optimising them.

Sign of mutual recognition

Theo Düppre, current CEO of the Wipotec Group, together with Udo Wagner, laid the foundation stone for the company in the 1980s with his idea of letter scales for electronically calculating postage in the department of Professor Walter Heinlein. Since then, Wipotec and the Technical University of Kaiserslautern have maintained a close partnership. In 2016, Wipotec donated one million euros and an X-ray inspection system to the university for research purposes. Another sign of mutual recognition: In May 2019, the university awarded Theo Düppre a badge of honour for special services to the university in the field of research and teaching. ▲

/**25 Years** of Wipotec-OCS

The Wipotec Group: The apple doesn't fall far from the tree.



wo extremely successful subsidiaries operate under the umbrella of the Wipotec Group with its central production site in Kaiserslautern. One of them, Wipotec-OCS in Schwäbisch Hall, celebrated its 25th anniversary last year. The company has already been successful in the market for many years and has formed such close ties with its customers that quite a few regulars think they are dealing with the parent company. This, of course, is a feather in the subsidiary's cap. And in Peter Radke's cap too. For many years, he has been responsible for everything to do with service and sales in Germany and neighbouring countries at Wipotec-OCS in Schwäbisch Hall.

Development contract for Wipotec provided the big break

In actual fact, it's been 30 years of affiliation, if we include Peter Radke's time in the checkweigher group of Optima Control Systems GmbH, predecessor of the Wipotec subsidiary. But this figure is not that important to him because the deciding course was set at the beginning of the 1990s. At that time, the company became so successful at selling checkweighers that the previous supplier of weighing cells suddenly stopped its deliveries because the competition grew too great for it. A decision with far-reaching consequences because then weighing specialist Wipotec in Kaiserslautern, equipped with a development contract from Optima Control Systems, supplied the new Weigh Cells for Schwäbisch Hall. With the new technology of its weighing systems, the company became even more successful. In 1996, with the incorporation of the company, Wipotec-OCS was launched in Schwäbisch Hall and became Wipotec's sales and service organization for end customer business.

Prepackaging Regulation versus Mean Value Control

According to Peter Radke, the decisive factor when negotiating sales with customers was not originally the Prepackaging Regulation with its quality assurance requirements but the mean value control of filling machines that could be achieved with weighing systems. It was easy to calculate the short payback periods for the investment necessary for this from the product savings achieved. Savings could also be made as a result of restrictions in the quality assurance of food. These savings and much more, however, would already be lost in the first scandal about quality. And this would apply not only to food.

Thanks to the faster and more accurate Weigh Cells from Kaiserslautern, Wipotec soon advanced to become a global technology leader in dynamic weighing technology. Incidentally, Wipotec Weighing Technology, the other successful subsidiary of the Wipotec Group in Kaiserslautern, was responsible for this. It is considered the nucleus of ultra-fast, precision Weigh Cells and high-tech weighing systems based on the principle of electro-magnetic force restoration (EMFR). Even back then, the Wipotec Group was known for not allowing itself to be thrown off track even by complicated requirements and, relying on its own superior technology, frequently implemented solutions to challenges that others had previously failed to meet.

There's no such thing as impossible

Only a few years later, the maxim attributed to Theo Düppre, Wipotec founder and current CEO, of not shying away from even the most technically demanding solutions had expanded to include product handling and X-ray. According to Peter Radke, "Anyone can weigh but how do I get the product onto the weighing belt quickly and safely?" is an abbreviated but perfectly acceptable formulation of the problems that many customers still face today. Where other manufacturers need room-sized machines, Wipotec integrates its twin-beam X-ray systems directly into customers' yoghurt filling machines. These inspection systems can even detect glass-in-glass contamination, one of the supreme disciplines of X-ray inspection.

In the meantime, Wipotec supplied complete Weigh Cells with integrated control system, including control cabinets and operating consoles, from Kaiserslautern to Schwäbisch Hall. This is where final assembly took place until Kaiserslautern became the permanent production facility. Schwäbisch Hall became the sales and service location and from here further branches were established in the USA, England, France and the Netherlands.

Founding member of Packaging Valley e.V.

Schwäbisch Hall, however, is not only home to Wipotec-OCS; it is also the headquarters of Packaging Valley Germany e.V., an association for manufacturers of packaging machines and automation. In 2007, Wipotec-OCS was one of the 15 founding members. Packaging Valley is a unique cluster of manufacturers of packaging systems and packaging machines, now well-known worldwide. As well as suppliers of software and automation solutions, it also includes manufacturers of components and suppliers of services relating to the packaging industry. Following last year's merger with the Stuttgart Packaging Excellence Center, which brings together other major manufacturers of packaging machines, universities and public institutions, the association now has more than 90 members. In September, 14 of them, including Wipotec-OCS, showcased their solutions on the Packaging Valley joint trade stand at Fachpack in Nuremberg, the European trade fair for packaging, technology and processes.

The sales department sells the first machine, the service department sells the rest.

> Peter Radke former Sales Director Wipotec-OCS

Service is crucial

What's the situation with Wipotec's sales and service partners? Peter Radke has a clear opinion on this. "We have no use for partners who only want to sell. Send us your technicians to train up, then you can also sell our products," is his motto and at the same time an invitation to future partners. His team are still maintaining customer machines that are over 20 years old. He owes this to his mechanical engineering honour, as he says; quite a few customers whose machines were dropped from maintenance for age reasons switched as a result from the competition to Wipotec. The team in Schwäbisch Hall looks after more than 6,000 Wipotec systems in the field. There are now over 80 employees, half of them in the service section. They are responsible for calibrating, inspecting and maintaining customer systems.

Machines with a long lifetime

One major advantage, already a unique selling point in itself, is the fact that not only does Wipotec not buy in almost all its spare parts, it also produces its own systems itself in Kaiserslautern, with the proportion of in-house production standing at over 85%. This exceptionally high proportion of in-house production represents the construction of highly complex machines with many variants and components that can now be swapped back and forth between standard and engineering machines. In the case of spare parts, this means deliberate downward compatibility, ideal for continuing the care and servicing of machines with a long lifetime. This is something that the systems from Kaiserslautern are now famous for worldwide.

"The sales department sells the first machine, the service department sells the rest," is an insight shared by Peter Radke and one which he is happy to pass on to his successor Georg Drakos. He's probably not telling him anything new either because Georg Drakos also has more than 20 years' experience in sales. And having assumed responsibility for sales in Schwäbisch Hall in the middle of last year, Georg Drakos is keen to achieve a high level of customer satisfaction by providing good and successful service. For Peter Radke, retirement started from October 2021; he planned to start it off with a two-month campervan tour to the south. He knows that his team at Wipotec-OCS is in good hands. ▲

/There is one Thing about True Flexibility: **It Knows no Limits**

Many advantages are good. Even more advantages are better. Provided that the customer actually recognises them as such.

eigh Cells and their product characteristics are undoubtedly relevant for every machine and plant constructor. The big picture, however, is much more important! This is where you see that all features revolve around the Weigh Cell or the cells that are modularly combined to create a multi-lane system. This is where you see that, here too, the whole is more than the sum of its parts. This is where it becomes limitless. This is where true flexibility begins.

All technical developments focus on Weigh Cells and modular multi-lane systems (MMS). The second generation of them is already available; the MMS2 is a further development of the established MMS. Implemented in protection class IP65, as far as the installation location is concerned, you are freer than ever before. The tried and tested modular system at lane level ensures space-saving, lane-number-accurate combination of units. Individual lane modules can be arranged side by side and with precise measuring point accuracy. It requires just a few simple steps to subsequently mount the electronic modules for Weigh Cells and AVC sensor on top of them. The base module ensures the supply of operating voltage and enables connection to field bus and analysis interfaces. The MMS form the centre of the Weigh Cell universe.

MMS Modular multi-lane systems

All features and properties revolve around it:

- Field bus
- Active Vibration Compensation (AVC)
- Wash Down
- Installation options
- Self Check
- Sampling rate

The most important topic today and until harmonisation is interface diversity. The Weigh Cells permit communication with a large number of field buses. CANopen, EtherNet/IP, EtherCAT, Profinet IO, Powerlink are all possible. The diversity of systems ensures maximum freedom for machine constructors and end customers alike when it comes to integration in existing systems, but at the same time it also provides scope for pioneering concepts.

Proprietary Active Vibration Compensation (AVC) is also indisputedly a technology for tomorrow. As a result, AVC is already part of the standard equipment of Wipotec Weigh Cells. The sensor-based measuring technology compensates all types of vibrations in production processes, thus ensuring the quality of the products to be weighed – across all industries.

Active Vibration Compensation filters out one-off impulse forces and/or any kind of disturbing forces, such as are reached in feed axes due to high accelerations. AVC sensors also filter out vibrations, such as those typically caused by drive units of machines or due to imbalance forces. The causes of vibrations are often application dependent. The variety of disturbing forces that can be filtered out thus illustrates the infinite range of applications for Weigh Cells with AVC sensor and their potential in Quality Assurance 4.0 in the pharmaceutical industry, food production, chemicals, logistics and many others.

Design what you want and how you want it.

Today, the wash down option, which is now available for both stainless steel and aluminium Weigh Cells, is also standard. Wash down means even more safety for the sensitive weighing technology and at the same time allows better performance in the cleaning processes of machines and systems. With the aid of a permanently integrated motor, the load output in the IP 44-protected Weigh Cell is closed automatically. The result: the Weigh Cell is now sealed up to protection class IP 65.

Today, the aluminium version is the one preferred for multi-lane systems in the pharmaceutical industry, since the aluminium cells, which lie side by side, are enclosed again by machine constructors in line with hygienic design aspects and therefore automatically have protection class IP65. By the way, IP65 is not the highest of all classes. For special applications, Wipotec also has protection class IP69 in its portfolio. Keyword



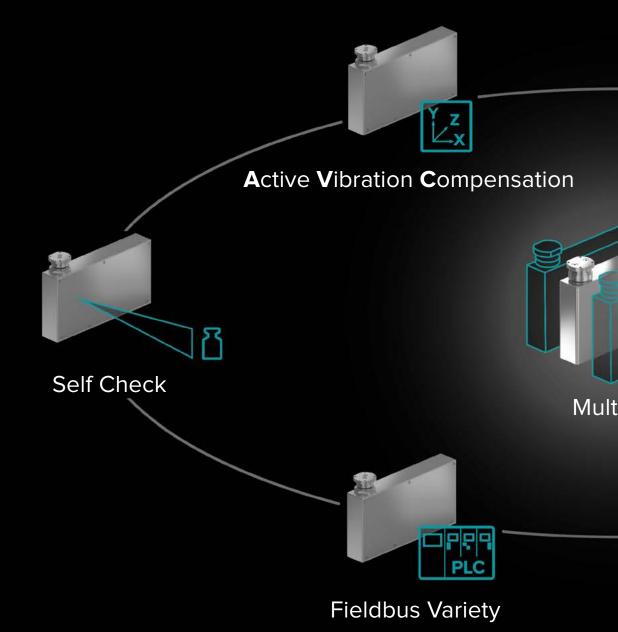
Weigh Cell production

special application: Anyone who chooses a Weigh Cell from Wipotec is also saying yes to unlimited freedom in respect of the installation options for Weigh Cells. A mounting flange is always the best solution for installation and bolting when complicated machine and system designs require slick solutions that are nevertheless space-saving and can be implemented efficiently. The connector outlet for bus and data lines can be designed optionally to the rear or to the bottom and becomes even more flexible by using a straight or angled connector.

Flexibility, however, is not required everywhere – accuracy must stay the way it is! Weigh Cells must always deliver it along with guaranteed long-term stability. This also applies to constantly excellent responsiveness and very good linearity with fast settling times. The Self Check proves whether reality lives up to what the data sheet promises. It assists with checking that the Weigh Cell is working properly. A weight is "applied" in the Weigh Cell via software. The aim is to obtain reliable information as to whether the Weigh Cell is still working and also moves within the firmly defined limits of accuracy and, for example, drift during weighing. Same product, new batch? Simply start the self check, check that the Weigh Cell is working properly and almost immediately carry on producing with high performance. How high this performance is also depends essentially on the Sampling rate. With 1,000 measured values per second, Wipotec is well above what other weighing cells in the market can achieve. This fact alone makes Weigh Cells from Wipotec the best option for companies that want to speed up their processes. The high sampling rate prevents artificial limits because it can already do much more today than the average processes require. Even with extremely high throughput rates, Weigh Cells from Wipotec determine the maximum possible number of individual weight values – 1,000 in a second! More measured values, more precise mean values: that is 100% inline process control with the best possible plant performance.

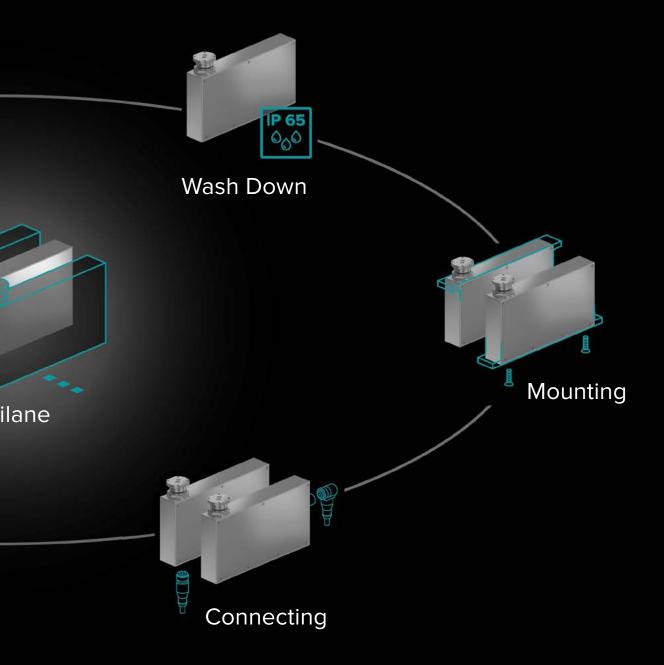
And this is where the circle closes. For now.

/ Flexibility Unlimited



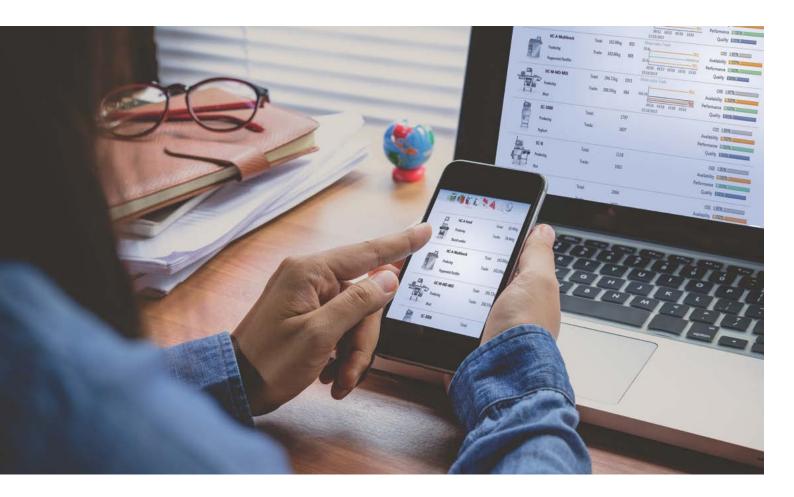
wipotec-wt.com





/**Comscale4** – Data Management for Inspection Systems

If you want to optimise production processes, you'll need in-depth insights into subprocesses and their results. Inspection machines integrated into production lines will provide the data required. Wipotec's Comscale4 management system collects and links this information in real time. As a result, it's easier to assess the efficiency and quality of production processes.



he use of inspection solutions, which include checkweighers and X-ray inspection systems, for example, means that 100% of all products are inspected during production or at the end of production at the latest. What used to be done manually in quality assurance in the form of random checks is now done by inspection systems. This means that the quality data of every individual product is available for analyses and, if necessary, optimisation purposes. Wipotec's Comscale4 ensures that this data is recorded at the point of origin and in real time across all sites and stored centrally.

Quality of products and production processes

One of the main tasks of inspection systems is to check the quality features of products. Inspection systems from Wipotec are capable of inspecting several packaging and product attributes with a single machine system and in a single pass. Multi-sensor technology means here that visual inspections are used in addition to X-ray technology and weighing systems. Depending on the inspection machine's complexity, once a product has passed through such an inspection system, it has undergone various checks, verifications or analyses. This data, which is summarised and processed in Comscale4 represents not only the final product quality; in its entirety, it provides an in-depth insight into the quality and efficiency of preceding production processes. The data relates not only to the product itself, but frequently to its condition and composition, its weight, shape and packaging.

Data within the production cycle

The customer determines which data is to be collected in Comscale4 and recorded beforehand by inspection systems. In addition to weight determination and the completeness check, this may include label checks, foreign body detection or seal-tightness inspections. Checkweighers, X-ray inspection and metal detection systems provide the data within the production cycle. The inspection data is recorded and displayed in real time.

Online monitoring for production lines

Thus online monitoring is possible for individual production lines. The data management system allows each individual inspection machine to be viewed across all sites. Checkweighers provide end-to-end documentation of prepackages and this can be retrieved in Comscale4 at any time. It is also possible to store the X-ray images of X-ray scanners.

Optimising production processes

Inspection systems are perfectly suited to optimise upstream production processes. In this case, Comscale4 can display lineor machine-related statistics in real time or merge and evaluate them on a product-related basis. The Comscale4 data management system additionally offers online monitoring with alarm level management for all production deviations which can be detected by checkweighers or X-ray inspection systems.

Configurable reports on production figures, waste, machine utilisation and other quality criteria assist in production optimisation. The user has access to all data available in Comscale4 from any browser-enabled terminal, including tablets and smartphones. It is possible to create and view a wide range of statistics and analyses. The management system can also be used to provide key figures on plant availability and machine efficiency of production lines by evaluating their operating lives. Random checks are history. Inspection systems today represent 100% individual product checking.

Using inspection systems properly – with Comscale4

Regardless of the number of inspection systems used, central data management such as Wipotec's Comscale4 always provides added value for the customer whenever checkweighers or X-ray inspection systems are used. With the inspection data obtained, it is often possible to find production parameters that allow optimum production without the need for time-consuming on-site checks on production lines. Comscale4 for inspection systems – designed by Wipotec for optimised and effective production. ▲

QR code for the video:



/ Cooperative Partnership in Packaging Technology

Wipotec supplies the weighing technology for Romaco's packaging lines. The customer supplier relationship is characterized by mutual appreciation – and has been for 20 years.

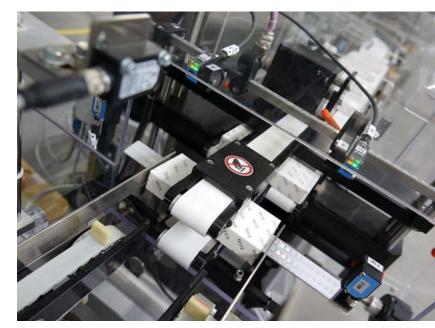


Cooperation with a small footprint: an HC-A checkweigher in the production line

ith perfect coordination, two independent technologies can become one system. In the past years, Romaco and Wipotec have been working towards exactly this goal. Thus, the solutions that Romaco offers to its customers today are "perfectly coordinated and meet all the requirements for quality assurance of the packaging process", says Rolf Izsak, Senior Product Manager at Romaco.

Cooperative Partnership

The Romaco Group started integrating checkweighers from Wipotec almost 20 years ago. As off 2013 the two companies have gradually moved even closer together. Michael Louis, Sales Manager Machine Integrators at Wipotec, played a decisive role in this process: "For us, communication based on partnership is just as important as an open exchange of technology. Mutual projects now go far beyond the integration of



Smooth interface: Transfer of the folding carton to the checkweigher

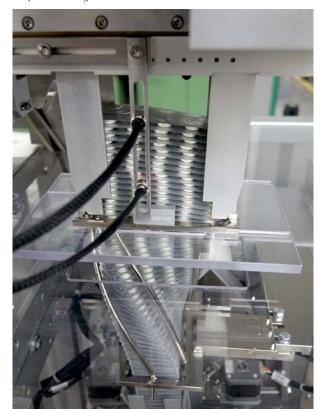
checkweighers: joint development in X-ray inspection, integration of Weigh Cells, as well as a successfully implemented cooperation expansion in the areas of serialisation and aggregation, just to name a few.

The basis for the cooperation is a standardised quotation and handling process that allows Romaco to select from 'cartoner-specific' checkweigher types. "Our product management can thus plan the inclusion of inspection solutions from Wipotec very quickly and easily and provide our customers with all the information about the machine as early as the quotation phase," explains Pia Britsch, Head of Product Management at Romaco. This optimised process and smooth operation are not least the reason why Romaco offers its customers Wipotec systems as a standard.

Customer centric cooperation

Romaco Group customers have high expectations. This is particularly true when it comes to achieving maximum performance with minimum space requirements – without having to sacrifice quality. The line manufacturer meets this demand, among other things, through the strategic selection of suppliers with space-saving high-performance machines. As senior Product Manager Rolf Izsak explains, "HC-A checkweighers from Wipotec fulfil all criteria so that the length of the production line can be kept as short as possible and throughput does not have to be sacrificed".

Rapid changeovers: quick and easy format changes



For us, communication based on partnership is just as important as an open exchange of technology.

> Michael Louis Sales Manager Machine Integrators at Wipotec

Pia Britsch, Head of Product Management at Romaco and Michael Louis, Sales Manager Machine Integrators at Wipotec



Our Customer Romaco Group

Romaco is a leading global supplier of process and packaging technology, specialised in handling solid pharmaceutical products.

Pharma manufacturers worldwide use their systems and turnkey solutions to produce and package powders, granulates, pellets, tablets, capsules, syringes, and medical devices. Romaco additionally serves the food and chemical industries.

More information: (e) www.romaco.com In pharmaceutical projects for packaging and production lines, the partnership offers further advantages for customers: Wipotec inspection and serialisation solutions can be handled economically and integrated very precisely into the respective projects in accordance with customer specifications. The standardisation of the supplied machines reduces the project planning effort to a minimum and enables the optimum use of all functionalities of the individual machine.

Inline-quality assurance

Mutually defined mechanical and electrical interfaces simplify line commissioning. During operation, Wipotec inspection solutions check each individual folding carton and thus ensure a consistently high quality of the packed products for the customer.

Quick format change

Romaco Group customers put high value on rapid format changes. Thanks to the coordinated systems of the packaging line, the format-dependent parameters can be set in the shortest possible time. The same applies to the interchangeable product feed systems of the blister machines from Romaco Noack. As a result, the shortest possible format changeover times are achieved for the complete line – blister machine, cartoner, checkweigher and case packer.

Service from a single source

Owing to the close cooperation between the Romaco Group and Wipotec, customers have only one central point of contact for service requests. The partners handle all conversions, maintenance work, repairs, and the stock keeping of spare parts in a straightforward manner – and the customer can fully concentrate on his production.

/TQS sets **a High Bar**

Boehringer Ingelheim relies on serialization and aggregation lines from Wipotec.



s one of the world's 20 leading pharmaceutical companies, the Boehringer Ingelheim group operates globally with 175 affiliates and employs more than 51,000 professionals. Since it exports pharmaceuticals to different markets worldwide, implementing all necessary anti-counterfeiting measures and complying with serialisation and anti-tampering requirements of different countries is an absolut prerequisite on the company's agenda. As part of its large-scale compliance project, the pharmaceutical company equipped production lines with state-of-the-art serialisation and aggregation technology from

Wipotec. Boehringer Ingelheim's investment has led to a successful implementation and assuring the reliable anti-counterfeit protection combined with serialisation of pharmaceutical products and thereby meeting the ultimate goal of enhancing patient health and safety.

Compliance by Precision

The introduction of the Falsified Medicines Directive in the EU and the Drug Supply Chain Security Act in the US was a transformational trigger to the whole pharmaceutical industry. It changed how companies package, distribute and export >>



Boehringer Ingelheim headquarters in Ingelheim, Germany

their products. Boehringer Ingelheim — an international biopharmaceutical company operating in Human Pharma, Animal Health and Biopharmaceutical Contract Manufacturing approached serialisation and traceability very strategically right from the beginning, by carefully designing and implementing new processes supported by reliable technological solutions.

Our Customer **Boehringer Ingelheim**

Improving the health and quality of life of humans and animals is the goal of the research-driven biopharmaceutical company Boehringer Ingelheim. The focus in doing so is on diseases for which no satisfactory treatment option exists to date.

Founded: 1885

Location: Ingelheim, Germany (Headquaters)

Products: human pharmaceuticals, animal health and biopharmaceuticals

More information:

www.boehringer-ingelheim.de
www.boehringer-ingelheim.com

Fundamental requirements and strategic approach to a solution choice

For Boehringer Ingelheim, it was essential to find solutions that would not only fulfil the compliance requirements but could also be integrated into the existing manufacturing process without becoming a production bottleneck. As the first step, Boehringer Ingelheim's project team created a vendor evaluation matrix that included the most significant criteria for selecting a feasible technological solution, such as usability, system architecture, documentation, licensing model, product development, innovation and product quality. The team was looking for solid systems that could reliably serialize and aggregate a wide range of packaging formats from folded boxes to bottles in manual and fully automated applications, with throughput rates ranging from 10 pcs/min up to 300+ pcs/min. By fulfilling high requirements on product quality, system architecture and usability, the Traceable Quality System (TQS) from Wipotec was eventually selected on the short list. However, the vendor evaluation did not stop there.

The opinion of operators was another important factor in the decision making process. After all they were the ones who would have to work with the machines on a daily basis. Prior to arriving at a final decision operators had to be sure that they could work with a new system quickly. At a time when personal visits were standard, the team of operators accepted Wipotec's invitation to test the TQS at Wipotec's Track & Trace showroom in Kaiserslautern – a good decision as it turned out later. Once the staff saw and experienced the solutions at work, they were much more confident that they could quickly learn how to intuitively operate the TQS machines. The fact that the TQS machines function as one holistic system that can be managed via one central user interface was a great advantage from the operators' perspective. Eventually, their opinion has literally tipped the scales in the decision-making process. With the technology, the showroom and the possibility to try out the system, Wipotec has met the mark.

The fact that the TQS software passed the IQ and OQ check flawlessly from the first time impressed the whole team.

> Martin Flanz Head of PSS & Labelling Boehringer Ingelheim

Key features and benefits of the Traceable Quality System

Specific features that particularly relive the operator's workload include a very simple layout manager called ConfigureFast. ConfigureFast enables line operators to quickly create all necessary code layouts by simply dragging and dropping them directly on the machine monitor. Hence the TQS printers and cameras are simultaneously provided with the print layouts and related content. This simple operation saves the usual and sometimes complicated configuration of the various individual units, even in applications integrated in 3rd party systems (e.g. labellers or case packers). ConfigureFast not only facilitate operator training but also improves the production process by accelerating product changeovers, since the system is ready to print a new batch in a matter of minutes. What's more, this approach significantly reduces the amount of manual work that the operator has to perform and consequently minimises the chances of human error and the resulting prolonged line downtimes.

Another important factor that facilitated the choice of the TQS was its high product quality derived from exceptionally deep vertical integration: Since Wipotec designs and manufactures its technological solutions under one roof, at its headguarters in Kaiserslautern, all machine modules and components are finely tuned to each other and work seamlessly together. The modular system architecture makes the TQS solutions flexible and application-centric. The machines can be equipped with diverse modules based on the customer specifications. One such module is the fully integrated checkweighing functionality, which is an integral part of the TQS-HC-A - one of the machines in Boehringer Ingelheim's packaging lines. Beside of performing the final "completeness check" to ensure that not even a leaflet is missing from any of the boxes, it also provides a "fingerprint" combining the precise weighing result and the serial number. All this is performed on the markets most compact footprint - a significant advantage in any facility with tight production space. The robust system architecture together with smooth product transport contribute to the system's efficiency and reliable code printing with remarkably low rejection rates. In the production process, it means less waste and fewer reworks.

Since Boehringer Ingelheim attaches great value to technological advancement, the company has its own center of competence for Track & Trace line construction in Ingelheim. With their profound technological expertise the company's project team was able to design and implement a highly complex automated aggregation process that required seamless communication between five different systems at various levels. >>



TQS-HC-A with an integrated checkweigher for fully automated serialisation and completeness check on the smallest footprint



TQS-CP-OEM fully integrated into the case packer

To tackle this complexity, the team developed an automation concept that was intended to serve as a blueprint for all aggregation lines and was particularly useful during factory acceptance tests. The goal of this concept was to establish standardized processes that are transparent and feasible for all parties involved. Thanks to its extensive experience with Track & Trace projects, Wipotec could effectively support and advise Boehringer Ingelheim in development of the automation concept by providing their input to streamline certain processes. With this jointly developed concept, the companies have created a good basis for further cooperation.

The implementation phase

The installation of the TQS solutions made it possible to achieve significant improvements in the serialization process: Less time for setup and a more stable packaging process. The serialisation solutions deployed in Boehringer Ingelheim's lines include standardized machines such as the TQS-HC-A for marking of folding boxes as well as a solution for highly customised bottle application: the TQS-LI-Bottle. Bundling is performed by the TQS-BP, a bundle-pack aggregation solution. TQS-CP-OEM kits are integrated into a case packer. The company has also stressed the overall service quality. The service technicians are always responsive and especially the unique approach regarding software updates is very much appreciated. This means that no annual licence fees for software maintenance is requested and potential updates are always available as "up to date" regarding the global country requirements. During the implementation phase, Boehringer Ingelheim was particularly pleased with such trouble free experiences. Hence it was impressive for Boehringer Ingelheim that the first system passed the IQ and OQ check without any issues. Everyone still remembers that it worked from the first time – "a noteworthy accomplishment," says Martin Flanz, Head of PSS & Labelling at Boehringer Ingelheim. ▲





OEM-Kits for maximum flexibility

/**The IPK*** is in a Tight Spot

* International Prototype of the Kilogram

Measuring and weighing goods creates the economic basis of almost all branches of industry.



ntil recently, all goods weighed – from tablet blister packs to bulk goods – brought an additional 50 μ g per kilo more to the scales than the scales showed on the display. The reason for this discrepancy, which in practice is hardly dramatic, was that the International Prototype of the Kilogram (IPK) has lost weight over the past 100 years. So, if the scales showed one kilo, in fact the object weighed slightly more because the IPK always weighs exactly one kilo. This does not mean that the

wrong weight has been weighed everywhere in recent years. It merely means that everything is based on the IPK, the only reference standard valid worldwide.

Experts at the General Conference on Weights and Measures were therefore looking for a new way of defining the kilogram and for a long-term solution to the dilemma of fluctuating weight. Finally, following countless conferences and symposia, a decision was reached¹: A ruling in favour of the Planck constant.

A constant must-have by nature: quality

The actual "weight" of a delta of 50 μ g in practice can be illustrated using the pharmaceutical production process as an example: Tablets, capsules or coated tablets are the most common solid dosage forms for drugs which are produced and weighed worldwide in large quantities every day. Depending on the dosage form, their weight varies between on average 0.1 g and 1.3 g per tablet or capsule. If these product weights are calculated with the 50 ug weight loss of the IPK, the result is a weight increase of 0.00000005 g per tablet – a difference that industrial scales no longer indicate. It is already clear at this point that the current discourse about the possible effects of the underweight IPK and introduction of the Planck constant is one conducted on a purely scientific level.

Companies such as Wipotec, for example, must nevertheless deal with the changes to be aware of the influence the Planck constant will have on standards and regulations which are binding for quality assurance within companies. Another aspect is that anyone carrying out research and development must do so with knowledge of the latest engineering and metrological framework conditions.

The Planck constant: Newcomer in the "weight class"

The Planck constant has the value of $6.62607015 \times 10^{-34}$ Js. What is important here is that the joule-second is also expressed as $(kg \times m^2)/s$ (in words: kilogram times square metre per second) which thus only permits reference to the unit of mass. The Physikalisch Technische Bundesanstalt, Germany's national metrology institute, also states that "with the introduction of the redefinition, the standard uncertainty (k = 1) of the mass of the International Prototype Kilogram, which is calibrated according to the Planck constant, is 0.010 mg (relatively 1 × 10⁻⁸)."

The Planck constant now renders scientists and users independent of the place where the generated weight force of an object is determined with scales. Up to now, weights for the adjustment, calibration and testing of scales all over the world had to be aligned to the IPK initially referred to. This process can now be carried out purely mathematically.

Anyone not regularly dealing with the subject of industrial weighing processes, commercial and precision scales or weighing cells, as the metrology engineers at Wipotec do, for example, not only runs the risk of not understanding the influence of the Planck constant on important processes, such as adjustment, calibration or verification, but also of mixing these important terms up with one another.

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A calibration certificate for Wipotec from the German Calibration Service

Standard (test equipment)	User	Tasks	Requirement for calibration/ measurement	Documentation of calibration/ measurement
1	Metrological state institute	Providing and passing on the national standards	Legal mandate to repre- sent the SI units and to safeguard international comparability	Calibration certificate for reference standard
2	Accredited calibration laboratories	Safeguarding the metrological infrastructure of a country	Calibration certificate of the state institute or other accredited laboratory	Calibration certificate for working standard or factory standard
3	In-house calibration laboratories	Monitoring of test equipment for in-house purposes	Calibration certificate of the state institute or an accredited laboratory	Factory calibration certificate calibration certificate or similar for test equipment
4	All company divisions	Measurements and tests in the course of quality assurance measures	Factory calibration certificate, calibration certificate or similar	Certification mark or similar

1 National standard; 2 Reference standard; 3 Working standard, factory standard; 4 Test equipment

Adjustment: Routine is compulsory

Adjustment, calibration and verification are different processes of quality assurance which also come under different responsibilities.

We talk about adjustment when making the most exact adjustment possible of the measurand of a measuring instrument to the environmental conditions. An adjustment is always absolutely necessary if there is a change in environmental parameters, such as location, temperature, or humidity, which is the case, for example, after a change in location but also when moving the scales after cleaning. The aim of adjustment by employees at Wipotec and other manufacturers of weighing technologies is to show and eliminate the deviation between a displayed value and the true measured value, which in turn can only be determined by calibration.

For adjustment, Wipotec, for example, uses test weights of defined mass whose permissible weight tolerances are stipulated in OIML guideline R111-2004 for weights. The quality assurance experts select the test weights depending on the accuracy class of the scales or the scale intervals on the Weigh Cell's display.

Key word test weights: The Wipotec company works, among other things, with test weights made by Haigis and Kern which are in turn accredited by the German Accreditation Body (DAkkS) as a laboratory for weights of the German Calibration Service (DKD). When selecting the appropriate test weights, the correct error limit class, i.e., the accuracy class, is crucial. This is based on the resolution of the scales which is calculated from the maximum weighing range divided by the readout. For test weights with nominal values lower than the maximum load, e.g., for testing the accuracy (= linearity) of scales, we remain in the same error limit class as that for resolution. As a result, after selecting an appropriate error limit class, it is suitable for all test weights.

Calibration: with proof please

If, on the other hand, we talk about calibration, we determine how large the deviation between the displayed weight value and the actual weight value really is. After measuring, the deviation from the correct value is documented. Subsequently, an adjustment may be required so that the measured values are within the tolerance range.

One relevant variable or a mandatory procedure as part of calibration is the so-called traceability of the measured values. This process is defined as a characteristic of a weighing result which is referred to suitable national or international standards by means of an uninterrupted chain of comparative measurements with specified measuring uncertainties. It can thus be traced back to a generally valid basic physical quantity: formerly the IPK; now the Planck constant.

Waiting for the Planck scale: patience needed

In terms of calibration, the shift from the IPK to the Planck constant will only have an impact on the development of new precision scales in the very long term. The Physikalisch Technische Anstalt Braunschweig (PTB), for example, is conducting research on so-called Planck scales² that have a continuous weighing range but which, according to the PTB, will initially "only" cover a weighing range of 1 mg to 100 g. It will be the distant future before its successors could be used in the industry. Known as primary standards, these "new" weighing technologies could then eliminate the need for calibration with standard weights. This is a development that could be relevant for some manufacturers of precision weighing technologies in the long term.

In addition to calibration and adjustment, scales can also be verified. Verification is a process that prescribes a metrological check by law. Verification is a (regular) check: a kind of maintenance of the measuring equipment used. Every country has the ultimate authority to decide which measuring instruments and which applications are subject to compulsory verification on its territory. In addition, every country is free to determine whether the verification test is carried out as a sovereign activity by verification agencies or as an activity under private law by appropriately certified companies. If commercial and precision scales are used in a country with corresponding regulations/ standards, the scales are adjusted prior to verification. They are then sealed, locking certain functionalities for the user as required by the Measurement and Verification Act.

Good prospects for the industry

Regarding to the initial question, namely the determination of a mass and reference to the IPK, future use of the Planck constant will make life much easier for laboratories and testing institutes,

since in future it might be possible to eliminate the need for weights to be transferred there for the purpose of the reference check. For plant and machinery manufacturers and their end customers, the Planck constant is not important in day-today operation as they already have their measuring equipment calibrated by external institutes.

Even with the introduction of the Planck constant, the accuracy of commercial or precision scales is still based on the quality of the components used and on the reliability of external service providers and their quality standards. For producers of pharmaceuticals or manufacturers of other very lightweight products, it does not matter when they purchased or commissioned weighing technology from Wipotec, for example. As a matter of principle these systems are conformity-assessed and have documented evidence (calibration certificate) of the complete and continuous traceability of the weights used.

For engineering – i.e., metrological – research on the other hand, the shift to the Planck constant ought, in one way or another, to provide incentives for innovations and technical developments in measurement and calibration: Until now, the IPK has determined a single point on the mass scale, resulting in measuring uncertainties above and below this point. It is possible with the new fundamental constant to determine any number of exact points on the scale.



F1 test weights

/ Quality Assurance of Milk Powder

Challenges in milk powder production.



nsuring consistent product quality is important to Tchin Lait; on the one hand, to protect consumers
and, on the other hand, to protect the brand image of Candia and the Tchin Lait Group.

Milk and dairy products are subject to strict and rigorous quality criteria, particularly when the product is packaged directly in its native form (for example powder for instant preparations). Unlike ultra high temperature or pasteurised milk, powders pass through a more complex path in the process. It is much safer due to filtration batteries and other trapping measures during the various processing stages and, due to the heat treatments which are carried out during processing operations, carries an even lower risk.

In this regard, it is only possible to prevent the risks of contamination due to foreign bodies or similar from occurring by using appropriate means to detect, examine and remove these contaminants which are foreign to the finished product. >>

Easier to handle than milk: milk powder

Due to its short shelf life and high transport and storage costs, milk is not easy to handle, even after processing into secondary products. Milk powder is therefore a welcome alternative when it comes to making milk non-perishable and storable. This is done for export and stockpiling purposes, for demand in countries with high temperatures or for the industrial production of milk from milk powder. It is only necessary to add water to the powder to turn it back into milk or even instant baby formula.

In hot countries, particularly in southern regions, consumers are therefore turning increasingly to milk powder to make reconstituted milk (milk obtained by adding water to skimmed milk or whole milk powder) or instant baby formula. Among dairy products, this is one of the most sensitive products with the highest quality requirements; recall campaigns in this sector are considered to be extremely detrimental to the image because the end users are particularly in need of protection. For risk-free and safe use among customers, producers are increasingly relying on advanced quality assurance of the milk powder.

Foreign body detection with End-of-Line X-ray scanners

Tchin Lait is one of the leading suppliers of UHT milk (ultra high temperature milk) and milk powder products in Algeria. The company chose the SC-E 3000 X-ray scanner from Wipotec-OCS for the quality assurance of milk powder products. The SC-E systems are X-ray scanners and unmistakable all-rounders in foreign body detection. The machines have a diode line detector with 0.4 mm resolution.

Metal detectors are not enough

In the production lines at Tchin Lait, milk powder is bagged in metallised pouches of varying pack sizes. Even though foreign bodies can be removed via screens and magnetic separators in the upstream production of milk powder, it was absolutely essential for Tchin Lait that the milk powder bagged in its sales packaging should then be examined for foreign bodies one more time before being shipped.

According to Abdeltif Arbouche, project manager at Tchin Lait, the supplier of the plant had not provided for any X-ray inspection of the packaged milk powder when designing the line. Originally, one production line had been equipped with a metal detector for this purpose, but its performance turned out to be inadequate as the milk powder is packaged in metallised pouches. The metal detector was only able to detect very large metal foreign bodies in these pouches.



From left: Joachim Ott, Ahmed Amamra (Wipotec-OCS) and Mohand Bouauchi (UPI Sarl)

Our customer **Candia**

Mr Fawzi Berkati set up the Tchin Lait company on the former site of the Tchin-Tchin soft drinks factory in Bir Slam in 1999. In 2015 a second production facility was opened in Baraki (Algiers).

In November 2017, the two companies, Tchin Lait and Générale Laitière Jugurta, merged to form a joint stock company, SPA Tchin-Lait.

The corporate group produces and sells longlife UHT milk and dairy products such as milk powder and instant baby formula as well as juices and fruit cocktails.

Location: Béjaïa, Algeria

Products: Milk powder, instant baby formula

More information: www.tchinlait.com



Quality assurance of milk powder with X-ray inspection

X-ray scanners detect more

At Tchin Lait, however, they were thinking even further ahead. The main causes of contamination in the milk powder are upstream production processes. Tchin Lait considered the possibility to find glass, stainless steel or aluminium in the milk powder. If this were the case, it would be far too much to expect metal detectors to work. They cannot detect either glass or ceramics, nor can they find stainless steel of the required size in metallised pouches. The scanners of the SC-E series from Wipotec-OCS enable very low false rejection rates coupled with excellent detection accuracy.

The central 15" colour TFT touchscreen, which is also used to control the systems, always displays the current X-ray images of the milk powder pouches being inspected during operation. Tchin Lait employees can use the ejection history to take a closer look at the X-ray images of any rejected milk powder pouches.

Metal detectors fail in metallised packages

Metal detectors were therefore unsuitable for ensuring the quality requirements for foreign body detection at Tchin Lait. The X-ray scanners from Wipotec-OCS, however, proved their worth. Despite metallised packages, the detection performance of the SC-E 3000 X-ray scanners remains at the high level Tchin Lait stipulates for its lines. In the run-up to installation, customer-specific tests conducted at Wipotec in Kaiserslautern proved that the SC-E could reliably detect specified foreign bodies in metallised pouches in a test environment. Then, after integration in Béjaïa, it was shown that the detection performance was also reliably achieved during operation at line speeds of 60 packages per minute.

Milk powder is one of the most sensitive products with the highest quality requirements.

The quality promise: Made in Germany

Tchin Lait advertises on the quality of its brand products; it cannot afford and will not permit product recalls. There is a big reputation at stake with the Candia brand, France's leading drinking milk. The top priority, therefore, was to meet the company's quality requirements for 100% product monitoring by passing every single pouch of milk powder through the X-ray scanners and thus subjecting all products to foreign body detection.

Speaking of reputation: The reputation that preceded the machines from Kaiserslautern and the quality promise of German products, i.e. "Made in Germany", tipped the scales. This confidence and the skill of Wipotec's Algerian partner SARL Unitedpi (UPI) convinced Tchin Lait at the DJAZAGRO, a trade show for the agricultural sector and the food industry in Algiers. as a service provider and service partner in the food processing and packaging sectors. The company has built strong alliances and represents its partners through West Africa.

It only took the company two days to integrate the first machine at Tchin Lait. Tchin Lait has already purchased a second X-ray scanner which will be installed in another line in the near future.

/**X-ray Inspection** and the Healthcare Industry

Use of X-ray inspection systems in medical technology, pharmaceutical companies and other manufacturers in the healthcare industry.



Contaminated or damaged products can lead to serious consequences.

-ray-based quality assurance is common practice in the food industry. The obvious question is: Are there also similar requirements for quality assurance and inspection technology in the healthcare industry? What are the advantages of X-ray inspection in this sector?

Producing safe products

One major reason for using X-ray inspection technology in food production is to detect foreign bodies, also referred to as contamination. It is not always supplier products that are responsible for contamination. Metal particles, plastics, shards of glass and ceramics can also get into the product during production itself. One possible cause here, for example, is employee malpractice if maintenance work or cleaning operations are carried out without process controls and reinspections.

Other causes are malfunctions in the processing machines and process technology. Here, there is increasing use of machine components made of modified thermoplastics, including gears, grippers and guide elements as well as precision parts and seals. The metal detectors in common use, for example, do not detect foreign bodies made of glass. As a result, contaminated products leave the production facility without the foreign bodies they contain being discovered – often with serious consequences for the manufacturer's image. Reputations built up over decades are permanently shattered in just a few short days, consequently shaking the consumers' confidence in products. This is why X-ray inspection makes sense; no other inspection technology is as precise and versatile.

Added value for the pharmaceutical industry

The pharmaceutical industry commonly packages tablets and capsules in blister packs. In single-layer blister packs, X-ray inspection can be used to find missing components (counting tablets, for example). It can also detect broken tablets. In addition to completeness checks, it can check the filling level of bottles to ensure that they have been filled with the correct quantity. This is also a way of preventing overfilling. The same applies to tablets that are packed in cylindrical tubes. The correct position of a cup and the potential presence of an extra dosing spoon can be checked, even if the product is already packaged in an outer box. In addition, inspections can be run to determine whether there are any product constituents in the sealed seam. Despite many advantages, there are reservations against using X-ray inspection technology in connection with pharmaceuticals. It should be borne in mind, however, that pharmaceuticals shipped by air are also exposed to a large amount of natural radiation during transport. What's more, cargo is often X-rayed while in transit, e.g. in port.

Quality assurance for medical devices

X-ray inspection technology is excellent for ensuring the quality of medical devices. It can detect missing components and check the correct number of products. Contact lens >>



X-ray image of syringes, left: missing needle, right: bent needle



Easy operation of the X-ray scanners

manufacturers, for example, can ensure that the package contains the right number of lenses. First aid kit manufacturers are able to check whether the kits contain bandage scissors, for example. Depending on the product, the presence of screws and springs is detected. In the case of assembled technical systems, such as respirators and spray cans, etc., it is possible to check whether valves, closures or other essential functional components are in the place and position where they belong (checking of the installation position). X-ray inspection equipment can also check the correct shape of components. In syringes, for example, it is possible to detect whether their needles are straight, bent or broken.

Use in the cosmetics industry

Cosmetics manufacturers also benefit from the advantages of cutting-edge X-ray inspection technology. In addition to searching for foreign bodies and checking filling levels, it is possible to check whether all parts are present in the packaging. This includes parts of the packaging itself as well as individual components of the product, such as the number of razor blades. X-ray inspection also provides assurance that the product is not damaged. For example, it is possible to check the integrity of mascara brushes and demonstrate that packaged face powder has not crumbled in its sales container. This ensures that only flawless products are delivered. ▲

Even more compact: Combination devices

Wipotec also supplies X-ray inspection technology as space-saving combination devices. These compact composite solutions also incorporate checkweighers, for example. These systems require considerably less floor space than individual systems and, as true combination systems, have only one central HMI to control the entire system. Not only do they examine packaged products for foreign bodies, they also perform 100% weighing of the individual products. The integrated checkweighers ensure that there is no underfilling or too much give-away due to overfilling. Contaminated, underweight or overweight products are ejected into separate containers. These systems are also available as multilane versions. Other combination devices from Wipotec have integrated image processing systems that can check labels on packaging or correct printing, e.g. of the best-before date.

/**E-Commerce** Parcel Sorting Automation Made Easy

Rhenus is one of Europe's leading providers of full-service logistics. At its location in Switzerland, Rhenus Logistics offers customized logistics solutions for transport, warehousing and transshipment. In order to optimize the processing of customer orders in contract logistics, Rhenus Logistics Switzerland uses the E-Commerce Sorter from Wipotec.

ith just under 15,000 items in stock, a small Swiss online mail order company is truly not one of the big players in the world of E-Commerce. However, in terms of delivery speed, they can keep up with the industry leaders: Customers who order by 3 p.m. on weekdays usually receive their parcel with the ordered cell phone and tablet accessories on the next business day. For the small start-up, this used to mean picking goods from the warehouse, putting them in the envelope, franking them and sending them off to the customer. The problem: With increasing order volumes, the error rate in franking also increased, so the manual process sometimes proved uneconomical. With an average of 6,000–10,000 items per day, incorrect sorting significantly reduced the revenue at the end of the month. Not to forget: Error messages were generated at the post office because of the incorrect franking and resolving them caused time delays. This was something the young E-commerce company wanted to avoid. It quickly became clear to the owners that as shipping volumes increased, error rates in the manual franking process would continue to rise. If the company wanted to continue to grow, it needed a smart solution – fast.





The E-commerce Sorter weighs and dimensions the parcels in order to determine the postage and classifies them into multiple categories

Our Customer Rhenus Logistics Switzerland

Switzerland is one of the countries with the highest share of foreign trade in the gross domestic product. Logistics is therefore one of the most important industries.

Rhenus is one of Europe's leading providers of full-service logistics. With 33,000 employees at 750 locations, Rhenus realizes comprehensive and innovative concepts.

More information:

The right decision at the right time: increasing turnover volumes

Without hesitation, the E-Commerce managers decided to outsource the entire process to Rhenus Logistics. A smart move at the right time – sales figures soon shot up by 20% and the Corona crisis did the rest. Now even the teams at Rhenus Logistics were starting to sweat. If they wanted to continue to meet customer requirements for fast delivery, they would have to switch from manual work to an automated sorting process. A decision without options, for which a high-performance machine manufacturer was required, who had both sorting and weighing expertise.

With Wipotec, a service provider was found that had repeatedly proven its competence in this sector, e.g. with the DWS system. The Business Process Development Manager at Rhenus Logistics also learned that Wipotec had successfully planned and installed sorting systems at the Swiss Post. Nevertheless, the project remained a challenge and a special case for Rhenus: Small consignments with very light products had to be weighed and measured. Flat rates, as known from parcel shipping, would not be applied to this special solution.

Teamwork: a guarantee for the best result

For this reason, the first budget offer was followed by an immediate meeting of the engineers from both companies. All participants were aware that the technical implementation of the specification would be anything but standard. The process had to run fully automatically, have high throughput speeds and, of course, work precisely. In several iteration loops within a very short period of time, the customer and the machine manufacturer came closer together and worked out a customer-specific tailor-made solution. The constant exchange between the engineers finally led to a solution with which Wipotec was able to successfully present itself in terms of technology, economy and time. This new system solution is now part of Wipotec's portfolio as E-Commerce Sorter and is particularly suitable to process those small, unstable shipments that are increasingly arriving from the Asia-Pacific region.

The infeed was designed using a special conveyor belt on which the items can be fed either manually or automatically. In order to separate the items quickly and without errors in preparation for sorting, Rhenus Logistics expected Wipotec to ensure the necessary distance for weighing. Once the weight and dimensions of the consignment had been determined, the mail items were categorized. In addition, the control of all processes via one single user interface was specified. In this way, Wipotec also met the customer's requirement to be able to individually adjust the sorting. In the end, the close dialogue made the technical implementation truly perfect.

Mechanical engineering at its best: weighing and measuring

The determination of the postage is based on a spectrum of weights and sizes, which is why the detection of the smallest differences were important for Rhenus Logistics.

Wipotec realizes this requirement via Active Vibration Compensation technology. AVC filters out interfering influences for the weight determination and ensures, that the weight of an envelope is 100% correct, even with ambient vibrations. By now, thousands of shipments are weighed and sorted correctly every day.

Precise measurement on a large and small scale: a profession that the engineers at Wipotec understand. It is not by chance that the DWS system – the big sister of the E-commerce Sorter – is frequently requested by transport and logistics customers to handle parcels and packages of all dimensions. As an option, Wipotec logistics systems can also be equipped with additional features such as barcode readers and labelers – flexibility and customer-specific solutions are a top priority at Wipotec.

In addition, the fastest certified letter scale in the world comes from Wipotec. Anyone who can check the weight of shipments 60,000 times per hour is virtually predestined as a solution provider for the logistics of a young, growing online mail order company. Something that Rhenus Logistics has also recognized and is happy to have Wipotec involved again for similar projects. ▲

The system is sorting into five categories and can be modularly adjusted for more sorting options



/ Triple the Progress: How Technology drives Logistics

Parcels nowadays appear in a wide variety of sizes and shapes. Gone are the days of easy-to-handle packages – the industry has to adapt to new habits of retailers and consumers. Modern sorting systems must therefore be highly flexible without sacrificing speed or durability. Accepting the challenge of these new requirements, Wipotec developed the HC-FL-T three-belt scale and thereby even improved the efficiency of logistics centers.



tandards increase continuously. From the shipping bags preferably used in the fashion industry to cardboard boxes with all kinds of impractical formats far from rectangular shapes. As e-commerce is of central importance to many companies, the volume of parcels to be processed is growing accordingly. Sorting systems are now facing the challenge of dividing this massive volume of extremely diverse parcels with their usual precision – and for this, the scale is the key to success. "For us, this is the absolute minimum against which we measure all our solutions" explains Jens Alder, head of logistics here at Wipotec. "The FL-T series is able to identify the exact length of each item and will automatically apply the right amount and combination of its three physical weighing belts. The possibilities thus offer six virtual scales of different sizes."

Aligned and yet ahead

Wipotec has long been regarded as an innovation leader in the field of dynamic weighing technology. "A close insight into the work routine of our clients is vital for this. Together, we always find a solution that meets the requirements while remaining cost-efficient." According to Alder, what's most important here is to get the perspective right. "Beyond our technical experience, we see ourselves first and foremost as consultants."

The objective in the area of logistics solutions therefore implies the further optimization of throughput rates. The spacing of the packages on the conveyor belts offers opportunities for this: The smaller the shipments, the larger the gaps must be with conventional weighing equipment. And the larger the gaps, the lower the total throughput. For this reason, Wipotec first added advanced double weighing units to its portfolio, until eventually the triple scale catchweigher set a new standard in the processing of this new mix of parcels.

"It was a long way from what was originally a simple idea to its implementation," Alder recalls. "But as a team, we are more than happy to take on such challenges. The fact that we don't back down even if a task seems difficult is what always made us stand out." In close cooperation with big customers, who are among the innovation drivers in the industry, the industry experts and engineers from Wipotec realized the first prototypes. "It quickly became obvious to us that the flexibility of a triple scale would bring numerous advantages in practice."

Wipotec provides the whole range of weighing technology. The concept of the triple scale is like a modular system and is applicable to our entire portfolio.

> Jens Alder Director Global Sales Mail & Logistics

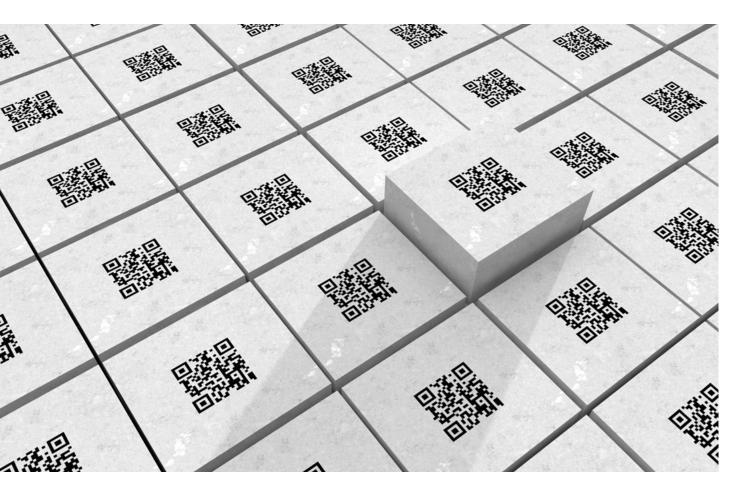
Facts and figures

The HC-FL-T models can weigh three products at the same time. Packages that are longer than the longest single conveyor are automatically weighed with multiple conveyors combined. Under the right conditions, the HC-FL-T can thus weigh up to 19,000 packages every hour at a transport speed of 3.4 m/s, with gaps as narrow as 250 mm. Since manufacturers are designing their sorting systems to be more and more universal and therefore require wider belts to optionally transport packages diagonally, the models are also manufactured with a width of up to 1,600 mm. "The leading global players rely on our technology, whether they are traditional postal services or progressive fulfillment service providers.

More and more leading e-commerce providers are building up new competences in addition to their core business and are handling logistics in-house. These companies have recognized that, with the right partner for technical realization, there is an enormous potential to reduce costs and at the same time increase efficiency and performance. Even new players in the market, who originally focused on other areas of logistics, have already been able to develop into system suppliers and enter completely new markets thanks to the comprehensive support by Wipotec. So for Alder it is vital that new impulses keep emerging: "For us, innovation is part of our daily business." **A**

/ Serialization Ahead: Track & Trace Paves the Path to the Future

The fact that different markets develop in the same direction allows a valid conclusion. Already today, serialization is an important topic for numerous sectors outside of the pharmaceutical industry. To protect the customers, demands on both packaging and product are growing. Companies around the world are increasingly recognizing the need for a transparent supply chain, which also offers significant benefits for the manufacturers thanks to Track & Trace. In accordance with the Wipotec pioneering mentality, our Traceable Quality System breaks new ground.



rack & Trace means a complete traceability along the supply chain. The basic requirement for this is serialization, which associates a unique marking with each product. Matching aggregation solutions then take over and combine these serial numbers in the process, ultimately providing comprehensive information on each product's course. "We aim for full consumer protection and safety across the supply chain," the Director of Global Sales Track & Trace at Wipotec Volker Ditscher emphasizes. "The insights gained along the way are extremely valuable for our clients and enable them to optimize their processes."

There is always a solution to be found.

> Volker Ditscher Director Global Sales Track & Trace

Progress around the world

Pharmaceutical companies have already been required to serialize their products for several years – following their country-specific regulations. The implementation of these rules assures authenticity, which greatly benefits the customer. At the same time, manufactures thereby protect their best-selling products from questionable counterfeits and thus protect their brand image.

More and more authorities are recognizing the opportunities offered by Track & Trace. While Australia and South Africa, for example, are currently inspired by the European model, Russian legislators are expanding their requirements to very different fields: food, cosmetics, luxury goods or dairy products and even bottled water, just to name a few. And it takes intensive advice from experienced specialists to meet the specifications properly.

Challenges require commitment

The insights that have resulted in the continuous development of the Traceable Quality System now are the key to technological advance. "Years and years of experience working with pharmaceutical companies have helped us tremendously in carrying over our success into other domains," Ditscher explains. "Food producers, especially, are continuously testing our capabilities with their wide variety of packaging. But our engineering team is ready for challenges like these. There is always a solution to be found." From achieving UDI-compliance for medical devices to tracing high-quality dairy products, Wipotec knows the way to go. "Identifying business trends and reacting to these changes early on," that's how Wipotec is approaching upcoming issues. "And our efforts are paying off. The Traceable Quality System is receiving appreciation from all directions." This is because many manufacturers recognize what emerges on the horizon. Even without an immediate need for serialization (beyond the labelling of batch data or the verification of best-before dates), experience shows the benefits of implementing a holistic system that keeps the production at a competitive level.

Harmonization of variety

The perfect Track & Trace system performs all serialization and aggregation tasks. In addition, a solution must meet all the special requirements of a customer, whether it handles the individual product, shipping carton or the entire pallet. For this reason, on top of our efficient all-in-one systems, we also offer integration kits that cover individual functions such as coding, verification or labelling. The decisive factor is that we do not implement these components independently, but follow our holistic approach, according to which all modules are united and controlled in a central system. Alongside our checkweighers and X-ray scanners, these units fit smoothly into the existing environment thanks to an identical interface. Our customers appreciate the great value we place on user-friendliness. ▲

/ Delivery Time 3 Weeks: Checkweighers for Vaccines

Wipotec: Covid-19 vaccine OEMs and CMOs take priority



Checkweigher production

 ovid-19 vaccine is too scarce a commodity. It is therefore all the more important that manufacturers expand production capacities as quickly as possible to meet the huge global demand for vaccines.

Major order from China

In December 2020, Wipotec received an order from China for 32 checkweighers at very short notice. The customer expected delivery within six weeks. Wipotec delivered the first batch within three weeks, even before the year was out, and the remaining machines arrived in China by air freight shortly afterwards. Fred Köhler, Managing Director and CSO at Wipotec, says, "That was certainly a huge challenge for us. Under normal circumstances, we need six to nine weeks for project planning, design and production. In a joint effort by all sections, with extra shifts in production but most notably with the utmost commitment of all employees involved, we managed to meet the delivery deadlines."

Pharmaceutical industry takes priority

Wipotec products are used in production processes in the filling and packaging sector. Wipotec Weigh Cells deliver results much faster and with much greater accuracy than conventional weighing cells due to their special construction principle. As a result, machine constructors are increasingly using them for weight checking in high-speed vaccine filling plants. This is also one of the reasons why Wipotec is currently experiencing an exceptionally high level of incoming orders and, without extra shifts and working Saturdays, it would not be possible to meet many delivery deadlines. Enquiries from the pharmaceutical industry for checkweighers are currently being priority processed. They are frequently used for filling level checks of vaccine vials and completeness weighing of test kits and reagent kits used in laboratories. The projects come from all over the world and their main thrust is, "Deliver fast!"

Easy handling

To ensure the traceability of drugs and protect against product counterfeiting, which is particularly important in the case of vaccines, the legislative authorities require serialisation. Wipotec's TQS (Traceable Quality System) business unit supplies the solutions for this, ranging from the coding of folding boxes and aggregation of bundles to the use of shipping cases. Many well-known vaccine manufacturers also use TQS systems for label coding of vials and syringes. And we are also involved in projects worldwide for the contract filler/CMO (Contract Manufacturing Organisation) group. Fred Köhler says, "What our customers particularly appreciate is how easy our machines are to handle. If I can carry out a product change quickly and easily, I'll save time and therefore money." ▲

/LEGAL INFORMATION

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