




THE HOME
OF QUALITY

stein[®]
AUTOMATION

**GETTING TO THE HEART
OF TRANSFER**



How do I transport small batch sizes economically?

How can I make my production processes flexible?

How intelligent is my assembly line?

YOUR PATH IS OUR GOAL

Assembly-line transfer systems are our passion and strength. We want to accompany our customers' workpieces along the assembly line as intelligently, carefully and safely as possible.

The systems we have developed are modular, compact and completely reliable. Our logistics meet the requirements for Industry 4.0. Networked production plants are precisely controlled using intelligent RFID technology.

All STEIN systems have one thing in common: they guarantee our customers the best quality for their production. Our proven technology is available in a variety of forms to meet different demands.

Welcome to STEIN. Discover more about our company and our products!

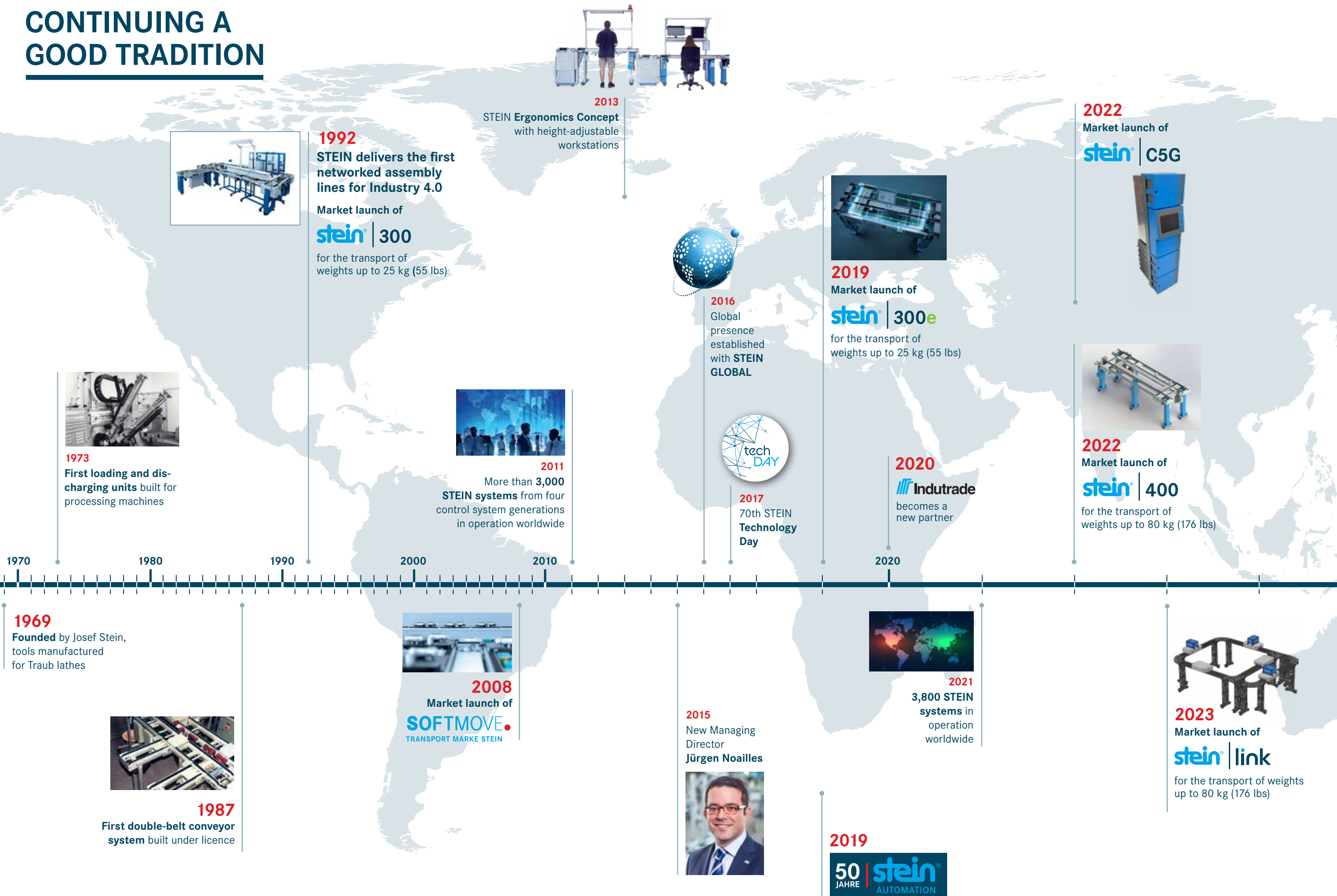
Jürgen Noailles



'STEIN AUTOMATION is an innovative corporation that goes the extra mile. You can sense the passion of the employees every day. Our philosophy of striving for success with standardisation of both the mechanics and the PLC is something that inspires me day in, day out.'

Jürgen Noailles, Managing Director

CONTINUING A GOOD TRADITION



MAKING SURE WORKPIECES ARRIVE WELL

We are passionate about systems that transport workpieces to where they need to be in the assembly line. Precise and safe technology, perfectly tailored to every process and workstation. We understand that a good flow of materials within a system is the lifeline of a successful process. However, in order to develop and improve such systems, continuous learning is required as well as a gathered experience. For us, the learning process is something we embark upon in cooperation with our customers as we discover more about their processes and products. As a result, we always know what our customers need, and we can use this knowledge to guide our approach to finding a solution.



NO TIME?
We gladly can take over the assembly for you.
Instead of individual components you can also
request an assembled system.

stein Your STEIN Transport System

5 Vertical Networking Network Connectivity, Statistic, Traceability, ERP/MES

4 stein | C5G Order-, Workflow- and Product Information Management, Diagnostic, Remote Maintenance, OPC UA, Modbus, Profinet...

3 AC Motor Technology **SOFTMOVE** TRANSPORT BRAND STEIN Motor Technology **SOFTMOVE provides collision free, energy efficient and quiet transport**

2 Components **Incl. Assembly** We gladly take over the assembly for you

1 stein | 300 stein | 300e stein | 400 stein | LEAN stein | link **STEIN Transport Systems**

STEIN PRODUCT OVERVIEW:

1 Choose your system

<input checked="" type="checkbox"/> STEIN 300 up to 25 kg (55 lb) 160 to 400 mm* freely scalable pneumatic	<input type="checkbox"/> STEIN 300e up to 25 kg (55 lb) 160 to 400 mm* freely scalable electric	<input type="checkbox"/> STEIN 400 up to 80 kg (176 lb) 240 to 1500 mm* freely scalable
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☐ **STEIN link**
up to 80 kg (176 lb)
230 to 550 mm*
to 50m/min.

☐ **STEIN LEAN**

2 Assembly ☐ Components ☒ incl. Assembly

3 Engine technology ☒ Softmove EC ☐ AC-Motor technology

4 Control ☒ STEIN CONTROL

5 Networking ☐ Vertical networking

Your STEIN transport system could look like this!

* Special dimensions on request

LOGISTICS FOR THE INDUSTRY OF TOMORROW

In logistics, STEIN has laid down the foundations for Industry 4.0, which has had a major role in shaping our portfolio since 1992.

We have been bringing our extensive logistics and data-processing experience to the market since 1992 with our logistics management services. Networked production plants are intelligently controlled using RFID technology.

In the age of Industry 4.0, production is gradually changing. Keywords such as batch size 1, variant diversity, networking and process-orientated production flows are important requirements, which a transfer system will have to satisfy in the future.

When it comes to transitioning processes, it is important to take a holistic approach right from the start. STEIN as already implemented many solutions and is working on more.

All systems from STEIN Automation can be equipped with the logistics control STEIN CONTROL 5G (300, 300e, 400 as well as STEIN link).

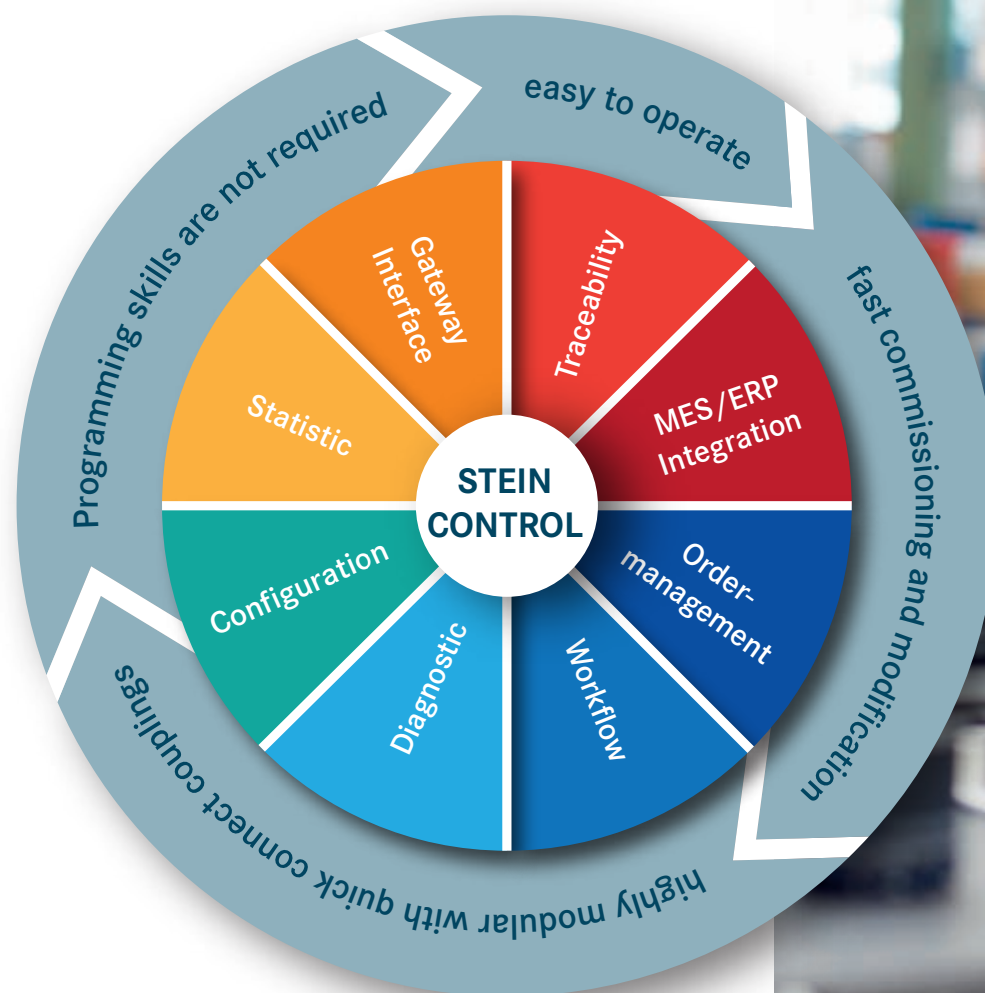
FLEXIBLE, EVEN WITH SHORT DELIVERY TIMES

Short delivery times are becoming increasingly important, and buying decisions are often delayed as long as possible for cash-flow reasons. We are in a very good position here thanks to our toolkit comprising both mechanics and software.

- Components are delivered within 4 to 6 weeks
- Working in tandem with STEIN LOGISTIC, we supply complete solutions in 10 to 12 weeks



Every moment counts in production – which is exactly why a good **control** system also needs to be ready for future needs.



EASY TO ADAPT, EVEN FOR SPECIFIC REQUIREMENTS

STEIN CONTROL achieves great things whilst remaining absolutely transparent and easy to use. As a result, after a brief introduction, anyone can assign schedules for different product variants.

- Orders and schedules are **easy to configure**, even for product variants
- Compliant with standards!



EFFICIENT, EVEN FOR SMALL BATCH SIZES

With our installations and systems, the flow of material can be controlled in such a way that the pallets intelligently find their own way. STEIN LOGISTIC guarantees that material flow and data management run as cost-effectively as possible in the production process, even with small production units.

- ERP connection
- Batch size 1 and mixed production
- Industry interface (OPC UA, Modbus...)



Intelligent pallets transmit the unique identity of each workpiece to the relative station.



An **easy-to-configure schedule** ensures safe transport.

STEIN CONTROL 5G

C5G is a control-Hardware completely developed by STEIN based on Codesys and structured text.

- Facts:
- 5 interface slots for standard industrial interfaces
 - High transfer rates of up to 1.400 bytes
 - Sophisticated visualization, order management, diagnostics, configuration



GENERATING SUSTAINABLE PROCESSES TOGETHER

Good planning results in success. Therefore, our staff works extremely close with customers in the initial stages to work out the vital details in a specific transfer process.

After all, every production process has its own character. For us, getting to the heart of this is key.

ACTIVE NETWORKING AND KNOWLEDGE EXCHANGE DURING THE STEIN TECHNOLOGY DAYS

Our success at STEIN is based on collaboration with our customers, suppliers and partners. We want our network to benefit from this too and that's why we organize STEIN Technology Days, where knowledge and experiences are shared in a pleasant atmosphere.

TURNING IDEAS INTO REALITY



PLANNING, CONCEPT AND CONSULTATION

STEIN'S many years of experience in assembly logistics and the production expertise of our customers result in a sophisticated assembly concept. Modular planning allows us to provide planning security in a very short time period based on a detailed proposal which includes a guaranteed delivery time.



DEVELOPMENT, CONFIGURATION AND IMPLEMENTATION

Standardized custom layouts are created for each specific transfer system. Thanks to the adaptable modules, the designs are immediately at hand and can be implemented quickly and efficiently. In parallel to this mechanical layout the interfaces are generated and the system configured.



SERVICE AND SUPPORT FOR ALL CONTROL SYSTEM GENERATIONS

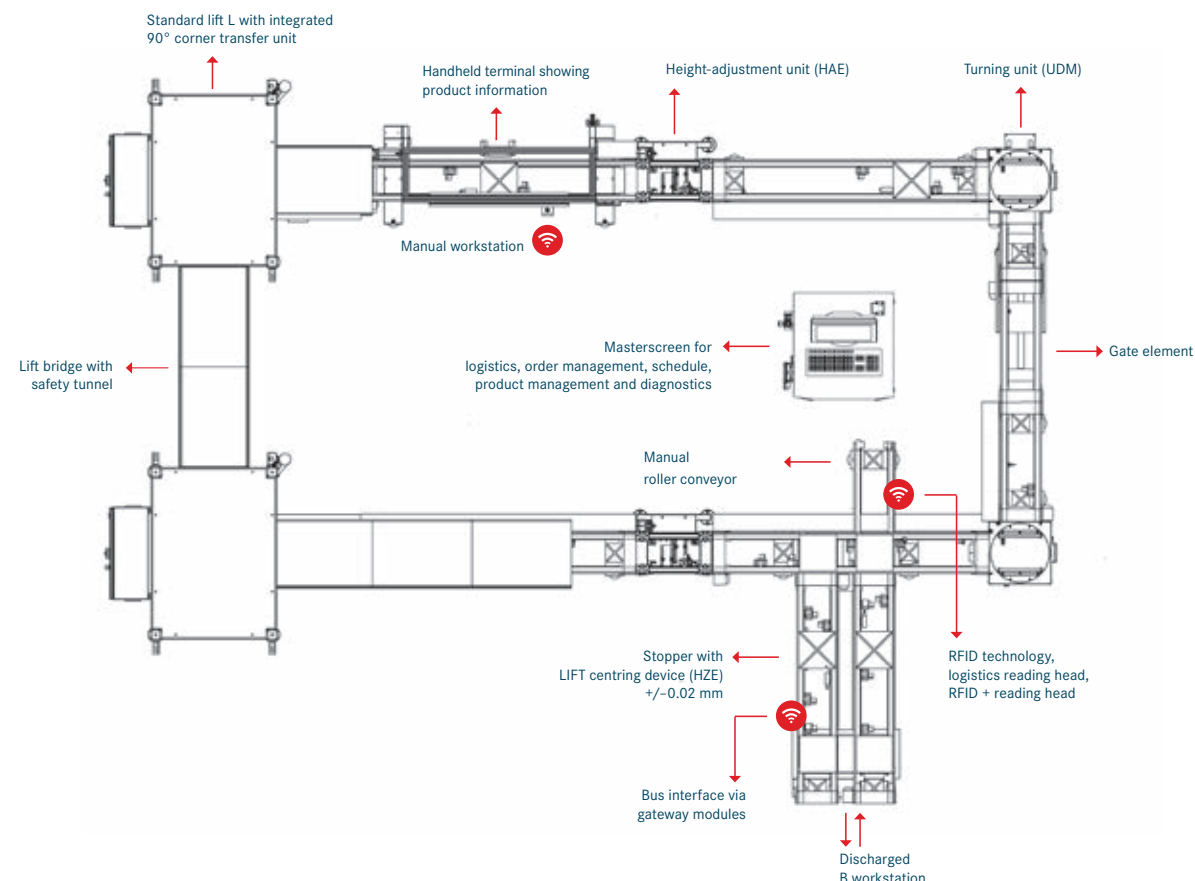
Thanks to standardization, all the different generations of the assembly lines supplied can get expert support on an ongoing basis. STEIN provides operators with reliable support either onsite or remotely. Easy understandable service videos demonstrate the simple operation.



STEIN 300: THE MAIN ARTERY OF AN ASSEMBLY LINE

The STEIN 300 has a fixed place in over 3,800 assembly halls. With a vast range of customers and in a wide variety of configurations.

From a simple circuit right through to ERP connection or traceability functionality, each installation is custom-made for our customers using a standard toolkit.



IMPLEMENTATION ON REQUEST

Our customers decide for themselves how far they want us to help them with putting the STEIN 300 into operation. There are three options. If required, we supply the individual components of the STEIN 300 in such a way that the customer can configure and assemble it themselves. It is also possible to order a complete system

including installation by STEIN, but without an integrated control system. The third option is to provide a complete STEIN 300 with control system – the ideal all-inclusive version for customers where getting the system ready for operation quickly is what counts.

CHOOSE YOUR IDEAL SOLUTION.

1

STEIN COMPONENTS

STEIN 300 with individual components is the basis for successful production. To allow customers to go their own way when realizing their installations, all components and corresponding data are available in the 'toolkit'. Plant designers and engineers can use them to create custom solutions with all the possibilities of STEIN technology.

2

STEIN ASSEMBLED

STEIN 300 ASSEMBLED is a good choice for anyone wanting to order an installed system rather than individual components. Savvy planners can configure a system themselves, whilst STEIN assembles the individual components and delivers a system that is virtually ready to use. Controlling the system with software and hardware is left to the customer.

3

STEIN CONTROL-PACKAGE

The complete system for central management and control is quick to get up and running. With the STEIN 300 ASSEMBLED and equipped with the STEIN CONTROL system controller, the process can be managed and monitored. Individual orders and entire production schedules can be created and processes can be configured by the click of a mouse.

In addition to the subject networking, STEIN also promotes mechanical innovation. Ergonomics play a very important role here. With our systems, operators are free to decide whether they want to sit or stand to work. The height of the conveyor belt automatically adapts to the requirements.

SOFTMOVE – QUIET

The gentle drive of the motors dramatically reduces noise. Pallets do not bump against each other. Belts do not wear through. The result is a quiet, energy-efficient transfer system, which is good for the health of your employees.

GATE ELEMENT – CONVENIENT

Free access to closed internal spaces in the system allows technicians to work in a relaxed – and more successful – way.

DISPLAY TERMINAL – INFORMATIVE

The product communicates with the operator. This supports the working process directly, especially since this feature is also available as a navigator.

STEIN LOGISTIC – FAST

Individual orders and entire production schedules can be created by the click of a mouse. This allows our customers to configure their processes very easily without having to do any programming.

HEIGHT-ADJUSTABLE

MANUAL WORKSTATIONS – IDEAL

Everyone is unique and has their own ideal working height. With STEIN, operators are free to choose the height, allowing them to stay relaxed to provide the best performance.



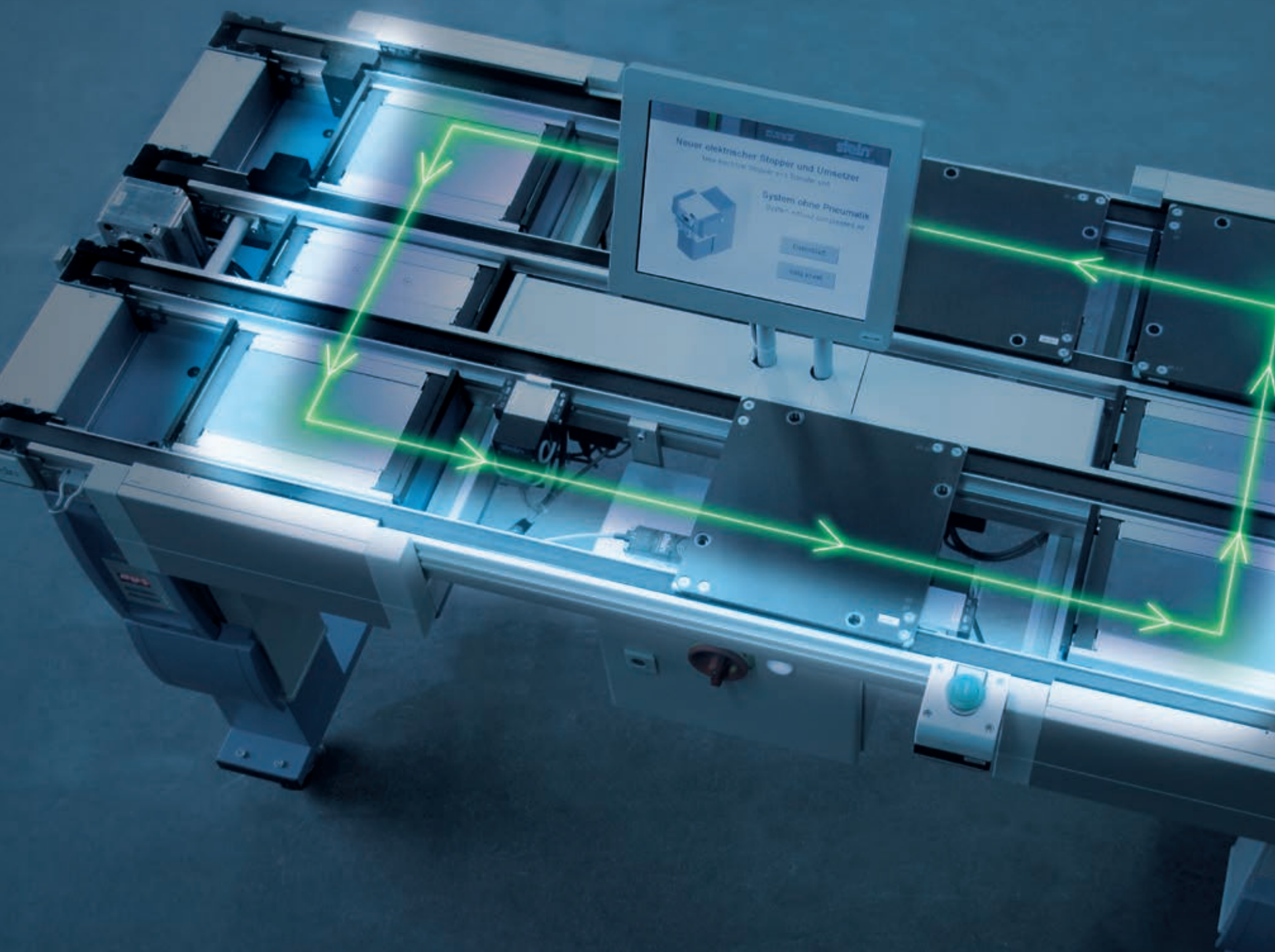
+ Workpieces are moved gently and quietly with Softmove

+

Flexible working heights



STEIN 300^e: STRONG WHEN IT COMES TO ELECTRICS



STEIN promotes the trend towards electrification with the STEIN 300^e, which is based on the STEIN 300. Instead of pneumatics, the stoppers, transfer units or centering devices are controlled via electric drives. This is particularly a big advantage for cleanroom applications. As a side benefit, your production is more environmentally friendly.

STEIN CONTROL – FAST

Individual orders and entire production schedules can be created with just a few mouse clicks. This allows our customers to configure their processes very easily without having to do any programming. The STEIN 300^e can be used with the STEIN Control C5G.

STATUS MESSAGES INCLUDED

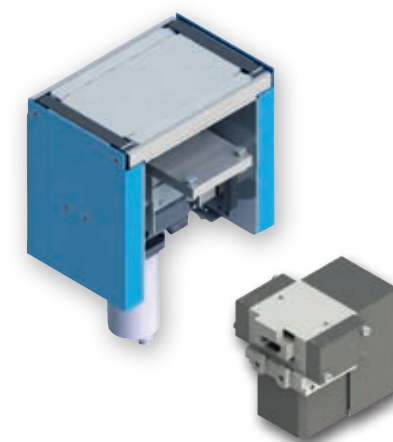
If you have always wanted to know the status of a stopper, a centering device or the transfer device, only the STEIN 300^e gives you the opportunity to query this.

USE IN CLEAN ROOMS

Paired with STEIN SOFTMOVE and the 300^e solution, clean room use ISO 6 and 7 is possible depending on the application.

TECHNICAL DATA:

- Pallet sizes: 160 x 160 mm – 400 x 400 mm, (6,3 x 6,3 inch – 15,75 x 15,75 inch) freely scalable, other sizes on request
- Max. total weight of pallet: 25 kg (55 lb)
Load / E-stopper: max. 3 pallets
- Transport speed: max. 21 m /min
- Power supply: 24 V DC
- Current consumption
Standby current for E-stopper, transfer unit < 0.1 A
Peak-current: E-stopper 1.0 A, transfer unit 2.0 A
- Stroke length: E-stopper 6 mm (0.24 inch),
transfer unit 16 mm (0.63 inch)
- Lifting time: E-stopper 0.22 s
Transfer unit 0.4 s



STEIN 400: FOR HEAVY ITEMS

The STEIN 400 performs particularly heavy jobs. It transports heavy workpieces weighing up to 80 kg (176 lbs) safely and effortlessly through the production process. Despite the heavy parts, configuration and control of the system is still easy with the tried-and-trusted STEIN CONTROL Solution.



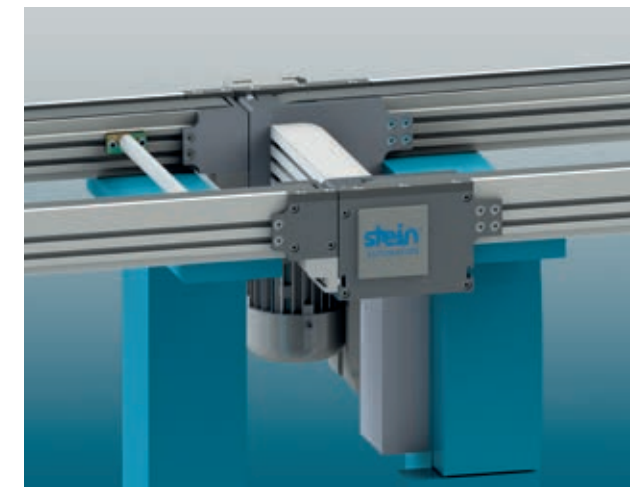
Easy to get off the ground
with up to **80 kg**

EASY TRANSPORT WITH STEIN SOFTMOVE

Gentle, fast and jam-free transport is made possible with intelligent EC motors. The pallets themselves move on ball-bearing rollers which are under the belt, thus eliminating the disadvantage of their heavy weight.

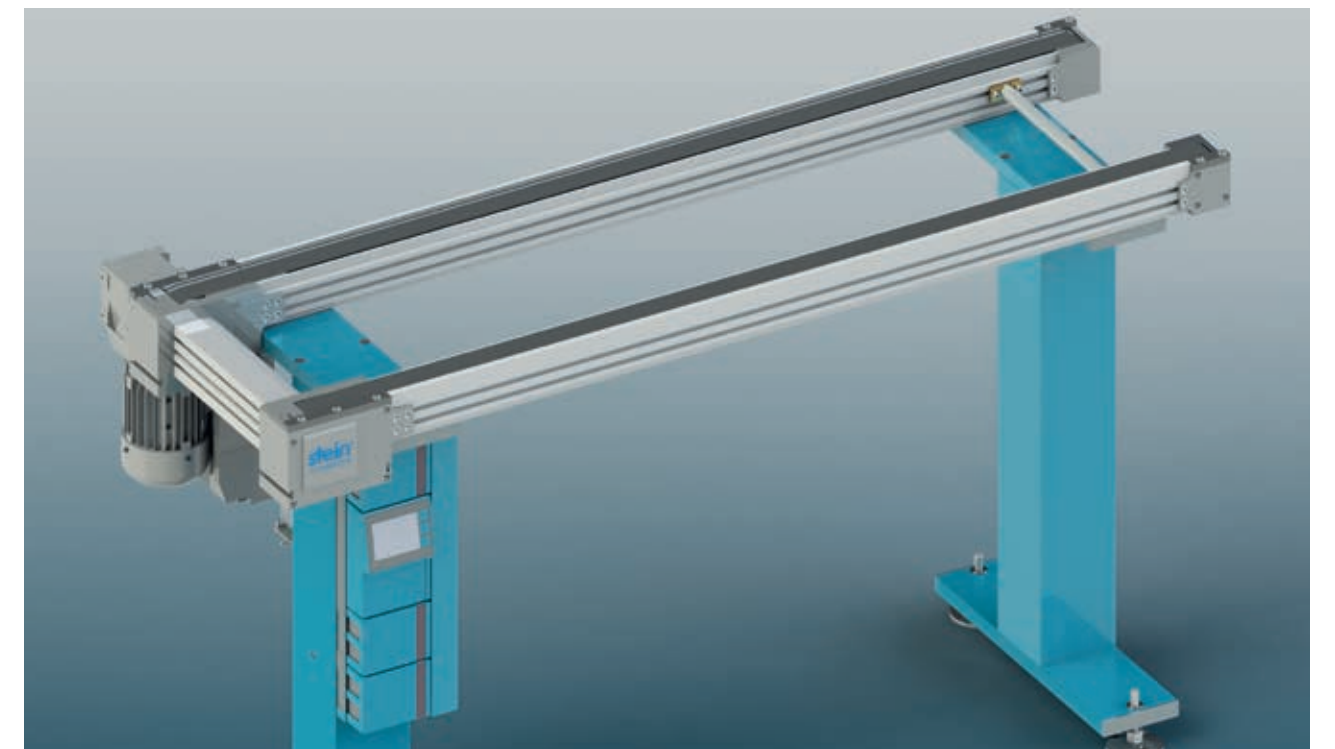
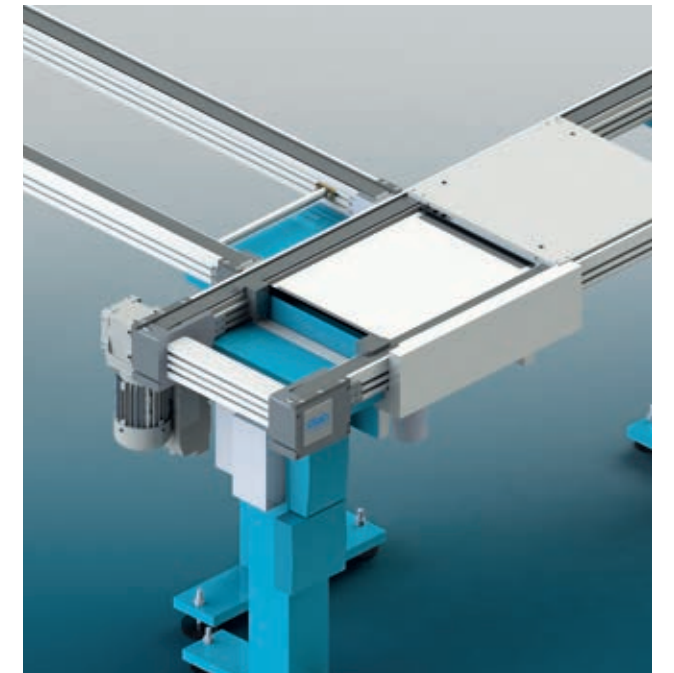
EFFICIENT FOR HEAVY WORKPIECES

This efficient and safe solution in particular impresses operators every day. The pallets move gently up to each other with STEIN SOFTMOVE technology, preventing wear, vibration and noise despite the workpieces weighing up to 80 kg (176 lbs). Various products in a variety of sizes can be transported at the same time on one pallet.



THE BENEFITS:

- pallet size > 240 mm (9,4")
- for weights up to 80 kg (176 lbs)
(max. 240 kg (529 lbs) per conveyor element)
- freely scalable
- speeds up to 30m/min.
- large selection of components
(transfer units, centering devices...)
- minimal wear and tear due to roller cassettes
- extremely quiet
- use of SOFTMOVE



STEIN link: Intelligent interlinking in INTRALOGISTICS

STEIN link connects any kind of stations easily and intelligently.

THE INTELLIGENCE

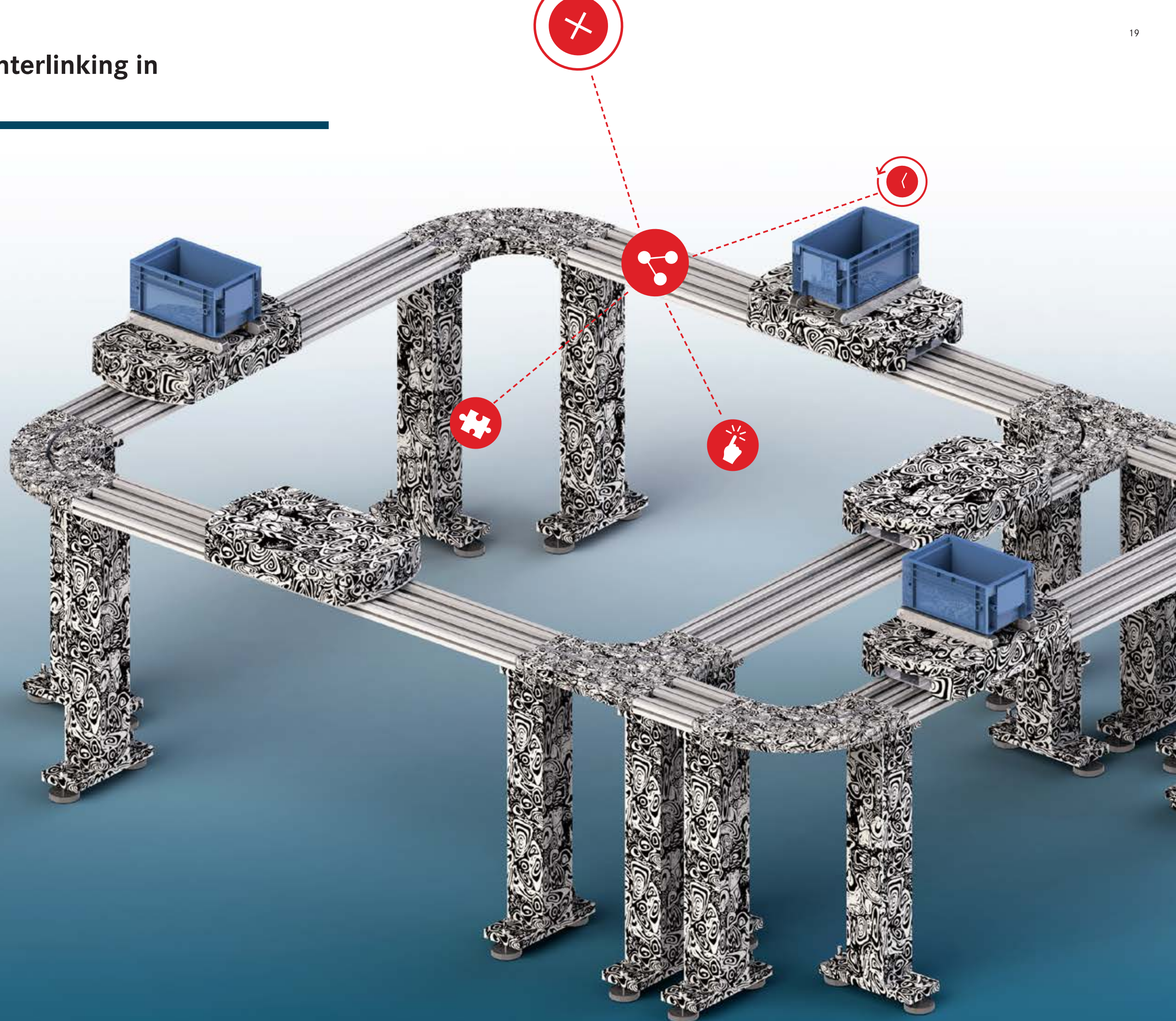
The STEIN link can drive intelligent routes using STEIN CONTROL 5G and RFID. Transport weights of up to 80 kg per pallet can be transported collision free with up to 50 m/min.

THE INNOVATIVE ENERGY CONCEPT

is based on an easy to exchange backpack battery. This can be changed manually or fully automatic. The charge is monitored and is flexibly managed. The system can be used in applications ranging from a connection to an injection-molding machine or in the automation of assembly, up to tasks in intralogistics.

+ FACTS:

- Intralogistics concept
- Intelligent Shuttle Solution
- Simple tracks, curves and track switches
- 80 kg payload per pallet - 50 m/min.
- Intelligent workflows using RFID and STEIN C5G logistics control
- Shock-free transport
- Battery management, 8 hours battery life (manual/full automatic change)
- Power supply available on shuttle



STEIN SOFTMOVE: START-STOP WITH HIGHEST CAUTION

VELVET GLOVES FOR PRODUCTION

In production operations, speed is of the essence. To ensure that pallets never collide hard despite travelling at high speeds and in large volumes, STEIN has developed SOFTMO-VE technology. This enables the extremely gentle transport of sensitive products while reducing wear, dirt and system noise, helping to save time, energy and money.

In production operations, all of these benefits are worth a great deal, and we are proud to say that only STEIN has combined them so successfully with SOFTMOVE.

With SOFTMOVE, STEIN has set the benchmark for the handling of sensitive workpieces – far beyond the borders of the Black Forrest.

WELL CALCULATED

With SOFTMOVE, thanks to the automatic on and off switching of the conveyor drives as required, motors only run when necessary – this allows power consumption to be reduced by up to 80 %.

WORKPIECE TRANSPORT THE GENTLE WAY

The intelligent technology of SOFTMOVE allows the automatic control of motors (as long as the conveyors are equipped with EC motors) based on the STEIN SOFTMOVE algorithm.

HOW SOFTMOVE WORKS

Since STEIN CONTROL is able to identify the exact position of each pallet, the conveyor drive motors can be programmed to ensure that there are no hard collisions and to prevent them from running when it is not necessary. The intelligent system reduces the speed of the pallet before it makes contact with the stopper latch and stops it gently. If the conveyor notices that there is no need for further transport, it automatically switches off. This, by the way, has economic potential, i.e. up to 80% in energy consumption.

CLEANLY TRANSFERRED

SOFTMOVE improves working conditions in production and leads to lower maintenance costs as the line is kept considerably cleaner.

LONG-TERM CONSIDERATION

Machine service costs are also reduced by using SOFTMOVE. But primarily, its life as a whole is extended – which is of special long-term value.



SOFTMOVE.
TRANSPORT BRAND STEIN

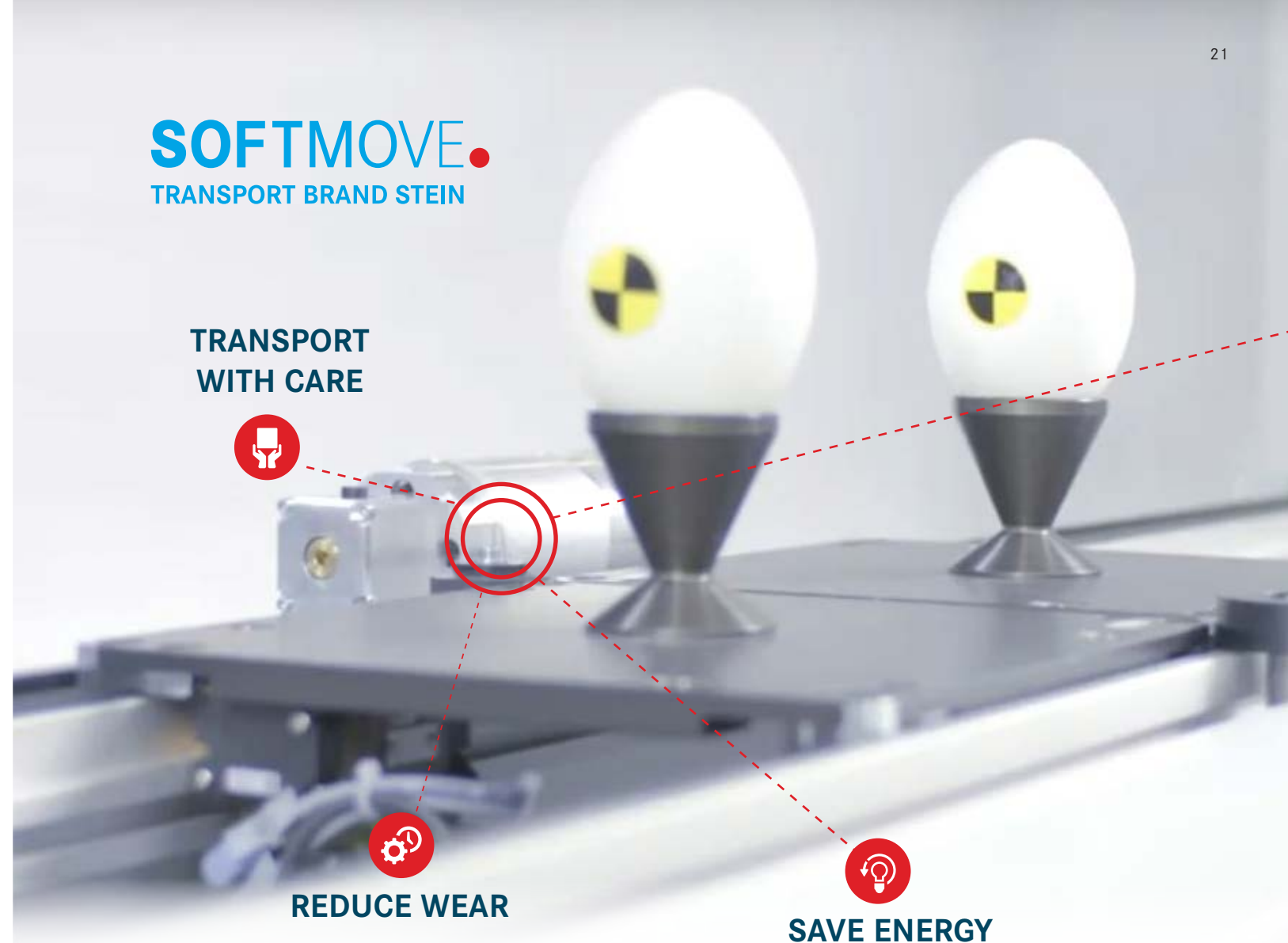
TRANSPORT WITH CARE



REDUCE WEAR



SAVE ENERGY



EXTREMELY SOFT TRANSPORT. WITH THE GREATEST EFFICIENCY.

THE FIVE STRENGTHS OF SOFTMOVE AT A GLANCE

reduces energy consumption

► enormous cost savings in the long run

prevents pallets from colliding hard

► gentle on your product (greater efficiency, more good parts)

reduces wear and tear

► longer system service life, lower maintenance cost, greater output, suitable for clean room

less dirt

► improved work conditions, less maintenance

reduces system noise

► quieter production, fewer employees sick, improved quality at manual workstations

STEIN LEAN: SOLUTIONS FROM STEIN

WHAT CAN LEAN PRODUCTION DO?

The method known as “STEIN LEAN” is used where material is to be continuously processed from the beginning of a production process to the end in a single flow, to the extent possible. This also makes it possible to react flexibly, in the event of errors, and to interrupt the production process quickly so that no further bad parts are produced. Other advantages of STEIN LEAN include, for example:

- no buffer quantities
- shorter through-put time
- higher flexibility, constant quality control possible
- greater productivity in a smaller space
- less waste due to material transport

We are proud that STEIN not only has experience with STEIN LEAN, but has also contributed to its success: Already in 2009 one of our customers won the Automotive LEAN PRODUCTION Award in the category „International Medium-Sized Businesses“.

THE RIGHT MODULES

Of course, all components of the proven STEIN 300 can be used in a STEIN LEAN version of the system. The most common components, which meet the basic needs of STEIN LEAN include the following:

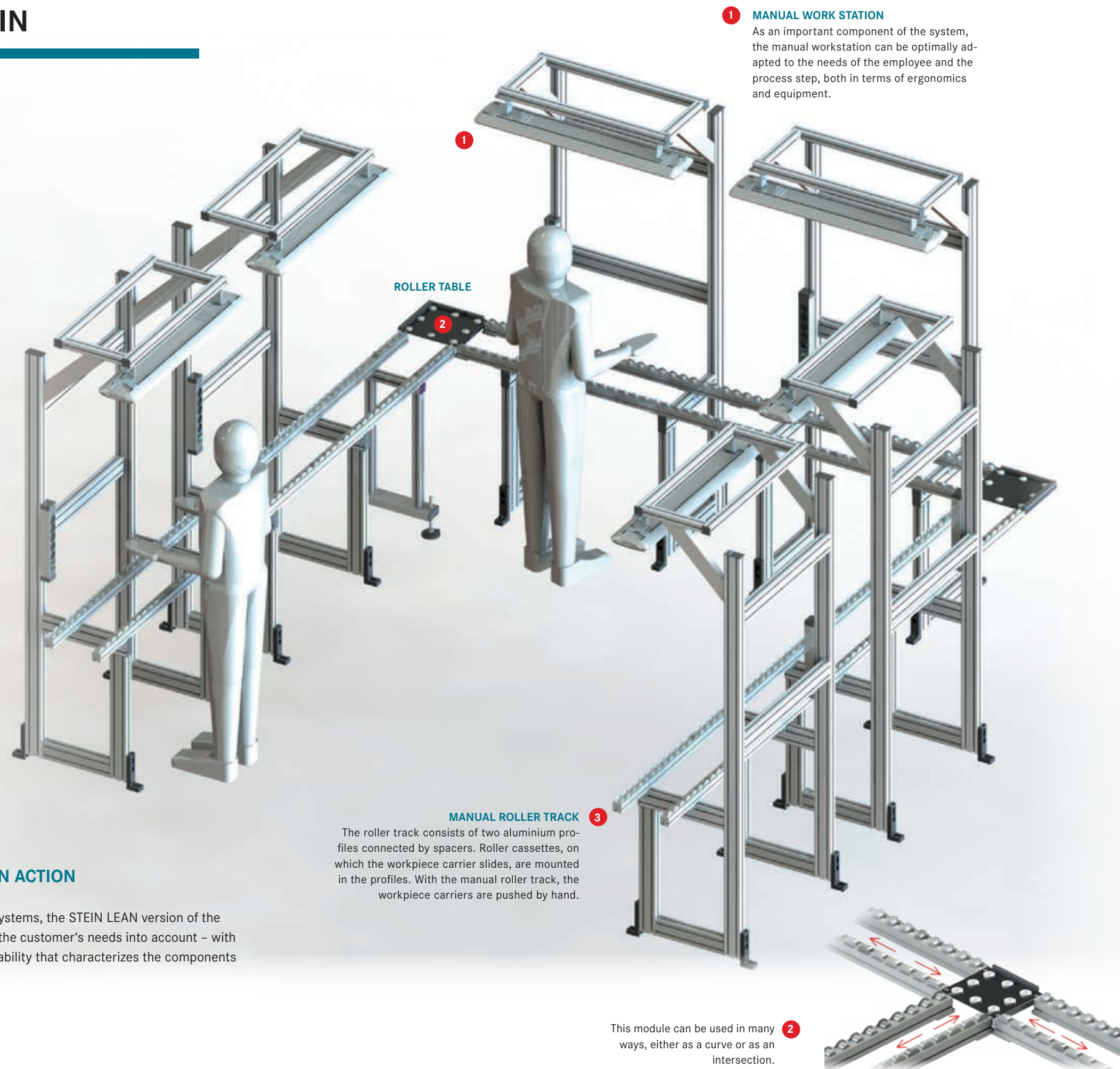
- manual roller track or driven belt section
- manual work station
- roller table
- centring unit

These components are also installed in the adjacent system.

Different interlinking concepts are available so that the ideal process can be implemented with maximum economic efficiency based on your situation.

STEIN LEAN IN ACTION

As with all STEIN systems, the STEIN LEAN version of the system also takes the customer's needs into account – with the modular adaptability that characterizes the components of the STEIN 300.



1 MANUAL WORK STATION

As an important component of the system, the manual workstation can be optimally adapted to the needs of the employee and the process step, both in terms of ergonomics and equipment.

ROLLER TABLE

1

2

3 MANUAL ROLLER TRACK

The roller track consists of two aluminium profiles connected by spacers. Roller cassettes, on which the workpiece carrier slides, are mounted in the profiles. With the manual roller track, the workpiece carriers are pushed by hand.

This module can be used in many ways, either as a curve or as an intersection.

2

THE PEOPLE BEHIND THE SOLUTIONS

At STEIN, we don't just help each other with our work – we work together. This is important, because new ideas and inspiration thrive in a pleasant atmosphere, benefiting everyone. We respect every employee and their work and this is reflected in the way we deal with each other.

For us, one idea is key: at STEIN, our employees don't work for a company; they are part of the company. Only then are individuals happy to contribute to the greater whole with their own independent work, which we nurture and value.

MASTERFUL SOLUTIONS

Even everyday work can be improved. Lots of ideas for improvement come from our employees.

TEAMWORK

At STEIN, working together is not just a method but a conviction.

DIRECT CUSTOMER CONTACT

With us, experience and service go hand in hand: 80% of our employees communicate directly with customers.

LEARNING IS PART OF WORKING

STEIN takes on apprentices in the company every year, thus investing in the future.



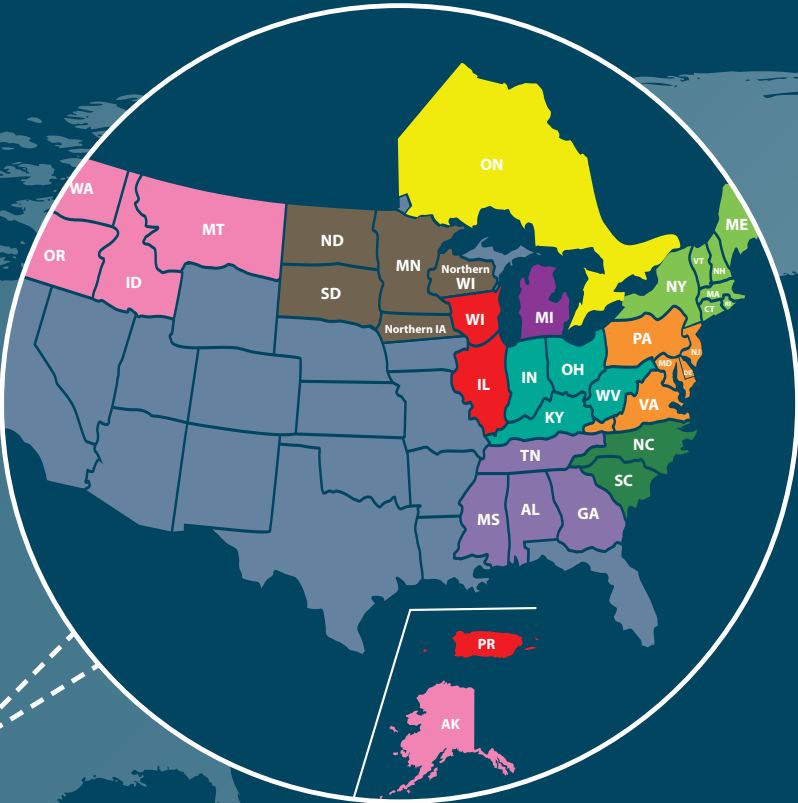
At STEIN, your employees take center stage

Each transfer system is **examined thoroughly** before delivery.



Quick and easy change of modules





STEIN AROUND THE WORLD

If we merely sold products to our customers, that would be a business – not a partnership. That’s why long-term, honest and constructive relationships with our customers are very important to us.







Customers can – and do – approach us at any time with new tasks and ques-tions. Last but not least, it is a valuable opportunity for us to learn and develop new skills together with our customers.

Our service strategy helps us in developing customer relationships: our customers’ production take absolute priority. Online diagnosis and remote maintenance are tools which enable us to be close enough to provide help and support quickly at any time, even for customers who are far away.

We take pleasure in every new customer and at the same time take pride in having a large number of regular and existing customers who have been successfully using and valuing our systems and their collaboration with STEIN for many years.

It is important to us that you not only just receive our high-quality products but also the **best possible support**. We have expanded our global presence with the **STEIN GLOBAL CONCEPT**.

WE ARE PROUD TO BE ABLE TO HELP SHAPE THE SUCCESS OF MARKET LEADERS:

 AUTOMOTIVE KIEKERT MAGNA MIRRORS CONTINENTAL SBS MAHLE	 HOUSEHOLD EQUIPMENT VORWERK IMPERIAL E.G.O. BKS EMSA	 TOYS AND LEISURE ATOMIC PLAYMOBIL EHEIM
 MEDICAL B BRAUN CERAMTEC BAXTER	 PROPULSION TECHNOLOGY EBM-PAPST AMK SEW	 ELECTRICAL ENGINEERING FESTO HILTI WERMA ELSTER



WO QUALITÄT
ZU HAUSE IST

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