

# SEAMLESS INTEGRATION AND MODULARITY



**SCHUBERT**  
PHARMA

# CONTENT

<b>04 /</b>	<b>INTRODUCTION</b>	
	EDITORIAL	04
	FLEXIBLE AND MODULAR – TECHNOLOGY SYSTEM COMPONENTS	06
<b>08 /</b>	<b>APPLICATIONS</b>	
	PENS & DEVICES	08
	SYRINGES	10
	VIALS & AMPOULES	12
	BFS SOLUTIONS	14
	COMBINATION PACKAGING & ASSEMBLY	16
	THE FLOWMODUL	18
	OTHER WIDE RANGING APPLICATIONS	20
	SEAMLESS INTEGRATION	22
<b>24 /</b>	<b>SERVICES</b>	
	QUALIFICATION & VALIDATION	24
	PACKAGING DEVELOPMENT	26
	TURNKEY SOLUTIONS	28
	SCHUBERT-CONSULTING	30
<b>32 /</b>	<b>SOFTWARE</b>	
	LINE MANAGEMENT SYSTEM	32
<b>34 /</b>	<b>REFERENCES</b>	



## DEAR READERS,

As consultants and solution providers, we at Schubert-Pharma take a holistic approach to the work we do. With our modular system platform and proven standard components, we engineer and deliver customized packaging systems.

A wide variety of processes and functionalities are brought to life with our TLM technology platform. The seamless integration of third-party devices and machine centres allows us to significantly reduce the number of interfaces required.

I invite you to explore our portfolio and to be inspired by our application examples.

We look forward to meeting you to discuss how we can support you in shaping and implementing all your future packaging needs.

**Olaf Horrenberger**

Managing Director  
Schubert-Pharma

## WHAT MAKES US UNIQUE

- » MODULARITY
- » SCALABILITY
- » PROVEN STANDARD COMPONENTS
- » STANDARD TECHNOLOGY PLATFORM FOR DIVERSE FUNCTIONS & PROCESSES
- » CUSTOMIZED MACHINES
- » OUR VISION SYSTEM
- » OUR TRACK & TRACE SOLUTION
- » OUR VALIDATION
- » SEAMLESS, INTERFACE-FREE INTEGRATION
- » OUR PACKAGING DEVELOPMENT
- » HOLISTIC PROJECT ASSESSMENT





MACHINE FRAME



F3-ROBOT



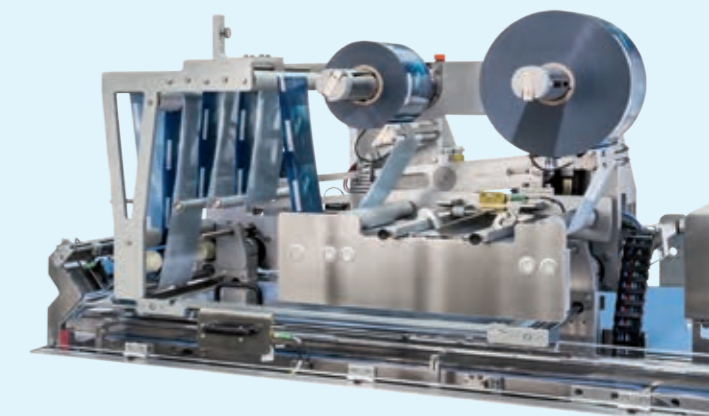
F2-ROBOT



F4-ROBOT



OPERATOR GUIDANCE



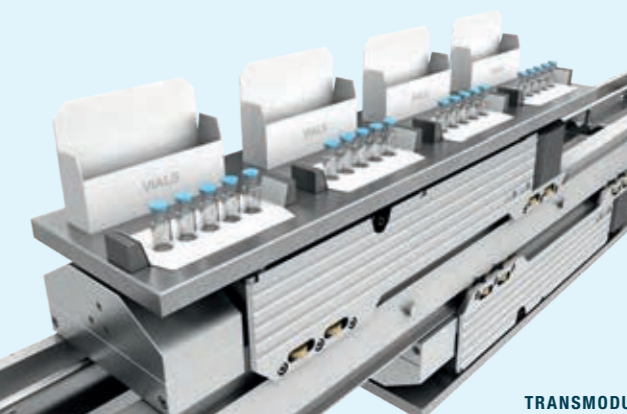
FLOWMODUL



VISION SYSTEM

# FLEXIBLE AND MODULAR – TECHNOLOGY SYSTEM COMPONENTS

PROVEN AND HIGHLY FLEXIBLE SYSTEM COMPONENTS ARE THE FOUNDATION OF OUR PACKAGING MACHINES. THESE INCLUDE ROBOTS DESIGNED TO TAKE ON SPECIALIZED TASKS, OUR VISION SYSTEM, OUR TRANSMODUL TRANSPORT ROBOT, THE FLOWMODUL FLOW-WRAPPING MACHINE AND THE VMS PACKAGING MACHINE CONTROL SYSTEM, WHICH SCHUBERT IS CONTINUOUSLY EVOLVING.



TRANSMODUL

## PENS & DEVICES

THE GENTLE HANDLING OF YOUR PRODUCTS IS ONE OF OUR TOP PRIORITIES.

### WHAT WE CAN IMPLEMENT FOR YOU:

- / Online/offline packaging
- / Cartons with or without dividers
- / Cartons with trays
- / Various carton closures
  - Top-load cartons
  - Tuck-in closures
  - Flip-top closures
  - Side-load cartons

### OUR SOLUTIONS ENABLE:

- / Infeed of pens
- / Unloading of products from trays, pucks or cases using a 3D vision system
- / Correct orientation of pens, depending on a specific product feature
- / Gentle and protective handling, using TLM-F4 pick & place robots exercising controlled load forces on the product
- / Quality controls and verification of items, such as carton forming and product presence
- / Tamper-evident closures
- / Integrated labeling
- / Serialization







## SYRINGES

SCHUBERT-PHARMA PACKAGES SYRINGES OF ALL TYPES.

### WHAT WE CAN IMPLEMENT FOR YOU:

- / Patient and clinical care kits into cartons and/or trays
- / Cartons with or without dividers
- / Thermoforming of blisters
- / Denesters
- / Cartoning machines
- / Case packing

### OUR PORTFOLIO INCLUDES:

- / Integrated labeling systems
- / Serialisation solutions
- / Integrated buffer systems
- / Tamper-evident solutions
- / Finger flange alignment
- / Quality controls, such as completeness of all components, checking for finger flange position and label presence
- / Verification of variable data
- / Feeding and orienting systems



## VIALS & AMPOULES

WHETHER YOUR VIALS OR AMPOULES ARE MADE OF GLASS OR PLASTIC, YOU WILL FIND THE RIGHT PACKAGING SOLUTION FOR EVERY SIZE AND FORMAT RIGHT HERE.

### WHAT WE CAN IMPLEMENT FOR YOU:

- / Online/offline packaging processes
- / Cartons
- / Trays

### ADAPTATION TO CUSTOMER-SPECIFIC CARTON DESIGNS:

- / With or without dividers
- / Tray inserts
- / Flip-top boxes
- / Various carton closures
  - Top-load cartons
  - Tuck-in closures
  - Flip-top closures
  - Side-load cartons

### OUR PORTFOLIO INCLUDES:

- / Leaflet insertion
- / Tamper-evident closures
- / Avoidance of cross contamination
- / Quality controls
- / Shape verification
- / Online/offline processing
- / Frictionless feeding via buffer tables
- / Individual handling via TLM-F4 pick & place robots
- / Prevention of glass breakage using overload controls
- / Machines without a fixed pitch, to accommodate all carton sizes
- / All types of coding and marking
- / Serialization solutions





## BFS SOLUTIONS

WE PROCESS BLOW-FILL-SEAL PRODUCTS (BFS)  
IN SIZES RANGING FROM 1 ML TO 1,000 ML.

### WE PROVIDE:

- / Gentle and low-noise transport
- / Elimination of product carriers throughout the entire process
- / Quality assurance controls, e.g. fill level, print presence and defect detection

### OUR PORTFOLIO INCLUDES:

- / Loading and unloading of sterilization trays
- / Palletizing of sterilization carriages
- / Separation of BFS-cards into single units
- / Integrated accumulator systems
- / Labeling and verification
- / Flow-wrapping
- / All outer packaging from trays to flowpacks and from cartons to pallets
- / Serialization and aggregation







## COMBINATION PACKAGING & ASSEMBLY

WHEN INDIVIDUAL COMPONENTS BECOME A COMPLETE UNIT, THE TLM-TECHNOLOGY IS THE RIGHT CHOICE.

TLM PACKAGING MACHINES ENABLE YOU TO PACKAGE A VARIETY OF CONTENT SETS, SUCH AS:

- / Vials
- / Syringes
- / Bottles
- / Coupling systems
- / Needles
- / Swabs
- / Brochures and leaflets
- / Package inserts

OUR PORTFOLIO INCLUDES:

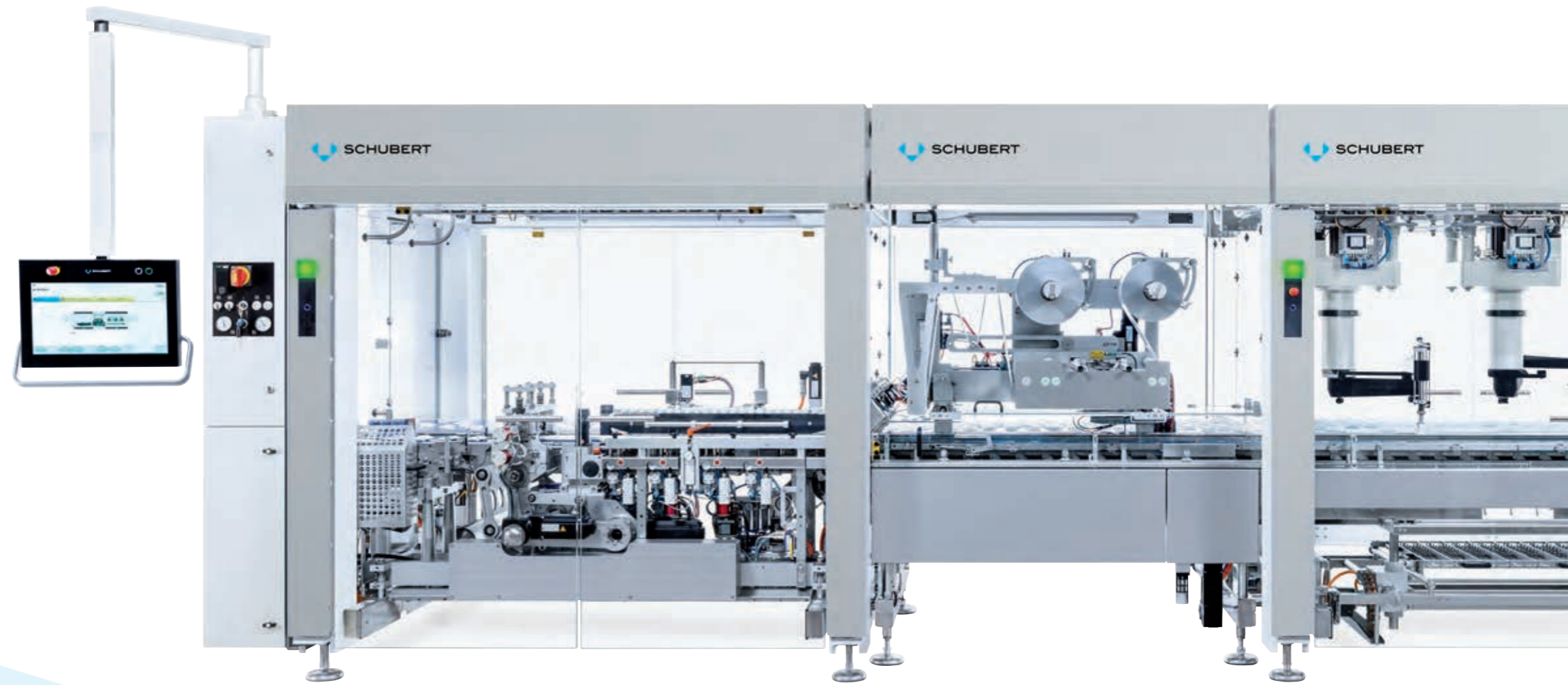
- / Separation and infeed of all components
- / Assembly of components on the Transmodul transport robot
- / Component and package labeling
- / Quality controls and verification such as product presence, variable data, fitting forces and patterns as well as fail-safe reject
- / Batch verification





# THE FLOWMODUL

THE FLOWMODUL IS THE WORLD'S FIRST FULLY INTEGRATED PACKAGING MACHINE FOR FLOWPACKS, ENABLING SEAMLESS INTEGRATION OF PRIMARY AND SECONDARY PACKAGING PROCESSES.



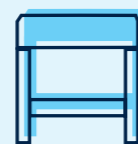
## FACTS & FIGURES:



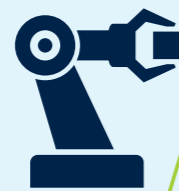
FILM SPEED VARIATIONS FROM

**0-100%**

<b>10-15</b>	MIN
<b>FORMAT CHANGE</b>	

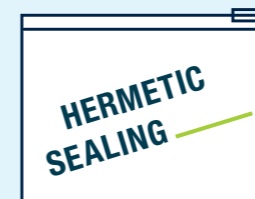


UP TO **2 FLOWMODULS**  
IN ONE MACHINE FRAME POSSIBLE



SMALL FOOTPRINT DUE TO FLEXIBLE ROBOT LOADING

TLM-SYSTEM COMPONENTS  
WITHOUT ELECTRICAL CABINET



HERMETIC SEALING

**AUTOMATIC FLIGHT CHANGEOVER**

**3D** INTEGRATED VISION SYSTEM  
FOR PRODUCT QUALITY CONTROL



## OTHER WIDE RANGING APPLICATIONS

THE RANGE OF APPLICATIONS SCHUBERT-PHARMA CAN OFFER ITS MANY CUSTOMERS AROUND THE WORLD ARE ALMOST UNLIMITED.

ALONG WITH THE MANY PREVIOUSLY DESCRIBED STANDARD PHARMACEUTICAL PRODUCTS, SCHUBERT-PHARMA CAN ALSO PACKAGE THE FOLLOWING:

- / Hospital care products
- / Flexible IV bags
- / Inhalers
- / Blister wallets
- / Diagnostics
- / Tubes
- / Syringe needles

» TALK TO US ABOUT YOUR INDIVIDUAL NEEDS AND REQUIREMENTS. WE WILL BE HAPPY TO DISCUSS HOW WE CAN CUSTOMIZE YOUR SPECIFIC APPLICATIONS.



SYRINGE NEEDLES

INHALERS



HOSPITAL CARE PRODUCTS

TUBES



FLEXIBLE IV BAGS



BLISTER WALLETS



DIAGNOSTICS

# SEAMLESS INTEGRATION

SCHUBERT-PHARMA HAS A HIGH LEVEL OF EXPERTISE IN REALIZING A WIDE VARIETY OF PROCESSES AND FUNCTIONS, USING SCHUBERT TLM TECHNOLOGY OR SEAMLESSLY INTEGRATED THIRD-PARTY DEVICES. HERE ARE SOME OF THE SOLUTIONS WE HAVE SUCCESSFULLY IMPLEMENTED FOR OUR CUSTOMERS.

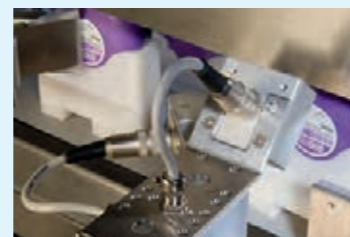
## LABELING:



TWO-SIDED LABELLING



TAMPER-EVIDENT CLOSURE APPLICATION

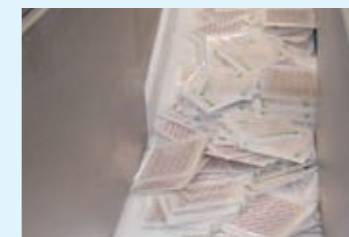


DEVICE LABELLING

## PRODUCT SEPARATION:



FRICTION FEEDER FOR PRODUCT COUNTING



BULK SORTING & FEEDING SYSTEM FOR FOUR SIDE SEALED SACHETS



SEPARATION OF BFS VIALS

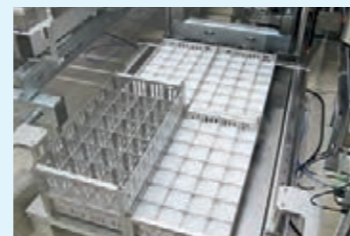
## ACCUMULATORS:



BLISTER ACCUMULATOR



STERILIZATION TRAY LOADING



WORK-IN-PROCESS TRAY UNLOADING

## SEALING:



ULTRASONIC SEALING OF CARDBOARDS ONTO TRAYS



HEAT SEALING OF PLASTIC TUBS WITH FOIL LIDS



ULTRASONIC SEALING OF BACKING CARDS ONTO BLISTER

## PRODUCT SORTING & FEEDING SYSTEMS:



SYRINGE FEEDING AND ORIENTING



ROTARY TABLE FOR VIALS



CENTRIFUGAL SORTING SYSTEM FOR SYRINGES

## VISION SYSTEMS:



READING AND VERIFICATION OF SERIAL DATA ON A TRANSPARENT LABEL



ROBOTIC UNLOADING OF BOXES USING A SCHUBERT 3D CAMERA FOR DETECTING COMPONENT POSITION



HEIGHT PROFILE IDENTIFICATION OF PRODUCTS IN BULK BOXES



## QUALIFICATION & VALIDATION

AS A SUPPLIER OF PACKAGING LINES FOR THE PHARMACEUTICAL INDUSTRY, SCHUBERT-PHARMA OFFERS A VALIDATION SERVICE ENRICHED BY MANY YEARS OF EXPERIENCE.

Our GMP-compliant validation package can be tailored to your individual needs and is extremely effective and time-saving.

### YOUR BENEFITS:

- / Outstanding effectiveness thanks to sound specialist knowledge of Schubert machines
- / Involvement in the project right from the concept stage
- / Close collaboration with project managers and engineers
- / GMP-critical functions can be identified at an early stage
- / Qualification of external machines
- / Requalification possible
- / Close alignment to customer needs



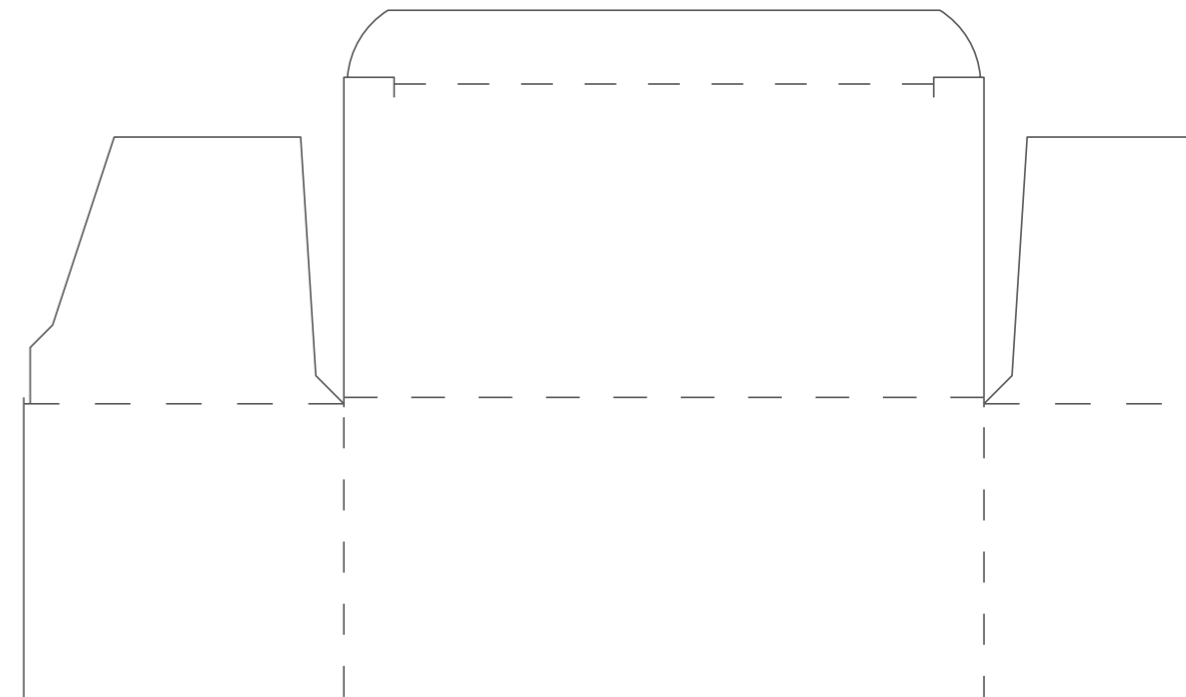
## PACKAGING DEVELOPMENT

SUCCESSFUL PRODUCT PACKAGING CALLS FOR THE PERFECT SYMBIOSIS OF THE MACHINE AND THE PACKAGING ITSELF. SCHUBERT-PHARMA, WITH ITS VAST AND VARIED EXPERTISE, IS IDEALLY POSITIONED TO SUPPORT YOU IN DEFINING AND OPTIMISING YOUR PACKAGING DESIGNS.

Smooth, problem-free processing of the packaging material is as essential as product safety and customer-friendly handling. Ideas, concepts and prototypes are produced by our in-house packaging development department. This ensures clarity and transparency even during the early packaging solution development process.

### OUR PORTFOLIO INCLUDES:

- / Consulting and development on all aspects of packaging design
- / Evaluation of design ideas with regards to benefits and feasibility
- / Realization of prototypes and sampling
- / Selection of the perfect design and material
- / Assistance in selecting the packaging material manufacturer

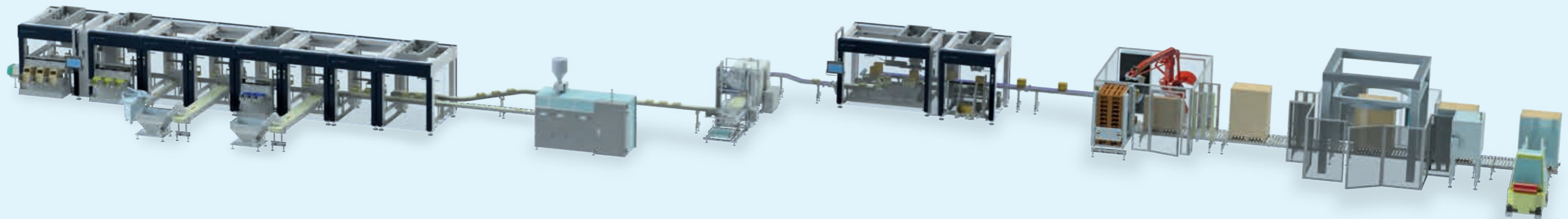




## TURNKEY SOLUTIONS

AS A TURNKEY SUPPLIER, OUR OBJECTIVE IS TO FIND THE OPTIMAL SOLUTION TAILORED TO THE SPECIFIC NEEDS OF EACH AND EVERY ONE OF OUR CUSTOMERS.

WE ARE SELECTING SUPPLIERS WITH THE MOST SUITABLE SOLUTION. THIRD-PARTY DEVICES ARE SEAMLESSLY INTEGRATED AND INDIVIDUAL MACHINES ARE SMOOTHLY LINKED TOGETHER TO CREATE A PERFECTLY FUNCTIONING PACKAGING LINE.



### YOUR KEY ADVANTAGES:

- / We reduce risk by taking full responsibility for the planning and implementation of automated packaging solutions
- / As single point of contact for the entire project, we take responsibility for all suppliers
- / You benefit from our experience and know-how, while saving valuable time and resources to concentrate on your core business
- / We assume technical and financial responsibility
- / You can count on investment security and decisively minimised risk
- / We won't deliver lines to you until we have tested their operation and performance at our factory
- / This ensures planning security and enables you to get started with production more quickly

# SCHUBERT-CONSULTING

AS A HIGHLY EXPERIENCED TECHNICAL PARTNER, WE PLAN COMPREHENSIVE SOLUTIONS TO BRING YOUR PACKAGING VISION TO LIFE.

**OUR CONCEPT:**

/ We develop innovative, customized solutions with a holistic view of processes – from product manufacturing, through packaging, to the end customer. We deliver much more than just an optimized isolated packaging solution. Our systematic and methodical procedure, in conjunction with our years of expertise, results in innovative, creative concepts and their successful implementation.

**YOUR BENEFITS:**

/ Our technical concepts, independent from supplier and technology, provide you with planning security for your processes, your budget, your investments and your resource planning – at a very early project stage.



SHAPING FUTURE PRODUCTION



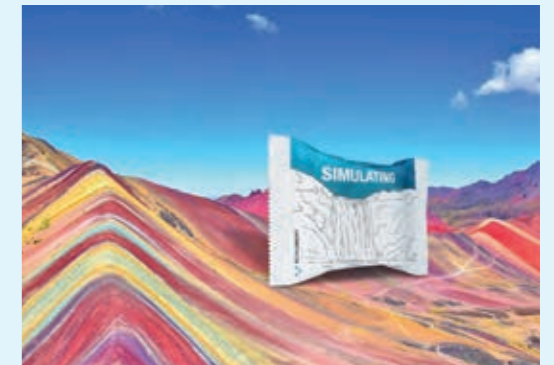
SUCCESSFUL PROJECT MARKETING THROUGH VISUALIZATION



LATE STAGE CUSTOMIZING



REDUCING COSTS AND INCREASING EFFICIENCY



INCREASING PLANNING RELIABILITY BY PROCESS FLOW SIMULATION



MERGING PACKAGING VISIONS WITH TECHNICAL VIABILITY



## LINE MANAGEMENT SYSTEM

WITH OUR LINE MANAGEMENT SYSTEM (LMS), YOU HAVE ACCESS TO A CLEAR OVERVIEW OF YOUR PRODUCTION AT ANY TIME.

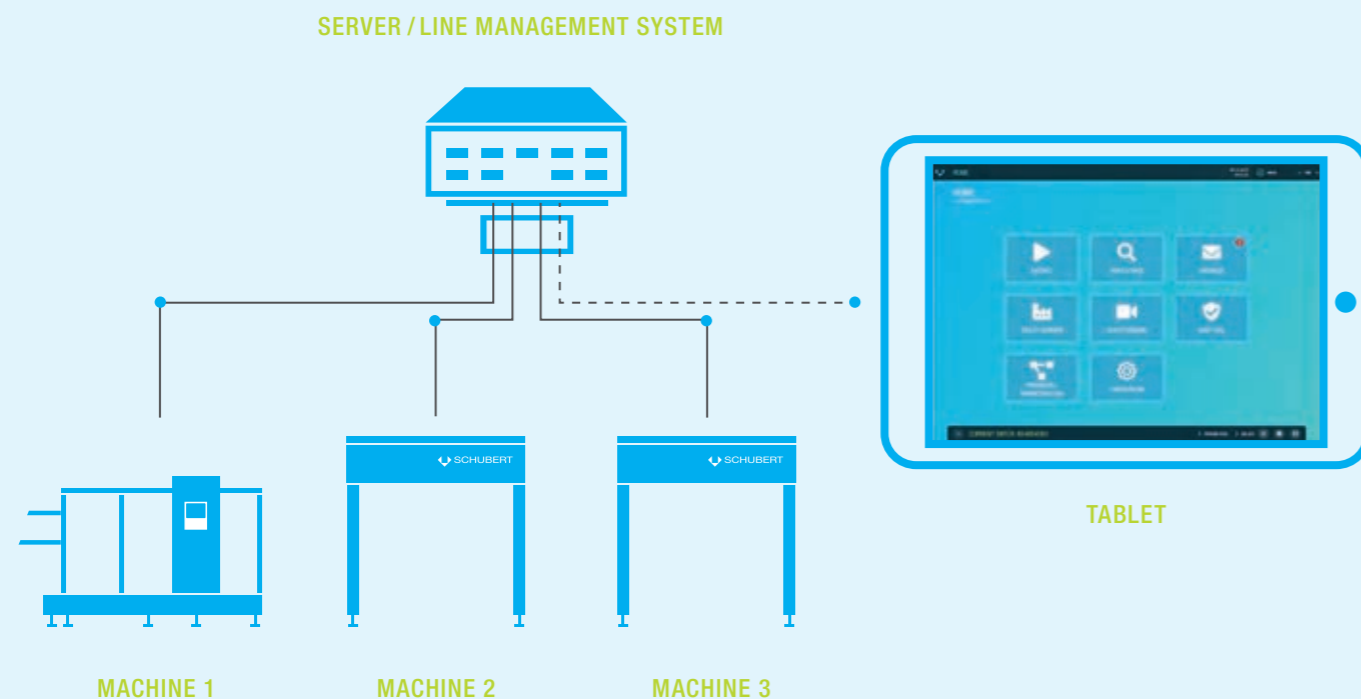
The range of functions is tailored to customer-specific requirements. From batch planning through the transmission of data to individual functional elements (e.g. printers, cameras, etc.) and the automatic generation of a batch report – everything can be controlled easily and clearly using Schubert's LMS.

The LMS can be connected to your production system either via standard interfaces or a customer-specific interface.

With the modular configurable system and software structure, Schubert-Pharma can map the complete serialization and aggregation processes – from a product up to the pallet – in the Track & Trace system.

Following completion of the batch, all relevant information and serializations are transferred to the higher-level MES or PPS system. Flexible data upload during the running batch is also possible.

By means of a web-based architecture, the system control station is available to the operators on the machine's touchscreen control terminal. Furthermore, clients (production monitoring computers) or mobile devices can be added to the system.



### THE LINE MANAGEMENT SYSTEM FEATURES THE FOLLOWING FUNCTIONS:

- / Generation of batches and input of batch data (LOT, Exp. date, etc.)
- / User management in accordance with CFR 21 Part 11
- / Display of data for all connected image processing systems
- / Creation of a batch protocol
- / Visualization of Track & Trace data
- / Display of the current OEE (Overall Equipment Effectiveness) data of the line and of individual machines

### TRACK & TRACE IS NOT NEW TO US. WE PROVIDE:

- / 100 % traceability of serial numbers in shift register, thanks to the Schubert Transmodul
- / No re-reading of the data is required before the next process step
- / Integration of the LMS server in the line, no external electrical cabinets are required
- / Complete integration of product tracking all the way through to the Schubert VMS control system
- / Absolute transparency as Track & Trace serial numbers, their status and usage can be viewed at any time
- / Manual rework on the line is also possible while the batch is running (changing, adding, deleting aggregations)

**WITH THE TLM PACKAGING LINE, WE NOW HAVE A TECHNOLOGICALLY ADVANCED, CUSTOMIZED SOLUTION TO EFFICIENTLY MEET OUR CHALLENGING PRODUCTION, FILLING AND PACKAGING NEEDS.**

SEBASTIAN EICHHOLZ,  
PROJECT ENGINEER AT LTS LOHMANN  
THERAPIE-SYSTEME AG

**I WAS EXCITED ABOUT THE MACHINE FROM THE VERY BEGINNING. I AM VERY CONFIDENT ABOUT FUTURE DEVELOPMENTS AND LOOK FORWARD TO SEEING HOW OUR MACHINE WILL SURPASS ITSELF. THANKS TO THE ENTIRE SCHUBERT TEAM FOR THEIR IMPRESSIVE AND INNOVATIVE WORK.**

CLIENT'S SITE MANAGER

**» SCHUBERT-PHARMA  
TOOK ON THEIR ROLE  
BRILLIANTLY!**

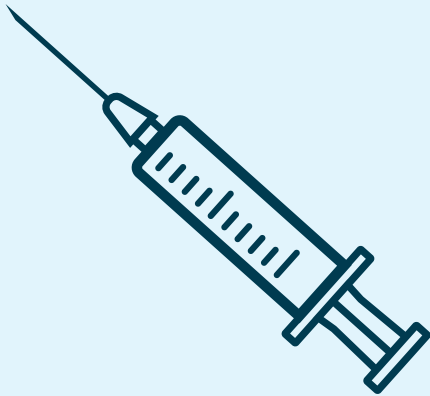
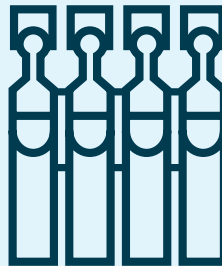
JONATHAN BURGESS,  
R&D ENGINEER AT NEPHRON  
PHARMACEUTICALS

**» THE DECISIVE FACTOR  
IN FAVOUR OF  
SCHUBERT-PHARMA WAS  
THE FACT THAT THE  
COMPANY WAS ABLE TO  
IMPLEMENT THE REQUIRED  
MANUFACTURING PROCESSES  
WITH A SINGLE LINE,  
IN WHICH ALL THE  
NECESSARY EXPERTISE WAS  
AVAILABLE AND THIS FROM  
ONE MANUFACTURER.**

RAIMUND MERKEL,  
KLOCKE-HOLDING



SCHUBERT-PHARMA.COM



**SCHUBERT**

PHARMA

WERNER-VON-SIEMENS-STRASSE 12  
74564 CRAILSHEIM, GERMANY

T / +49 7951 494-0  
F / +49 7951 494-94

SCHUBERT-PHARMA@SCHUBERT-PACKAGING-SYSTEMS.COM  
WWW.SCHUBERT-PHARMA.COM

2019 edition

© Schubert Packaging Systems GmbH. All rights reserved. All information is non-binding and does not represent guaranteed properties. We assume no liability for print errors. We reserve the right to make changes.

For the most part, company names and logos in this document are protected by copyright and/or trademark right, even if this is not indicated. All product names are trade names and/or trademarks of the respective registered owners.