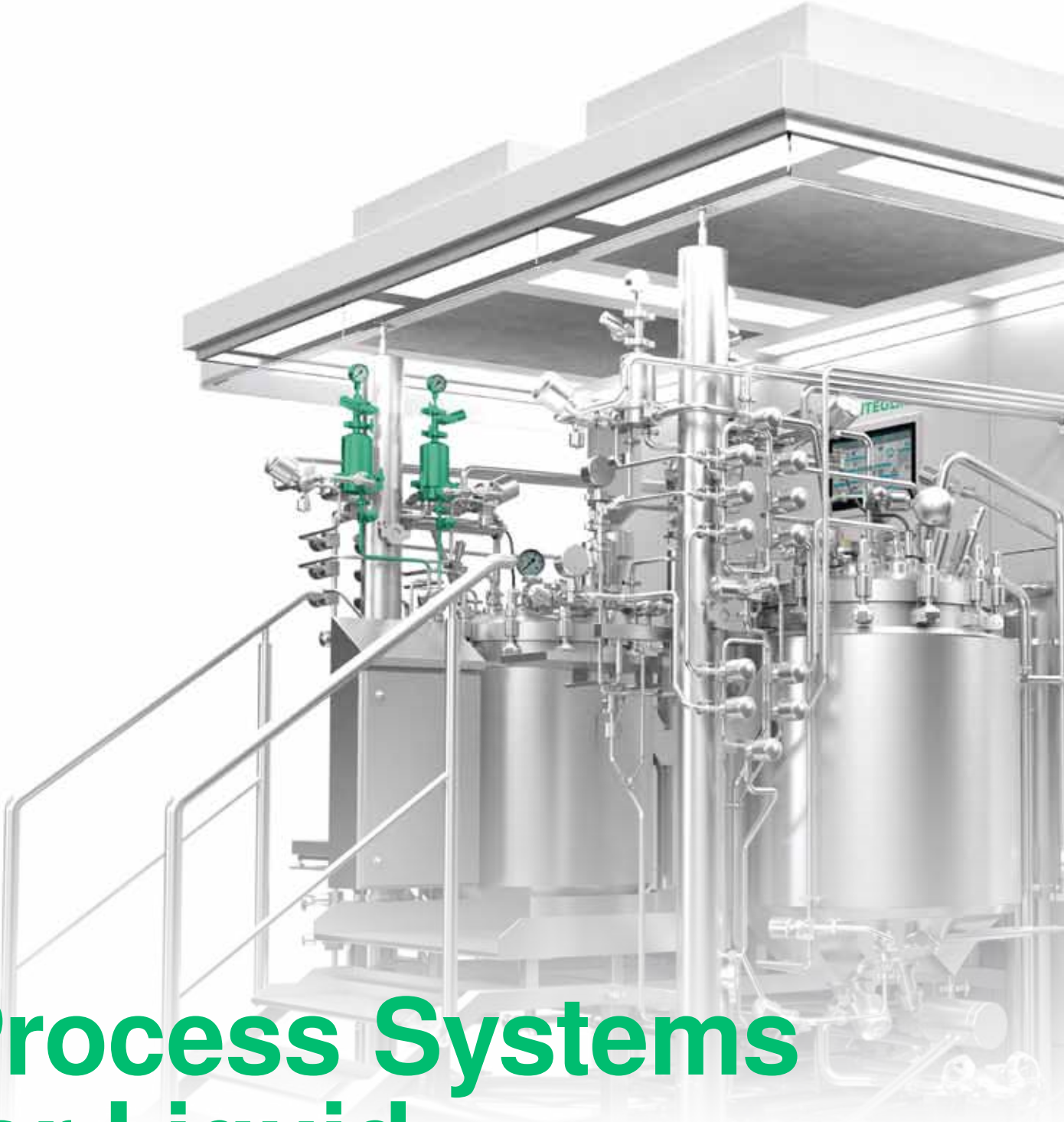


SYNTEGON

PROCESSING & PACKAGING



**Process Systems
for Liquid
Pharmaceuticals.**

6.100

employees

64.000

machines in the installed base

Count
on it.

30

locations

50

years in business

1.3 billion

euros annual sales

1.100

service specialists

2.000

patented inventions

Syntegon Technology is your reliable partner for process and packaging technology in the global pharmaceutical and food industries. Whether you are an aspiring start-up or a global market leader, we offer intelligent and sustainable solutions for everyone.

Individual machines, systems or services – as a full-service provider, we take responsibility right up to fully integrated end to end solutions. Fields of application in the pharmaceutical industry are the production, processing, filling, inspection and packaging of liquid and solid active ingredients in all common packaging materials.

In the food industry, we offer solutions for the primary and secondary packaging of dry, liquid and frozen food as well as process technology for the production of confectionery.

We are at your side from project planning, development and implementation to comprehensive digitization, qualification and validation services. In addition, you always have access to our worldwide network of service specialists who support you throughout the entire machine life cycle.

From preparation to filling: everything from one source

The Syntegon portfolio covers the entire production chain of liquid pharmaceuticals: from the production of pure media to the final packaged product.

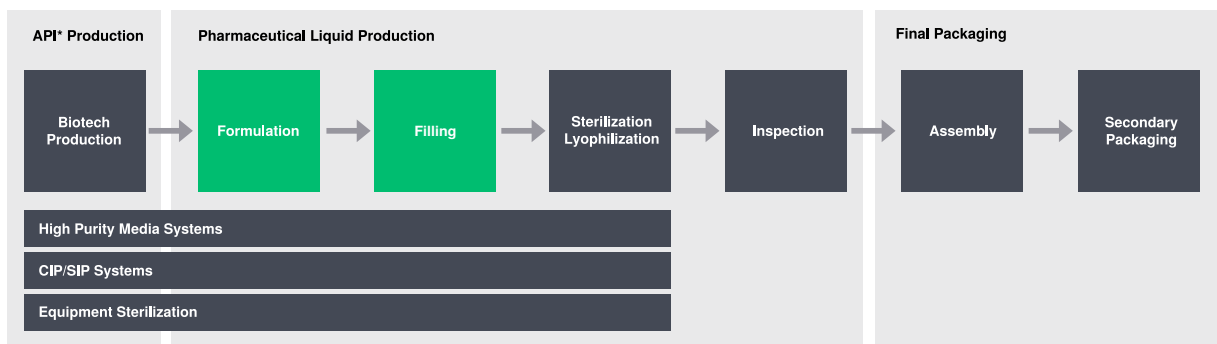
Our focus is on maximum safety and efficiency for your processes. Thanks to modern engineering, a high degree of digitalization, automation and a continuous flow of data you receive the entire scope fully integrated from one source.

You are on the safe side: our modular Pharmatec SVP process system for the production of small volume liquid pharmaceuticals offers you "the perfect match for every batch" – whether you choose a stand-alone machine or an integrated line.



Your advantages at a glance:

- ❑ Many years of experience in the design and engineering of process systems
- ❑ The highest quality and flexibility for your production chain
- ❑ SVP: modular process system for small volume pharmaceuticals
- ❑ Perfect integration of process system and filling line



*API = Active Pharmaceutical Ingredient

Your process system for small volume pharmaceuticals

More than 70 functional modules: the Pharmatec SVP process system is a highly modular and flexible solution for the production of small volume liquid pharmaceuticals.

Our industrial designers and engineers have developed the SVP process system in close cooperation with our customers. Our joint goal: the greatest possible flexibility and maximum ease of operation.

The result is a highly flexible and modular system. We use pre-tested modules to design your individual solution, which is precisely tailored to your needs and can be rapidly put into operation.

Filter modules

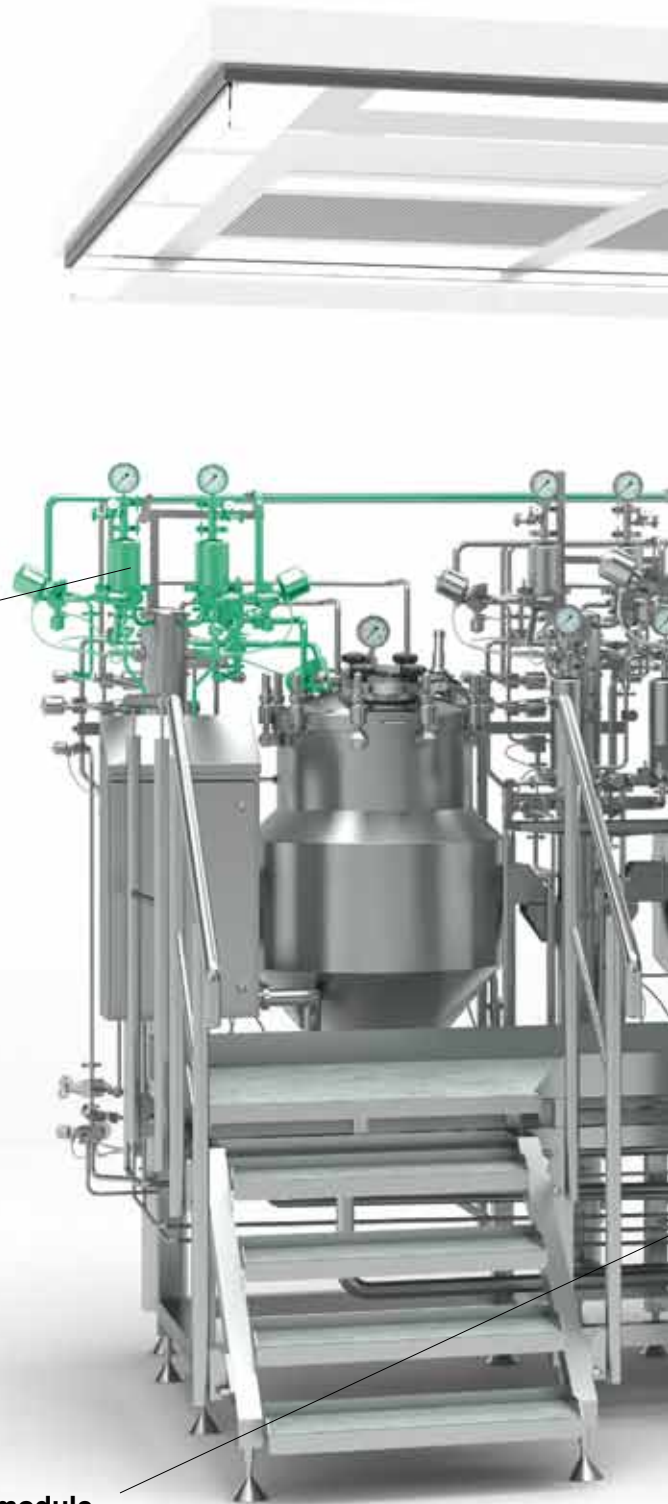
- ▣ Independent gas filters
- ▣ Product filtration

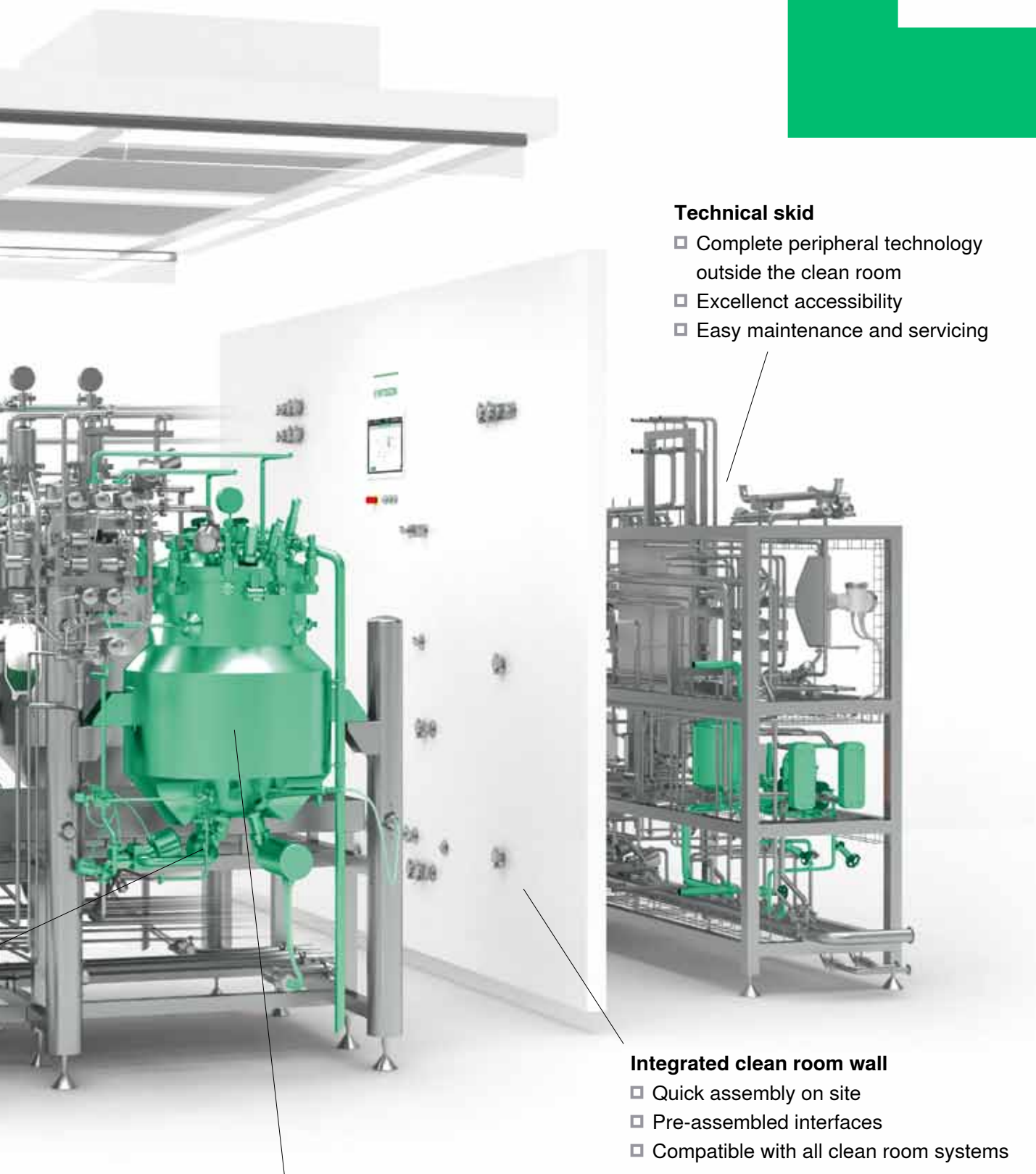
Your advantages at a glance:

- ▣ Maximum flexibility and ease of operation
- ▣ Flexibly configurable system
- ▣ Modular building set with short delivery times
- ▣ Particularly user-friendly and easy to maintain

Sampling module

- ▣ Penetrable membranes
- ▣ Automatic sampling valves (suitable for CIP/SIP)
- ▣ Single and multiple bottle solutions
- ▣ Hybrid solutions





Technical skid

- ❑ Complete peripheral technology outside the clean room
- ❑ Excellent accessibility
- ❑ Easy maintenance and servicing

Integrated clean room wall

- ❑ Quick assembly on site
- ❑ Pre-assembled interfaces
- ❑ Compatible with all clean room systems

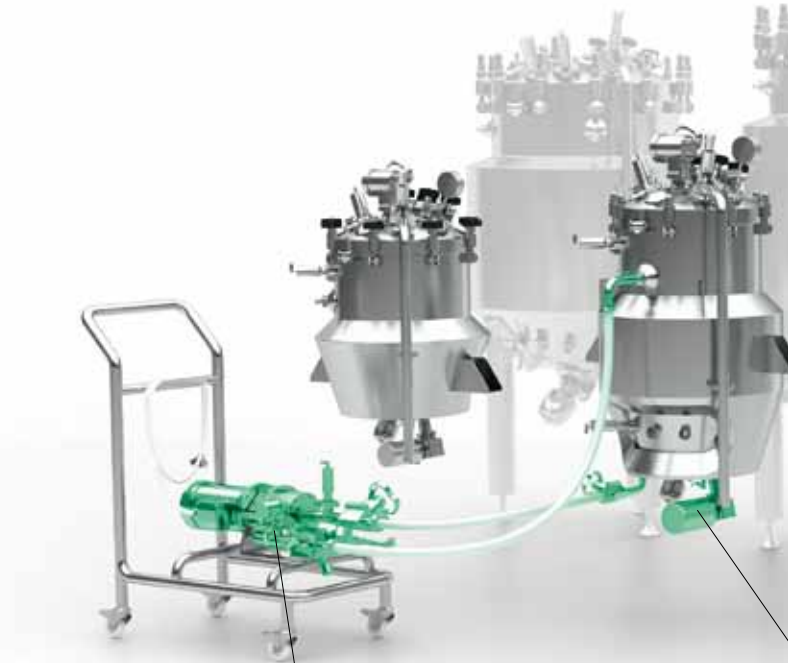
Preparation and storage tanks in the clean room

- ❑ High ease of use
- ❑ Ergonomic accessibility
- ❑ Easy cleaning

The highest flexibility: batch sizes from 13 to 3000 liters

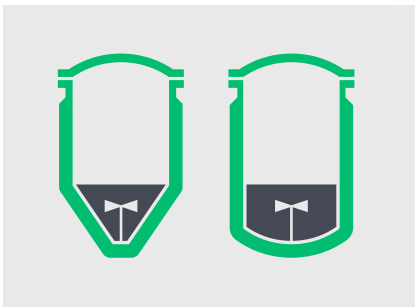
Full range of combinations according to product and batch size. We will find the right solution for your requirements.

The highest degree of flexibility is our priority, in both the layout of your room concept and the configuration of the production units. Together we will define the shape, volume and equipment of up to five fixed and mobile containers so that you receive exactly the preparation system you need for your products.



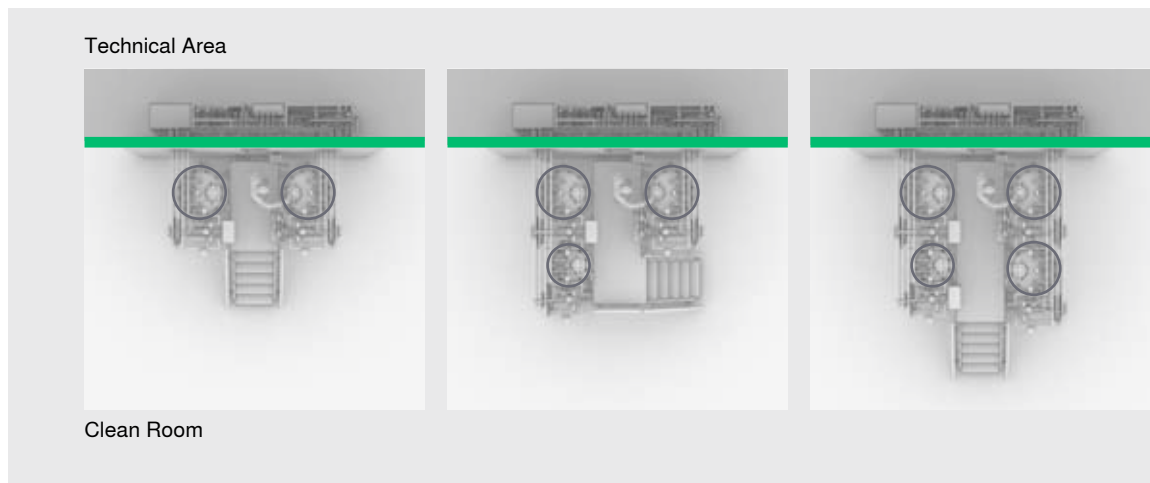
Optional, mobile **homogenizer** integrated in the control system

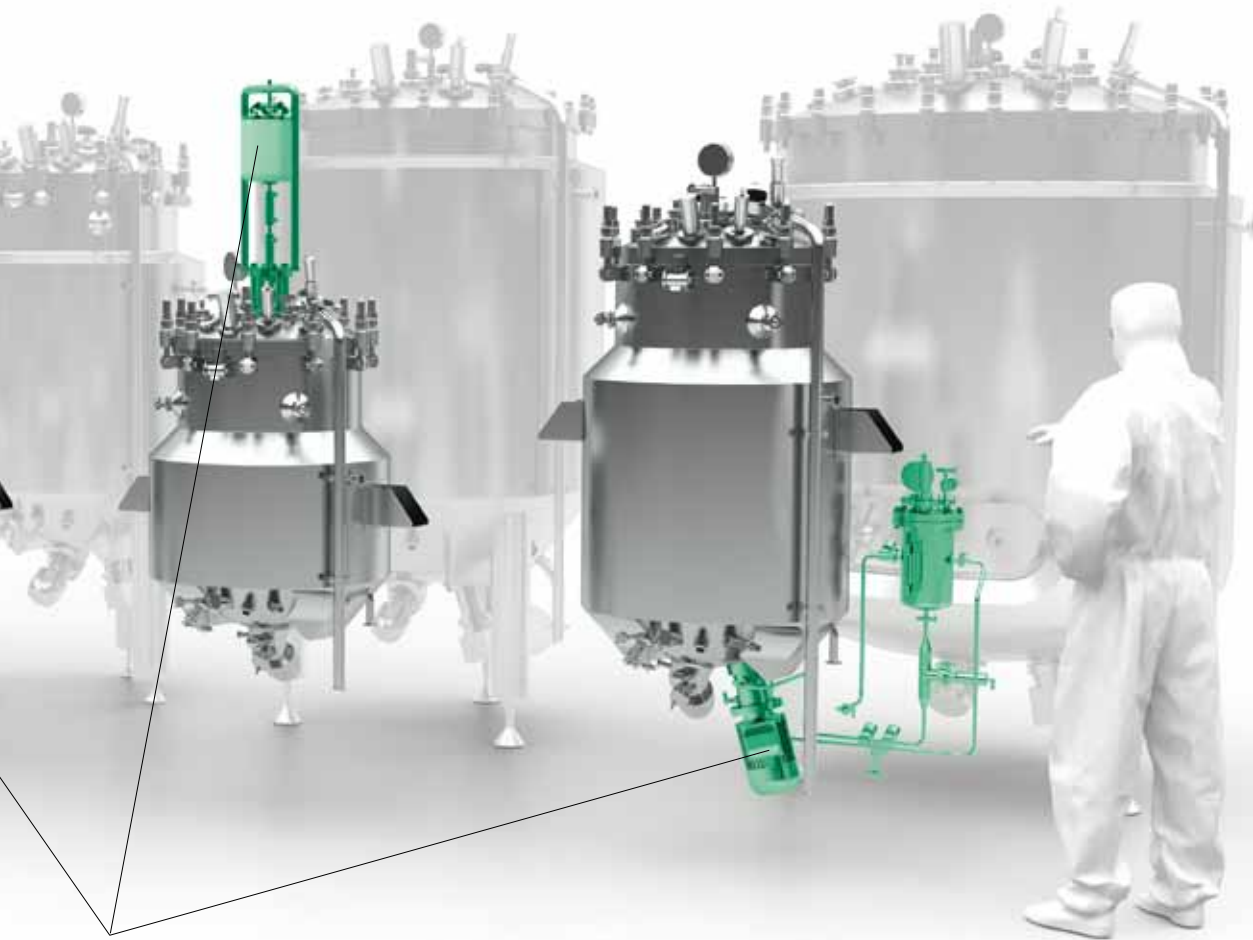
Conical vessels for small batch sizes and minimal process volumes



Room concept

- ❑ Flexibly adaptable to the most diverse production requirements
- ❑ Compact floor space, low clean room footprint
- ❑ Good accessibility
- ❑ Defined interfaces enable easy extensions



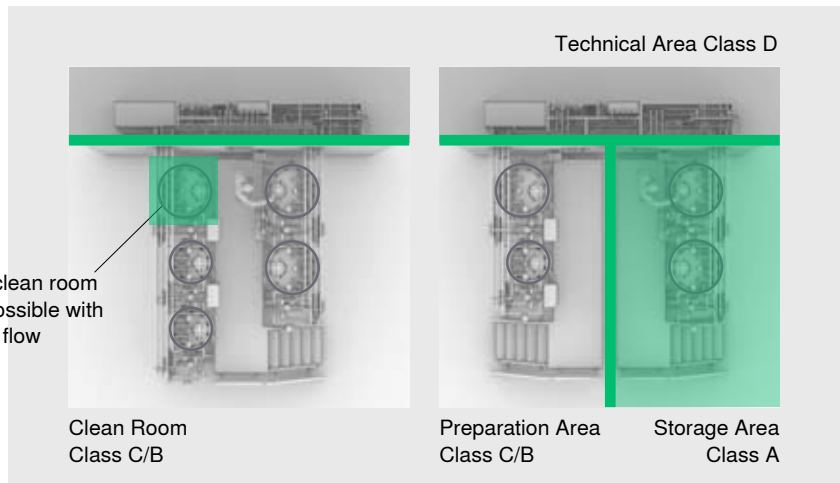
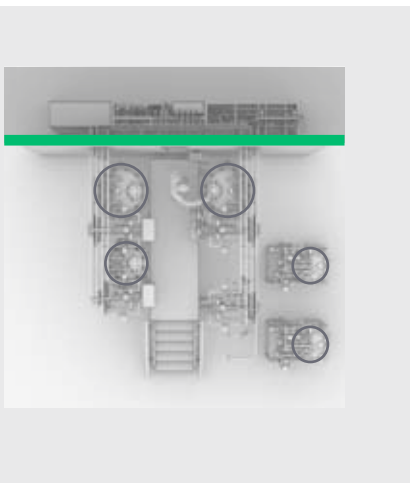


Variable agitator modules

- ▣ Magnetic stirrers
- ▣ Vibromixer
- ▣ High-shear agitators

Your advantages at a glance:

- ▣ Individually configurable
- ▣ Freely selectable shape, equipment and volume
- ▣ Optionally separated preparation and storage areas
- ▣ Production in different clean room classes possible
- ▣ Especially good accessibility in the technical area



SVP: the perfect match for every batch

Thanks to their numerous equipment options, the SVP process systems are perfectly suited for the safe production of a wide range of liquid pharmaceuticals.

The safety of operators and products comes first. We can meet complex requirements such as aseptic production or the processing of toxic substances simply by selecting the appropriate functional modules.

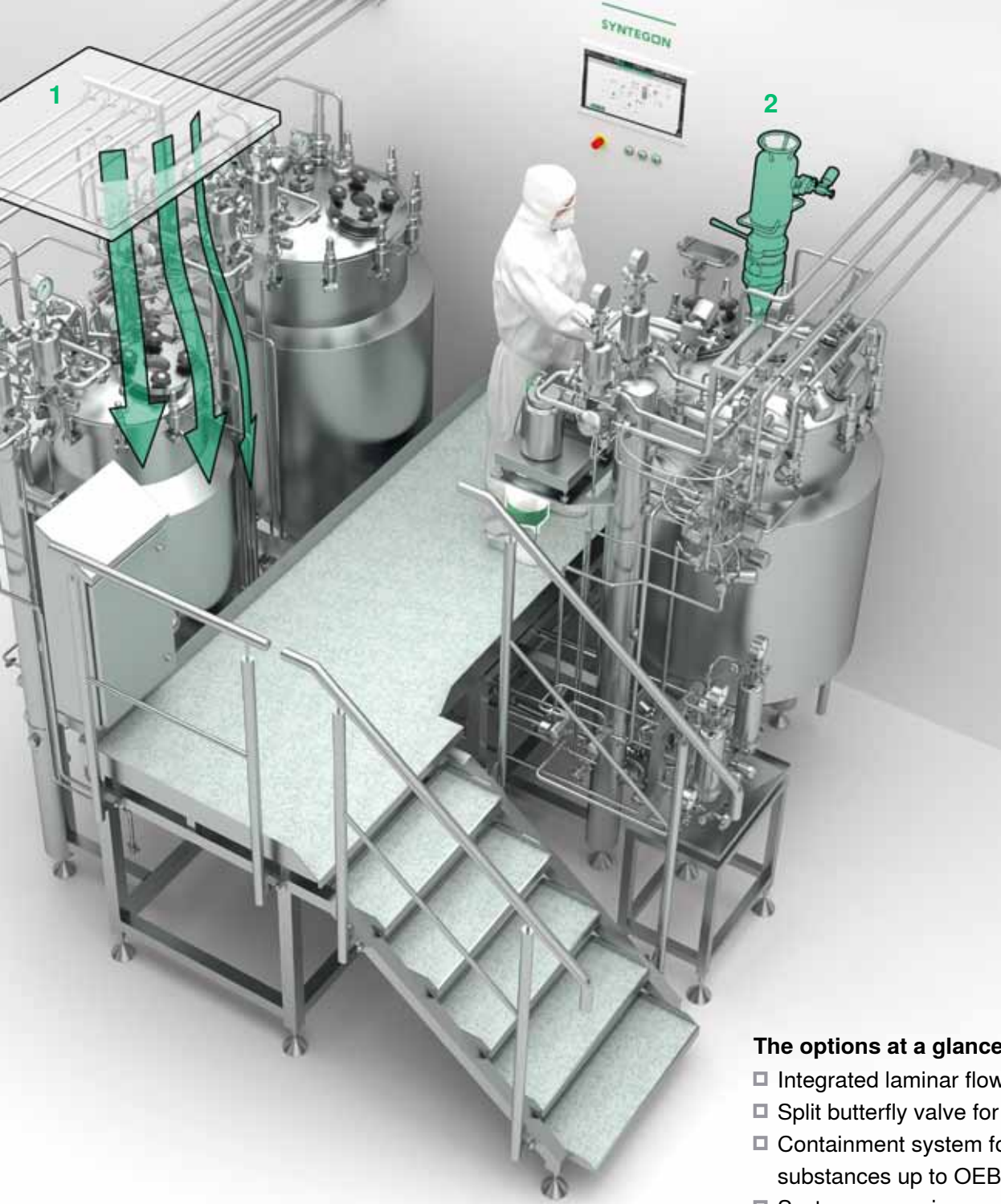


Large product variety:

- Insulin
- Vaccines
- Ophthalmics
- Ear drops
- ... and many more

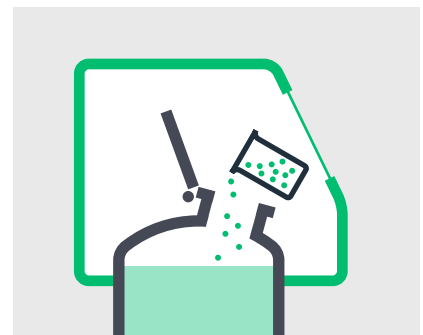
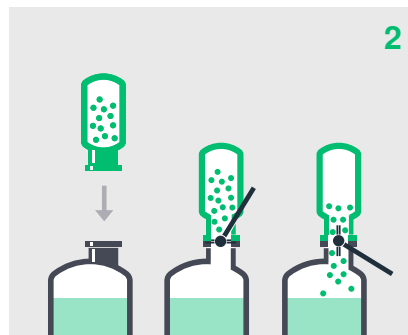
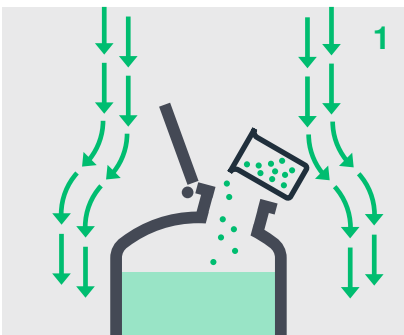
Highest demands on operator protection

Potency	OEB	OEL	Barrier System
extremely potent	6	< 0,1 µg/m ³	Isolator
highly potent	5	< 1 µg/m ³	Isolator/Containment
potent	4	1 – 10 µg/m ³	Containment
moderate potency	3	10 – 100 µg/m ³	Laminar Flow
low-moderate potency	2	100 – 1000 µg/m ³	Laminar Flow
low potency	1	1000 – 5000 µg/m ³	Laminar Flow



The options at a glance:

- ❑ Integrated laminar flow module
- ❑ Split butterfly valve for aseptic production
- ❑ Containment system for toxic substances up to OEB5
- ❑ System expansion possible with customer-specific isolator systems



Automation: from recipe to product

We strive to define trends and drive digital production. The result: attractive solutions for production monitoring and control.

Our automation architecture, which is structured according to ISA-88, is one of the foundations of our modularization. Mechanics, electronics and software merge into intelligent mechatronic modules in our systems.

Numerous customers around the world already rely on our proven software solutions. Become part of the success story. The implementation of your individual recipe on the SVP process system can be realized in three different ways.

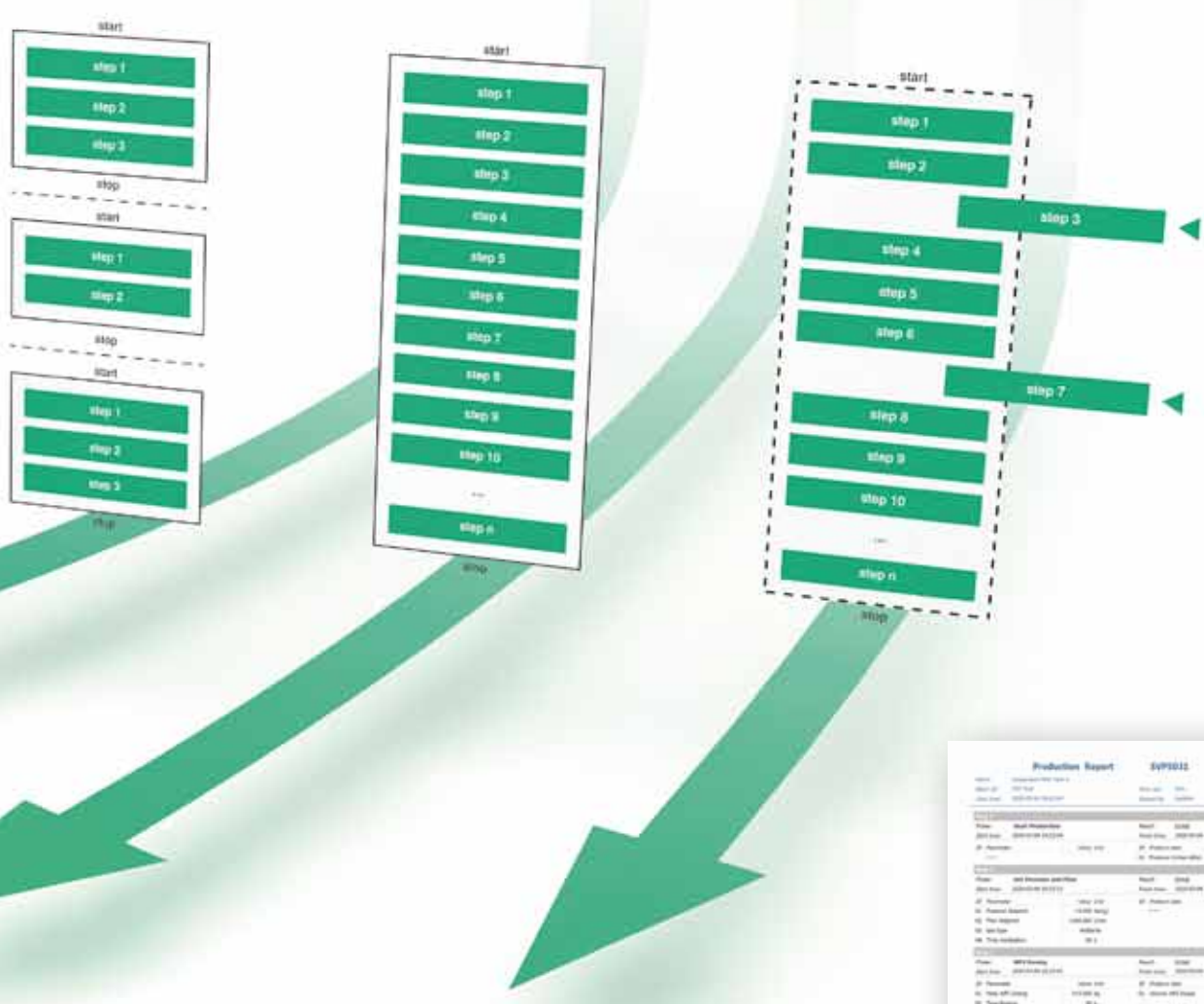
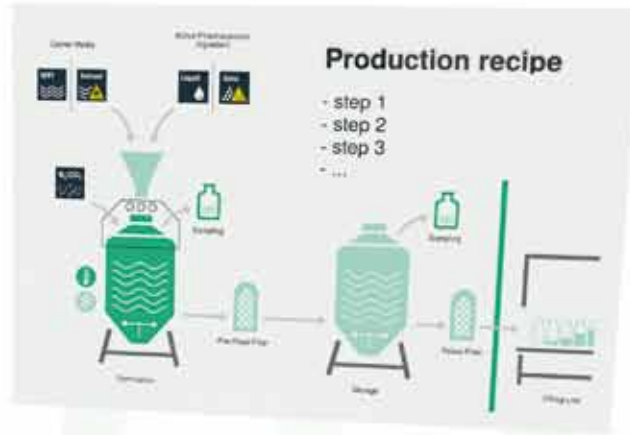


Program sequence

- ❑ Functions that can be started individually
- ❑ Flexible for many different products
- ❑ Low level of automation
- ❑ Entry variant

Production sequence

- ❑ Customized automated function sequences
- ❑ Ideal for a lower number of different products
- ❑ Higher degree of automation
- ❑ Aligned customer solution



Batch management system

- Maximum flexibility
- High degree of automation
- Validated basis

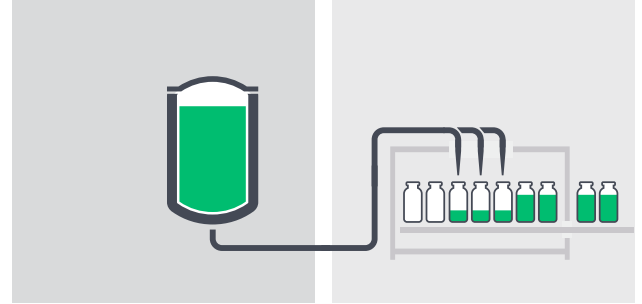


Production Report		SVP1012		Customer	
Batch No.	0000000000000000	Batch Size	1000	Production Date	2023-10-27
Production Date	2023-10-27	Production Time	10:00:00	Production Location	001
Production Method	001	Production Status	001	Production Operator	001
Production Reason	001	Production Reason Code	001	Production Reason Description	001
Production Start Time	2023-10-27 10:00:00	Production End Time	2023-10-27 10:00:00	Production Duration	00:00:00
Production Start Date	2023-10-27	Production End Date	2023-10-27	Production Duration	00:00:00
Production Start Time	2023-10-27 10:00:00	Production End Time	2023-10-27 10:00:00	Production Duration	00:00:00
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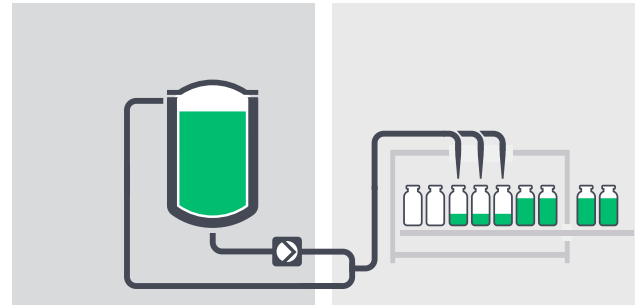
Your advantage: everything from one source

Thanks to our line competence, you can flexibly combine our process systems and filling machines. Whichever way you look at it: with Syntegon, everything fits together perfectly!

We offer you a synchronized line layout from one source. You benefit from aligned M2M interfaces and an integrated safety concept. Since all relevant information is available on every HMI, you can reduce your clean room footprint and increase the user-friendliness of your line.



Fixed pipe



Fixed circulation pipe

Product transfer via fixed piping

- ❑ Minimum process times thanks to integrated processes
- ❑ Minimal product loss
- ❑ Reduced system complexity

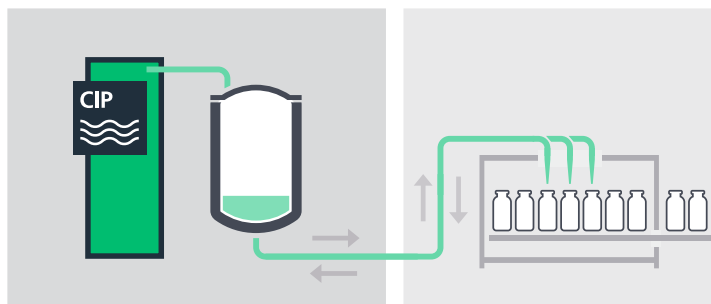
Product transfer with mobile vessel

- ❑ Full flexibility
- ❑ Suitable for spatially separated production and filling
- ❑ Wide range of volumes can be processed



Integrated CIP system

- Minimum process times thanks to integrated processes
- Cost effective thanks to integrated CIP system
- Low system complexity



Selection of filling machines



FXS Combi

The FXS Combi is an extremely flexible filling machine: a machine with two, five or ten heads processes pre-sterilized syringes, vials and cartridges in the low, medium and high output ranges.



ALF 5000

In addition to an increased output of up to 600 containers per minute, the ALF 5000 delivers an optional 100 % in-process control and hygienic design. Further advantages: easier cleaning and high safety.







MLD 3000

The MLD series for medium and high output ranges impresses pharmaceutical engineers all over the world with its performance, precision and safety. Thanks to its modular and space-saving concept, this linear machine can be adapted to individual requirements.

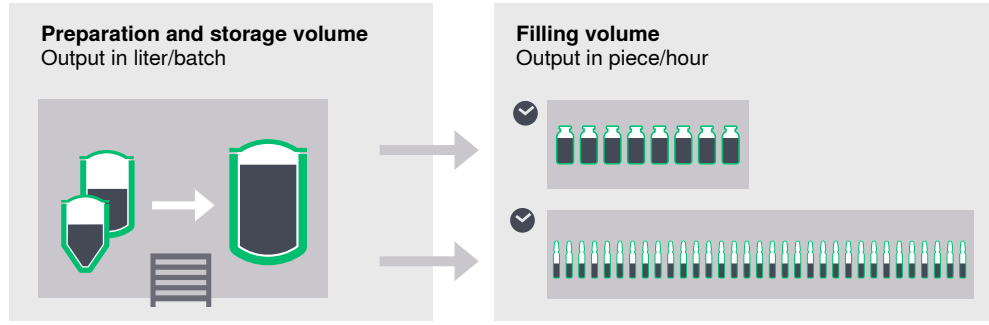
The right size for every product

Tailored to your individual production requirements: our wide range of solutions is sure to have the right size for your production plans.

		Batch Size
SVP 05		13 – 50 l
SVP 10		30 – 100 l 15 – 100 l*
SVP 15		30 – 150 l 20 – 150 l*
SVP 25		50 – 250 l 25 – 250 l*
SVP 40		80 – 400 l 40 – 400 l*
SVP 50		100 – 500 l 50 – 500 l*
SVP 60		120 – 600 l 60 – 600 l*
SVP 100		200 – 1000 l 100 – 1000 l*
SVP 200		400 – 2000 l 200 – 2000 l*
SVP 300		600 – 3000 l 300 – 3000 l*

ALF 5000	ARF	FLC
		
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* when using conical vessels



MLF	MLD 3000	MLD 5000	MRD	FXS 3000	FXS 5000	FXS Combi
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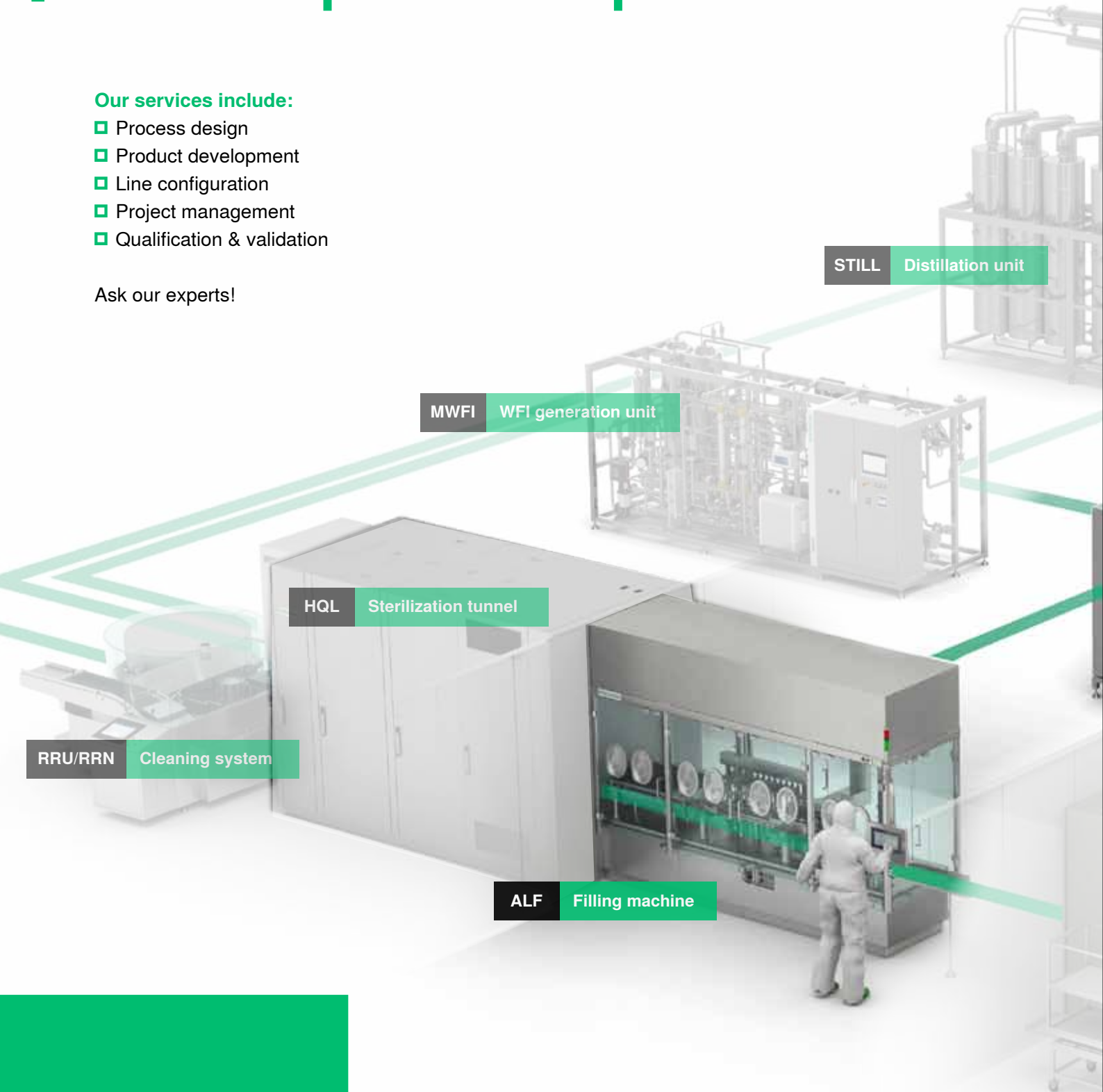


100% line competence = 100% partnership

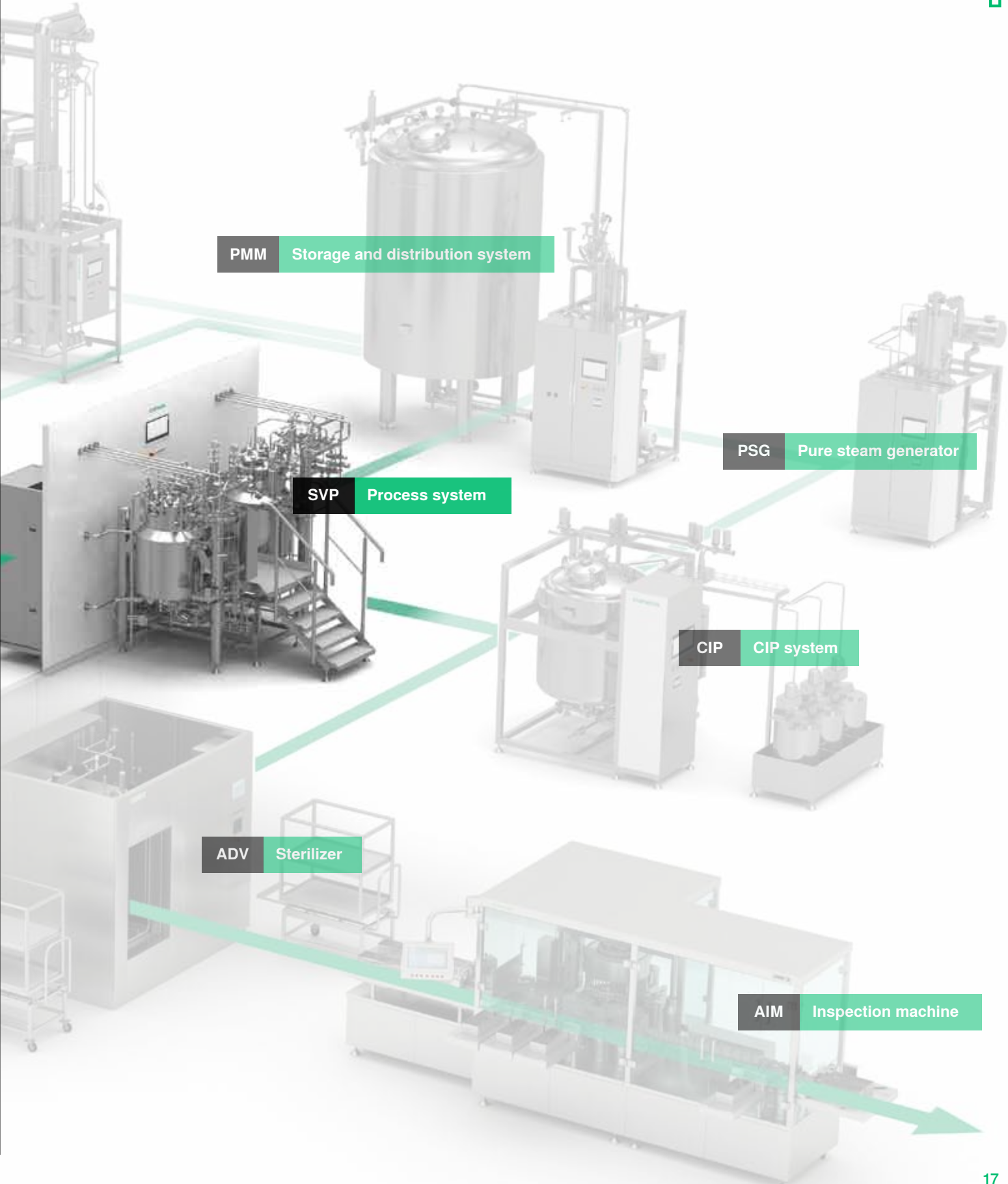
Our services include:

- ▣ Process design
- ▣ Product development
- ▣ Line configuration
- ▣ Project management
- ▣ Qualification & validation

Ask our experts!



Our broad line and system competence makes us your partner of choice when it comes to planning and developing your production lines.



Digital products

Let our versatile and proven software solutions support you in your daily work.

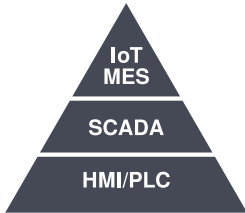
The digitized value chain is becoming increasingly important in the age of Industry 4.0. We are looking forward to developing your ideal digital solutions that meet all regulatory requirements.

Advanced analytics

- ▣ Anomaly detection
- ▣ Process stability
- ▣ Predictive maintenance
- ▣ Image classification

I 4.0 functionalities

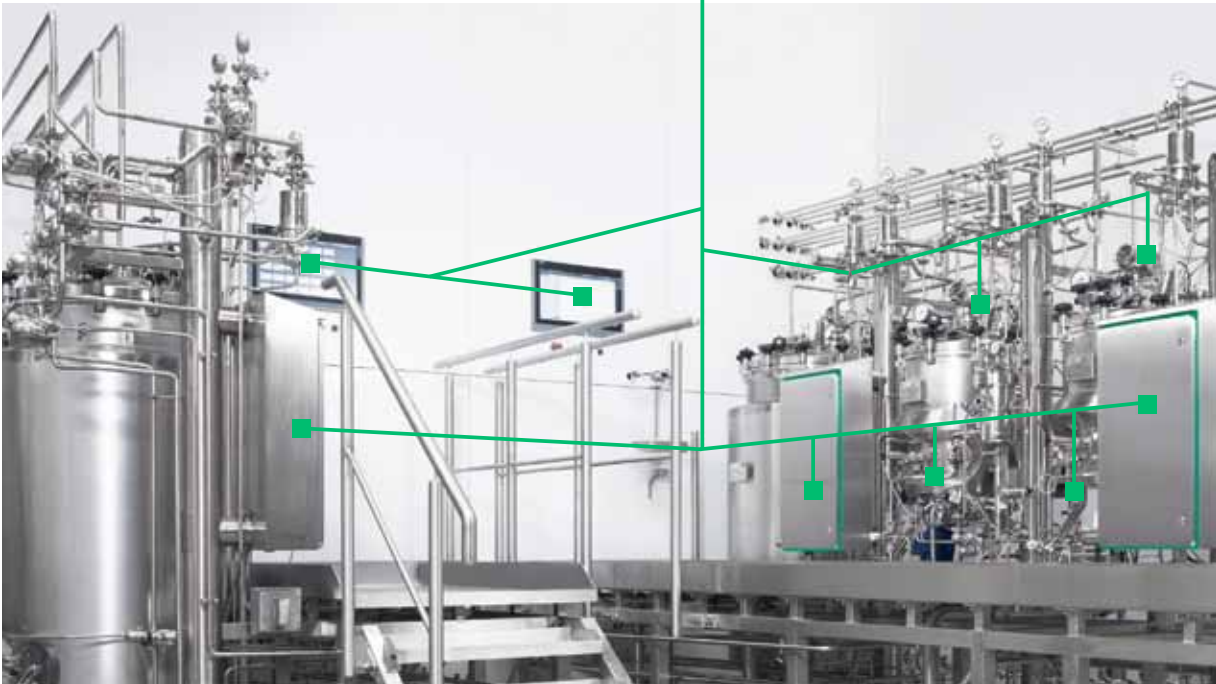
- ▣ Production management
- ▣ KPI management
- ▣ Event tracking
- ▣ Condition monitoring



see ISA 95 automation pyramid



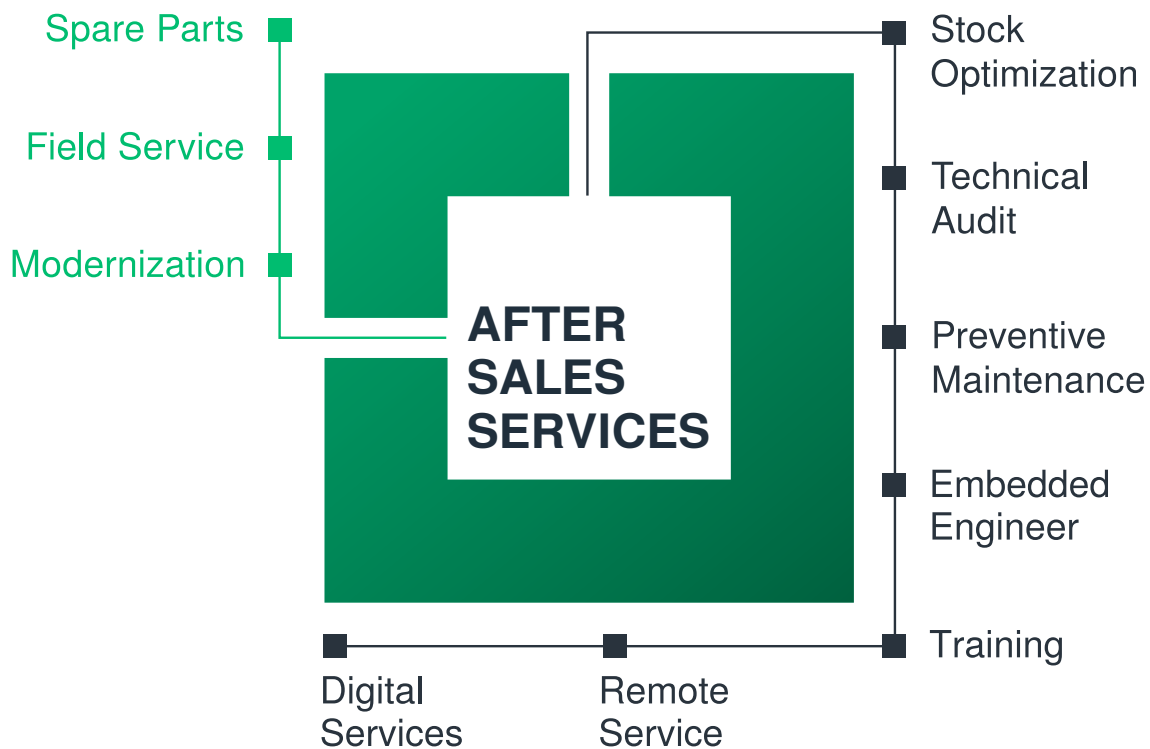
SCADA/MES functionalities



Customized service solutions for the entire life cycle of your machine.

By investing in a Syntegon process system, you gain access to an extensive range of services. We are always there for you, providing reliable services from a single source, all over the world. It begins during the project phase with services such as process consulting, system planning, or lab services. Service continues during operation: from spare parts and field service

offerings to stock optimization, modernization, and preventive maintenance, all the way to remote and data-based services and training. Whether it's a customized solution or a standard service – together with us you achieve maximum output with minimum downtime and optimize the profitability of your machines.



For detailed information please visit our homepage:
www.syntegon.com/services

Connect with our team.

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