

**High Purity Media Systems
for Generation, Storage and
Distribution.**

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.

Your expert for high purity media systems

High purity media systems are essential for the production of liquid pharmaceuticals. At Syntegon, we rely on our globally proven Pharmatec expertise.

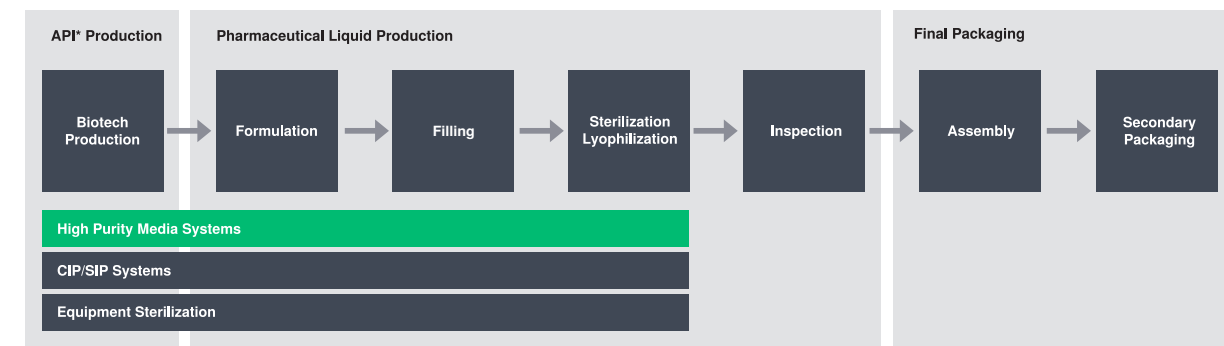
We offer you everything that is required for a seamlessly integrated system infrastructure – from cold and hot generators to storage and distribution systems; from pre-configured units to highly customized high purity media systems.

Whatever solution you choose, our systems ensure a trouble-free process from generation to distribution at the point of use, incl. the associated CIP systems. You benefit from a flexible design of individual modules that can be seamlessly combined to a complete system.



Your advantages at a glance:

- Seamlessly integrated system infrastructure
- Cold or hot generators as required
- Storage and distribution systems for all common media
- From pre-configured to highly customized
- Flexible and modular for your specific processes



*API = Active Pharmaceutical Ingredient

Pharmatec Syntegon Group

Your custom-fit high purity media system

The Pharmatec high purity media systems from Syntegon make sure you have the right pure water quality at any time all over the world!

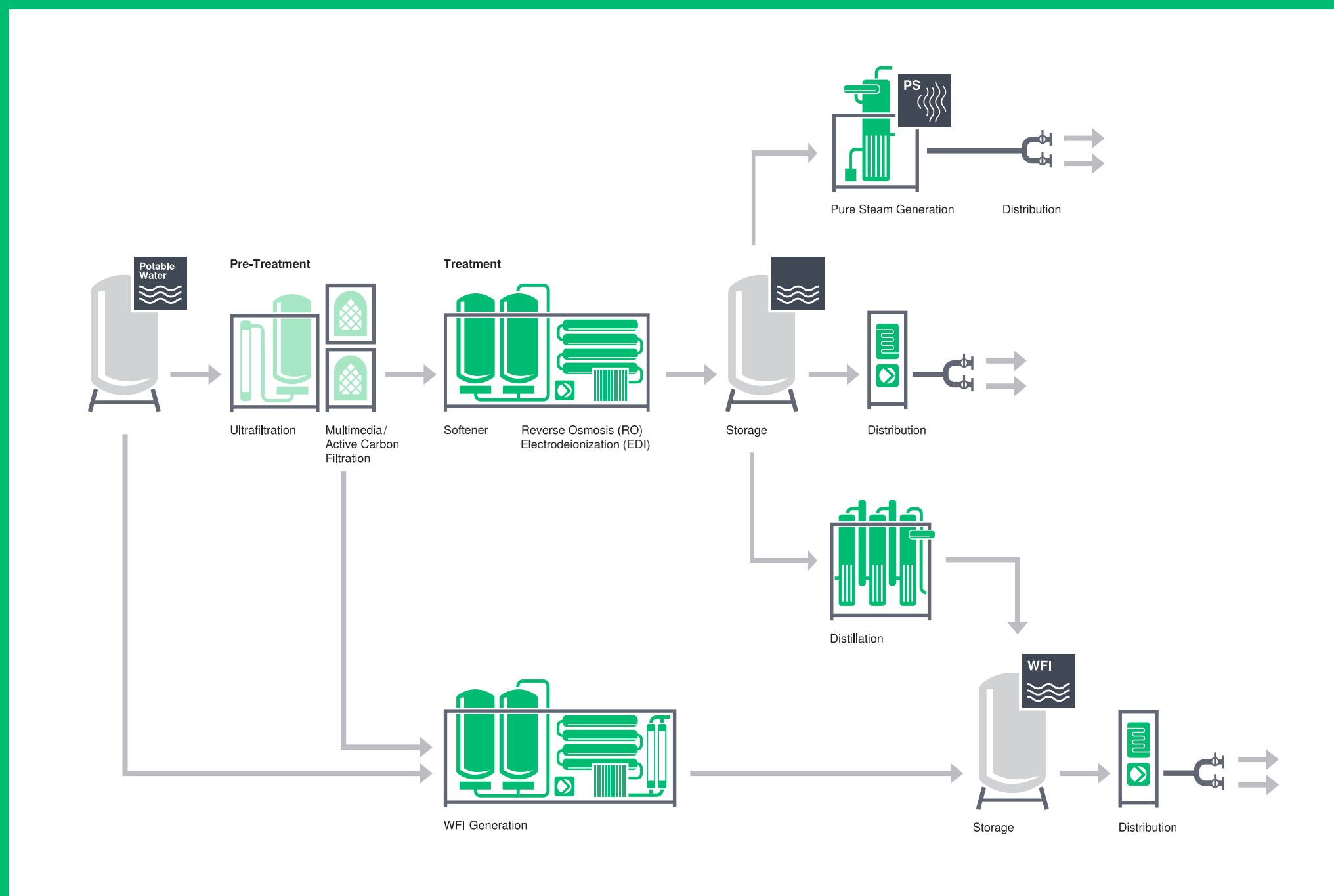
Our portfolio ranges from compact generator systems for water treatment to pure steam generators and complete supply systems for pharmaceutical production processes.

State-of-the-art membrane or distillation systems are used for the generation of PW¹, WFI² and PS³. Thanks to their modular design, you can adapt the capacities to your individual requirements.

Our engineers' many years of experience enable us to deliver even highly complex systems ready to use. Moreover, we are delighted to support you in all project phases, from concept design to start-up.

Your advantages at a glance:

- High purity water for pharmaceutical and biotech applications at all times and worldwide
- In line with national and international regulations
- From compact machines to complete supply systems
- Efficient and inexpensive adaptation of standard platforms



¹ PW = Purified Water

² WFI = Water for Injection

³ PS = Pure Steam

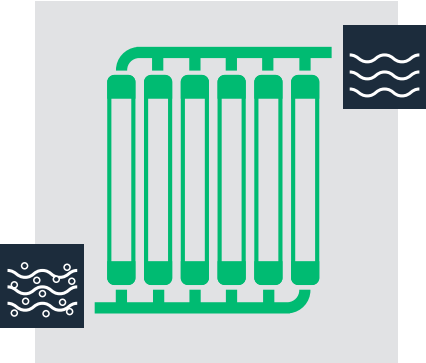
Pretreatment of potable water

No matter the quality of the potable water supply – you are on the safe side with the Pharmatec potable water pretreatment systems!

Depending on the origin and quality of the available potable water, different processes and treatment stages are required. Our offer is therefore based on a modular system that allows you to implement tailored pretreatment measures.

We not only provide the generator units; we offer you the entire design including water analyses, as well as specific operation and maintenance concepts. Our portfolio ranges from the removal of particulate matter to the conditioning of potable water. Of course, softening units and sanitization modules can also be integrated.

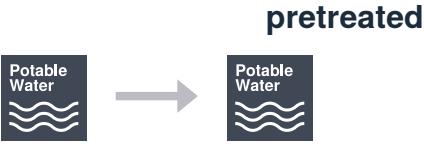
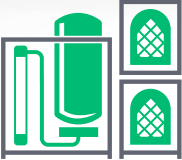
Raw Water Ultrafiltration
removal of particulate matter and bacteria



- Your advantages at a glance:**
- Always the best PW quality
 - Modular system for tailored pretreatment
 - From filtration to ultrafiltration



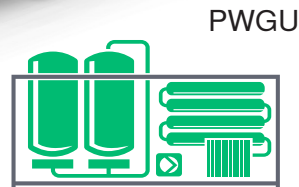
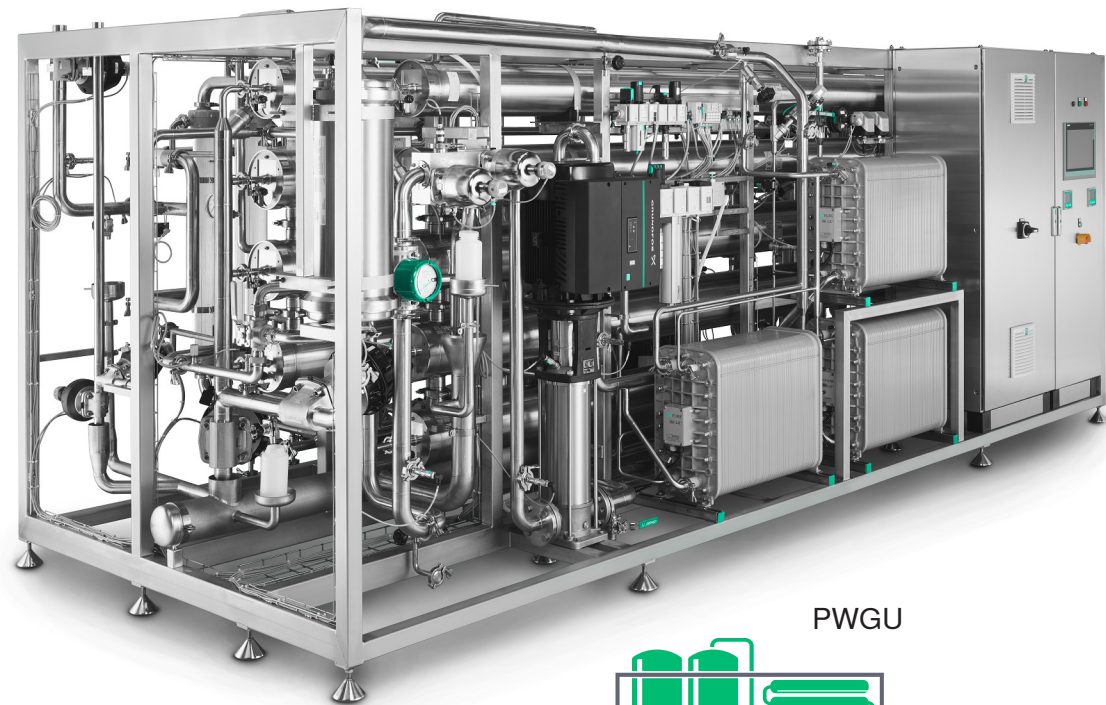
modular pretreatment system



Membrane-based generation processes

Your advantages at a glance:

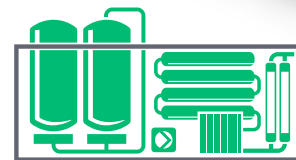
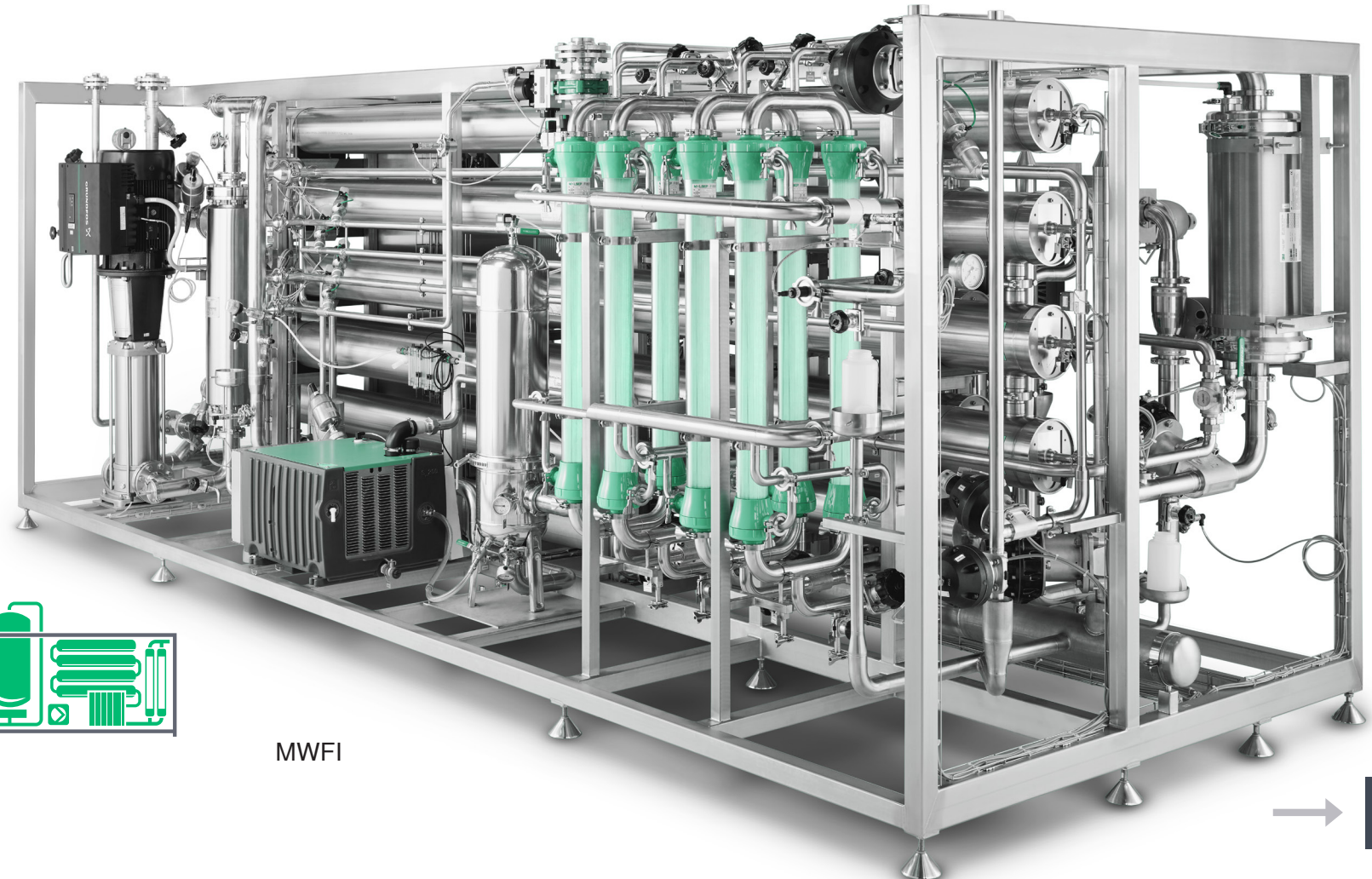
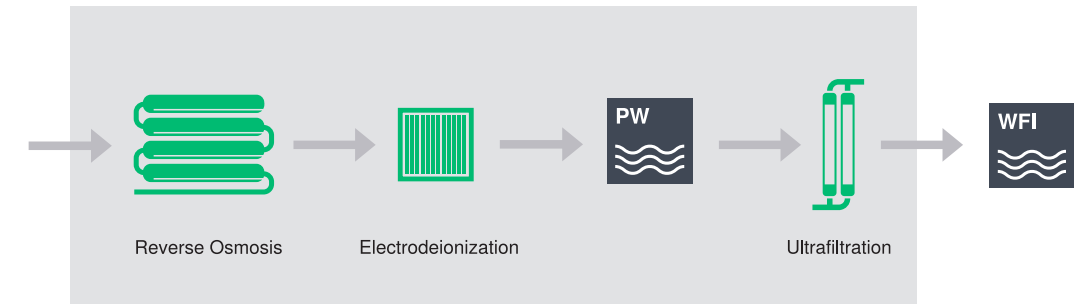
- Processes for PW and WFI quality
- Energy efficiency thanks to cold membrane process
- Modular system for specific requirements
- Small footprint and overall height
- Easy to maintain thanks to excellent accessibility



**Do you need purified water in PW or WFI quality?
We're sure to have the right processes for your particular application!**

We can offer you everything from multi-layer filters and ultrafiltration systems to physical-chemical processes – of course including reverse osmosis, electrodeionization, as well as advanced monitoring and analysis functions.

We have developed a new series of generator units especially for WFI. It is based on the "cold" membrane process of reverse osmosis, which is combined with an electrodeionization modul and a further ultrafiltration stage. The system can be sanitized chemically or with hot water. Measuring instruments and sensors make sure that the water and filter quality are controlled during the entire production process.



MWFI



Thermal generation processes



Still

Your advantages at a glance:

- Many years of Pharmatec expertise
- Robust system type
- Safety through thermal processes
- Low maintenance requirements



Whether you need a single, dual, or triple mode distillation unit – you can always rely on the Pharmatec expertise in thermal generation for the production of WFI and pure steam!

Our multi-column units (Still) use the natural circulation process for distillation. All you need for operation is heating steam for the first column; all other modules are heated in an energy efficient manner utilizing the heat generated during the previous process stage. Patented droplet separation systems eliminate remaining pyrogens. The sterile steam is condensed to high-purity water of WFI quality in the next stage.

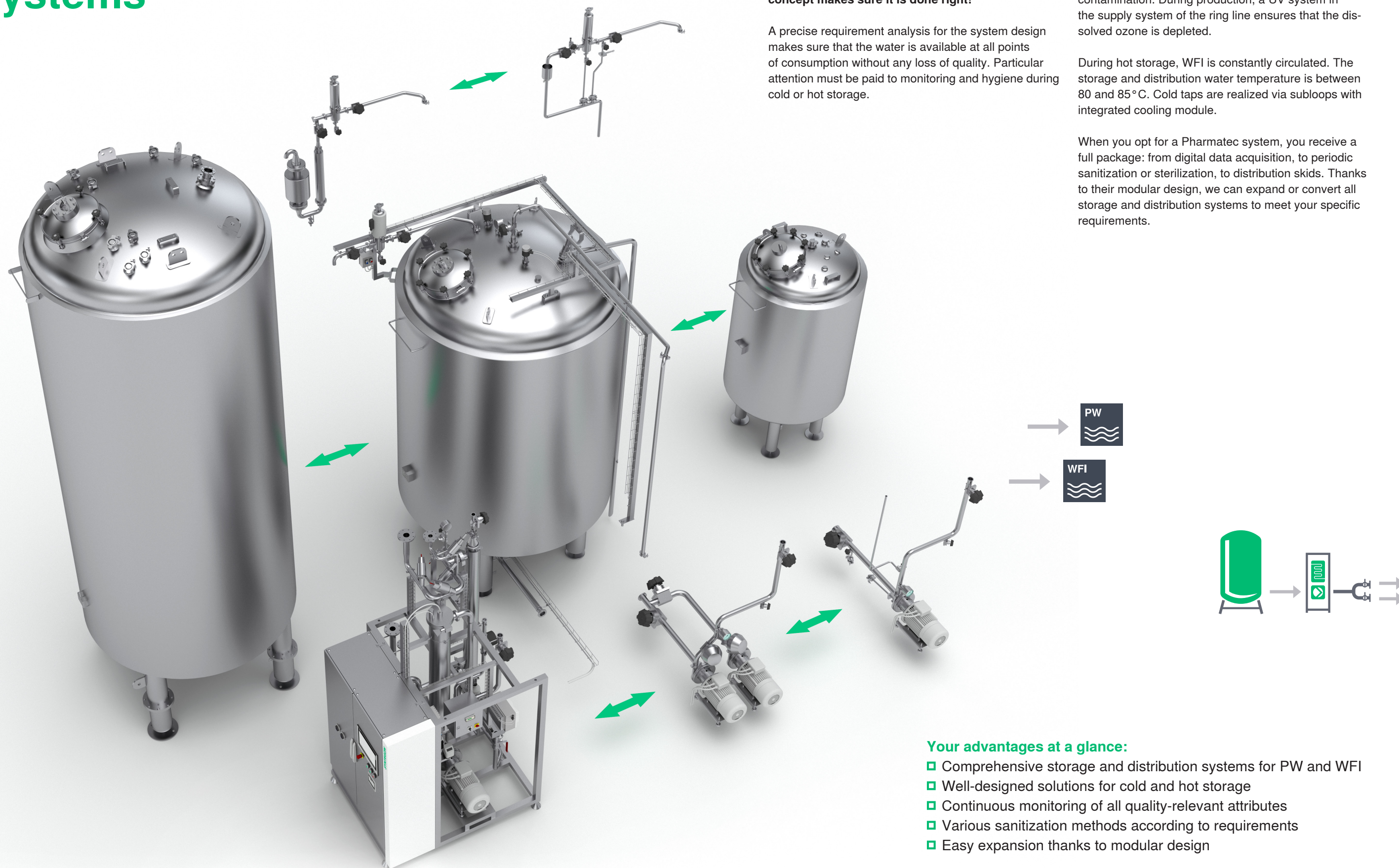
Sterile steam is indispensable for cleaning and sterilizing production systems and autoclaves. It is generated from PW-quality water in an evaporation column driven by heating steam. Non-condensable gases are eliminated by thermal degassing or an integrated membrane degassing module.



PSG



Storage and distribution systems



System Overview

Intermediate sizes are available upon request, as well as a wide range of other modular options that can be integrated into customer-specific systems.

Pretreatment

We offer the right pretreatment solution for every water quality.

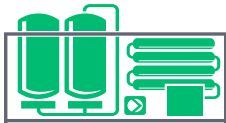
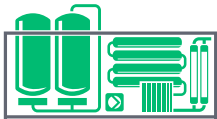


Options:

- ☐ Raw water ultrafiltration
- ☐ Activated carbon filter
- ☐ Hot water sanitization
- ☐ Multimedia filter
- ☐ Chemical dosing

Membrane-based generation processes

PWGU		MWFI	
Type series	l/h	Type series	l/h
400	<input type="checkbox"/> 220 to 550	600	<input type="checkbox"/> 300 to 1 000
1 100	<input type="checkbox"/> 550 to 1 250	1 500	<input type="checkbox"/> 1 000 to 2 100
2 000	<input type="checkbox"/> 1 500 to 2 500	2 500	<input type="checkbox"/> 2 100 to 3 300
3 300	<input type="checkbox"/> 2 500 to 4 500	4 500	<input type="checkbox"/> 3 300 to 6 700
6 600	<input type="checkbox"/> 4 500 to 7 500	9 000	<input type="checkbox"/> 4 900 to 11 900
9 900	<input type="checkbox"/> 7 500 to 11 500	12 500	<input type="checkbox"/> 9 600 to 13 300
13 300	<input type="checkbox"/> 10 500 to 14 500		
16 500	<input type="checkbox"/> 11 500 to 20 000		



Options:

- | | |
|---|---|
| <input type="checkbox"/> Softening | <input type="checkbox"/> Hot WFI production |
| <input type="checkbox"/> Antiscalant dosing | <input type="checkbox"/> Softening |
| <input type="checkbox"/> Thermal sanitization | <input type="checkbox"/> Antiscalant dosing |
| <input type="checkbox"/> Chemical sanitization | <input type="checkbox"/> Thermal sanitization |
| <input type="checkbox"/> Sanitization and softening during operation mode | <input type="checkbox"/> Chemical sanitization |
| | <input type="checkbox"/> Sanitization and softening during operation mode |

Thermal generation processes

Still		PSG	
Type series	l/h	Type series	kg
501	<input type="checkbox"/> up to 500	501	<input type="checkbox"/> up to 500
1 101	<input type="checkbox"/> up to 1 100	1 001	<input type="checkbox"/> up to 1 100
1 501	<input type="checkbox"/> up to 1 500	1 501	<input type="checkbox"/> up to 1 500
2 201	<input type="checkbox"/> up to 2 200	2 501	<input type="checkbox"/> up to 2 500
3 301	<input type="checkbox"/> up to 3 300	3 501	<input type="checkbox"/> up to 3 500
5 001	<input type="checkbox"/> up to 5 000	5 001	<input type="checkbox"/> up to 5 000
6 001	<input type="checkbox"/> up to 6 000		
8 001	<input type="checkbox"/> up to 8 000		
10 001	<input type="checkbox"/> up to 10 000		
12 001	<input type="checkbox"/> up to 12 000		



Options:

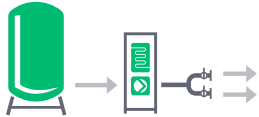
- ☐ Dual mode (WFI or PS)
- ☐ Triple mode (WFI and/or PS)

Options:

- ☐ Thermal degassing
- ☐ Membrane degassing

Storage | Distribution

PMM (Pure Media Master)	
Type series	l/h
4 000	<input type="checkbox"/> up to 3 500
10 000	<input type="checkbox"/> up to 8 500
19 000	<input type="checkbox"/> up to 17 500
30 000	<input type="checkbox"/> up to 28 500
40 000	<input type="checkbox"/> up to 38 500



Options:

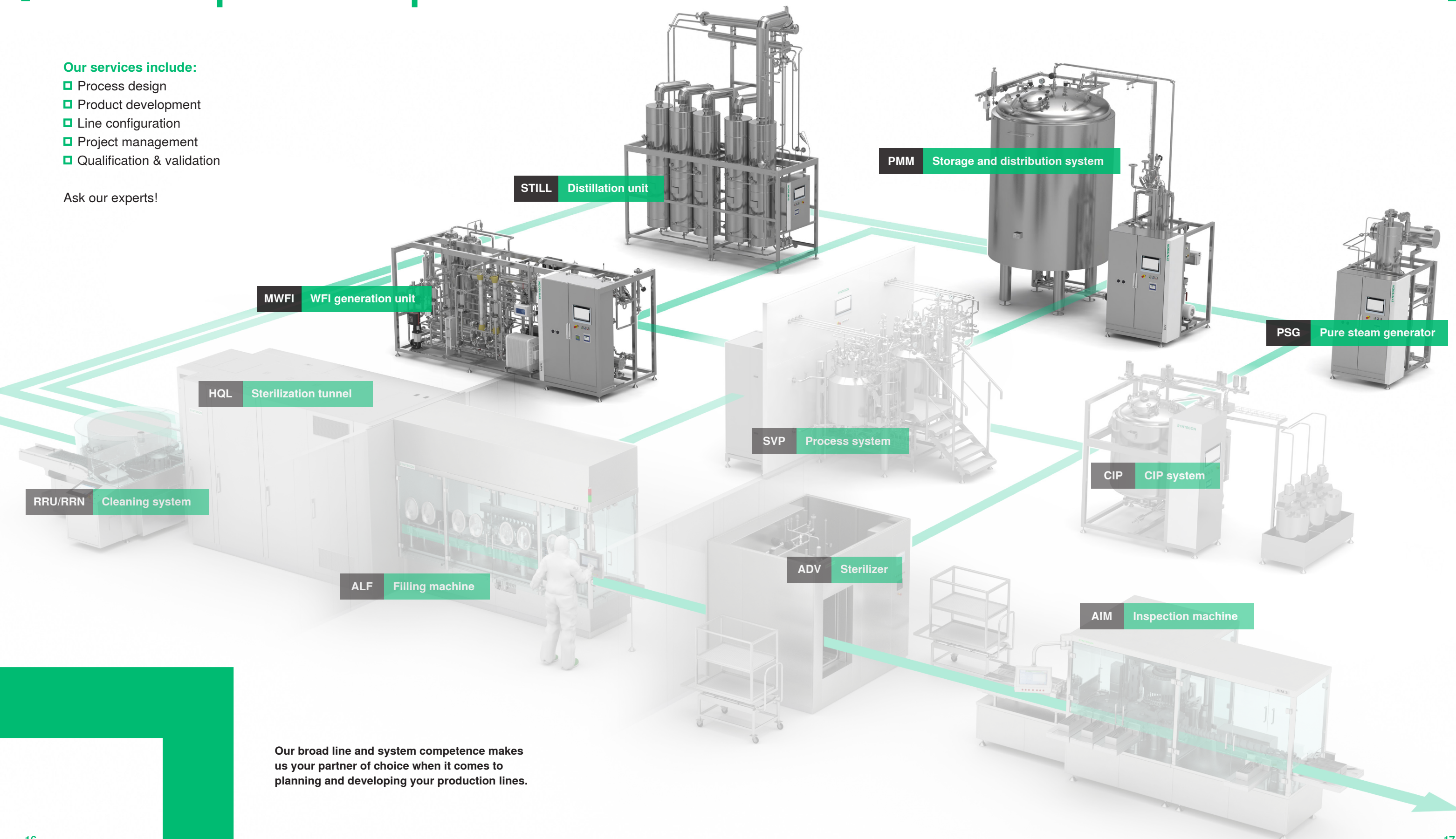
- ☐ Double pump station
- ☐ Steam sterilization (SIP)
- ☐ UV lamp
- ☐ TOC measurement
- ☐ Cold storage with sanitization 85°C
- ☐ Hot storage with sanitization 121°C
- ☐ Cold storage with ozone

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.

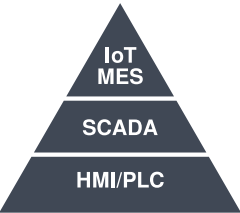
Digital products

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.

I 4.0 functionalities

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



see ISA 95 automation pyramid

Advanced analytics

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



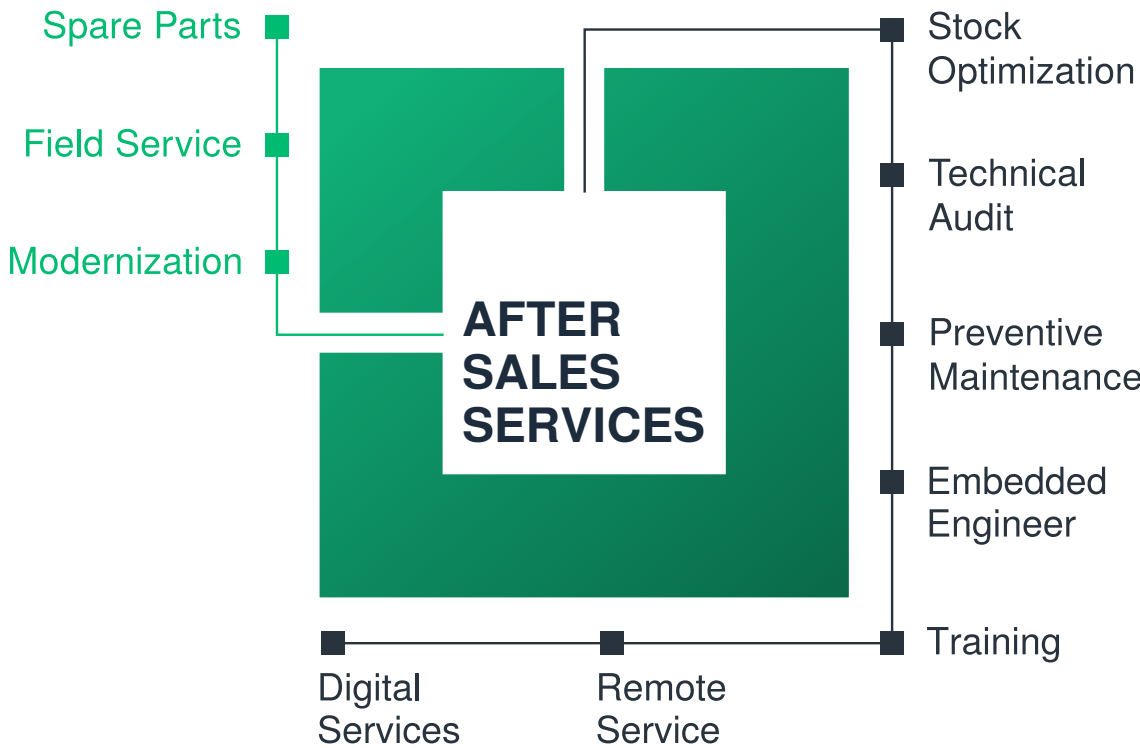
SCADA/MES functionalities



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

By investing in a Syntegon High Purity Media 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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