



Advanced
Automation
Systems



Production Lines Guide

Production Lines range

Production Lines for Flat Emitters



N350 FL

Pages 8-11



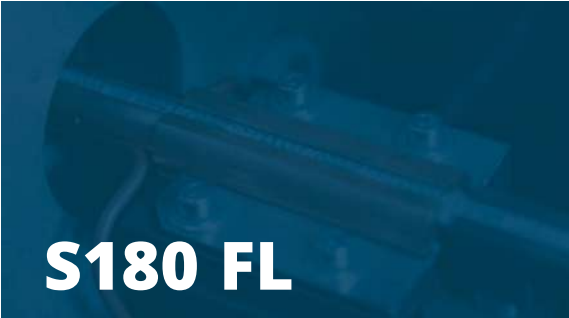
H250 FL

Pages 12-15



T250 FL

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S180 FL

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Production Line for Cylindrical Emitters



R120 CL

Pages 24-27



By utilizing our knowledge, experience and expertise, we offer the most advanced solutions for the drip irrigation industry worldwide



We are a global leader in developing state of the art production lines for the drip irrigation industry

Production Solutions

We are a global leader in designing and developing state of the art production lines for the drip irrigation industry. By combining the knowledge, experience and expertise of our dedicated R&D department with the cutting-edge technology, we are able to deliver the best possible solution for every dripline production.

Being active in drip irrigation manufacturing for more than 40 years worldwide, enables us to offer to our partners the optimal solution, tailored for their specific manufacturing capabilities and market needs.

Production lines

Our production lines are designed and developed for the optimal and uninterrupted operation, at the highest possible production speed, while at the same time attaining the maximum efficiency.

All individual parts of every production line are designed in-house by our R&D team and manufactured from carefully selected suppliers, according to our strict specifications and under proprietary mechanical designs, perfected by our constant strive for excellence and upgrade. Our dedicated R&D department is constantly upgrading every single part, using the latest technologies available for every unit, in order to offer the most efficient production lines of the highest quality, which will constantly add value to our partners operations and dripline production.

Software

One of the most important elements of our production lines, is the fully customized, in-house developed operation software. Our software makes all parts work together in perfect harmony, for achieving the highest efficiency and effectiveness.

Our dedicated R&D software experts, design, develop and constantly upgrade the software of our production lines in order to achieve the optimum operation of every single mechanical component. That offers the benefit of constantly improving it and enables us to provide bespoke solutions to our partners.

Additionally, our team has designed and developed an easy to comprehend and operate Human-Machine Interface (HMI), which requires the minimum effort from the end user, while controlling 100% of the production line operation and individual functions, from all access points available.

Production Lines

We offer three types of production lines for drip irrigation pipe (dripline) production, which utilize all emitter types that we produce, both flat and cylindrical.

- N350 FL Ultra-High-Speed production line for Nano® emitters
- H250 FL, T250 FL and S180 FL High-Speed production lines for flat emitters
- R120 CL High-Speed production line for cylindrical emitters

Our production lines are designing and developing in-house by our dedicated R&D department with emphasis on the highest possible production efficiency. The aim is to enable our partners to produce the highest quality dripline and ultimately add value to their production and operations.

A.A.S. Emitters Actual Size

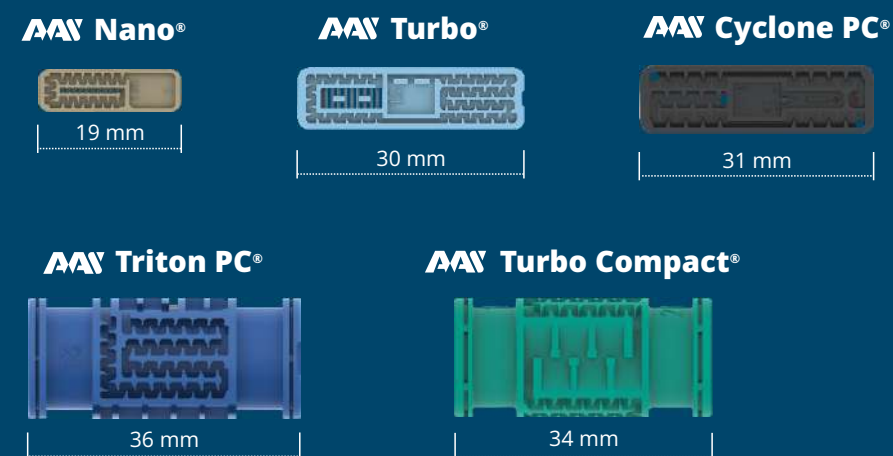


Table Legend

- (1). Option for reducing the total length to 25,6m under certain conditions
 (2). Total length with two feeders: 39,9m, with 1 feeder: 38,8m
 (3). Total length with automatic coiler (120m/min): 42,3m
 Total length with semi-automatic coiler and accumulator (100m/min): 43,6m
 Total length with semi-automatic (60m/min) 40,7m

For H250, T250 and S180 with automatic cylindrical coiler, the length of the line increases by 1,7m

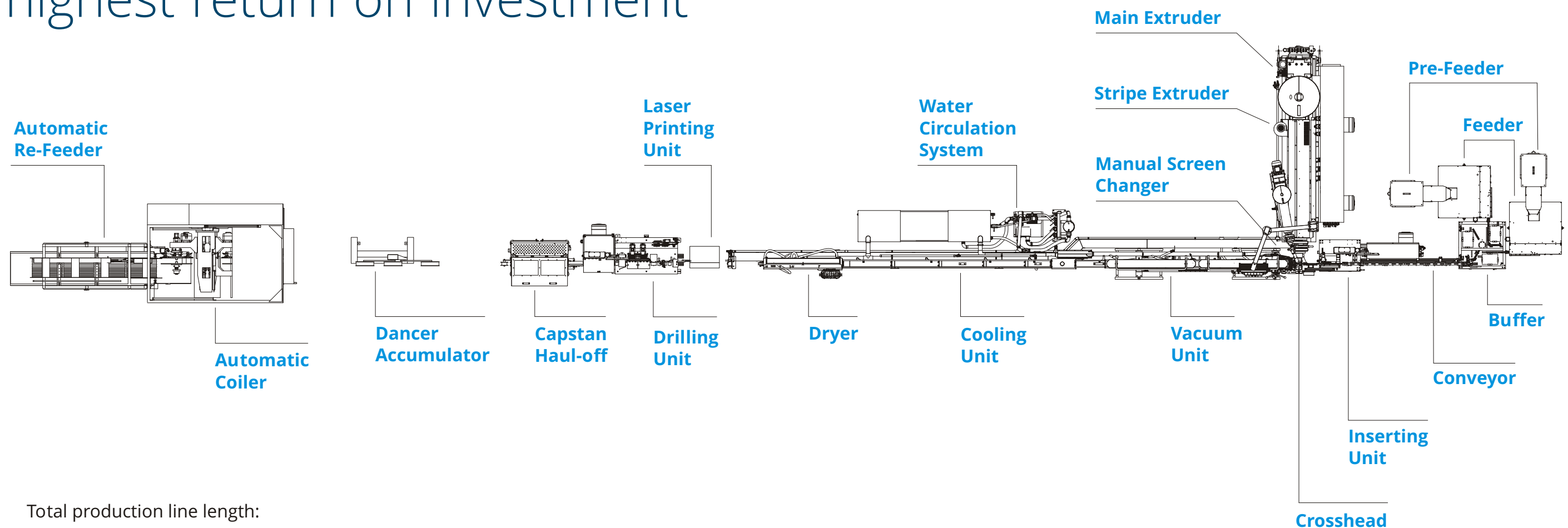
Technical Characteristics

Production Line Name		N350 FL	H250 FL	T250 FL	S180 FL	R120 CL
Emitter Type		Nano Emitters	Flat Emitters			Cylindrical Emitters
Non PC Emitters	Nano	●	●	●		
	Turbo		●	●	●	
	Turbo Compact					●
PC Emitters	Cyclone PC		●	●	●	
	Triton PC					●
Production Line Technical Specifications						
Production Speed m/min		350	250	250	180	120
Inserting Rate e/min		2.500	1.250	1.250	600	500
Minimum Emitter Spacing mm		100	100	100	100	150
Minimum Wall Thickness mil		5	5	5	6	24
Maximum Wall Thickness mil		13	36	36	36	47
Minimum Pipe Diameter mm		12	12	12	12	6,35
Maximum Pipe Diameter mm		24	35	35	35	20
Cylindrical dripline with flat emitters			●	●	●	
Production Line Length m		27,6 ⁽¹⁾	39,9 ⁽²⁾	38,6	39,2	42,3 ⁽³⁾
Production Line Components						
Pre Feeder		2	2	●	●	●
Feeder		2	2	●	●	●
Buffer		●	●	●		
Retractable Inserting		●	●	●	●	
Main Extruder (single screw)		75/36	75/36	75/36	75/36	75/36
Co Extrusion (optional)		●	●	●	●	●
Stripe Extruder (optional)		●	●	●	●	●
Closed Loop Water Circulation		●	●	●	●	●
Vacuum Unit Length m		4	4	4	4	6
Cooling Unit Length m		4	16	16	16	18
Laser Printing Unit (optional)		●	●	●	●	●
Drilling Unit		2 Drills	1 Drill	1 Drill	1 Drill	2 Drills (2/4 Holes)
Camera Inspection		●	●	●	●	Optional
Haul-Off		Capstan	Caterpillar	Caterpillar	Caterpillar	Caterpillar
Accumulator					●	●
Automatic Coiler		●	●	●	●	●
Automatic Re-feeding (5 coils)		●	●	●		

N350 FL

is the most advanced drip
irrigation production line
in the industry, with the
highest return on investment

Our knowledge, experience and expertise are combined with state-of-the-art technology and offered through N350 FL to our partners. From the design and development stage of every single component which is performed in-house from our R&D department, to the final commissioning of the production line at our partner's premises, we offer a unique quality experience. By bringing together the highest quality material made in Germany, with the latest technologies available, we manage to offer a comprehensive drip irrigation production solution attaining the maximum efficiency at industry leading production speed.



Total production line length:
Basic Composition up to 12 mil 25,6 meters
Including all Optional Components 30,3 meters

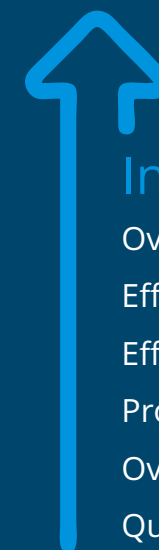
N350 FL



Benefits of N350 FL

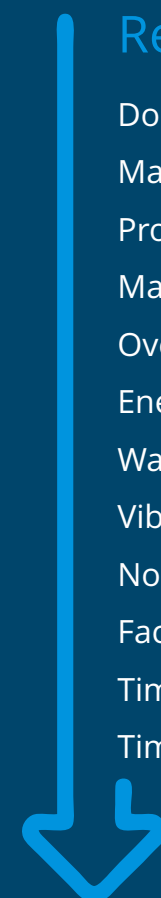
The unique attention to every single detail of our production lines along with the quality excellence that we offer, provide many benefits to our partners, which all translate to increased Return On Investment (ROI).

-  Industry leading production efficiency
-  Industry leading production speed
-  Fully customizable
-  The highest return on investment
-  Remote connectivity for data analysis, software updates and troubleshooting
-  Continuous upgrades in software and hardware
-  Ease of overall usage and settings
-  Industry 4.0
-  Enhanced Human Machine Interface (HMI) capabilities



Increased

- Overall production
- Efficiency
- Effectiveness
- Productivity
- Overall capacity
- Quality of the final product



Reduced

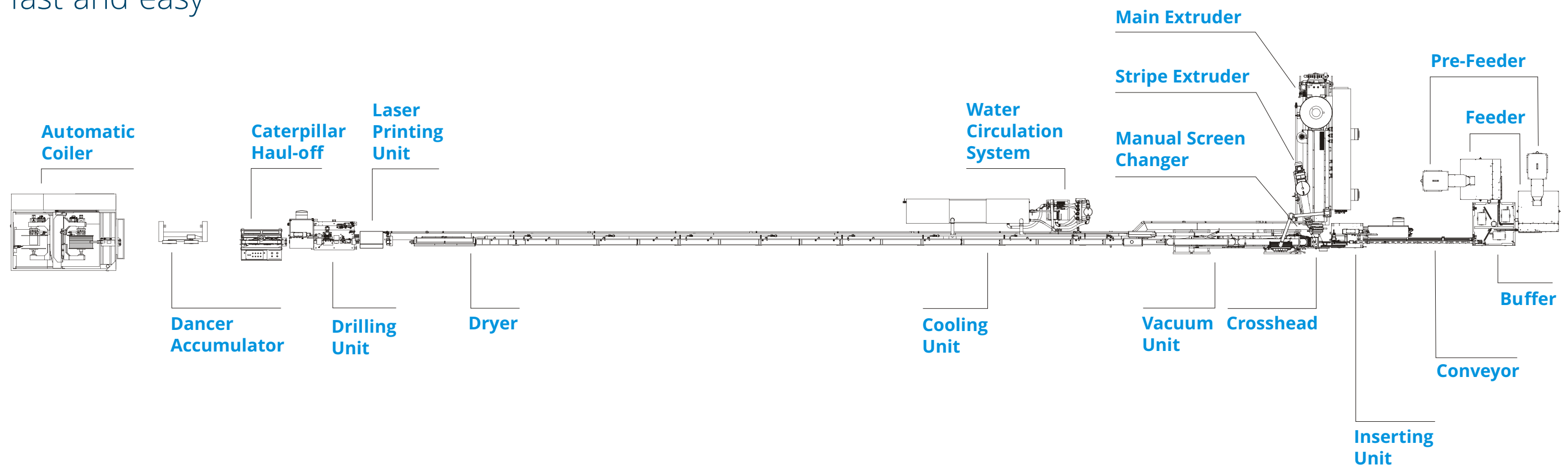
- Downtimes
- Malfunctions
- Production shutdowns
- Maintenance costs
- Overall scrap
- Energy consumption
- Water usage
- Vibrations
- Noise
- Factory floor space usage
- Time between product change
- Time for settings and adjustments

* Depending on the size and weight of the emitter, production speed and inserting capacity may vary.

H250 FL

is the only production line any manufacturer will ever need for any flat dripline production, since it incorporates an innovative emitter change mechanism, which makes the task of producing with every flat emitter extremely fast and easy

Our knowledge, experience and expertise are combined with state-of-the-art technology and offered through H250 FL to our partners. From the design and development stage of every single component which is performed in-house from our R&D department, to the final commissioning of the production line at our partner's premises, we offer a unique quality experience. By bringing together the highest quality material made in Germany, with the latest technologies available, we manage to offer a comprehensive drip irrigation production solution attaining the industry leading production efficiency.



Total production line length:

Basic Composition 38,8 meters with one feeder 39,9 meters with two feeders

H250 FL

Production Speed

Up to
250
meters/min

Inserting Capacity

Up to
1.250
emitters/min

Emitter spacing

Minimum
100
mm

Production Efficiency

Up to
99%

Minimum wall thickness

From
5
mil

Maximum wall thickness

Up to
36
mil

Pipe diameter

From
12
mm

Up to
35
mm

Emitters*

AAV Nano®

AAV Turbo®

AAV Cyclone PC®

* Nano, Turbo and Cyclone PC equivalent emitters can be used with H250 FL production line. Depending on the size and weight of the emitter, production speed and inserting capacity may vary.

Benefits of H250 FL

The unique attention to every single detail of our production lines along with the quality excellence that we offer, provide many benefits to our partners, which all translate to increased Return On Investment (ROI).



Industry leading production efficiency



Industry leading production speed



Extremely fast emitter changing mechanism



The highest return on investment



Fully customizable



Continuous upgrades in software and hardware



Remote connectivity for data analysis, software updates and troubleshooting



Industry 4.0



Ease of overall usage and settings



Enhanced Human Machine Interface (HMI) capabilities



Production of cylindrical dripline with flat emitters

Reduced

Downtimes
Malfunctions
Production shutdowns
Maintenance costs
Overall scrap
Energy consumption
Water usage
Vibrations
Noise
Factory floor space usage
Time between product change
Time for settings and adjustments

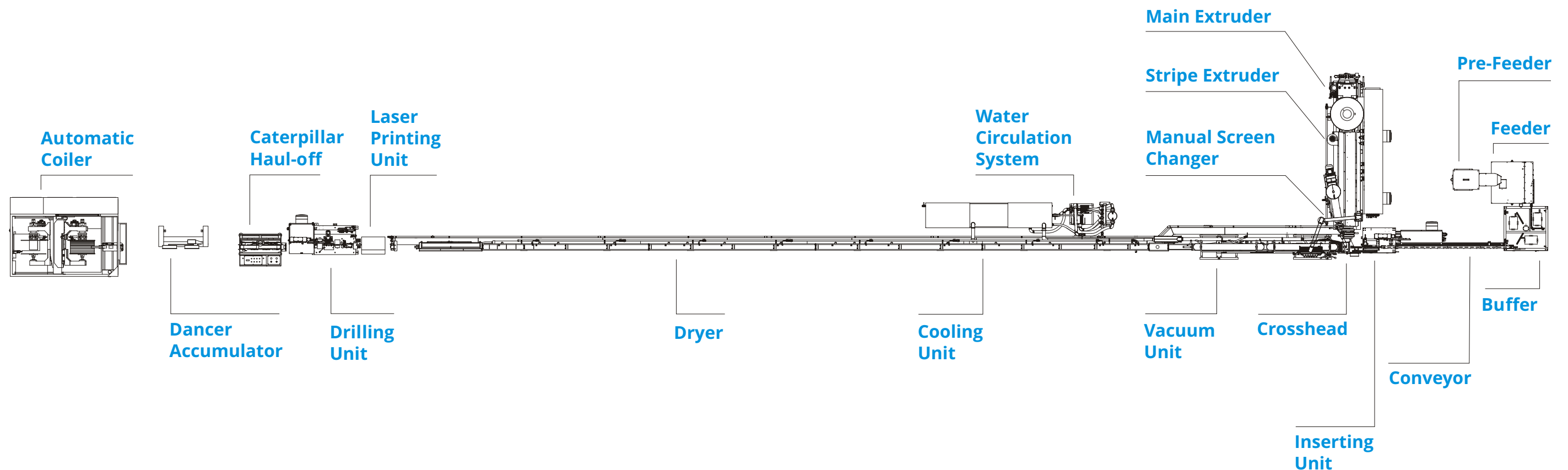
Increased

Overall production
Efficiency
Effectiveness
Productivity
Overall capacity
Quality of the final product

T250 FL

is a versatile, high speed drip irrigation production line, capable of utilizing every symmetrical flat emitter

Our knowledge, experience and expertise are combined with state-of-the-art technology and offered through T250 FL to our partners. From the design and development stage of every single component which is performed in-house from our R&D department, to the final commissioning of the production line at our partner's premises, we offer a unique quality experience. By bringing together the highest quality material made in Germany, with the latest technologies available, we manage to offer a comprehensive drip irrigation production solution attaining the industry leading production efficiency.



Total production line length:
Basic Composition 38,6 meters

T250 FL

Benefits of T250 FL

The unique attention to every single detail of our production lines along with the quality excellence that we offer, provide many benefits to our partners, which all translate to increased Return On Investment (ROI).

-  Industry leading production efficiency
-  Industry leading production speed
-  Fully customizable
-  The highest return on investment
-  Remote connectivity for data analysis, software updates and troubleshooting
-  Continuous upgrades in software and hardware
-  Ease of overall usage and settings
-  Industry 4.0
-  Enhanced Human Machine Interface (HMI) capabilities
-  Production of cylindrical dripline with flat emitters

Production Speed

Up to
250
meters/min

Inserting Capacity

Up to
1.250
emitters/min

Emitter spacing

Minimum
100
mm

Production Efficiency

Up to
99%

Minimum wall thickness

From
5
mil

Maximum wall thickness

Up to
36
mil

Pipe diameter

From
12
mm

Up to
35
mm

Emitters*

AAV Nano®

AAV Turbo®

AAV Cyclone PC®

* Nano, Turbo and Cyclone PC equivalent emitters can be used with T250 FL production line. Depending on the size and weight of the emitter, production speed and inserting capacity may vary.

Increased

Overall production
Efficiency
Effectiveness
Productivity
Overall capacity
Quality of the final product

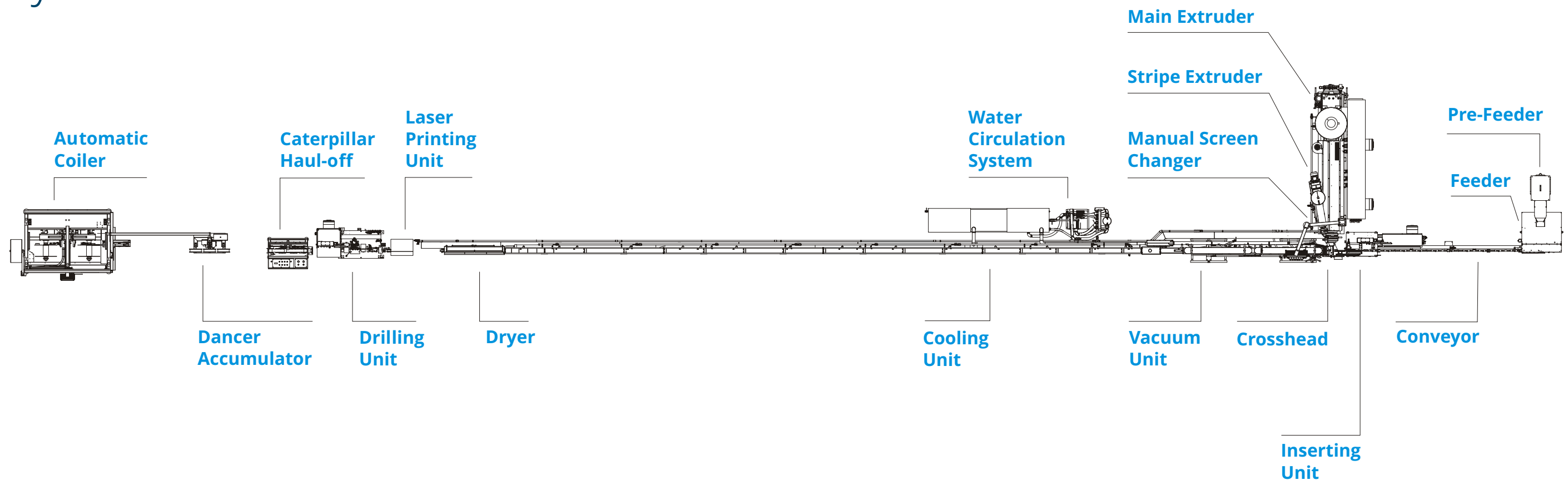
Reduced

Downtimes
Malfunctions
Production shutdowns
Maintenance costs
Overall scrap
Energy consumption
Water usage
Vibrations
Noise
Factory floor space usage
Time between product change
Time for settings and adjustments

S180 FL

is a cost effective and versatile drip irrigation production line, capable of utilizing every symmetrical flat emitter

Our knowledge, experience and expertise are combined with state-of-the-art technology and offered through S180 FL to our partners. From the design and development stage of every single component which is performed in-house from our R&D department, to the final commissioning of the production line at our partner's premises, we offer a unique quality experience. By bringing together the highest quality material made in Germany, with the latest technologies available, we manage to offer a comprehensive drip irrigation production solution attaining the industry leading production efficiency.



Total production line length:
Basic Composition 39,2 meters

S180 FL

Production Speed

Up to
180
meters/min

Inserting Capacity

Up to
600
emitters/min

Emitter spacing

Minimum
100
mm

Production Efficiency

Up to
99%

Minimum wall thickness

From
6
mil

Maximum wall thickness

Up to
36
mil

Pipe diameter

From
12
mm

Up to
35
mm

Emitters*

AAV Turbo®

AAV Cyclone PC®

Benefits of S180 FL

The unique attention to every single detail of our production lines along with the quality excellence that we offer, provide many benefits to our partners, which all translate to increased Return On Investment (ROI).



Industry leading production efficiency



Industry leading production speed



Fully customizable



The highest return on investment



Remote connectivity for data analysis, software updates and troubleshooting



Continuous upgrades in software and hardware



Ease of overall usage and settings



Industry 4.0



Enhanced Human Machine Interface (HMI) capabilities



Production of cylindrical dripline with flat emitters

Reduced

Downtimes
Malfunctions
Production shutdowns
Maintenance costs
Overall scrap
Energy consumption
Water usage
Vibrations
Noise
Factory floor space usage
Time between product change
Time for settings and adjustments

Increased

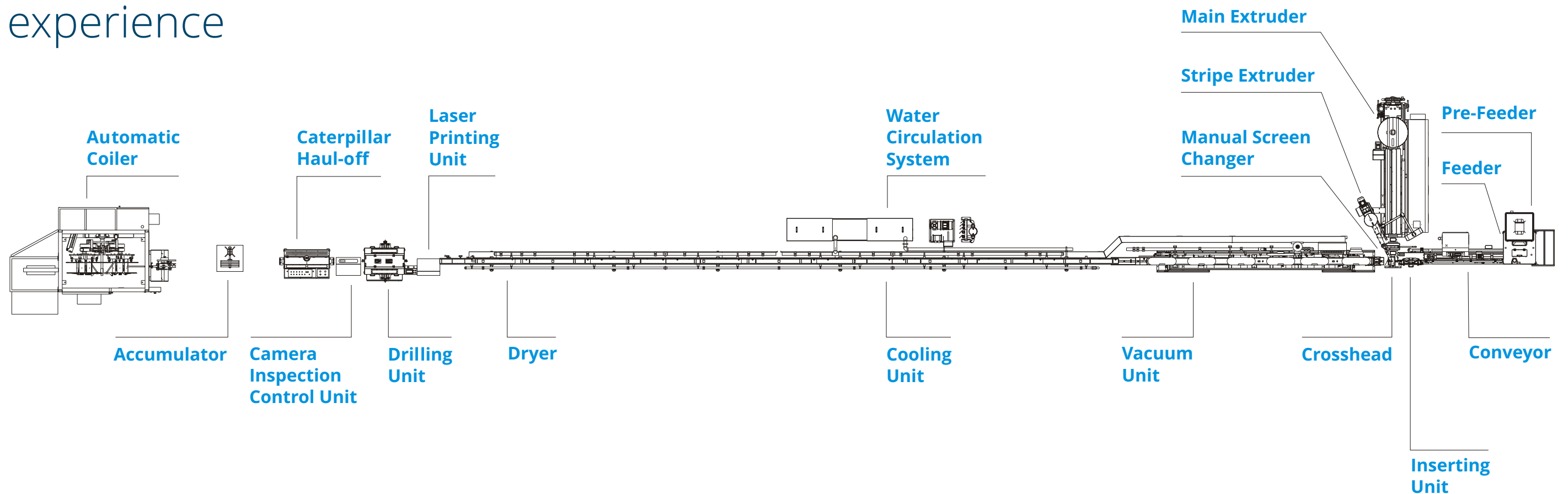
Overall production
Efficiency
Effectiveness
Productivity
Overall capacity
Quality of the final product

* Turbo and Cyclone PC equivalent emitters can be used with S180 FL production line. Depending on the size and weight of the emitter, production speed and inserting capacity may vary.

R120 CL

production line for cylindrical dripline production, incorporating the latest technology in the industry along with our 40-year experience

Our knowledge, experience and expertise are combined with state-of-the-art technology and offered through R120 CL to our partners. From the design and development stage of every single component which is performed in-house from our R&D department, to the final commissioning of the production line at our partner's premises, we offer a unique quality experience. By bringing together the highest quality material with the latest technologies available, we manage to offer a comprehensive drip irrigation production solution attaining the industry leading production efficiency.



Total production line length:
Basic Composition 42,2 meters

R120 CL

Production Speed

Up to
120
meters/min

Inserting Capacity

Up to
500
emitters/min

Emitter spacing

Minimum
150
mm

Production Efficiency

Up to
99%

Minimum wall thickness

From
24
mil

Maximum wall thickness

Up to
47
mil

Pipe diameter

From
6,35
mm

Up to
20
mm

Emitters*

AAV
Triton PC®

AAV
Turbo Compact®

Benefits of R120 CL

The unique attention to every single detail of our production lines along with the quality excellence that we offer, provide many benefits to our partners, which all translate to increased Return On Investment (ROI).



Industry leading production efficiency



Industry leading production speed



Fully customizable



The highest return on investment



Remote connectivity for software updates and troubleshooting



Continuous upgrades in software and hardware



Ease of overall usage and settings



Human Machine Interface (HMI)

Reduced

Downtimes
Malfunctions
Production shutdowns
Maintenance costs
Overall scrap
Energy consumption
Water usage
Vibrations
Noise
Factory floor space usage
Time between product change
Time for settings and adjustments

Increased

Overall production
Efficiency
Effectiveness
Productivity
Overall capacity
Quality of the final product

* Triton PC and Turbo Compact equivalent emitters can be used with R120 CL production line. Depending on the size and weight of the emitter, production speed and inserting capacity may vary.

Customization

The knowledge, experience and expertise of our dedicated production line development team, enables us to provide customized solutions for the specific bespoke needs of every market worldwide. Our 40-year experience in the drip irrigation industry, equips us with the ability to understand every dripline producer needs, goals and expectations. Moreover, we already know that the market each company operates in has its own challenges and we have solutions for each challenge.

In order to meet all drip irrigation production criteria and constraints of our partners, and at the same time deliver a perfectly operating production line with a great efficiency, we have developed a wide range of different

solutions for each production line component. All components provided are designed, developed and optimized by our R&D team and can be combined in order to reach the best possible outcome with the greatest production output and achieve the highest possible Return On Investment (ROI). The production line department will work with you hand in hand to develop the optimum dripline production solution for your individual needs. We can provide several alternatives that will enable you to achieve all your targets. We will thoroughly explain the benefits of each solution, in order to assist you with the optimal dripline production configuration.

Holistic Approach in Human Error Elimination

One of the critical elements in a production procedure is the human error. In an attempt to eliminate this issue, we have developed a holistic approach which involves three basic steps and minimizes the need for human intervention.

The first step is the development of an HMI which is extremely easy to operate and does not require any particular knowledge or skills. From the simple to understand graphics and the ease of access through the touch screens, our interface can be operated as easy as any tablet or smartphone.

The second one, is the advanced software that we have developed which provides the

ability to preprogram and set several production criteria that can be easily accessed and selected by the line operator. Moreover, the micro adjustments that might be needed are extremely easy and can be performed via the touch screens either on the beginning or the end of the line.

Last step but the most important one, is the extensive training that we provide to your production line supervisor. Our 40-year experience enables us to provide the highest possible training in both production line operation and immediate problem solving during production.

Commissioning

We have developed a unique production line commissioning experience for our partners. As soon as you place your order, we start working on it by assembling all components of your production line. The next step is to start operating the production line and run several tests on every component, in order to ensure that it is operating as described. As soon as every test is completed and we produce an adequate quantity of high-quality dripline, we welcome you in our showroom for a comprehensive demonstration. You are able to see your production line operate for the first time and experience firsthand the quality excellence of our products and services.

After your approval, the production line is carefully packed and shipped to your factory.

Upon arrival of the production line, our dedicated commissioning officer will come to your premises to finalize the commissioning process which involves several steps. First of all, he inspects the production line components. The next step is to install them in place and make the appropriate alignments and adjustments. The final step involves both initializing the production line operation and at the same time train your line supervisor.

As soon as the production line runs smoothly, the dripline is produced according to specifications and your production team feels comfortable with the complete line operation, our commissioning officer can leave the premises and the commissioning is regarded complete.



Support

Products

We have designed and developed a wide range of emitters which can meet all irrigation needs worldwide. The enormous production capacity that we have in emitters guarantees a constant supply of the most important ingredient of a dripline.

Raw Materials

We can assist you in raw material selection for your dripline production at every level. Depending on availability at your specific area, we will determine the optimal solution which will best suit your production needs.

Spare Parts

We keep a wide range of spare parts and consumables at our warehouse in order to be

able to dispatch them immediately to your premises and therefore reduce the downtimes to the minimum possible.

Troubleshooting

In the unlikely event of a production shutdown due to a production line malfunction, the line operator has to follow the standard procedure which was thoroughly explained to him during the initial training process. If the problem persists and cannot be solved by following the standard procedure, we provide the ability to connect remotely with our premises and provide a solution online. Moreover, our technicians are always available for any issue that can not be solved by your maintenance team, offering immediate On-site support.

Constant Upgrades and Enhancements

In order to achieve the quality excellence that we praise, we never stop evolving. The extremely fast pace of technology evolution, combined with the advanced skills and experience of our team members, enables us to constantly improve our production lines. By utilizing the latest available technology, we constantly upgrade both the hardware and the software of our production lines in order to offer to you the best possible solution.

Hardware

The hardware upgrades that we design and develop, are compatible with both our current and previous model range. This means that we offer the opportunity for an older production line to be more productive and efficient. Another advantage of constantly improving several parts, is that of increased durability and reduction of the maintenance costs. Finally, we develop new product kits and sets that can be installed on the production lines to increase profitability and make an impact to your market by differentiating. For instance, the introduction of a flap outlet instead of a hole that can be easily installed and interchanged. The coextrusion kit that enables the production of dripline with one- or two-color lines.

Software

The software upgrades that we develop are designed for both functionality and convenience. The functional updates are designed to enhance the operation of several different parts and to allow for a more productive and at the same time cost effective overall operation. Moreover, every new hardware update needs its corresponding software update to function. The convenience updates have to do with the HMI ease of access and usability for error proof operation and the remote connectivity or the interconnectivity between the production lines.





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