GREENHOUSE & SOILLESS





Reliable Solutions to Achieve Highest Quality Yield

Rivulis

www.rivulis.com

Greenhouse & Soilless Solutions

Greenhouses are becoming an increasingly more important solution in precision agriculture, specifically when dealing with varying climate zones. Greenhouses provide a safe and stable ecosystem for our food supply, allowing for increased results and high quality yields. From climate control to germination, the correct water application is critical to maximize plant productivity. We recommend working with your Rivulis representative who brings the hydraulic and agronomic expertise to develop a greenhouse solution for your unique needs.

Most greenhouse applications use drip as the primary source of irrigation. Generally integral drip lines are used in soil applications and online drippers are used in soilless applications. When choosing the correct dripper / drip line, there are many considerations and options available.

Rivulis offers a wide range of greenhouse irrigation solutions, including:

- **Online Drippers and Drip Lines:** From the state of the art Rivulis Supertif dripper and Rivulis Hydro PCND drip line to the economical Rivulis E1000 drippers.
- **Sprinklers & Misters:** Including the Rivulis Rondo Micro Sprinkler, one of the most trusted sprinklers in the world and the Rivulis FLF Foggers with advanced nozzles for ideal climate control.



"I have grown tomatoes in greenhouses for more than 25 years. Greenhouse operations demand the most reliable systems. This is why I am very selective about my suppliers…for irrigation I tried different suppliers, but in the last 8 years I only use Rivulis Supertif.

Rivulis Supertif is a heavy duty dripper, with perfect uniformity, that is why we have used it for so many years."

Pieter Geerst,
Tomato Grower,
The Netherlands

Rivulis Supertif:
The Most Advanced Online Dripper

If you have intensive horticulture production, you need the Rivulis Supertif range of drippers.

Trusted the world over for performance and flexibility, each dripper features a self-cleaning mechanism and precision manufacturing for maximum reliability.

Additionally, Rivulis Supertif provides multiple outlet configurations, variable flow rates, no-drain options with multiple sealing and opening pressures, and a wide range of accessories.

Rivulis offers multiple Supertif Pressure Compensating (PC) Dripper outlet options for your various needs:

- **Multi-function port – Straight conic-barb outlet (Conic + Barb) = Multi-function port**
  Use stand-alone without tube, connect direct to 3x5 tube or connect to tube using branching adaptors.
- **Barbed side outlet (SOL) – A unique Rivulis solution**
  Drives the water straight to the plants roots, reducing evaporation and desalination.
  Use stand-alone without tube, connect direct to 3x5 tube or connect to tube using branching adaptors.

Supertif | PC ■ Pressure compensating for accurate flow over a wide range of pressures. **Flow rates:** 2.20, 3.85, 7.80, 12.00 and 25.00 l/h	
Supertif | PCND **Pressure compensating no-drain dripper** ■ Pressure compensating and no-drain function for Pulse Irrigation applications and very long drip lines. **Flow rates:** 1.10, 2.20, 3.85 and 7.80 l/h	
Supertif | PCND-H **Pressure compensating no-drain dripper with a high sealing pressure** **Flow rates:** 1.60, 3.10 and 11.00 l/h	
Supertif | PCND-MOP & PCND-H-MOP **Pressure compensating no-drain mechanism dripper with medium opening pressure.** ■ Pressure compensating and no-drain with differing sealing and opening pressures to suit your unique application. **PCND-MOP Flow rates:** 1.10, 2.20, 3.85 l/h **PCND-H-MOP Flow rates:** 1.60, 3.10, 5.30 l/h	

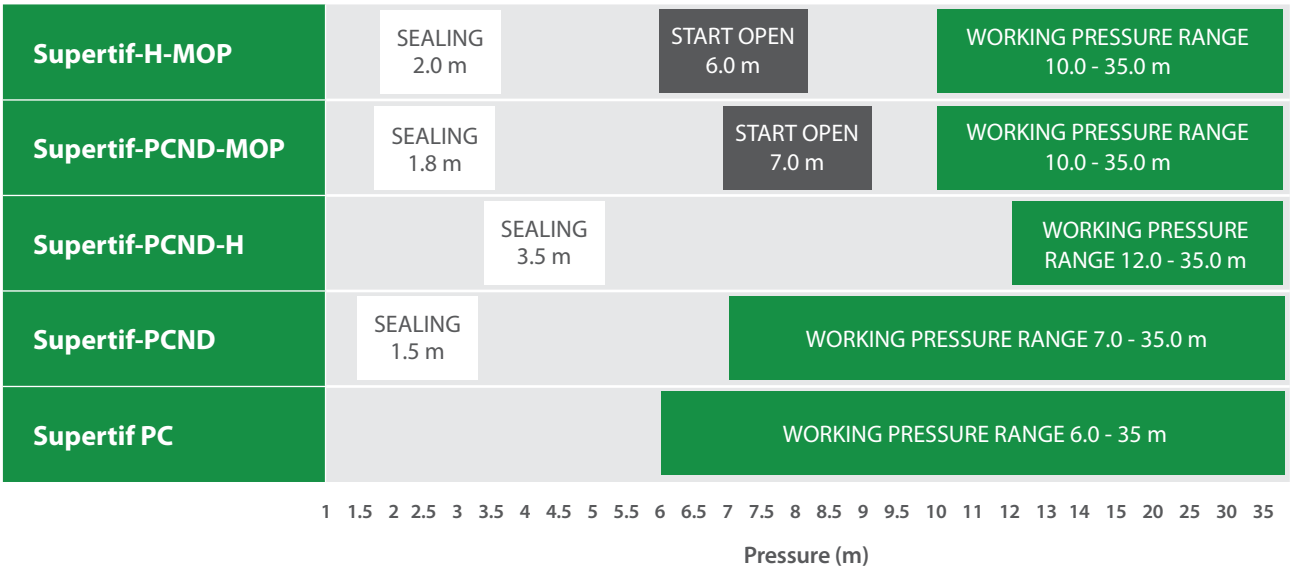
No Drain Drippers: What You Need To Know

Standard Pressure Compensating (PC) drippers provide a consistent flow rate over a wide pressure range to ensure uniformity regardless of run length or elevation.

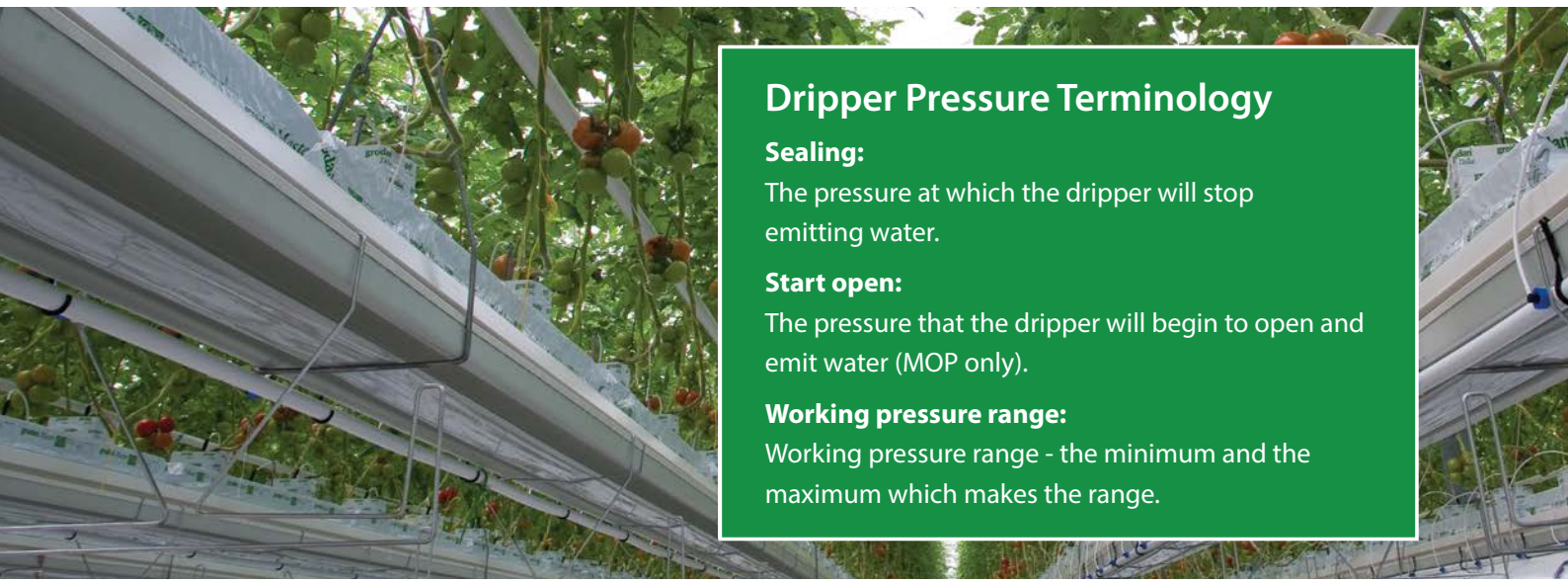
No Drain (ND) drippers take this further by also sealing when pressure falls below a specified level.

The benefit of ND is that it keeps the pressure in the tube when the dripper is turned off enabling you to pulse irrigate. Without this feature, the system would drain at shut-off and would need to re-fill at each operation and water retribution along the irrigation flow will not be even.

Quick Reference Pressure Chart for Rivulis Supertif Drippers



The table above is for use as a general guide. Please consult your Rivulis representative for the exact performance specifications of each dripper.



Dripper Pressure Terminology

Sealing:
The pressure at which the dripper will stop emitting water.

Start open:
The pressure that the dripper will begin to open and emit water (MOP only).

Working pressure range:
Working pressure range - the minimum and the maximum which makes the range.

Eurodrip Corona

For precision drip irrigation, the Eurodrip Corona offers a range of reliable online drippers in both PC and PCND models.

Each dripper features a self-flushing mechanism that operates at start-up to help expel accumulated debris. Combined with a high quality silicone diaphragm, Eurodrip Corona offers flexibility and reliability.

Corona PC	Corona PCND
Pressure compensating for accurate flow over a wide range of pressures. **Flow rates:** 2.15, 3.15, 4.15, 8.25, 26.20 l/h A dripper outlet cover for 26.20 l/h models is available to diffuse the stream caused in high flow models.	Pressure compensating and no-drain function for pulse irrigation applications. **Flow rates:** 2.15, 3.15, 4.15, 8.25 l/h **Sealing pressure:** 0.20 bar **Opening pressure:** 0.45 bar
	

Rivulis E1000: Easy Take-Apart Dripper

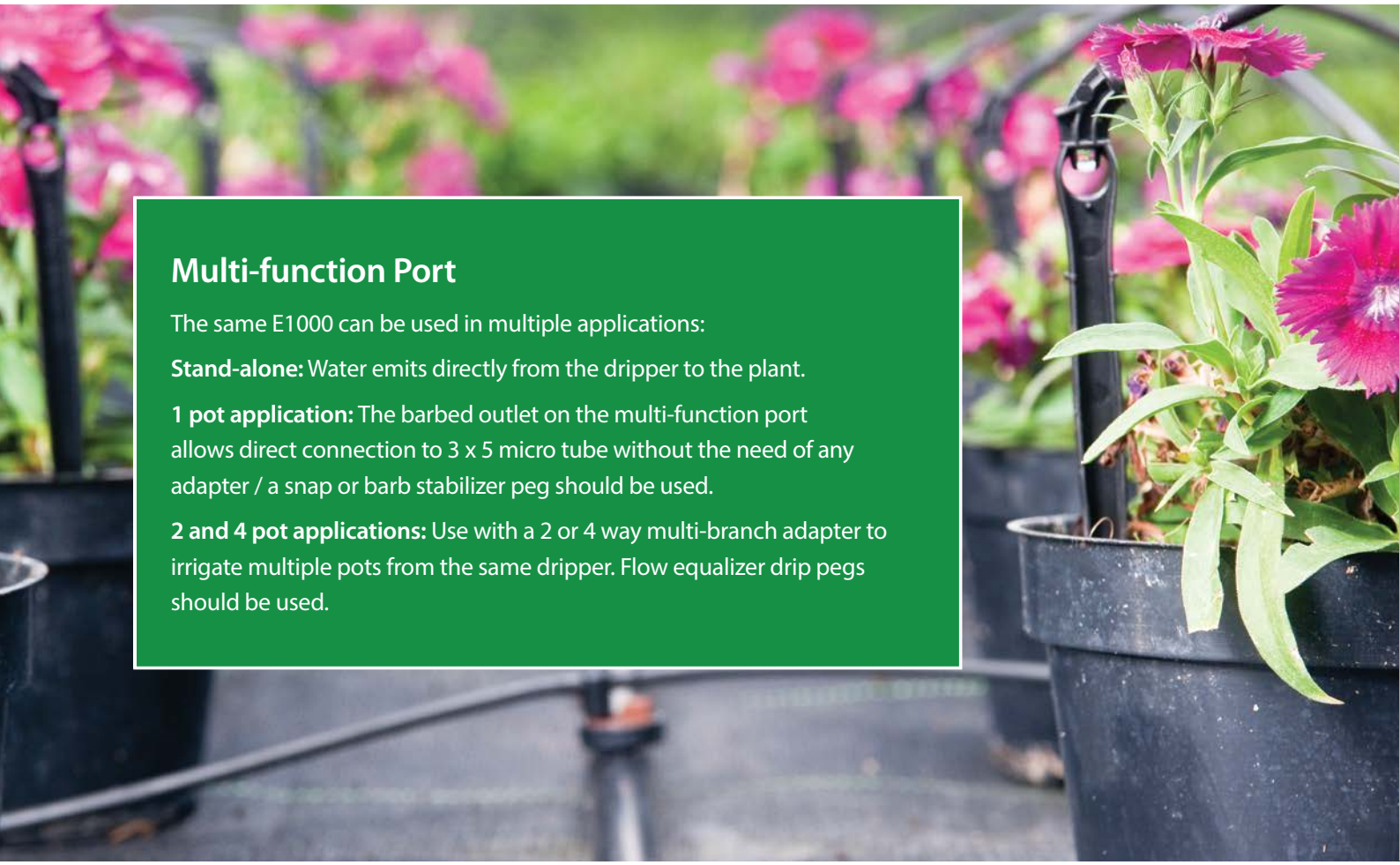
Cost Effective

The Rivulis E1000 is a cost-effective dripper that that can be used standalone or also with tube and pegs. Available in flow rates of 2.0, 4.0 and 8.0 l/h (calculated at 1 bar pressure).

Easy Cleaning

Every pack of 1,000 drippers comes with a useful E1000 spanner. This specially designed spanner allows you to open your Rivulis E1000 dripper with ease. Once open, you have full access to the flow labyrinth allowing you to easily clean the dripper.





Multi-function Port

The same E1000 can be used in multiple applications:

Stand-alone: Water emits directly from the dripper to the plant.

1 pot application: The barbed outlet on the multi-function port allows direct connection to 3 x 5 micro tube without the need of any adapter / a snap or barb stabilizer peg should be used.

2 and 4 pot applications: Use with a 2 or 4 way multi-branch adapter to irrigate multiple pots from the same dripper. Flow equalizer drip pegs should be used.

Climate Control: Rivulis FLF Foggers

Rivulis FLF foggers, available in 1, 2 and 4 outlet options, provide the ultimate solution to increase humidity and lower ambient temperatures in your greenhouse.



Each nozzle is available in 5.4 and 10.5 l/h (3.5 bar pressure) models. This provides a maximum flow of 42 l/h for the 4 x 10.5 l/h nozzle option.

The average FLF droplet size is 70 microns resulting in a fine mist that evaporates quickly.



Dripper Pegs: Choosing The Correct Option

If you have more than one peg and tube per dripper, it is necessary to use an equalizer DripPeg that also has a flow equalizing labyrinth built in.

This reduces the risk that if one peg is lower than the other, it will expel more water than pegs at higher elevation. Therefore, when using multiple pegs per dripper, you should use DripPeg or Polytif which both have built in flow equalizing labyrinth.

Note: Rivulis DripPeg, Polytif, BarPeg and SnaPeg are designed for Rivulis E1000 and Rivulis Supertif only. Rivulis pegs can be used with Eurodrip Corona drippers by the use of Eurodrip 1, 2 or 4 way adaptors.



Flow equalizing mechanism built into each Rivulis DripPeg and Polytif for equal flow in multi-pot applications



DripPeg – Flow Equalizing Peg (Black)



Polytif – Flow Equalizing Peg (Black)



SnaPeg – 30° Diagonal Bend (Grey)



BarPeg – 30° Diagonal Bend (Grey)

Rivulis Supertif Applications with Dripper Pegs



Rivulis Supertif with 4-Way Multi Outlet and 4 x Rivulis DripPegs

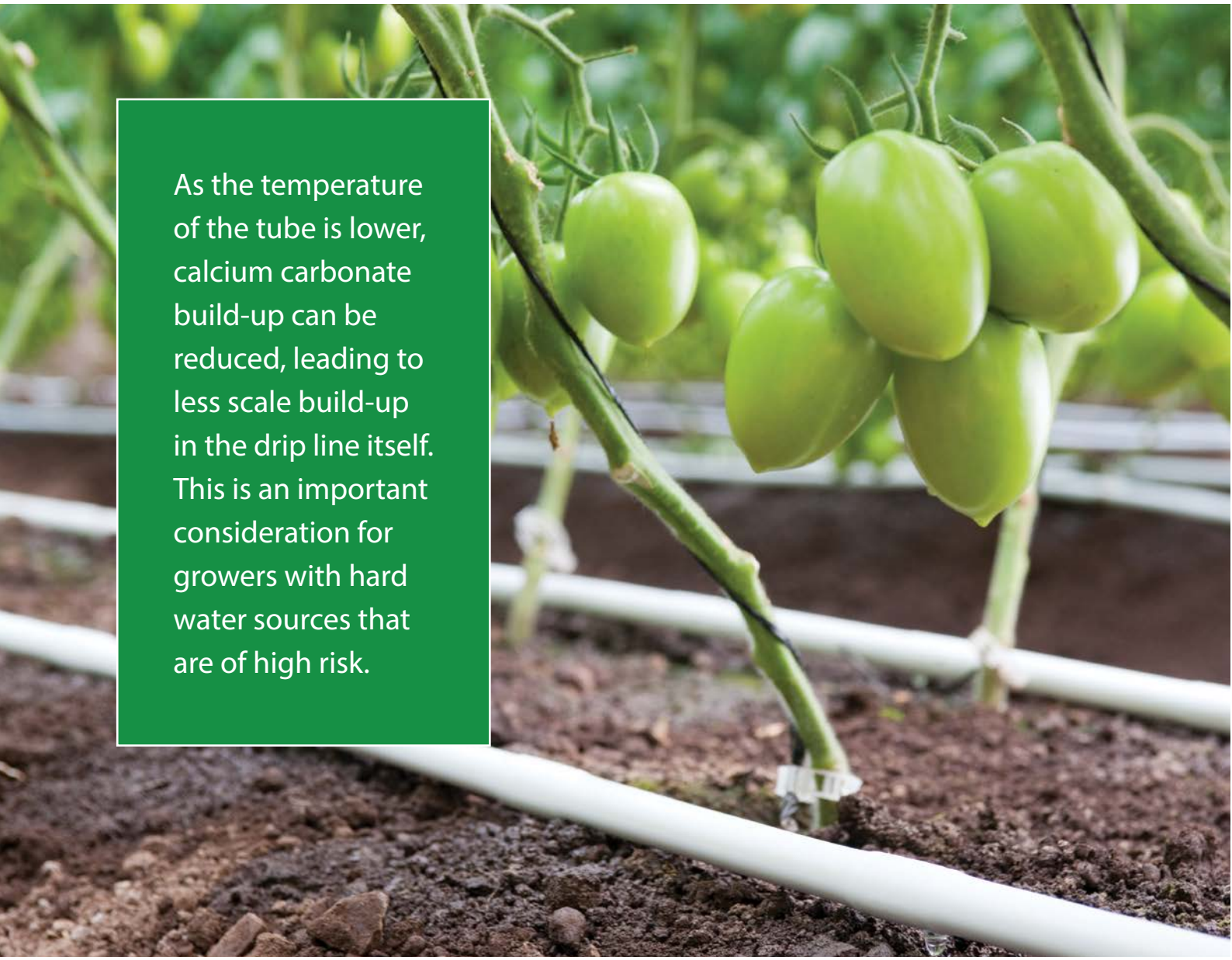


Rivulis Supertif with direct connection to Rivulis SnapPeg

Rivulis White Drip Line Solutions

Why consider using white drip line in your greenhouse?

White drip line or tube dramatically reduces the water temperature being delivered to the plants. This lower water temperature can significantly benefit crops, particularly young plants where feeder roots are more sensitive to water temperature. In addition, because the water temperature is lower, scaling is reduced, which reduces the risk of dripper clogging, and ultimately increases the lifespan of the drip line. In a field study comparing white drip lines to black drip lines, the water coming out of the white drip line was 10°C lower than the water from the black drip line. Rivulis white tubing is used in greenhouses, climate control and overhead irrigation systems. White tubing is available in 16, 20, and 25 mm. All Rivulis white tubing is produced using multi-layer technology with a black internal tube layer to prevent algae build-up.



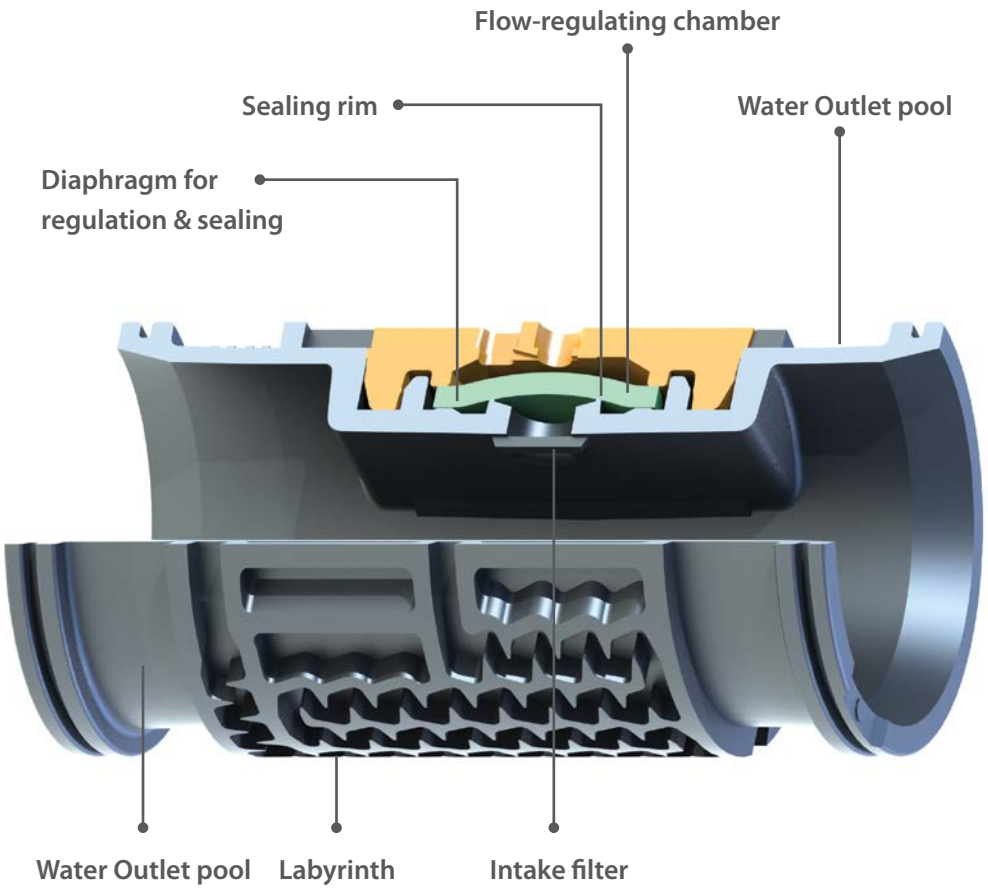
As the temperature of the tube is lower, calcium carbonate build-up can be reduced, leading to less scale build-up in the drip line itself. This is an important consideration for growers with hard water sources that are of high risk.

Rivulis White Hydro PC & PCND

The Rivulis White Hydro PC & PCND drip lines are the ideal solution for growing in both soil or soilless applications. The benefits include:

- Strong round dripper with two outlets in every dripper.
- Pressure compensating for same flow per dripper.
- Unique Rivulis Hydro PC 12 mm low flow drip line available. Easier to transport and install, and requires half the amount of water to fill and drain compared to 16 mm drip line.
- Rivulis Hydro PCND 16 and 20 mm No-Drain option available to stop water emitting at system shut-off (1.0 meter sealing pressure) enabling for pulse irrigation with a large diameter drip line.
- Rivulis Hydro PCND is the leading soilless irrigation solution for growing in media channels.

Rivulis Hydro PCND Dripper



Choosing Drip Irrigation for your Greenhouse

Considerations

- Greenhouse width
- Greenhouse length
- Bed / table width
- Crop type and peak water demand
- Growing size of the crop
- Crop value

Soil



Drip Line with Integral Emitters (White Hydro PCND)

Irrigation Method: Pulse
Emitter Spacing: 15–30 cm (maximum) Choose emitter spacing according to soil type. Lighter soils require closer spacing.

Soilless (Pots, Grow Bags)



Hose with Online Emitters (Rivulis E1000, Rivulis Supertif or Eurodrip Corona)

How often will you irrigate?

- **3+ Times Per Day**
- **1–2 Times Per Day**



Pressure Compensanting & No Drain Drippers
(Rivulis Supertif PCND or Eurodrip Corona ND)

The dripper seals when pressure falls below a specified pressure to stop water draining out of the tube at shut-off. The water stays in the tube and therefore allows you to irrigate in pulses with no drainage.

When it comes to ND drippers, you need to consider: what pressure should the dripper turn on (open) and what pressure should the dripper turn off (seal) .i.e. Rivulis Supertif NDH has a sealing pressure of 3.5 m. There are many PCND models available. Consult your local Rivulis representative to determine the configuration best-suited for your application.



PC Dripper
(Rivulis Supertif or Eurodrip Corona)
For constant flow over a wide range of pressure.



Non-PC Dripper
(Rivulis E1000)

Economical solution with take-apart body.

How many pots per dripper?

Considerations:

- Crop value - high value crops should have one dripper per pot.
- Total flow required - if you have multiple pots per dripper, you need to ensure that each pot still receives enough water.

Single Pot Per Dripper

Multi-Pot

Connect Using Single Hose
SnaPeg or BarPeg*



Connect Using Manifold & Flow Equalizing Pegs
DripPeg or Polytif*

Flow equalizing pegs helps each plant receive the same amount of water, through an equalizing mechanism in each peg.



** SnaPeg, BarPeg, DripPeg and Polytif are suitable for Rivulis E1000 and Rivulis Supertif only. For Eurodrip Corona pegs and manifolds, please contact your local representative or dealer*

Germination & Overhead Irrigation

For greenhouses, even with drip irrigation, an overhead irrigation system including mist sprayers and/or micro sprinklers is often needed for germination, chemigation and sometimes as supplementary irrigation.

Note, you may choose to use overhead irrigation for all of your irrigation requirements; however, this is only suitable for specific crops that are durable to fungus and pests.

Mist Sprayers: Rivulis Rondo Mist Sprayer for Fine Seed Germination

If you are growing from fine seeds, it is best to use a mist sprayer in order to protect seeds from large droplets of conventional mini sprinklers.

A mister differs from a micro sprinkler by spreading very fine drops without a spinner. Each droplet is approximately 150 microns in size, which is distributed in a uniform pattern of 2 meters on average. The Rivulis Rondo Mist Sprayers deliver 47 to 61 l/h of water (at 3.0 bar pressure).



Depending on the application, misters can also be used for humidification and evaporative climate control in greenhouses.

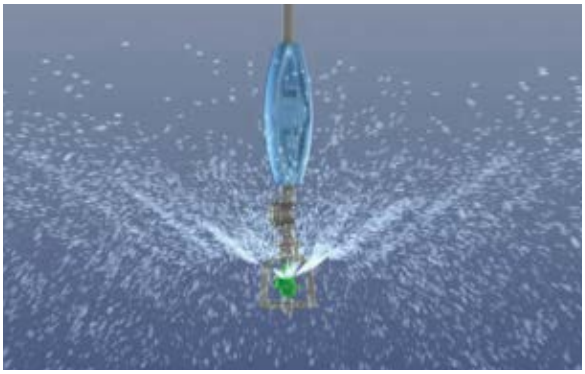
Micro Sprinklers: Rivulis Rondo – Inverted Application

The Rivulis Rondo Micro Sprinkler is one of the most trusted sprinklers worldwide.

Did you know that the Rivulis Rondo is also available in an inverted model, designed specifically for greenhouse irrigation? Available in a range of flow rates from 30 - 300 l/h (2.0 bar pressure) and two different spinner options (flat and convex), Rivulis Rondo can be customized to irrigate 5.0 - 10.8 meters diameter per sprinkler.

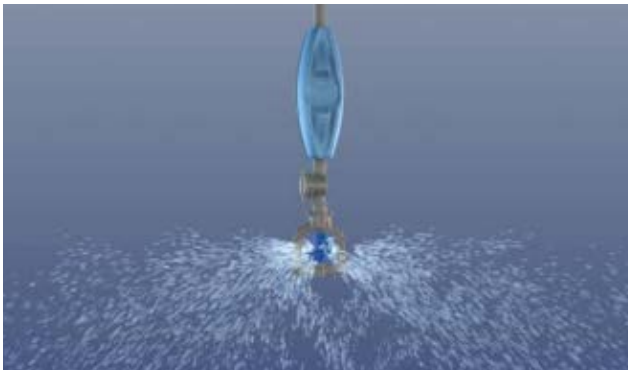


Convex Trajectory (Green Spinner)



Provides a larger wetted diameter allowing for larger distance between sprinklers. However if using convex trajectory spinners, you will need to suspend the sprinkler down at least 65 cm to prevent droplets from hitting the greenhouse roof.

Flat Trajectory (Blue Spinner)



Water droplets are spread horizontally from the sprinkler head. This enables the sprinkler to be suspended higher while decreasing the diameter of each sprinkler. This is mostly recommended for the greenhouse edges where less wetting of the plastic is required, or shorter wetting diameter is required.

Note: Rivulis Rondo PC (RFR) models are only available with flat trajectory spinners.

Rivulis RFR: Pressure Compensated (PC) Rondo

The Rivulis RFR model is a reliable inverted model that contains an accurate flow regulating mechanism.

This simply means that a sprinkler receiving 1.5 bar of pressure will emit the same flow as a sprinkler receiving 3.0 bar of pressure. The result is better water distribution uniformity in your greenhouse.

Climate Control: Humidity & Cooling

Greenhouses are designed to provide a mico-climate providing the optimal temperature needed to accelerate plant growth and provide versatility of crop growth without being restricted by the outside climate or relative humidity. The correct environment is critical for healthy plant growth. This environment can be achieved through the use of foggers that distribute fine water droplets into the air.

When foggers are used, they help increase the humidity in the air while also lowering the overall temperature in the greenhouse. Use foggers to reduce the air temperature and/or to increase the air humidity.

Create the Best Environment For Healthy Plant Growth with Foggers

- The correct environment is critical for healthy plant growth. This environment can be achieved through the use of foggers that distribute fine water droplets into the air.
- Use foggers to reduce the air temperature and/or to increase the air humidity.





Installation Considerations

To make sure that plants stay dry during the foggers activity, foggers should be installed in the highest position possible, ideally above the path. By calculating distance x temperature x humidity, it is possible to calculate the falling distance required for drops to evaporate. This helps minimize the risk of plant disease. The efficiency of a cooling system is subject to the relative humidity. The most common configuration for standard applications is 3 x 2 m (4 outlet option), however your Rivulis representative can assist you with calculating the FLF requirements for your greenhouse.

FLF Options: 1, 2 & 4 Way Outlets



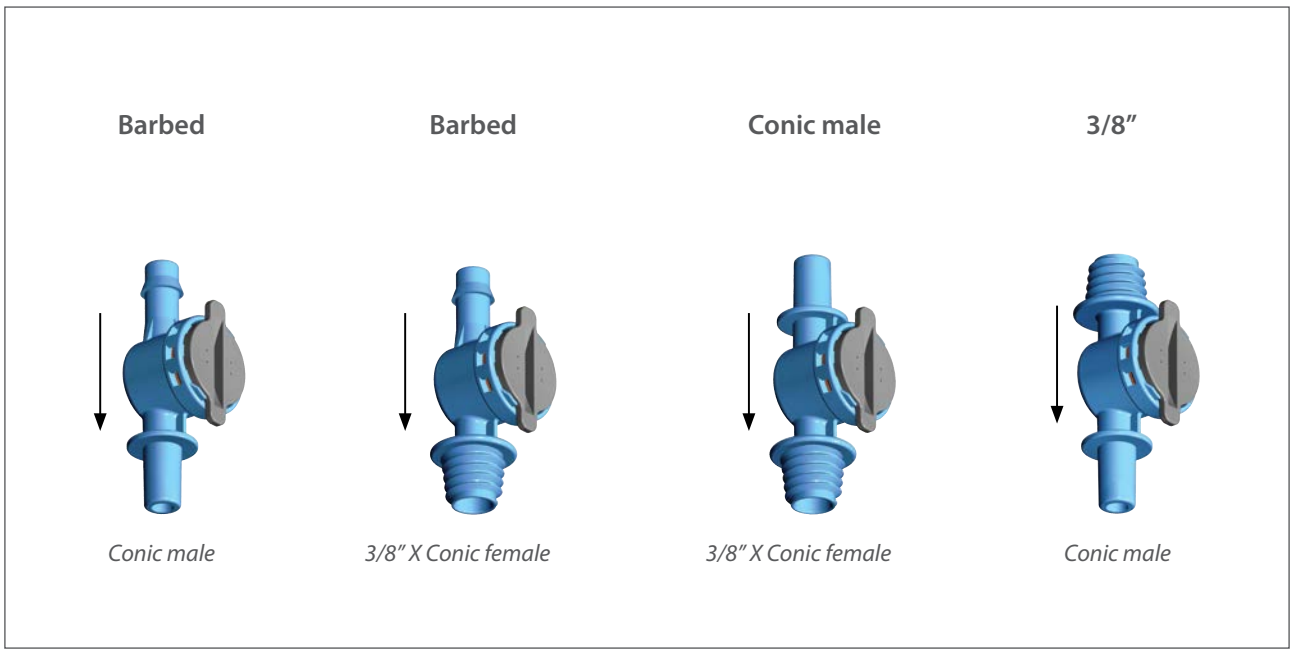
Benefits of Anti-Leak Mini Valves

The primary benefit of anti-leak valves is that they keep the system pressurized at shut-off.

After a shift is complete, the pressure will fall and the anti-leak valve will seal. This enables pulse irrigation because the system does not need to refill.

Another major benefit of anti-leak valves is that water will not drain, which could damage the crop below it.

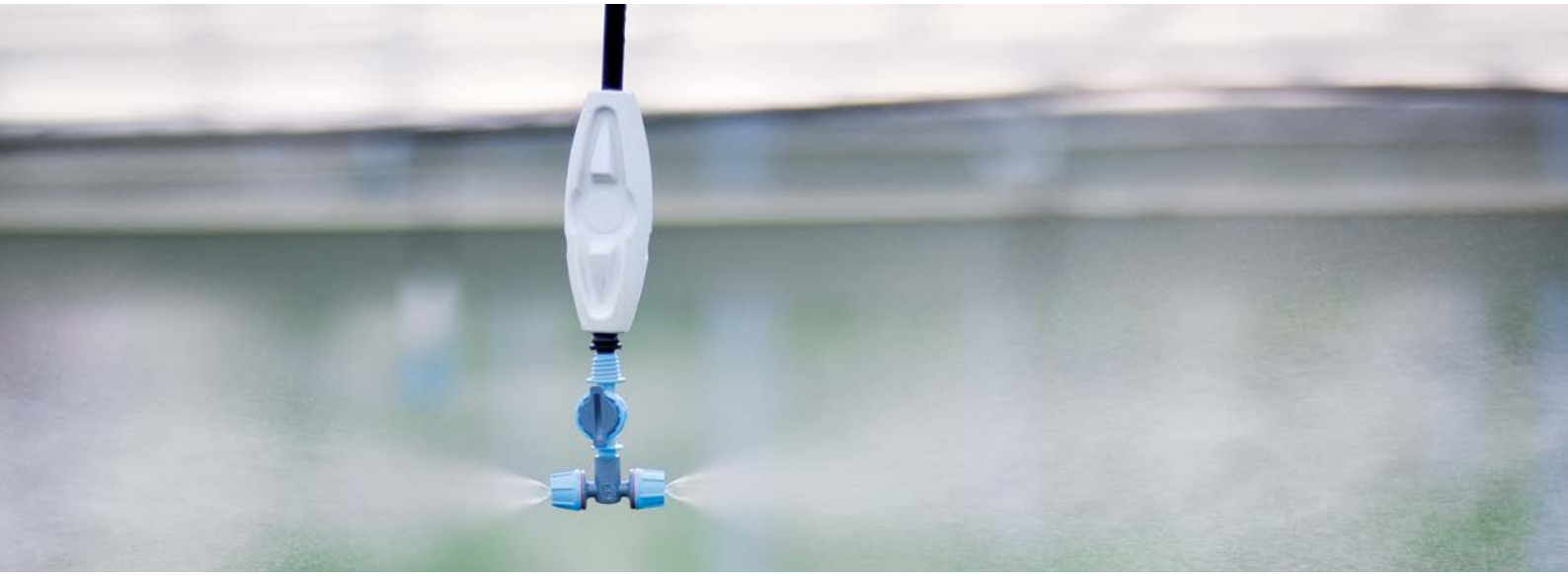
Rivulis anti-leak valves are suitable for a wide range of Rivulis misters, sprinklers and foggers.



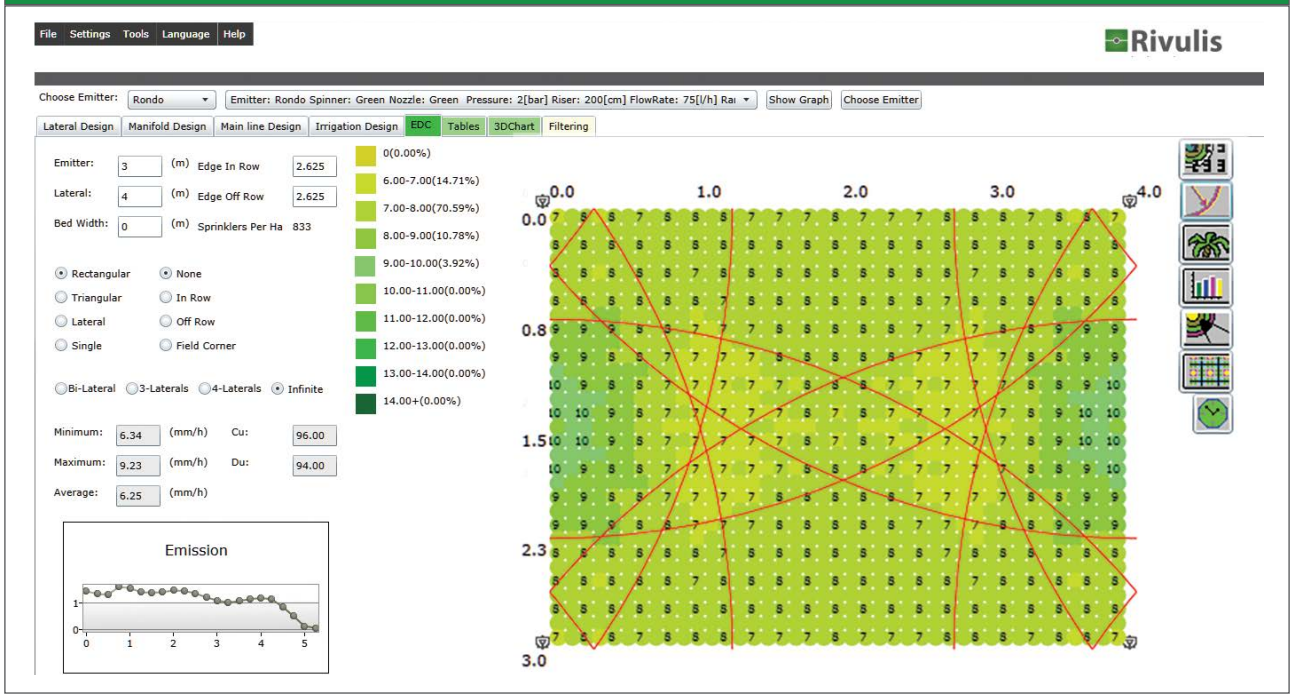
Design: Sprinklers, Misters & Foggers

When designing for sprinklers, you are measuring the coefficient of uniformity which is a 3D analysis where you want to achieve minimum 90% uniformity over the total area. This analysis includes the effect of sprinkler overlap.

When designing for drip, you are most commonly designing to minimize flow variation of 10% along each row. Effectively this is a two-dimensional analysis. Our team at the Rivulis Global Design centers have the expertise to help you design the sprinkler system for your greenhouse.



Rivulis Hydraulic Design Tool software (Every Drop Counts) is used to calculate uniformity and optimize sprinkler placement.



Rivulis S5000, S6000 and SuperXL Sprinklers

Rivulis S5000 & S6000 Plastic Impact Sprinkler

A plastic impact sprinkler that sets itself apart with a stainless steel spring, high quality movement and a balanced mechanism. The Rivulis S5000 and S6000 sprinklers are equipped with state-of-the-art nozzles that provide perfect water distribution and uniformity.



Flow rates:

- S5000 Low Angle: 375 – 637 lph (2.5 bar) 1 nozzle
- S5000 High Angle: 390 – 1286 lph (2.5 bar) 1 and 2 nozzle options
- S6000 High Angle: 1200 – 2599 lph (3.0 bar) 2 nozzle



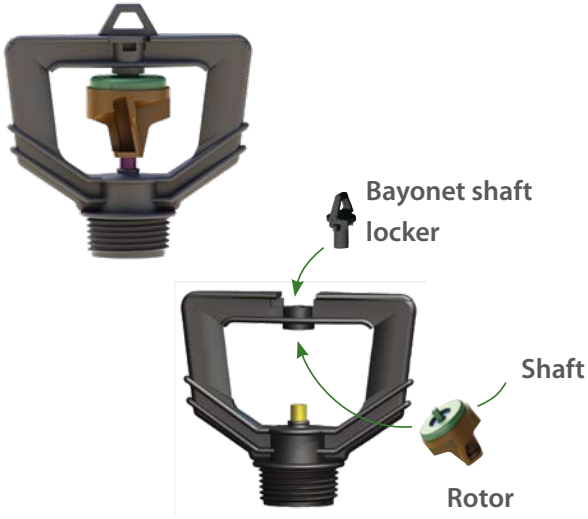


Rivulis Super XL Silicone Drive Sprinkler

The Rivulis Super XL is a slow-rotating rotor sprinkler that sprays a single continuous stream of water reaching up to 17 m in diameter. The solid single stream makes the Rivulis SuperXL very effective for use in greenhouse roof applications and for sensitive crop irrigation.

Flow rates:

- 191, 235, 290 and 341 lph (2.5 bar)



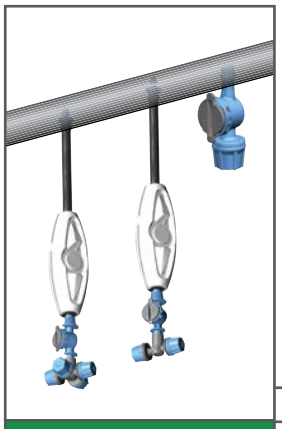
Choosing Overhead Irrigation / Climate Control for your Greenhouse Application

START

What are your needs?

Climate Control
(Humidity & Cooling)

Protect plants from excessive heat and increase humidity to increase plant yield.



Foggers
(Rivulis FLF Fogger with weight and check valve)

Germination Only
(With Misters)

Delivers an even distribution of water to ensure the seed / root has contact with water before the root system is developed.

Fine Seeds & Roots Cuttings

Overhead Irrigation
(Without Drip Irrigation)

Overhead sprinkler irrigation can be used to provide uniform irrigation for various crops.

Seedlings

1-way Fogger	1 X 5.4 l/h or 1 X 10.5 l/h
2-way Fogger	2 X 5.4 l/h or 2 X 10.5 l/h
4-way Fogger	4 X 5.4 l/h or 4 X 10.5 l/h

Mist Sprayer
(Rivulis Rondo Mist Sprayer with Weight & Check Valve).

Install Rivulis Rondo Mist Sprayer over each table and continue along the length of the greenhouse at intervals that ensure a continued wetted pattern on the benches.



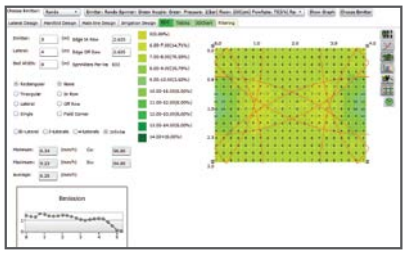
Inverted Sprinkler
(Rondo Inverted with Weight & Check Valve).

Greenhouse span width, row length and distance from the crop to the hanging sprinkler determines what sprinkler positioning and configuration is required.



The Objective: Uniformity

Through computer hydraulic simulation available from the Rivulis design team, an irrigation system that delivers >90% coefficient of uniformity (CU) can be calculated. The result is that your plants receive uniform water application and in turn, it enables them to deliver uniform yield.



Product Information

Supertif PC

Outlet Type	Outlet Color	Flow (lph)	Base Color	Product Number
Conic + Barb – for use with single, 2 & 4 way branching adaptors (min. flow per outlet – 0.5 lph max. flow per outlet – 2.0 lph) Or connect barbto 3 x 5 mm tube	Brown	2.20	Black	201015523
	Black	3.85		201015524
	Green	7.80		201015525
	Red	12.00		201015526
	Orange	25.00		201015527



Pressure compensating | Operating pressure range: 0.60-3.50 bar (25 lph model: 1.0-3.5 bar) | Install with 2 mm punch tool

Supertif PCND

Outlet Type	Outlet Color	Flow (lph)	Base Color	Product Number
Conic + Barb – for use with single, 2 & 4 way branching adaptors (min. flow per outlet – 0.5 lph max. flow per outlet – 2.0 lph) Or connect barb to 3 x 5 mm tube	Light Gray	1.10	Brown	201015528
	Brown	2.20		201015531
	Black	3.85		201015533
	Green	7.80		201015534
SOL – 90° Side barbed for 3 x 5 mm tube	Light Gray	1.10		101003187
	Brown	2.20		101003191
	Black	3.85		101003195



Pressure compensating, No-Drain | Operating pressure range: 0.70-3.50 bar | Sealing pressure: 0.15 bar
Install with 2 mm punch tool

Supertif PCND-H

Outlet Type	Outlet Color	Flow (lph)	Base Color	Product Number
Conic + Barb – for use with single, 2 & 4 way branching adaptors (min. flow per outlet – 0.5 lph max. flow per outlet – 2.0 lph) Or connect barb to 3 x 5 mm tube	Dark Gray	1.6	Brown	201015529
	Blue	3.1		201015532
	Red	11.0		201015535
SOL – 90° Side barbed for 3 x 5 mm tube	Dark Gray	1.6		101011756
	Blue	3.1		101011757



Pressure compensating, No-Drain high sealing pressure | Operating pressure range: 1.20-3.50 bar | See page 4 for additional specifications | Install with 2 mm punch tool

Supertif PCND-MOP (light blue base) & PCND-H-MOP (blue base)

Outlet Type	Outlet Color	Flow (lph)	Base Color	Product Number
SOL – 90° Side barbed for 3 x 5 mm tube	Light Gray	1.10	Light Blue	101003189
	Dark Gray	1.60	Blue	101003185
	Brown	2.20	Light Blue	101018411
	Blue	3.10	Blue	101003193
	Black	3.85	Light Blue	101003196
Conic + Barb – for use with single, 2 & 4 way branching adaptors (min. flow per outlet – 0.5 lph max. flow per outlet – 2.0 lph) Or connect barb to 3 x 5 mm tube	Light Gray	1.10	Light Blue	201015536
	Dark Gray	1.60	Blue	201015537
	Brown	2.20	Light Blue	201015538
	Blue	3.1	Blue	201015539
	Violet	5.30	Blue	201015540



Operating pressure range : 1.1-3.5 bar | See page 4 for additional specifications | Install with 2.0 mm punch tool

Supertif Vacuum Dripper

Use	Outlet Color	Product Number
For Upper side of ND systems as vaccum breaker	Green	101003200

Corona PC & PCND

Outlet Type	Outlet Color	Flow (lph)	Base Color	No Drain	Product Number
Conic*	Blue	2.15	Black	X	201015350
	Gray	3.15			201015262
	Black	4.15			201015356
Barbed	Black	4.15			201015745
Conic*	Brown	8.25			201015359
Barbed	Brown	8.25			201015742
Conic*	Green	26.20			201015362
	Blue	2.15	Green	✓	201015364
	Gray	3.15			201015544
Barbed	Black	4.15			201015747
Conic*	Black	4.15			201015368
Barbed	Brown	8.25			201015740
Conic*	Brown	8.25			201015371



Operating pressure range: 0.5-4.0 bar | PCND sealing pressure: 0.2 bar | PCND opening pressure: 0.45 bar | Install with 3.0 mm punch tool.

* Conic – for use with single, 2 & 4 way branching adaptors. Use only with Eurodrip Corona adaptors.

E1000 Dripper

Outlet Type	Outlet Color	Flow (lph)	Product Number
Multi-function outlet for use with single, 2 & 4 way branching adaptors	Brown	2.00	201013383
	Black	4.00	201013385
	Green	8.00	201013386



Flow rates calculated at: 1.0 bar | Operating pressure range: 0.8-2.0 bar | Install with 2 mm punch tool

Rivulis Dripper Accessories

Description	Product Information	Product Number	
Tube			
Rolls of 3 x 5 tube & pre-punched LDPE are available			
Plugs			
Plug 2 mm		101003314	
Katif plug 2.8 mm		101003311	
Tools			
2 mm Punch Tool	Suitable for E1000 & Supertif drippers	101001967	
2.8 mm Mini Punch	Suitable for all Katif drippers	101003347	
2.8 mm Punch Tool		101001880	
Multi Adaptors for Rivulis E1000 & Supertif			
Start Adaptor	Suitable for 3 x 5 tubing	101003297	
1 Way Angled Adaptor (barb)		201000237	
2 Way Adaptor (barb)		101003301	
4 Way Adaptor (barb)		101003302	
Eurodrip Corona Adaptors			
Corona Single Barbed Adaptor	Enables Eurodrip Corona drippers to connect to 3 x 5 mm tube	101065944	
Corona 2 Way Barbed Adaptor		101054727	
Corona 4 Way Barbed Adaptor		101065936	

Rivulis Dripper Accessories

Description	Product Information	Product Number
Pegs		
DripPeg – Flow Equalizing Peg (black)	For multiple-outlet drippers	101003308
SnaPeg – 30° Diagonal Bend (grey)	For single-outlet drippers	201000247
BarPeg – 30° Diagonal Bend (grey)	For single-outlet drippers	101008233
Polytif – Flow Equalizing Peg (black)	For multiple-outlet drippers	201000076



Rondo Mist Sprayer Head

Flow Rate @ 3.0 bar	Nozzle Color	Wetting Diameter (m)	Product Number
47	Black	2	201000281
61	Blue	2	101022981



Rondo Micro Sprinkler Head

Flow Rate (lph) @ 2.0 bar for non-flow reg models	Spinner	Nozzle	Pressure Compensating	Wetting Diameter (m) 2 m Above Ground @ 2.0 bar	Product Number
51	Blue (Flat Trajectory)	Blue	X	8.0	101003433
75		Green		8.5	10103443
102		Red		9.5	101023214
132		White		9.5	101003444
51	Green (Convex Trajectory)	Blue		10.0	201005978
75		Green		11.0	201000278
102		Red		11.0	201000277



Rondo Micro Sprinkler Head

Flow Rate (lph) @ 2.0 bar for non-flow reg models	Spinner	Nozzle	Pressure Compensating	Wetting Diameter (m) 2 m Above Ground @ 2.0 bar	Product Number
132	Green (Convex Trajectory)	White	X	11.5	101003399
23	Red (RFR only)	Black	✓	5.0	101003454
30		Blue		5.5	201003440
41		Dark Blue		6.5	101003455
53		Green		7.0	201003441
70		Red		7.5	101011812
95		White		7.6	101018433



Operating pressure range: 1.5 - 2.5 bar (Rondo), 1.5 - 3.5 bar (RFR) | Flow rate calculated at 2.0 bar | Wetting diameter: 5.0 - 10.8m, according to Flow Rate and Spinner | Inlet: Conic female (Rondo) / 3/8"THM (RFR)

Rondo Accessories

Description	Product Number
Anti-Leak Valve (Conic Female x Conic Male) – suitable for Inverted Rondo	201000202
Anti-Leak - Mini Valve (Barbed x Conic Male) – suitable for Inverted Rondo	201000204
Weight for hanging tube	101003723
35 cm tube, Weight and 4/7 x Male Press Fit Connector Assembly	201000260
60 cm tube, Weight and 4/7 x Male Press Fit Connector Assembly	101003694
Meteor 44 (3/8"THF x 4/7mm)	201000822









FLF

Type	Flow rate per outlet (lph)	Inlet	Color	Product Number
Single Outlet with Anti-Leak	5.4	Barb	Light Blue	201000197
	10.5		Dark Blue	101003674
	5.4	Male Conic	Light Blue	101003679
	10.5		Dark Blue	101003680
2 outlet head only	5.4	Female Conic	Light Blue	101008234
	10.5		Dark Blue	101009818
4 outlet head only	5.4		Light Blue	101003664
	10.5		Dark Blue	101009819



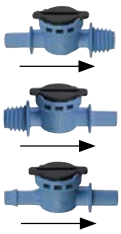




Operating pressure range: 3.5 – 5.0 bar | Flow rate calculated at 3.5 bar | Inlet: Conic female or barb | All models of FLF-1 outlet come pre-installed with anti-leak valve. Operating pressure range: 2.5 - 4.0 bar | Flow rate calculated at 3.0 bar | Inlet : Conic female

Anti-Leak Valves

Description	Product Number
Anti-Leak Valve – High Pressure (conic x thread)	201000833
Anti-Leak Valve – High Pressure (thread x conic)	201000236
Anti-Leak Valve – High Pressure (barb x conic)	201000832



Quick Reference Guide: Greenhouse Drippers

Dripper Type	Corona	Supertif	Supertif ND	Supertif NDH	Supertif ND MOP	E1000
Pressure Compensating	✓	✓	✓	✓	✓	X
No-drain	Available	X	✓	(high sealing pressure)	(medium opening sealing pressure option)	
Flow Rates (lph) Based on nominal operating pressure	2.15, 3.15, 4.15, 8.25, 26.20	2.2, 3.85, 7.8, 12.0, 25.0	1.1, 2.2, 3.85, 7.8	1.6, 3.1, 11.0	1.1, 2.2, 3.85, 5.3	2.0, 4.0, 8.0
Operating Pressure (bar)	0.5 - 4.0	Conic + Barb - for use with branching adapters or connect direct to 3 x 5 mm tube				0.8 - 2.0
Outlet Type	Conic*.	Conic + Barb - for use with branching adapters or connect direct to 3 x 5 mm tub				
		SOL (selected configurations) 90° barbed side for 3 x 5 mm tube				
Features	Self-activated flushing mechanism	Self-activated flushing mechanism		Self-activated flushing mechanism with no-drain feature to prevent water draining from drippers when water is shut-off		2-piece take-apart dripper for easy cleaning

* Barb available for 4.15 l/h and 8.25 l/h.

Quick Reference Guide: Greenhouse Sprinklers

Dripper Type	Inverted Rondo	Inverted RFR	FLF	Rondo Mist Sprayer	Tornado Mist Sprayer
Type	Inverted Micro Sprinkler	Inverted Micro Sprinkler	Inverted Fogger	Inverted Mister	Inverted mister
Pressure Compensating	X	✓	X	X	X
Flow Rate (l/h) Based on nominal operating pressure	51, 75, 102, 132	23, 30, 41, 53, 70, 95	5.40, 10.50	47, 61	23, 28, 40, 50
Operating Pressure (bar)	1.5 – 2.5	1.5 – 3.5	3.5 – 5.0	2.5 – 4.0	2.5 – 3.5
Inlet	Conic female	3/8" THM	Conic female	Conic female	Conic male
Options / Models	Anti-leak valve assembly	Anti-leak valve assembly	Single, 2-way & 4-way models. Anti-leak valve assembly	Anti-leak valve assembly	Anti-leak valve assembly



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