

Greenhouse, Tunnel, Net House & Hydroponic Solutions

 Irrigation

 Fertigation

 Germination

 Humidification

 Cooling

 Snow & Ice
Protection

 Dust Removal

Water applications for your greenhouse extend much further than irrigation.



From climate control to germination, the correct use of water application is critical to maximize plant productivity.

This guide will introduce you to the principals and decision making process to determine the right solutions for your greenhouse.

Since the design of a greenhouse is complex, this guide is to serve as an introduction only. We highly recommend you contact a Rivulis Eurodrip representative who has the hydraulic and agronomic expertise to develop a solution for your unique needs.



“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 Supertif.

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



Greenhouses by their very nature are designed to provide higher ambient temperature to accelerate plant growth and provide versatility of crop growth without being restricted by the outside climate.

However, you can have too much of a good thing and excessive heat and dry conditions can damage your crop.

HIGH TEMPERATURE

Ventilation is limited in greenhouses which can lead to excessive heat.

At 42°C, proteins in your plant will stop functioning, with temperatures over 50°C creating major damage for most crops. This damage is irreversible.

Young plants after germination and plants with wider leaves are more sensitive.

LOW HUMIDITY

Heating in greenhouses decreases humidity resulting in dry air.

Plants cannot mobilize if there is not enough water for transpiration.

The result is that the plant becomes stressed, stomata closes, photosynthesis is reduced, and you have subsequent yield loss.

THE SOLUTION:

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.



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.



INSTALLATION CONSIDERATIONS:

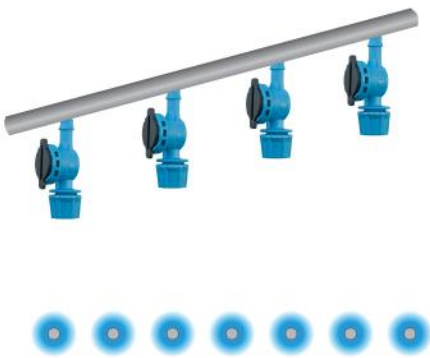
Foggers should be installed in the highest position possible, ideally above the path. By calculating distance x temperature x humidity, it is possible to calculate the falling distance required for drops to evaporate. This helps minimize the risk of plant disease. Remember that the efficiency of a cooling system is subject to the relative humidity.

For very sensitive plants, it is recommended to use a 2-way FLF running parallel to the path.

The most common configuration for standard applications is 3 x 2 m, however your Rivulis Eurodrip representative can assist you with calculating the FLF requirements for your greenhouse.

FLF OPTIONS: 1, 2 & 4 WAY OUTLETS

Single Outlet



2 - Outlet



4 - Outlet



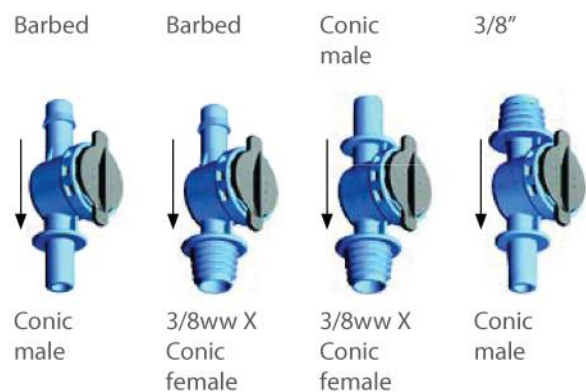
Anti-leak mini valves:

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.



Germination & Overhead Irrigation

Even if you have drip irrigation, in greenhouses, you generally need both drip irrigation and overhead irrigation for germination, chemigation and sometimes supplementary irrigation.

You may choose to only use overhead irrigation for all your irrigation requirements. However, this is only suitable only for specific crops that are durable to fungus and pests.



MIST SPRAYERS: RONDO MIST SPRAYER

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 minisprinklers.

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. 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: INVERTED RONDO



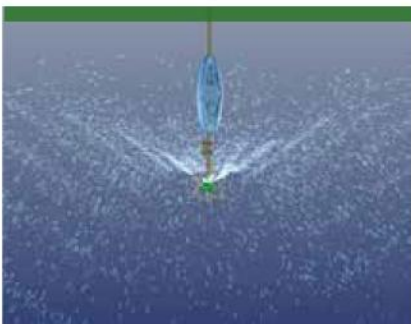
The Rondo Micro Sprinkler is one of the most trusted sprinklers worldwide.

Did you know that Rondo is also available in an inverted model, designed specifically for greenhouse irrigation?

Available in a range of flow rates from 30 to 132 l/h (2,0 bar pressure) and two different spinner options (flat and convex), Rondos can be customized to irrigate 5,0 - 10,8 meters diameter per sprinkler.

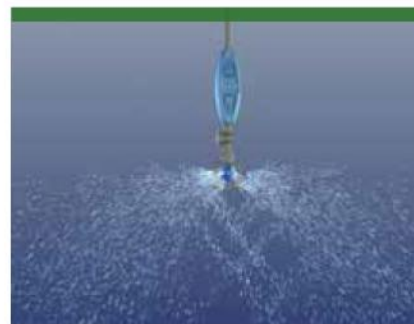
RFR: PRESSURE COMPENSATED (PC) RONDO

The RFR model is a dependable inverted model that contains a diaphragm in each sprinkler to regulate the flow. 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 uniformity for your greenhouse and the potential for longer rows of sprinklers.



CONCAVE TRAJECTORY

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



FLAT TRAJECTORY

Water droplets are spread horizontally to the sprinkler head. This enables the sprinkler to be suspended higher but decreases the diameter of each sprinkler.

Note: PC Rondo models are only available with flat trajectory spinners.

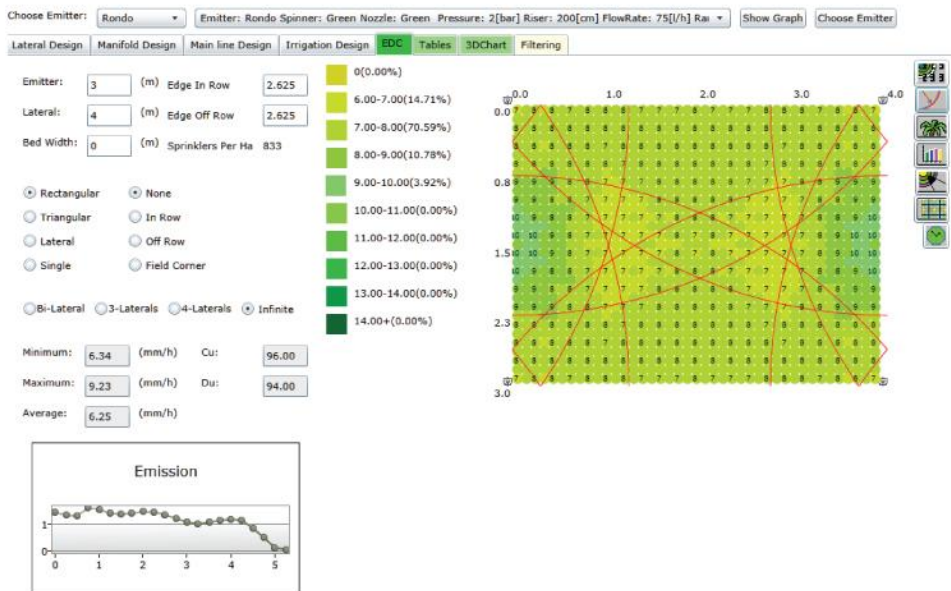
DESIGN: SPRINKLERS, MISTERS & FOGGERS



Designing for greenhouses incorporates a different methodology than both open field and drip irrigation.

When designing for drip, you are most commonly designing to minimize flow variation to 10% *along* each row. Effectively this is a two-dimensional analysis.

When designing for sprinklers, you are measuring *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.

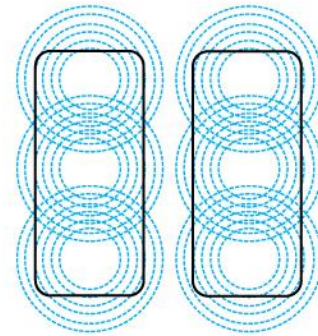


Rivulis Hydraulic Design Tool software (Every Drop Counts) is used to calculate uniformity and optimize sprinkler placement. The team at our Rivulis Eurodrip global design centers have the expertise to help you design your a sprinkler system for your greenhouse.

For overhead irrigation in greenhouses, you should also consider the following options:

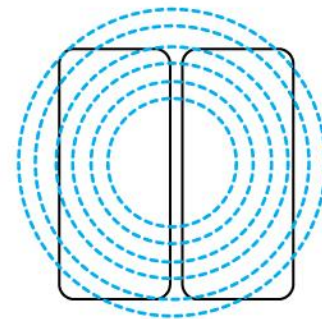
Sprinklers over each table

Provides best uniformity and the most efficient design. Most misting systems for germination will use this design due to the small diameter of water spread. However, it is also suitable for sprinkler irrigation where very high uniformity is required.



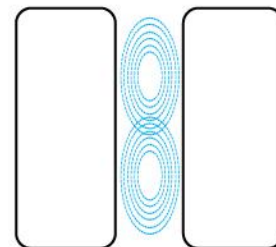
Sprinklers over multiple tables

Larger sprinklers are used to irrigate multiple tables from each sprinkler. In some cases the entire width of the greenhouse can be irrigated with one row of sprinklers. This reduces cost but requires higher flow sprinklers, delivers less uniformity and water is wasted on paths between tables



2-Way foggers along path only

In conjunction with drip irrigation, 2-way foggers can be installed above and parallel to the path to minimize the risk of disease to very sensitive plants



Remember - most wetting diameters are calculated at 2 m. This 2 m should be measured from the elevation of the crop - being the distance from the table height in soil-less applications, and the distance from the floor in soil applications.

START

What are your needs?



CLIMATE CONTROL (HUMIDITY & COOLING)

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



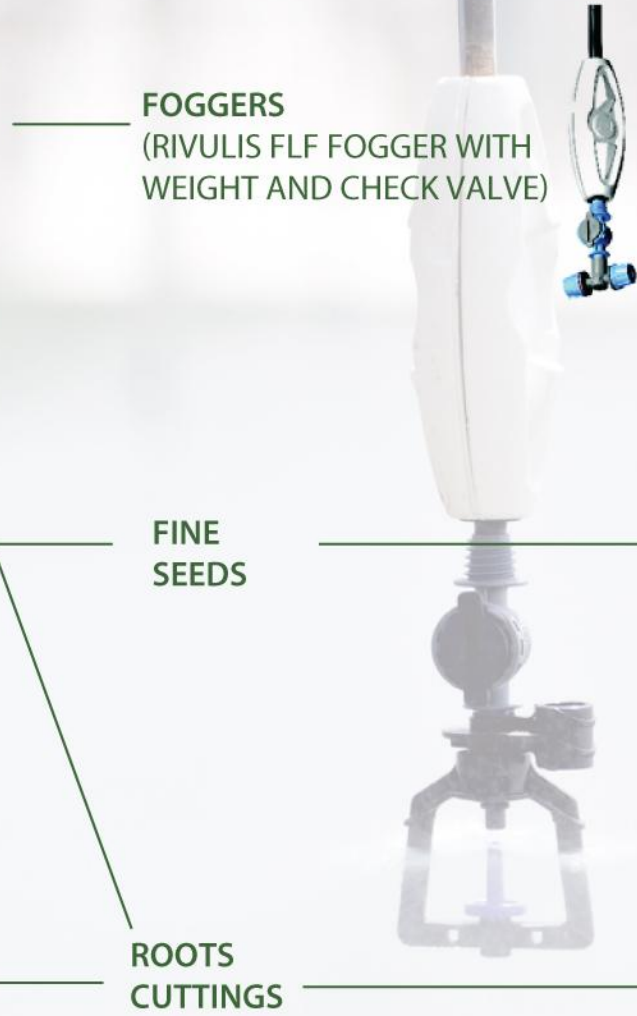
GERMINATION ONLY (WITH DRIP IRRIGATION)

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



OVERHEAD IRRIGATION (WITHOUT DRIP IRRIGATION)

Overhead sprinkler irrigation can be used instead of drip irrigation, but is only suitable for specific crops that are durable to fungus and pests.



SENSITIVE PLANTS

2-WAY FOGGERS

Run along and parallel to the path, not over plants.



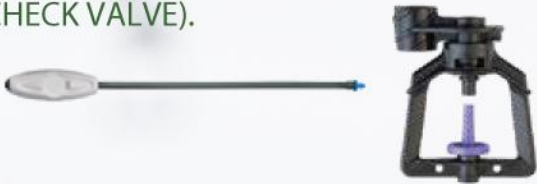
1-WAY & 4-WAY FOGGERS

Designed to maximize humidity uniformity with equal spacing throughout the greenhouse.



MIST SPRAYER

(RONDO MIST SPRAYER WITH WEIGHT & CHECK VALVE).



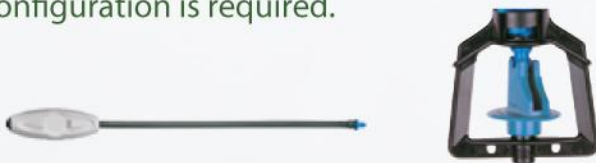
Install one Rondo Mist Sprayer over each table and continue along the length of the greenhouse at intervals that ensure a continued wetted pattern on the benches.



INVERTED SPRINKLER

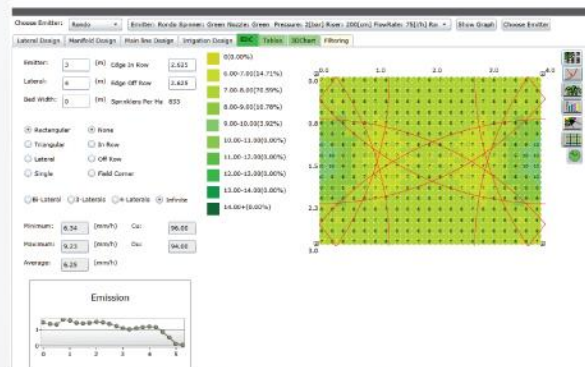
(RIVULIS INVERTED RONDO WITH WEIGHT & CHECK VALVE).

Table width, table length and distance from the table to the hanging sprinkler determines what rows & sprinkler configuration is required.



THE OBJECTIVE: UNIFORMITY

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



DRIP IRRIGATION

Most greenhouse applications will use drip as the primary source of irrigation. Generally integral drip lines are used in soil applications, and on-line drippers are used in soil-less / hydroponic applications.

The advantages of drip irrigation are numerous. They include delivering water and fertilizer direct to the root zone of the plant, which helps keep foliage dry and minimizes disease risk. Additionally, drip irrigation enables pulse irrigation, which enables numerous small irrigation applications per day.

When choosing the correct dripper / drip line, there are many considerations and options available. Rivulis Eurodrip offer a wide variety of drip solutions for greenhouses, from the economical E1000 dripper, to the state of the art Supertif dripper and HydroPCND drip line.

QUICK REFERENCE GUIDE: RIVULIS DRIPPER OUTLETS



Straight conic outlet (Conic)
Use stand-alone without tube or connect to tube with branching adaptors



Barbest side outlet (SOL)
Connect direct to 3x5 tube using straight outlet



Barbed straight outlet (SLB)
Connect direct to 3x5 tube. 90° angle outlet for ease of installation below pots



Multi-function port
Use stand-alone without tube or connect directly to 3x5 tube or branching adaptors

RIVULIS E1000: EASY TAKE-APART DRIPPER

The Rivulis E1000 is a cost-effective dripper that can be used both stand-alone, and also with tube and pegs.

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

Easy Cleaning

Every pack of 1.000 drippers comes with a useful E1000 tool.

This specially designed spanner allows you to open your 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 utilized 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 stabilizer peg should be used.
- 2-4 pot applications: Use with a 2 or 4 way multi-branch adapter to irrigate multiple pots from the same dripper. Flow equalizer pegs should be used.



SUPERTIF FAMILY: THE MOST AVANCED ONLINE DRIPPER

If you have intensive horticulture production, you need the 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, Supertif provides you with maximum flexibility multiple outlet configurations, no-drain options with multiple sealing and opening pressures, and a wide range of accessories.



SUPERTIF | PC

PRESSURE COMPENSATING DRIPPER
Pressure compensating dripper 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.

Flow rates: 1,10, 2,20, 3,85 and 7,80 l/h



SUPERTIF | PCND-H

PRESSURE COMPENSATING NO-DRAIN DRIPPER
With high sealing pressure.

Flow rates: 1,60, 3,10, and 11,00 l/h



SUPERTIF | PCND-MOP & PCND-H-MOP

PRESSURE COMPENSATING NO-DRAIN DRIPPER WITH MEDIUM OPENING PRESSURE & HIGH SEALING PRESSURE OPTION
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

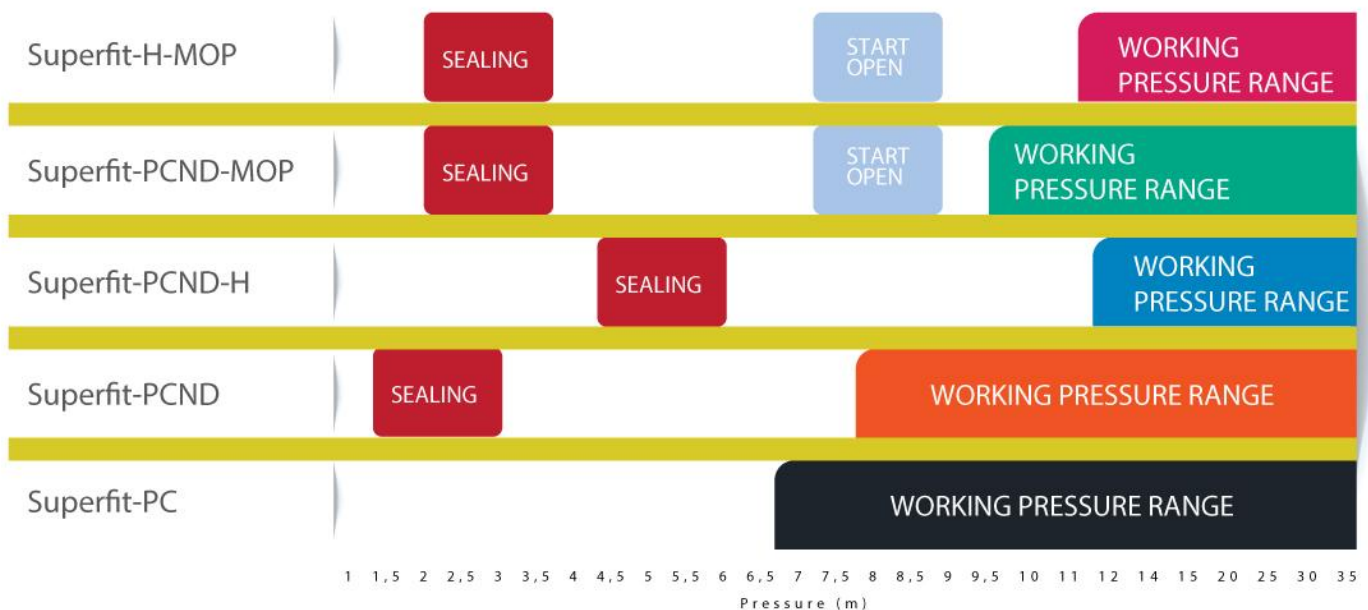


NO DRAIN DRIPPERS: WHAT YOU NEED TO KNOW

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 drippers remain sealed until the pressure increases above a specified pressure - the "opening" pressure.

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 the system would need to re-fill at each operation.



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: This is the minimum operation pressure for the dripper to fully open and emit the specified flow-rate.



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, Corona offers flexibility and reliability.



CORONA PC

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



CORONA PCND

Pressure compensating and no-drain function for pulse irrigation applications.

Flow rates: 2,15, 3,15, 4,15, 8,25, 26,20 l/h

Sealing pressure: 0.20 bar
Opening pressure: 0.45 bar

DRIPPER PEGS: CHOOSING THE CORRECT OPTION

If you have more than one peg and tube per dripper, it is recommended to use a peg that also has flow regulation built into it. 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 regulation.

Note: DripPeg, Polytif, BarPeg and SnaPeg are designed for Rivulis E1000 and Supertif only. Please contact your Rivulis Eurodrip representative for pegs and fittings for Corona drippers.



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

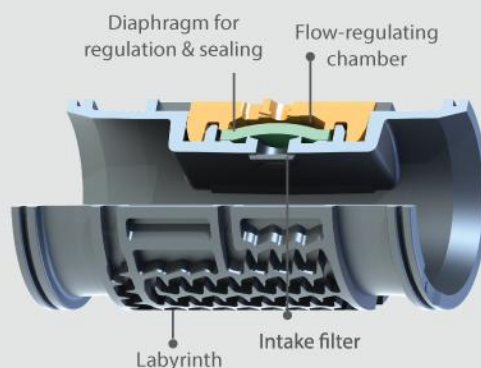


WHITE HYDRO PC & PCND: DRIP LINE SOLUTIONS

The unique white Hydro PC & PCND drip lines by Rivulis are the ideal solution for plants in soil applications in greenhouses.

- Strong round dripper with two outlets in every dripper.
- Pressure compensating for same flow per dripper.
- Unique 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.
- 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 greenhouse pulse irrigation with a large diameter drip line.

Hydro PCND
Dripper





RIVULIS HYDRO PCND - AVAILABLE IN WHITE TUBE.

The major difference between black and white drip line is that black drip line absorbs more solar radiation, heating the water within the pipe. This heating can cause two issues: namely a negative impact on the root systems of plants (particularly younger plants) and secondly, an increased build-up of algae.

In one field study, white drip lines were run alongside black drip lines so the temperature of the water flowing through the system could be measured. When measured, water flowing through the white drip line was cooler by 10°C. This can have a significant benefit for crops, particularly for young plants where feeder roots are more sensitive to water temperature.

The rate at which plants absorb water is influenced by temperature, and can vary depending on the climate the plant is adapted to. Most horticulture crops are cooler climate plants that have root systems which absorb colder water more efficiently.

Reduction of scale build-up is another major advantage that can increase the lifespan of the drip line, by reducing the risk of dripper clogging. 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.

Considerations

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

SOIL or SOIL-LESS?

SOIL

DRIP LINE WITH INTEGRAL EMITTERS (WHITE HYDRO PCND)



PRESSURE COMPENSATING & NO DRAIN (PCND) DRIPPERS (Rivulis Superfit ND 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 minimal drainage.

SOIL-LESS (POTS)



HOSE WITH ON-LINE EMITTERS (Rivulis E1000, Rivulis Superfit for Eurodrip Corona)

HOW OFTEN WILL YOU IRRIGATE?

3+ TIMES PER DAY

1-2 TIMES PER DAY

IRRIGATION METHOD: Pulse

EMITTER SPACING: 15-30 cm (maximum)

Choose emitter spacing based on heaviness of soil. Lighter soils require closer spacing.
Choose closer emitter spacing for higher value crops to maximize crop potential.

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).

e.g. Supertif NDH has a sealing pressure of 3,5 m and an opening pressure of 5,0m.

There are many PCND models available. Consult your local Rivulis Eurodrip representative to determine the configuration best-suited for your application.

PC DRIPPER

(Rivulis Superfit or Eurodrip Corona)

For constant flow over a wide range of pressure.

NON-PC DRIPPER

(Rivulis E1000)

Economical solution with take-apart body.



** Snappeg, Barpeg, Drippeg and Polytif are suitable for E1000 and Supertif only. For pegs and manifolds for Corona, please contact your Eurodrip representative or dealer.*

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

CONNECT USING SINGLE HOSE SNAPPEG OR BARPEG*



MULTI-POT

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.



OTHER CONSIDERATIONS

FERTIGATION AND CHEMIGATION

Drip technology allows for application with fertigation direct to the root zone while overhead irrigation allows for chemigation.

System design should incorporate fertigation and chemigation requirements to maximize the effectiveness of the overall system.

GREENHOUSE STRUCTURE PROTECTION

Beyond irrigation and climate control, water is also used to protect the greenhouse from snow and ice, and to clean the greenhouse from dust.

Accumulated dust build-up lowers the UV in the greenhouse, which has an adverse impact on plants.

Beyond the standard range of irrigation products for greenhouse, Rivulis Eurodrip has a range of sprinklers ideally suited to this purpose of greenhouse structure protection.



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.

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 SuperXL Silicone Drive Sprinkler:

The 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 SuperXL very effective in cleaning greenhouses from dust.

Flow Rates:

- 191, 235, 290 and 341 lph (2,5 bar)



FLF

Flow Rate per outlet (lph)	Inlet	Colour	Product Number
5,4	Barb	Light Blue	201000197
10,5		Dark Blue	101003674
5,4	Male Conic	Light Blue	101003679
10,5		Dark Blue	101003680
5,4	Female Conic	Light Blue	101008234
10,5		Dark Blue	101009818
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.

RONDO MIST SPRAYER

Flow Rate @ 3,0 bar	Nozzle Colour	Wetting Diameter (m)	Product Number
47	Black	2	201000281
61	Blue	2	101022981



> 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



INVERTED RONDO & RFR

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	101011800
75		Green		8,5	201000123
102		Red		9,5	101011801
132		White		9,5	201000124
51	Green (Convex Trajectory)	Blue	X	8,7	101011803
75		Green		9,8	201000126
102		Red		10,7	101011804
132		White		10,8	101011805
23	Red (RFR only)	Black	✓	5,5	101003454
30		Blue		5,5	201003440
41		Dark Blue		6,5	101003455
53		Green		7,0	201003441
70		Red		7,5	101011812
98		White		7,6	101018433

- >Operating pressure range : 1,5 - 3,0 bar >Flow rate calculated at 2,0 bar
- >Wetting diameter: 5,0 - 10,8m, according to Flow Rate and Spinner
- >Inlet : Conic female / 3/8" THM depending on product

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
35 cm tube, Weight and 4/7 x Male Press Fit Connector Assembly	101003694
Meteor 44 (3/8"THF x 4/7mm)	201000822



SUPERTIF PC

Outlet Type	Outlet Colour	Flow (lph)	Base Colour	Product Number
Conic - for use with single, 2 & 4 way branching adaptors (min. flow per outlet - 0,5 lph max. flow per outlet - 2,0 lph)	Brown	2,20	Black	201000058
	Black	3,85		201000242
	Green	7,80		201000059
	Red	12,00		201000060
	Orange	25,00		101003183
SLB - Straight barbed for 3 x 5 mm tube	Brown	2,20		201000240



>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 Colour	Flow (lph)	Base Colour	Product Number
Conic - for use with single, 2 & 4 way branching adaptors (min. flow per outlet - 0,5 lph max. flow per outlet - 2,0 lph)	Light Gray	1,10	Brown	201000066
	Brown	2,20		201000061
	Black	3,85		201000062
	Green	7,80		201000064
SLB - Straight barbed for 3 x 5 mm tube	Brown	2,20		201000241
SOL - 90° Side barbed for 3 x 5 mm tube	Brown	2,20		101003191



>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 Colour	Flow (lph)	Base Colour	Product Number
Conic - for use with single, 2 & 4 way branching adaptors (min. flow per outlet - 0,5 lph max. flow per outlet - 2,0 lph)	Dark Gray	1,6	Brown	101011749
	Blue	3,1		101011750
	Red	11,0		101011753
SLB - Straight barbed for 3 x 5 mm tube	Blue	3,1		101011754
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
>Sealing pressure: 0,35 bar >Install with 2 mm punch tool

**PRODUCT
INFORMATION**



SUPERTIF PCND-MOP & PCND-H-MOP

Outlet Type	Outlet Colour	Flow (lph)	Base Colour	Product Number
SOL - 90° Side barbed for 3 x 5 mm tube	Light Gray	1.10	Light Blue	101003189
	Brown	2.20		101018411
	Black	3.85		101003196
Conic - for use with single, 2 & 4 way branching adaptors	Dark Gray	1.60	Blue	201000067
	Blue	3.10		101003180
	Violet	5.30		101003181
	Light Green	8.00		201000063
SOL - 90° Side barbed for 3 x 5 mm tube	Dark Gray	1.60		101003185
	Blue	3.10		101003193

- >Operating pressure range: 1.0-3.5 bar >Sealing pressure: 1.8 m
- >Start opening pressure: 0,7 bar >Install with 2.0 mm punch tool

CORONA PC & PCND

Outlet Type	Outlet Colour	Flow (lph)	Base Colour	No Drain	Product Number
Conic - for use with single, 2 & 4 way branching adaptors Use only with Eurodrip Corona adaptors	Blue	2.15	Black	✗	201015350
	Gray	3.15			201015354
	Black	4.15			201015356
	Brown	8.25			201015359
	Green	26.20			201015362
	Blue	2.15	Green	✓	201015364
	Gray	3.15			2171CN03PL
	Black	4.15			201015369
	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














E1000 DRIPPER



Outlet Type	Outlet Colour	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: 1,00 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 3x5 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			
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	
Pegs			
DriPeg - Flow Equalising 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 Equalising Peg (black)	For multiple-outlet drippers	201000076	

QUICK REFERENCE GUIDE:

GREENHOUSE SPRINKLERS & JETS

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	✗	✓	✗	✗	✗
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 female
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

QUICK REFERENCE GUIDE:

DRIPPERS

Dripper Type	Corona	E1000	Supertif	Supertif ND	Supertif NDH	Supertif ND MOP
Pressure Compensating	✓	✗	✓	✓	✓	✓
No-drain	Available	✗	✗	✓	(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	2,0, 4,0, 8,0	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
Operating Pressure (bar)	0,5 - 4,0	0,8 - 2,0	0,6 - 3,5. Minimum pressure varies upon model			
Outlet Type	Conic	Multi-function outlet (can be used with branching adaptors and tube)	Conic - for use with branching adaptors			
			SLB (selected configurations) Straight barbed for 3 x 5 mm tube			
Features	Self-activated flushing mechanism	2-piece take-apart dripper for easy cleaning	Self-activated flushing mechanism	Self-activated flushing mechanism with no-drain feature to prevent water draining from drippers when water is shut-off		

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