



# Mechanized Irrigation

*Low Pressure - High Performance™*

AGRICULTURAL IRRIGATION



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# PARTNERING TOGETHER

Since 1963, Senninger has maintained a commitment to innovating and manufacturing quality sprinklers, spray nozzles, and pressure regulators to improve your crop yield. Our goal is to ensure that all products and enhancements are designed to make it easier and more profitable for you to provide food and fiber for a growing population.

Senninger is focused on conservation. Our high-performance sprinklers use low pressure to reduce water usage and energy costs, which is good for the growers and the planet.

*The information contained in this catalog is intended to be used as a general guideline only. Your local Senninger dealer will be happy to advise you about packages designed using these products.*



## UNIVERSAL PIVOT PRODUCTS PLATFORM

The Senninger® exclusive UP3 (Universal Pivot Products Platform) product line adds significant benefits to the proven technologies of the i-Wob®2, Xi-Wob™, Dynamic Drive, LDN®, Super Spray® and Xcel-Wobbler™ TOP making nozzle changes just a click away.

Growers may want to renozzle to utilize different flow rates on their sprinkler package. Lower flow rates are often used for germination and chemigation. Some growers experience frequent drops in well capacity or simply want to tailor-manage their resources. The UP3 nozzle design offers a quick solution for easy nozzle changes along with two convenient options for nozzle carriers so your next nozzle is always at hand when you're ready to make the change.



### EASY-CLEAN / EASY-CHANGE UP3 NOZZLE (Patented)



Just pinch and pull to remove the nozzle then place and click to re-install. Cleaning and changing nozzles is easy and convenient. There is no need to disassemble or remove the sprinkler.

The color-coded nozzles are highly visible and easy to identify. The nozzle numbers (corresponding to orifice sizes in 64ths of an inch) are visible on the ears, with half sizes denoted beneath the second digit and the notches on the lower edge of the nozzle.

### UP3 DUAL NOZZLE CARRIER (Patented)



To access the secondary nozzle, pinch and pull the nozzle from the applicator, flip the carrier over and click in the secondary nozzle. The carrier is marked to indicate high and low flow nozzles. When installed in the applicator, if HIGH is visible on the carrier, then the lower flow nozzle is in use. If LOW is visible on the carrier, the higher flow nozzle is in use.

### UP3 DUAL NOZZLE FITTING



Designed to be used instead of a standard barb x threaded fitting, this device carries two additional UP3 nozzles. Just pinch and pull to remove nozzles and place and click to reinstall. Nozzles are easily identifiable with numbers on the ears. The larger the number, the higher the flow.

# i-Wob<sup>®</sup>2



## I-WOB2

### FOUR DEFLECTORS AVAILABLE

Grey, Black, Blue or White

SA9 (Standard Angle 9-Groove) model shown above

Introducing the i-Wob<sup>®</sup>2, the next generation of Wobbler<sup>®</sup> Technology. Wear surfaces have been improved and a protective shroud doubles as a nozzle carrier for two extra nozzles. The i-Wob2 is designed for areas where poor water quality may cause higher wear on irrigation componets.

## FEATURES

- Uses Wobbler<sup>®</sup> Technology – unique rotary action combined with wobbling grooved deflectors
- Outstanding uniformity over a large area for low application intensity
- Low pressure operation saves money and energy - 0.41 to 1.03 bar.
- Four different models available based on desired trajectory and droplet size
- Exclusive below-the-nozzle weight eliminates the need for heavier, conventional drop weights.
- UP3<sup>®</sup> snap-in nozzle is easy to remove for cleaning or changing. To remove the nozzle simply pinch and pull, then place and click to install.
- Backed by the longest warranty in the industry (3 years) covering materials, workmanship, and performance

## I-WOB2 SYSTEM ASSEMBLY

- The i-Wob2 must be mounted with a minimum of 0.6 m reinforced flexible hose above the applicator because of its off-center rotary action. The hose must always be on outlet end of semi-rigid or rigid drop.
- When using the Universal Magnum Weight or One Weight, never use another weight above the i-Wob2. Always be sure the weight is tightly threaded into the bottom of the i-Wob2 (140 inch-lbs. torque recommended).
- If you are using a conventional weight above the i-Wob2, only use a threaded weight weighing at least 0.7 kg, but not exceeding 0.31 m in length. A slipover drop weight is not recommended.

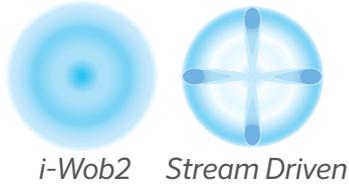
**Note:** Any modifications or deletions regarding installation requirements will void warranty.



Use the Universal Magnum Weight™ or The One Weight on flexible hose installations.

(See pg. 24)

**INSTANTANEOUS AREA OF COVERAGE**



In this example, the i-Wob2 is spreading the same amount of water over an area five times greater than the area covered by the spray nozzle.

**LOW APPLICATION INTENSITY**

Stream-driven applicators provide good throw distance, but their distinct streams instantaneously place the entire flow in a relatively small area. This more intense application can negatively impact the soil surface. In contrast, the i-Wob2 applies water to a larger area of soil surface, reducing the impact of the sprinkler's pattern on the soil structure. Larger instantaneous coverage offers a slower intake rate to help reduce runoff and wheel tracking.

**UNMATCHED UNIFORMITY**

The unique rotary action combined with the wobbling grooved deflector delivers outstanding uniformity over a large area of coverage. The droplet size can be tailored to the needs of the soil through the selection of the deflector and the proper operating pressure.



Four different deflector models based on desired trajectory and droplet size.

I-WOB®2 SYSTEM DESIGN CRITERIA	Standard Angle 6 Groove - Grey Small Droplet	Standard Angle 9 Groove - Black Medium Droplet	Low Angle 9 Groove - Blue Medium Droplet	Low Angle 6 Groove - White Large Droplet
<b>Nozzle Sizes*</b>				
0.41 bar**	#12 - 26 4.76 - 10.32 mm	#12 - 26 4.76 - 10.32 mm	#12 - 26 4.76 - 10.32 mm	#12 - 26 4.76 - 10.32 mm
0.69 - 1.03 bar	#10 - 26 3.97 - 10.32 mm	#6 - 26 2.38 - 10.32 mm	#6 - 26 2.38 - 10.32 mm	#12 - 26 4.76 - 10.32 mm
<b>Flows</b>				
0.41 bar**	570 - 2635 L/hr	570 - 2635 L/hr	570 - 2635 L/hr	570 - 2635 L/hr
0.69 - 1.03 bar	509 - 4168 L/hr	182 - 4168 L/hr	182 - 4168 L/hr	736 - 4168 L/hr
<b>Diameters</b>				
0.91 m height at 0.41 bar**	8.0 - 9.1 m	9.1 - 10.4 m	8.5 - 9.1 m	8.5 - 9.8 m
0.91 m height at 0.69 - 1.03 bar	11.0 - 14.0 m	9.5 - 16.2 m	9.5 - 14.3 m	12.2 - 14.9 m
1.83 m height at 0.41 bar**	9.1 - 10.4 m	11.0 - 12.8 m	9.8 - 10.7 m	9.8 - 11.9 m
1.83 m height at 0.69 - 1.03 bar	10.7 - 15.2 m	10.4 - 17.4 m	10.7 - 15.2 m	13.4 - 16.2 m
2.74 m height at 0.41 bar**	10.4 - 11.0 m	12.2 - 14.0 m	11.0 - 12.8 m	10.4 - 13.4 m
2.74 m height at 0.69 - 1.03 bar	11.0 - 15.8 m	11.6 - 18.0 m	11.9 - 16.8 m	14.0 - 17.4 m
<b>Maximum Spacing***</b>				
at 0.41 bar**	3.0 m	3.0 m	3.0 m	3.0 m
at 0.69 - 1.03 bar	5.5 m	6.1 m	5.5 m	4.6 m
<b>Pressure at the nozzle</b>				
Minimum	0.41 bar	0.41 bar	0.41 bar	0.41 bar
Maximum	1.03 bar	1.03 bar	1.03 bar	1.03 bar

\* It is recommended that larger nozzle sizes be used only on soils that can handle higher application rates.

\*\* Senninger recommends 0.69 bar for optimum performance. 0.41 bar can be used for nozzles #12 and larger.

\*\*\* For optimum performance, Senninger recommends the use of maximum spacing for 1-2 spans only.

**Note:** Always mount the i-Wob2 on a minimum of 0.6 m reinforced flexible hose. The hose must be on the outlet end of any semi-rigid or rigid drop. Keep the i-Wob2 above crop canopy when outlet spacing exceeds 3.0 m. This is especially important on high profile crops.

# Xi-Wob™



## XI-WOB

### THREE DEFLECTORS AVAILABLE

Blue, Black or Grey

615 (6-Groove 15-Degree)  
model shown above

The Senninger® Xi-Wob provides the same low application intensity and uniform distribution pattern that has made the i-Wob®2 the leading pivot sprinkler on the market. The Xi-Wob's patented counter balance technology makes it ideal for installation on semi-rigid PE drops, steel drops, and flexible hose drops when used with the Universal Magnum Weight™.

## FEATURES

- Uses Wobbler® Technology – unique rotary action combined with wobbling grooved deflectors
- Outstanding uniformity over a large area for low application intensity
- Low pressure operation saves money and energy - 0.69 to 1.03 bar.
- Three different models available based on desired trajectory and droplet size
- UP3® snap-in nozzle is easy to remove for cleaning or changing. To remove the nozzle simply pinch and pull, then place and click to install.

## XI-WOB SYSTEM ASSEMBLY

- The Xi-Wob must be mounted no more than 0.3 m below the truss rod on semi-rigid Polyethylene or steel drops. Do not use PVC drops.
- The Xi-Wob can also be mounted on flexible hose drops when used with the Universal Magnum Weight.



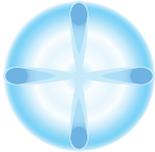
Use the Universal Magnum Weight™ or The One Weight™ on flexible hose installations.

(See pg. 24)

**INSTANTANEOUS AREA OF COVERAGE**



Xi-Wob



Stream Driven

In this example, the Xi-Wob is spreading the same amount of water over an area five times greater than the area covered by the spray nozzle.

**LOW APPLICATION INTENSITY**

Stream-driven applicators provide good throw distance, but their distinct streams instantaneously place the entire flow in a relatively small area. This more intense application can negatively impact the soil surface. In contrast, the Xi-Wob applies water to a larger area of soil surface, reducing the impact of the sprinkler's pattern on the soil structure. Larger instantaneous coverage offers a slower intake rate to help reduce runoff and wheel tracking.

**UNMATCHED UNIFORMITY**

The unique rotary action combined with the wobbling grooved deflector delivers outstanding uniformity over a large area of coverage. The droplet size from the Xi-Wob can be tailored to the needs of the soil through the selection of the deflector and the proper operating pressure.



**XI-WOB™ DESIGN CRITERIA**

	Model 610 (Blue) 6-Groove 10° Trajectory Medium Droplets	Model 615 (Black) 6-Groove 15° Trajectory Large Droplets	Model 910 (Grey) 9-Groove 10° Trajectory Small Droplets
<b>Nozzle sizes</b>			
Minimum	#7 2.78 mm	#10 3.97 mm	#10 3.97 mm
Maximum*	#24 9.53 mm	#24 9.53 mm	#24 9.53 mm
<b>Flows</b>			
Minimum	248 L/hr	509 L/hr	509 L/hr
Maximum	3584 L/hr	3584 L/hr	3584 L/hr
<b>Diameters</b>			
Minimum at 0.91 m	9.1 m	11.6 m	0.1 m
Maximum at 0.91 m	12.5 m	13.1 m	11.0 m
Minimum at 1.83 m	10.7 m	13.1 m	11.6 m
Maximum at 1.83 m	13.7 m	15.2 m	13.1 m
Minimum at 2.74 m	11.3 m	14.0 m	13.1 m
Maximum at 2.74 m	14.3 m	16.8 m	15.2 m
<b>Maximum Spacing**</b>			
at 1.8 m ground clearance	5.5 m	6.1 m	5.5 m
at 2.74 m ground clearance	5.5 m	6.1 m	5.5 m
<b>Pressure at the Nozzle</b>			
Minimum	0.69 bar	0.69 bar	0.69 bar
Maximum	1.03 bar	1.03 bar	1.03 bar

Three different deflector models based on desired trajectory and droplet size.

\* It is recommended that larger nozzle sizes be used only on soils that are suited for higher application rates.

\*\* For optimum performance, Senninger recommends the use of maximum spacing for 1-2 spans only.

**Note:** When outlet spacing exceeds 3.0 m, keep the Xi-Wob above crop canopy. This is especially important on high profile crops. Not warranted for rigid installation on offsets or booms larger than 3.2 m. Longer offsets and booms require a minimum of 0.61 m reinforced flex hose.

# Xcel-Wobbler™ TOP

Senninger® has expanded their patented Wobbler® Technology with a new top-of-pipe Xcel-Wobbler employing the innovative UP3® nozzle. This new sprinkler is designed for low pressure to promote energy savings. It produces a wind-resistant larger droplet size. The gentle rain-like application is suitable for all soils and various terrains.



## FEATURES

- Uses Wobbler Technology™ - unique rotary action combined with wobbling grooved deflectors
- Outstanding uniformity over a large area for low application intensity
- More economical than sprinkler packages with crop components
- Low pressure operation saves money and energy - 0.69 bar.
- UP3® snap-in nozzle is easy to remove for cleaning. To remove the nozzle, simply pinch and pull, then place and click to install.

## XCEL-WOBBLER SYSTEM ASSEMBLY

- The Xcel-Wobbler TOP must employ a 0.69 bar pressure regulator (PSR™2 recommended).
- Use a 3/4" galvanized nipple or Senninger's impact-modified thermoplastic nipple into the mainline (maximum 0.6 m length). PVC nipples are not recommended.
- The Xcel-Wobbler TOP is designed specifically for upright installation on top-of-pipe.
- The Xcel-Wobbler TOP is not recommended for a manifold installation of two or more units from a single outlet.

**Note:** Any modifications or deletions regarding installation requirements will void warranty.

XCEL-WOBBLER TOP DESIGN CRITERIA	(Blue) 6-groove 5° Trajectory Large Droplets
Nozzle Sizes	
Minimum	#6 2.38 mm
Maximum*	#26 10.32 mm
Flows	
Minimum	182 L/hr
Maximum	3402 L/hr
Diameters	
Minimum at 3.66 m	3.4 m
Maximum at 3.66 m	15.5 m
Maximum Spacing	
at 3.66 m ground clearance	6.1 m up to nozzle #16.5 3.0 m nozzles #17 - 26
Pressure at the Nozzle	
	0.69 bar

\* It is recommended that larger nozzle sizes be used only on soils that can handle higher application rates.

# Pivot Master®



The Senninger® Pivot Master impact sprinklers distribute water in a low 6° trajectory and are designed to resist wind-drift. Their large diameter of throw means fewer sprinklers are needed.

## FEATURES

- Color-coded band identifies each model based on flow (see chart below).
- Durable design with an enclosed splasharm spring and bearing for protection from the elements
- 3/4" NPT brass connection for use in galvanized steel fittings
- The Hand Tight Nozzle™ eliminates the need for tools during renozzling; simply place and twist to install. Nozzle sizes are easily identified with color-coding. Warranted to maintain their correct orifice size for five years.



## PIVOT MASTER IMPACT DESIGN CRITERIA

	3006 - Orange	4006 - White	5006 - Blue	5006-2 - Blue
<b>Nozzle sizes</b>				
Minimum	#7 2.78 mm	#10 3.97 mm	#13 5.16 mm	#13 x 12 5.16 x 4.76 mm
Maximum*	#9 3.57 mm	#12 4.76 mm	#18 7.14 mm	#18 x 18 7.14 x 7.14 mm
<b>Flows</b>				
Minimum	425 L/hr	863 L/hr	1408 L/hr	2576 L/hr
Maximum	988 L/hr	1749 L/hr	3634 L/hr	8177 L/hr
<b>Diameters</b>				
Minimum at 3.66 m	22.3 m	24.4 m	25.6 m	25.6 m
Maximum at 3.66 m	26.5 m	28.3 m	32.0 m	32.0 m
<b>Pressure at the nozzle</b>				
Minimum	2.07 bar	2.07 bar	2.07 bar	2.07 bar
Maximum	4.14 bar	4.14 bar	4.14 bar	4.14 bar

\* It is recommended that larger nozzle sizes be used only on soils that can handle higher application rates. Larger flow models available. Square-orifice nozzles not recommended.

# Dynamic Drive

The LDN® Dynamic Drive is an economical solution that doesn't sacrifice performance. Built on the LDN sprinkler platform, the Dynamic Drive features a modular design and easy clean nozzles that make maintenance easier and more efficient. Its advanced brake technology ensures a smooth and consistent movement, offering optimum control for a wide and uniform application.



## FEATURES

- Interchangeable parts make maintenance easier and allow for tool-free assembly and disassembly.
- One sprinkler model and one pressure regulator model can be installed across the entire machine.
- Five models based on installation and pressure
- UP3® snap-in nozzle is easy to remove for cleaning. To remove the nozzle, simply pinch and pull, then place and click to install.

## TOP-OF-PIPE SYSTEM ASSEMBLY

- The LDN® Dynamic Drive TOP models are designed specifically for upright installation on the top-of-pipe along a center pivot or other mechanical move system.
- The LDN Dynamic Drive TOP low-pressure model requires a 0.69 bar pressure regulator. Senninger® PSR™2 is recommended.
- Install with a 3/4" stainless steel nipple (FTN33S) or the Senninger impact-modified thermoplastic nipple (FTN33) into the mainline, not to exceed 0.61 m length.
- The LDN Dynamic Drive TOP models are not recommended for a manifold installation of two or more units from a single outlet.

**Note:** Any modifications or deletions regarding installation requirements will void product warranty.



### TOP-OF-PIPE SYSTEM DESIGN CRITERIA

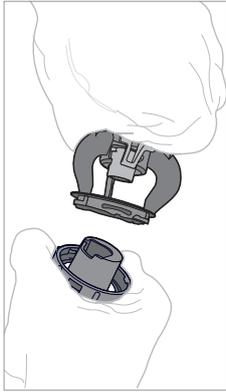
	Low Pressure TOP (White Deflector)	High Pressure TOP (Dark Blue Deflector)
<b>Nozzle Sizes</b>		
Minimum	#6 2.38 mm	#6 2.38 mm
Maximum*	#26 10.32 mm	#26 10.32 mm
<b>Flow Range</b>		
Minimum	182 L/hr	223 L/hr
Maximum	3402 L/hr	7606 L/hr
<b>Diameters</b>		
3.66 m height	11.0 - 15.8 m	15.2 - 18.3 m
<b>Maximum Spacing</b>		
3.66 m ground clearance	3.4 m	6.1 m
<b>Pressure at the nozzle</b>		
Minimum and Maximum	0.69 bar	1.03 - 3.45 bar

\* It is recommended that larger nozzle sizes be used only on soils that are suited for higher application rates.

# Dynamic Drive

## REMOVE ENGINE MODULE

To remove the engine module, grasp the LDN bracket base with one hand and the engine module's extension bracket ring with the other. Then twist in opposite directions.



## DROP HOSE AND PART-CIRCLE SYSTEM ASSEMBLY

- The LDN® Dynamic Drive drop models can be mounted on rigid drops or flexible hose drops.
- When using flexible hose, a weight is recommended.
- When using the Senninger® Universal Magnum Weight™, thread onto the LDN bracket base.
- Conventional slip over weights can be used with the LDN Dynamic Drive drop models.
- Mount the LDN Dynamic Drive drop models no less than 0.91 m above the ground.
- Mount the LDN Dynamic Drive part-circle model on a semi-rigid or rigid drop to ensure proper distribution.

### DROP HOSE SYSTEM DESIGN CRITERIA

	Low Pressure DROP (Green Deflector)	High Pressure DROP (Orange Deflector)
<b>Nozzle Sizes</b>		
Minimum	#6 2.38 mm	#6 2.38 mm
Maximum*	#26 10.32 mm	#26 10.32 mm
<b>Flow Range</b>		
Minimum	182 L/hr	223 L/hr
Maximum	3402 L/hr	5892 L/hr
<b>Diameters</b>		
0.91 m height	7.6 - 11.9 m	7.9 - 14.3 m
1.83 m height	8.2 - 14.9 m	8.5 - 18 m
2.74 m height	9.4 - 15.5 m	11.6 - 18 m
<b>Maximum Spacing</b>		
2.74 m ground clearance	4.6 m	6.1 m
<b>Pressure at the nozzle</b>		
Minimum and Maximum	0.69 bar	1.03 - 2.07 bar

\* It is recommended that larger nozzle sizes be used only on soils that are suited for higher application rates.

**Note:** When outlet spacing exceeds 3.0 m, keep Dynamic Drive sprinklers above crop canopy. This is especially important on high profile crops. Not warranted for rigid installation on offsets or booms larger than 3.2 m.

### PART-CIRCLE SYSTEM DESIGN CRITERIA

	Part-Circle (Mustard Deflector)
<b>Nozzle Sizes</b>	
Minimum	#8 3.18 mm
Maximum*	#15 5.95 mm
<b>Flow Range</b>	
Minimum	325 L/hr
Maximum	1996 L/hr
<b>Radius</b>	
2.74 m height	6.4 to 8.2
<b>Pressure at the nozzle</b>	
Minimum and Maximum	0.69 - 2.07 bar

\* It is recommended that larger nozzle sizes be used only on soils that are suited for higher application rates.



Use the Universal Magnum Weight™ or The One Weight on flexible hose installations.

(See pg. 24)

# Close Spacing

**LEPA (Low Energy Precision Application) Close Spacing** is a water efficient irrigation practice that relies on bubble applicators. LEPA system gently deliver water from a height of 20 to 46 cm above the ground, without spraying, to combat wind-drift and prevent evaporation loss.



## FEATURES

- Prevent wind-drift losses
- Minimize evaporative loss
- Avoid wetting plant canopy in row crops
- Achieve a more uniform root zone coverage
- Can increase yield using less water

## EASY CONVERSION TO AND FROM SPRAY IRRIGATION

By combining a LEPA surface with a deflector pad, each of these allows for easy conversion between LEPA application and spray irrigation. Simply twist and unlock the deflector pad. Flip it over and twist it to lock it back in place. The choice of deflector pads is based on the desired trajectory and spray pattern.

## LDN® Wide Spray Bubble Assemblies

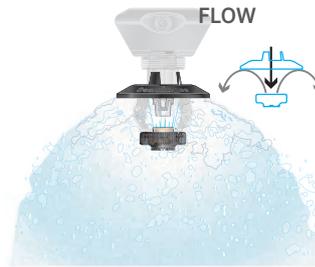


The Wide Spray Bubble provides a total coverage solution for 30" to 60" (0.76 to 1.5 m) spacing. It produces a wide gentle aerated pattern suitable for most crops and soils.



# Close Spacing

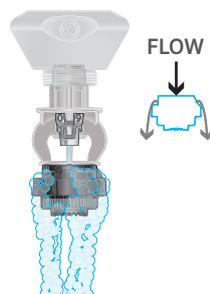
## LDN® Shroud™ with Pad Inserts



The Shroud is used in conjunction with deflector pads containing a bubble or chem pad insert. The Shroud deflects the water from the insert down in a gentle dome-shaped pattern, providing complete coverage of the field. Due to its less concentrated distribution, it can be used on fields without furrows and is often used for germination as well as irrigation.

 <p><b>LDNSCUP3</b> LDN Shroud with clips</p>	CONCAVE	FLAT	CONVEX	
				Beige Bubble Insert
				Red CM1 Insert
				Maroon CM2 Insert

## LDN® with UP3® Bubbler Pad Inserts



The bubbler side of the deflector pad gently deposits water onto the soil surface in a bubbling stream. This aerated cascading stream resists the effects of wind and evaporation.



Use the *Universal Magnum Weight™* or *One Weight™* on flexible hose installations.

(See pg. 24)

CONCAVE	FLAT	CONVEX
		

# LDN<sup>®</sup> Spray Irrigation

The LDN<sup>®</sup> was the first spray nozzle for pivots providing the option to stack multiple deflector pads. Each additional pad has extra grooves that divide larger flows into multiple streams.

## FEATURES

- Widens the wetted footprint of larger flows to help match the soil's infiltration rate to reduce runoff
- The additional streams also help eliminate small droplets to reduce wind-drift and maintain pattern integrity.
- Low pressures operation of 0.41 to 1.38 bar can reduce pumping costs.
- UP3<sup>®</sup> snap-in nozzle is easy to remove for cleaning. To remove the nozzle, simply pinch and pull, then place and click to install.



**SINGLE**



12, 24  
or 33  
grooves

---



**DOUBLE**



66  
grooves

---



**TRIPLE**



99  
grooves

NOZZLE NUMBER & SIZE			PADS
02	1/32"	0.79 mm	 Mini 12
03	3/64"	1.19 mm	
04	1/16"	1.59 mm	
05	5/64"	1.98 mm	
06	3/32"	2.38 mm	
07	7/64"	2.78 mm	
08	1/8"	3.18 mm	
09	9/64"	3.57 mm	
10	5/32"	3.97 mm	
11	11/64"	4.37 mm	
12	3/16"	4.76 mm	
13	13/64"	5.16 mm	
14	7/32"	5.56 mm	
15	15/64"	5.95 mm	
16	1/4"	6.35 mm	 Double
17	17/64"	6.75 mm	
18	9/32"	7.14 mm	
19	19/64"	7.54 mm	 Triple
20	5/16"	7.94 mm	
21	21/64"	8.33 mm	
22	11/32"	8.73 mm	
23	23/64"	9.13 mm	
24	3/8"	9.53 mm	
25	25/64"	9.92 mm	
26	13/32"	10.32 mm	

The LDN is incredibly versatile thanks to its various deflector pad options. Each surface is also available in three basic geometries based on the desired trajectory of throw - flat (black), concave (blue) for a slightly upward spray, and convex (green) for a slightly downward spray.



The surfaces of the deflector pads (smooth, grooved, medium groove, or deep groove) each delivers a different spray pattern and droplet size.



# LDN® Spray Irrigation



Use the Universal Magnum Weight™ or The One Weight™ on flexible hose installations.

(See pg. 24)

LDN DESIGN CRITERIA	Standard or Medium 33 Groove	24 Deep Groove	Mini 24 Groove	Mini 12 Groove
<b>Nozzle sizes</b>				
Minimum	#10 3.97 mm	#10 3.97 mm	#4 1.59 mm	#2 0.79 mm
Maximum*	#26 10.32 mm	#26 10.32 mm	#9.5 3.76 mm	#5 1.98 mm
<b>Flows</b>				
Minimum	395 L/hr	395 L/hr	61 L/hr	16 L/hr
Maximum	4811 L/hr	4811 L/hr	650 L/hr	177 L/hr
<b>Pressure at the Nozzle</b>				
Minimum	0.41 bar	0.41 bar	0.41 bar	0.41 bar
Maximum	1.38 bar	1.38 bar	1.38 bar	1.38 bar
<b>Maximum Spacing</b>				
Above crop canopy**	3.4 bar	3.4 bar	3.4 bar	2.1 bar
Below crop canopy	2.1 bar	2.1 bar	2.1 bar	2.1 bar

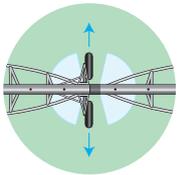
\* It is recommended that larger nozzle sizes be used only on soils that can handle higher application rates. The LDN is not recommended for surface water or effluent application.

\*\* Maximum spacing for convex pads above crop canopy is 3 m

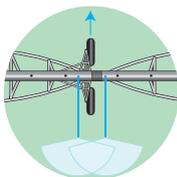


## Part-Circle

The LDN® Part-Circle is specifically designed for use on rigid drops to distribute water away from wheel tracks to minimize rut depth. It water in a 170° pattern with 17 streams at a 10° trajectory for minimum evaporative loss.



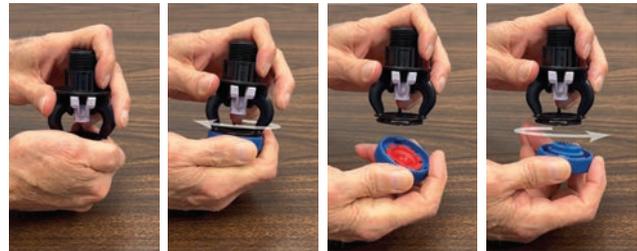
Mount the Part-Circle LDN® to spray away from the towers regardless of the direction of the pivot.



Mount the Part-Circle LDN® to spray in the opposite direction the pivot is traveling.

## Chemigation

The LDN® offers chemigation pad inserts for corn or cotton. These are designed to produce an upward spray under the crop canopy to wash the underside of the leaves, where pests might hide. To change from irrigation to chemigation mode, simply twist and unlock the deflector pad. Flip it over and twist to lock it back in place. Any LDN Pad can be backed with a corn chemigation pad or a cotton chemigation pad insert.



### CORN

Chemigation Pad and Pad Inserts: 58° upward throw



### COTTON

Chemigation Pad and Pad Inserts: 15 - 30° upward throw



# Super Spray®



The Senninger® Super Spray® has interchangeable deflector pad options to meet various droplet size, crop, climatic, and soil requirements. Its design makes it ideal for surface water due to the distance between the nozzle, deflector and bracket legs.

## FEATURES

- Twenty-two versatile, easily changeable snap-in pads are available.
- No moving parts for longer product life
- Can be mounted on top-of-pipe or on hose drops
- UP3® snap-in nozzle is easy to remove for cleaning or changing. To remove the nozzle simply pinch and pull, then place and click to install.

Dual Nozzle Carrier available see pg. 3



Use the Universal Magnum Weight™ or The One Weight on flexible hose installations

(See pg. 24)



## DRAG HOSE ADAPTER

You can apply water directly into the furrow with the Super Spray drag hose adapter and a drag line. The adapter snaps right into the Super Spray, replacing the deflector pad.

SUPER SPRAY DESIGN CRITERIA	Flat, Concave, Convex (black, blue, green)	Mini Smooth (black, blue, green)	Corn Chemigation (red) Cotton Chemigation (white)	Mini Corn Chemigation (red) Mini Cotton Chemigation (white)
<b>Nozzle sizes</b>				
Minimum	#4 1.59 mm	#4 1.59 mm	#10 3.97 mm	#4 1.59 mm
Maximum*	#26 10.32 mm	#9.5 3.76 mm	#26 10.32 mm	#9.5 3.76 mm
<b>Flows</b>				
Minimum	61 L/hr	61 L/hr	395 L/hr	61 L/hr
Maximum	6805 L/hr	459 L/hr	6805 L/hr	459 L/hr
<b>Maximum Spacing</b>				
at 1.8 m ground clearance	3.0 m	3.0 m	3.0 m	3.0 m
at 2.74 m ground clearance	3.0 m	3.0 m	3.0 m	3.0 m
<b>Pressure at the Nozzle</b>				
Minimum	0.41 bar	0.41 bar	0.41 bar	0.41 bar
Maximum	2.76 bar	2.76 bar	2.76 bar	2.76 bar

\* It is recommended that larger nozzle sizes be used only on soils that can handle higher application rates.

# End Spray

Super Spray® deflector pads are identified by their shape (flat, concave, or convex) and surface type (smooth, medium-grooved, or deep-grooved). The shape and surface help control spray pattern and droplet size. Chemigation pads are available to reach the underside of foliage. These snap-in pads and UP3® nozzles can be easily changed during the season to fit varying field, flow, and growing conditions.



Concave-Grooved



Concave-Smooth

CONCAVE	
	24 Deep Groove
	36 Deep-Groove
	48 Deep-Groove
	36 Medium-Groove
	Smooth
	Mini-Smooth



Flat-Grooved



Flat-Smooth

FLAT	
	24 Deep Groove
	36 Deep-Groove
	48 Deep-Groove
	36 Medium-Groove
	Smooth
	Mini-Smooth



Convex-Grooved



CONVEX	
	24 Deep Groove
	36 Deep-Groove
	48 Deep-Groove
	36 Medium-Groove
	Smooth
	Mini-Smooth

The Senninger® low pressure End Spray is designed for use at the end of a machine. It can help irrigate the area between the last sprinkler and the end gun.



## FEATURES

- No moving parts for longer product life
- Provides a 180° distribution with good uniformity over large area to help reduce compaction and run-off
- End Spray must be installed on a 1" Female NPT connection
- One-year warranty on materials and workmanship



Rigid mount is recommended for the End Spray. Use a 1" (2.5 cm) NPT galvanized 45° elbow (not included). Orient pad of End Spray nozzle to face up.

END SPRAY DESIGN CRITERIA	
<b>Nozzle Sizes</b>	
Minimum	#20 7.94 mm
Maximum	#38 15.08 mm
<b>Flows</b>	
Minimum	1840 L/hr
Maximum	11106 L/hr
<b>Average Radius</b>	
at 2.13 - 3.66 m	7.6 - 8.8 m
<b>Pressure at the Nozzle</b>	
Minimum	0.69 bar
Maximum	1.72 bar

# GooseNecks

Senninger® gooseNecks are constructed of noncorrosive, UV-resistant thermoplastic materials for long life. This reduces plugging from rust flaking sometimes associated with galvanized gooseNecks.

## FEATURES

- Three models available: 180° single, 125° single, and 125° double
- Lightweight for easier handling and installation
- Lower freight costs
- Inlet connections: 3/4" NPT male or female
- Outlet connections: 3/4" male hose or 3/4" NPT male

### 180° Single



180° single gooseNeck with 3/4" barb outlet shown above.

19 mm barb outlet model also available.

Single 180° gooseNecks, due to their thermoplastic construction, are preferred worldwide over steel and PVC and are used for pivot sprinklers on drops. On machines with outlets spacing of 1 m or less, gooseNecks are used in every outlet for Close Spaced LEPA and LESA installations.

### Stainless-Steel Nipple

The stainless steel nipple is ideal for gooseNecks used on semi-rigid drop installations. The built-in hex section makes it easy to tighten the nipple into the mainline and then thread the gooseNeck onto the nipple.



For use with 3/4" NPT female inlet models

## GOOSENECK SYSTEM ASSEMBLY

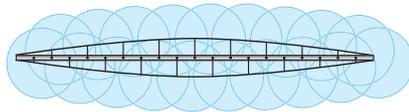
- Max recommended pressure: 8.27 bar.
  - Max recommended flow: 4543 L/hr or 3407 L/hr per side for the double model.
  - Max recommended water temperature: 43° C.
  - Ambient temperatures to 66° C will not damage gooseNecks.
  - Attaches to mainline using galvanized nipple or Senninger's impact-modified thermoplastic nipple (PVC nipples not recommended)
  - Wrench tighten using nipple hex until snug. Overtightening may cause issues.
  - If using a sealant, use only Teflon tape.
  - When using rigid drops in high profile crops, drop length should not exceed one foot below truss rod.
- Note:** Any modifications or deletions regarding installation requirements will void warranty.

# Goosenecks

## 125° Single



By installing single 125° goosenecks on alternating sides of the mainline, the wetted application area is widened and can help increase soak time.



125° single gooseneck with 3/4" barb outlet shown above.

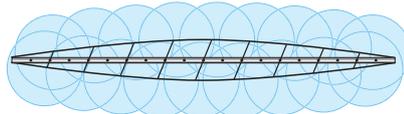
Diagram on the left shows single goosenecks in every outlet with sprinklers on opposite sides of the pivot mainline.

## 125° Double



Installing double 125° goosenecks allows the flow from each outlet to be divided in half for two sprinklers on either side of the mainline. This doubling of drops is used to convert wider spacing machines to closer drop spacing.

This also allows the flow from a single outlet to be spread over a wider application area which increases soak time and improves infiltration on tighter soils.



125° double gooseneck with 3/4" barb outlet shown above.

Diagram on the left shows double goosenecks in every other outlet with sprinklers on opposite sides of the pivot mainline.

# Truss Rod Hose Slings

**Truss Rod Hose Slings are easy to install to securely fasten 3/4" flexible hose to the truss rods. They allow precise positioning of the hose drop and sprinkler which can be adjusted as needed. They protect the hose from kinking and abrasive wear.**



### FEATURES

- Color coded models for various truss rod sizes: 625 rust (1.6 cm), 687 green (1.7 cm), 750 black (1.9 cm), 812 grey (2.1 cm), and 875 blue (2.2 cm).
- Used in conjunction with the 125° model goosenecks.



# Filter Regulator



The Senninger® Filter Regulator helps prevent clogging of the small nozzles on the first few spans of a center pivot. This solution integrates filtration and pressure regulation in one product to provide installation convenience and help ensure optimal system performance.



## FEATURES

- Maintains a constant preset outlet pressure while handling varying inlet pressures
- Quality field proven PSR2 internal components
- Easy access to mesh screens with a twist of the bonnet; no tools required; no need to dismantle the drop assembly
- Convenient installation above the sprinkler
- Inlet size: 3/4" male NPT
- Outlet size: 3/4" female NPT

FILTER REGULATOR MODELS	Description	Mesh Orifice (microns)	Preset Outlet Pressure	Maximum Inlet Pressure	UP3 Nozzle Number	Flows
FPSR2063M3F20	6 psi, Filter PSR2, 3/4" M NPT x 3/4" F NPT, 20 mesh screen	841	6 psi (0.41 bar)	80 psi (5.51 bar)	#13 - #23	2.95 - 9.19 gpm (670 - 2087 L/hr)
FPSR2063M3F30	6 psi, Filter PSR2, 3/4" M NPT x 3/4" F NPT, 30 mesh screen	595	6 psi (0.41 bar)	80 psi (5.51 bar)	#6 - #12.5	0.62 - 2.72 gpm (141 - 618 L/hr)
FPSR2063M3F40	6 psi, Filter PSR2, 3/4" M NPT x 3/4" F NPT, 40 mesh screen	400	6 psi (0.41 bar)	80 psi (5.51 bar)	#2 - #5.5	0.07 - 0.52 gpm (16 - 118 L/hr)
FPSR2103M3F20	10 psi, Filter PSR2, 3/4" M NPT x 3/4" F NPT, 20 mesh screen	841	10 psi (0.69 bar)	90 psi (6.20 bar)	#13 - #23	3.81 - 11.87 gpm (865 - 2696 L/hr)
FPSR2103M3F30	10 psi, Filter PSR2, 3/4" M NPT x 3/4" F NPT, 30 mesh screen	595	10 psi (0.69 bar)	90 psi (6.20 bar)	#6 - #12.5	0.80 - 3.52 gpm (182 - 799 L/hr)
FPSR2103M3F40	10 psi, Filter PSR2, 3/4" M NPT x 3/4" F NPT, 40 mesh screen	400	10 psi (0.69 bar)	90 psi (6.20 bar)	#2 - #5.5	0.09 - 0.67 gpm (20 - 152 L/hr)
FPSR2153M3F20	15 psi, Filter PSR2, 3/4" M NPT x 3/4" F NPT, 20 mesh screen	841	15 psi (1.03 bar)	95 psi (6.55 bar)	#13 - #23	4.66 - 14.54 gpm (1058 - 3302 L/hr)
FPSR2153M3F30	15 psi, Filter PSR2, 3/4" M NPT x 3/4" F NPT, 30 mesh screen	595	15 psi (1.03 bar)	95 psi (6.55 bar)	#6 - #12.5	0.98 - 4.31 gpm (223 - 979 L/hr)
FPSR2153M3F40	15 psi, Filter PSR2, 3/4" M NPT x 3/4" F NPT, 40 mesh screen	400	15 psi (1.03 bar)	95 psi (6.55 bar)	#2 - #5.5	0.11 - 0.82 gpm (25 - 186 L/hr)
FPSR2203M3F20	20 psi, Filter PSR2, 3/4" M NPT x 3/4" F NPT, 20 mesh screen	841	20 psi (1.38 bar)	100 psi (6.89 bar)	#13 - #23	5.38 - 16.78 gpm (1222 - 3811 L/hr)
FPSR2203M3F30	20 psi, Filter PSR2, 3/4" M NPT x 3/4" F NPT, 30 mesh screen	595	20 psi (1.38 bar)	100 psi (6.89 bar)	#6 - #12.5	1.13 - 4.97 gpm (257 - 1129 L/hr)
FPSR2203M3F40	20 psi, Filter PSR2, 3/4" M NPT x 3/4" F NPT, 40 mesh screen	400	20 psi (1.38 bar)	100 psi (6.89 bar)	#2 - #5.5	0.12 - 0.95 gpm (27 - 216 L/hr)

The pressure regulator shall maintain the predetermined operating pressure provided that the inlet pressure is at least 5 psi (0.34 bar) above the expected outlet pressure, with flows up to 11 gpm (2498 L/hr), but not exceeding the maximum inlet pressure as shown above. Higher flows require additional inlet pressure to engage the regulator. Where flows are greater than 11 gpm (2498 L/hr), the inlet pressure should be at least 9 psi (0.62 bar) above the expected outlet pressure but not exceeding the maximum inlet pressure as shown above.

**CAUTION:** Always install downstream from all shut-off valves. Not NSF certified. Recommended for outdoor use only.

The Senninger® PSR™2 (Pivot Special Regulator) is ideal for mechanical move installations. Its wide flow range allows irrigators to use one model along the entire length of the machine. Its patented design is ideal for systems pumping surface water.



**FEATURES**

- Flows of 114 to 3407 L/hr allow the use of the same model to be used the entire machine.
- Each regulator maintains a constant preset outlet pressure based on its flow and inlet pressure.
- Outlet pressures: 0.41 to 3.45 bar
- Tamper-proof housing
- Very low hysteresis and friction losses
- Pressure tested, to ensure quality and performance

PSR2 MOD-ELS	Preset Outlet Pressure	Maximum Inlet Pressure	Flow Range
PSR206	0.41 bar (6 psi)	5.51 bar (80 psi)	114 - 3407 L/hr (0.5 - 15 gpm)
PSR210	0.69 bar (10 psi)	6.20 bar (90 psi)	
PSR212	0.83 bar (12 psi)	6.20 bar (90 psi)	
PSR215	1.03 bar (15 psi)	6.55 bar (95 psi)	
PSR220	1.38 bar (20 psi)	6.89 bar (100 psi)	
PSR225	1.72 bar (25 psi)	7.24 bar (105 psi)	
PSR230	2.07 bar (30 psi)	7.58 bar (110 psi)	
PSR235	2.41 bar (35 psi)	7.93 bar (115 psi)	
PSR240	2.76 bar (40 psi)	8.27 bar (120 psi)	
PSR250	3.45 bar (50 psi)	8.96 bar (130 psi)	

The pressure regulator shall maintain the predetermined operating pressure provided that the inlet pressure is at least 0.34 bar above the expected outlet pressure, with flows up to 2498 L/hr, but not exceeding the maximum inlet pressure as shown above.

**CAUTION:** Always install downstream from all shut-off valves. Not NSF certified. Recommended for outdoor use only.

Filter Regulator Screens

**FEATURES**

- Replacement filter screens are available with color-coded rubber seals to readily identify mesh size.
- Color-coded stickers are available for the outer bonnet to assist installers in matching the mesh size to the correct nozzle.
- Easy in-field maintenance to clean or change filter screens for new or cleaned screens; clean screens for reinstallation during the next scheduled maintenance cycle.



SCREEN MODELS	Description	Mesh Orifice (microns)
FPSR220SCREEN	Filter PSR2 20 mesh screen, <b>black rings</b>	841
FPSR230SCREEN	Filter PSR2 30 mesh screen, <b>green rings</b>	595
FPSR240SCREEN	Filter PSR2 40 mesh screen, <b>grey rings</b>	400

# PRL



**PRL**  
**LOW FLOW**

### FEATURES

- Flows: 114 to 1817 L/hr depending on model
- Each regulator maintains a constant preset outlet pressure based on its flow and inlet pressure.
- Outlet pressures: 0.41 to 2.76 bar
- Tamper-proof housing
- Very low hysteresis and friction losses
- Pressure tested, to ensure quality and performance

PRL MODELS	Preset Outlet Pressure	Maximum Inlet Pressure	Flow Range
PRL06	0.41 bar (6 psi)	5.51 bar (80 psi)	114 - 1136 L/hr (0.5 - 5 gpm)
PRL10	0.69 bar (10 psi)	6.20 bar (90 psi)	114 - 1817 L/hr (0.5 - 5 gpm)
PRL12	0.83 bar (12 psi)	6.20 bar (90 psi)	
PRL15	1.03 bar (15 psi)	6.55 bar (95 psi)	
PRL20	1.38 bar (20 psi)	6.89 bar (100 psi)	
PRL25	1.72 bar (25 psi)	7.24 bar (105 psi)	
PRL30	2.07 bar (30 psi)	7.58 bar (110 psi)	
PRL35	2.41 bar (35 psi)	7.93 bar (115 psi)	
PRL40	2.76 bar (40 psi)	8.27 bar (120 psi)	

The pressure regulator shall maintain the predetermined operating pressure provided that the inlet pressure is at least 0.34 bar above the expected outlet pressure, but not exceeding the maximum inlet pressure as shown above.

**CAUTION:** Always install downstream from all shut-off valves.

Not NSF certified. Recommended for outdoor use only.

# PMR-MF



**PMR**  
**MEDIUM FLOW**

### FEATURES

- Flows: 454 to 4542 L/hr depending on model
- Each regulator maintains a constant preset outlet pressure based on its flow and inlet pressure.
- Outlet pressures: 0.41 to 4.14 bar
- Very low hysteresis and friction losses
- Pressure tested, to ensure quality and performance

PMR-MF MODELS	Preset Outlet Pressure	Maximum Inlet Pressure	Flow Range
PMR06MF	0.41 bar (6 psi)	5.51 bar (80 psi)	909 - 3634 L/hr (4 - 16 gpm)
PMR10MF	0.69 bar (10 psi)	6.20 bar (90 psi)	
PMR12MF	0.83 bar (12 psi)	6.20 bar (90 psi)	454 - 4542 L/hr (2 - 20 gpm)
PMR15MF	1.03 bar (15 psi)	6.55 bar (95 psi)	
PMR20MF	1.38 bar (20 psi)	6.89 bar (100 psi)	
PMR25MF	1.72 bar (25 psi)	7.24 bar (105 psi)	
PMR30MF	2.07 bar (30 psi)	7.58 bar (110 psi)	
PMR35MF	2.41 bar (35 psi)	7.93 bar (115 psi)	
PMR40MF	2.76 bar (40 psi)	8.27 bar (120 psi)	
PMR50MF	3.45 bar (50 psi)	8.96 bar (130 psi)	
PMR60MF	4.14 bar (60 psi)	9.65 bar (140 psi)	

The pressure regulator shall maintain the predetermined operating pressure provided that the inlet pressure is at least 0.34 bar above the expected outlet pressure, but not exceeding the maximum inlet pressure as shown above.

**CAUTION:** Always install downstream from all shut-off valves.

Not NSF certified. Recommended for outdoor use only.

# Components

## Hose

- Durable 3/4" reinforced flex hose
- Long lasting construction with a UV-resistant PVC cover, polyester reinforcement yarns, and a PVC core tube
- Lightweight with good abrasion resistance



## Hose Clamps & Crimp Tools

### HOSE CLAMPS

- Stainless steel, one-ear design with mechanical interlock
- Size range: 0.945" to 1.067" (24 to 27.1 mm) to fit various hose and poly drop sizes



### CRIMP TOOLS

- Specifically designed to be used for one-ear clamps
- Available in Two models in lengths of 8-7/8" or 11-1/8" (22.5 and 28.26 cm)



## Adapters & Fittings

### BALL VALVE

- Dial shut-off knob makes changing or cleaning sprinklers and spray nozzles easy while the system is still operating.
- Streamlined design reduces snagging and unintentional operation.
- Smooth-bore design maximizes bi-directional flow efficiency.
- 3/4" female NPT x 3/4" male NPT connection
- UV-resistant
- 125 psi (8.62 bar) pressure rating
- Backed by a one-year warranty



- Constructed from non-corrosive UV-resistant thermoplastic for a longer life
- Hose barb adapter models available with 3/4" barb inlet x male NPT or female NPT outlets, plus PE tubing (grey)
- Pipe couplings, reducing couplings, nipples, and plugs also available
- Backed by a two-year warranty



See Senninger Price List for all models

## Quick Connect Coupler Kit

- Allows growers to adjust their drop length throughout the growing season
- Kit includes two 3/4" barb fittings and one Quick Connect Assembly (upper & lower housings)
- Two kits needed per hose drop
- Twist the two-piece housing to easily detach or attach a section of hose.
- No tools are required.
- Available in box quantity of 25 kits



# Components

## Weights

- Unique fit technology installs on all Senninger® pivot sprinklers
- Design allows weight to remain on sprinkler during nozzle changes
- Easy to install
- Reuse weights when sprinklers need replacing to save money
- 0.85 lbs. (0.39 kg)

### UNIVERSAL MAGNUM WEIGHT™

UV-resistant thermoplastic construction prevents corrosion and deters metal theft.



### THE ONE WEIGHT

Constructed entirely of zinc alloy for strength and resistance to corrosion.

**Note:** Always be sure the weight is tightly threaded into the bottom of the i-Wob2 (140 inch-lbs. torque recommended).

## Pressure Gauge

- 3.5" (8.9 cm) Bourdon tube industrial gauge is filled with glycerin, comes with a Zytel nylon case, and has a 1/4" male NPT connection
- Corrosion and impact-resistant
- Several pressure models available
- Freeze-proof design
- Backed by a one-year warranty



## Pressure Gauge

- Provides a quick and easy check of end-of-system pressure
- Includes glycerin-filled 2.5" (6.4 cm) diameter gauge
- Several pressure models available
- 3/4" female NPT inlet x 3/4" female NPT outlet connection
- Backed by a one-year warranty



## Visual Pressure Indicator (VPI)

- Allows growers to confirm their system has adequate pressure
- Stem pops up when pressure is at least 15 psi (1.03 bar), retracts when pressure drops below 10 psi (0.69 bar)
- Box includes one Hunter Indicator, two 3/4" x 1/2" nipples, one 3/4" x 3/4" coupling, and one drain
- Backed by a one-year warranty



# Nozzle Flows (Imperial)



## FEATURES

- Patented easy change nozzle
- Color-coded for easy size identification
- Excellent durability
- Warrantied to maintain correct orifice size for five years



Nozzle Number and Nozzle color	Nozzle Size	gpm								
		6 psi	10 psi	15 psi	20 psi	25 psi	30 psi	35 psi	40 psi	50 psi
#2 Pink	1/32"	0.07	0.09	0.11	0.12	0.14	0.15	0.16	0.18	0.20
#2.5	5/128"	0.11	0.14	0.17	0.19	0.22	0.24	0.26	0.28	0.31
#3 Ice	3/64"	0.15	0.20	0.24	0.28	0.31	0.34	0.37	0.40	0.44
#3.5	7/128"	0.21	0.27	0.33	0.38	0.43	0.47	0.50	0.54	0.60
#4 Light Blue	1/16"	0.27	0.35	0.43	0.50	0.56	0.61	0.66	0.70	0.79
#4.5	9/128"	0.35	0.45	0.55	0.63	0.71	0.77	0.84	0.89	1.00
#5 Beige	5/64"	0.43	0.55	0.68	0.78	0.87	0.96	1.04	1.11	1.24
#5.5	11/128"	0.52	0.67	0.82	0.95	1.06	1.16	1.26	1.34	1.50
#6 Gold	3/32"	0.62	0.80	0.98	1.13	1.26	1.38	1.50	1.60	1.79
#6.5	13/128"	0.73	0.94	1.15	1.33	1.49	1.63	1.76	1.88	2.10
#7 Lime	7/64"	0.85	1.09	1.34	1.54	1.73	1.89	2.04	2.18	2.44
#7.5	15/128"	0.97	1.26	1.54	1.77	1.98	2.17	2.35	2.51	2.81
#8 Lavender	1/8"	1.11	1.43	1.75	2.02	2.26	2.48	2.68	2.86	3.20
#8.5	17/128"	1.25	1.62	1.98	2.29	2.56	2.80	3.02	3.23	3.61
#9 Grey	9/64"	1.40	1.81	2.22	2.56	2.87	3.14	3.39	3.63	4.06
#9.5	19/128"	1.57	2.02	2.48	2.86	3.20	3.50	3.78	4.04	4.52
#10 Turquoise	5/32"	1.74	2.24	2.75	3.17	3.55	3.88	4.20	4.49	5.01
#10.5	21/128"	1.92	2.47	3.03	3.50	3.91	4.29	4.63	4.95	5.53
#11 Yellow	11/64"	2.10	2.72	3.33	3.84	4.30	4.71	5.08	5.43	6.08
#11.5	23/128"	2.30	2.97	3.64	4.20	4.70	5.15	5.56	5.94	6.65
#12 Red	3/16"	2.51	3.24	3.97	4.58	5.12	5.61	6.06	6.48	7.24
#12.5	25/128"	2.72	3.52	4.31	4.97	5.56	6.09	6.58	7.03	7.86
#13 White	13/64"	2.95	3.81	4.66	5.38	6.02	6.59	7.12	7.61	8.51
#13.5	27/128"	3.18	4.11	5.03	5.81	6.49	7.11	7.68	8.21	9.18
#14 Blue	7/32"	3.42	4.42	5.41	6.25	6.99	7.65	8.27	8.84	9.88
#14.5	29/128"	3.67	4.74	5.81	6.71	7.50	8.21	8.87	9.48	10.60
#15 Dk. Brown	15/64"	3.93	5.08	6.22	7.18	8.03	8.79	9.50	10.15	11.35
#15.5	31/128"	4.20	5.42	6.64	7.67	8.57	9.39	10.14	10.84	12.12
#16 Orange	1/4"	4.48	5.78	7.08	8.17	9.14	10.01	10.81	11.56	12.92
#16.5	33/128"	4.76	6.15	7.53	8.69	9.72	10.65	11.50	12.30	13.75
#17 Dk. Green	17/64"	5.06	6.53	7.99	9.23	10.32	11.31	12.21	13.06	14.60
#17.5	35/128"	5.36	6.92	8.47	9.78	10.94	11.98	12.94	13.84	15.47
#18 Purple	9/32"	5.67	7.32	8.96	10.35	11.57	12.68	13.69	14.64	16.37
#18.5	37/128"	5.99	7.73	9.47	10.93	12.22	13.39	14.46	15.46	17.28
#19 Black	19/64"	6.31	8.15	9.98	11.53	12.89	14.12	15.25	16.30	18.23
#19.5	39/128"	6.65	8.58	10.51	12.14	13.57	14.86	16.05	17.16	19.19
#20 Dk. Turquoise	5/16"	6.99	9.02	11.05	12.76	14.27	15.63	16.88	18.05	20.18
#20.5	41/128"	7.34	9.47	11.60	13.40	14.98	16.41	17.72	18.95	21.18
#21 Mustard	21/64"	7.70	9.93	12.17	14.05	15.71	17.21	18.59	19.87	22.21
#21.5	43/128"	8.06	10.40	12.74	14.71	16.45	18.02	19.46	20.80	23.26
#22 Maroon	11/32"	8.43	10.88	13.33	15.39	17.20	18.85	20.36	21.76	24.33
#22.5	45/128"	8.81	11.37	13.92	16.08	17.98	19.69	21.27	22.74	25.42
#23 Cream	23/64"	9.19	11.87	14.54	16.78	18.77	20.56	22.20	23.74	26.54
#23.5	47/128"	9.58	12.37	15.15	17.49	19.56	21.43	23.14	24.74	27.66
#24 Dk. Blue	3/8"	9.98	12.88	15.78	18.22	20.37	22.31	24.10	25.77	28.81
#24.5	49/128"	10.38	13.40	16.41	18.95	21.18	23.20	25.06	26.79	29.96
#25 Copper	25/64"	10.78	13.92	17.05	19.69	22.01	24.11	26.04	27.84	31.13
#25.5	51/128"	11.19	14.45	17.69	20.43	22.84	25.02	27.03	28.89	32.30
#26 Bronze	13/32"	11.60	14.98	18.35	21.18	23.68	25.94	28.02	29.96	33.49

# Nozzle Flows (Metric)



## FEATURES

- Patented easy change nozzle
- Color-coded for easy size identification
- Excellent durability
- Warrantied to maintain correct orifice size for five years



Nozzle Number and Nozzle color	Nozzle Size	L/hr								
		0.41 bar	0.69 bar	1.03 bar	1.38 bar	1.72 bar	2.07 bar	2.42 bar	2.76 bar	3.45 bar
#2 Pink	0.79 mm	16	20	25	27	32	34	36	41	45
#2.5	0.99 mm	25	32	39	43	50	55	59	64	70
#3 Ice	1.19 mm	34	45	55	64	70	77	84	91	100
#3.5	1.40 mm	48	61	75	86	98	107	114	123	136
#4 Light Blue	1.59 mm	61	79	98	114	127	139	150	159	179
#4.5	1.78 mm	79	102	125	143	161	175	191	202	227
#5 Beige	1.98 mm	98	125	154	177	198	218	236	252	282
#5.5	2.16 mm	118	152	186	216	241	263	286	304	341
#6 Gold	2.38 mm	141	182	223	257	286	313	341	363	407
#6.5	2.59 mm	166	213	261	302	338	370	400	427	477
#7 Lime	2.78 mm	193	248	304	350	393	429	463	495	554
#7.5	2.97 mm	220	286	350	402	450	493	534	570	638
#8 Lavender	3.18 mm	252	325	397	459	513	563	609	650	727
#8.5	3.38 mm	284	368	450	520	581	636	686	734	820
#9 Grey	3.57 mm	318	411	504	581	652	713	770	824	922
#9.5	3.76 mm	357	459	563	650	727	795	859	918	1027
#10 Turquoise	3.97 mm	395	509	625	720	806	881	954	1020	1138
#10.5	4.17 mm	436	561	688	795	888	974	1052	1124	1256
#11 Yellow	4.37 mm	477	618	756	872	977	1070	1154	1233	1381
#11.5	4.57 mm	522	675	827	954	1067	1170	1263	1349	1510
#12 Red	4.76 mm	570	736	902	1040	1163	1274	1376	1472	1644
#12.5	4.95 mm	618	799	979	1129	1263	1383	1494	1597	1785
#13 White	5.16 mm	670	865	1058	1222	1367	1497	1617	1728	1933
#13.5	5.36 mm	722	933	1142	1320	1474	1615	1744	1865	2085
#14 Blue	5.56 mm	777	1004	1229	1420	1588	1738	1878	2008	2244
#14.5	5.77 mm	834	1077	1320	1524	1703	1865	2015	2153	2408
#15 Dk. Brown	5.95 mm	893	1154	1413	1631	1824	1996	2158	2305	2578
#15.5	6.15 mm	954	1231	1508	1742	1946	2133	2303	2462	2753
#16 Orange	6.35 mm	1018	1313	1608	1856	2076	2274	2455	2626	2934
#16.5	6.55 mm	1081	1397	1710	1974	2208	2419	2612	2794	3123
#17 Dk. Green	6.75 mm	1149	1483	1815	2096	2344	2569	2773	2966	3316
#17.5	6.93 mm	1217	1572	1924	2221	2485	2721	2939	3143	3514
#18 Purple	7.14 mm	1288	1663	2035	2351	2628	2880	3109	3325	3718
#18.5	7.34 mm	1360	1756	2151	2482	2775	3041	3284	3511	3925
#19 Black	7.54 mm	1433	1851	2267	2619	2928	3207	3464	3702	4140
#19.5	7.75 mm	1510	1949	2387	2757	3082	3375	3645	3897	4359
#20 Dk. Turquoise	7.94 mm	1588	2049	2510	2898	3241	3550	3834	4100	4583
#20.5	8.13 mm	1667	2151	2635	3043	3402	3727	4025	4304	4811
#21 Mustard	8.33 mm	1749	2255	2764	3191	3568	3909	4222	4513	5044
#21.5	8.53 mm	1831	2362	2894	3341	3736	4093	4420	4724	5283
#22 Maroon	8.73 mm	1915	2471	3028	3495	3907	4281	4624	4942	5526
#22.5	8.94 mm	2001	2582	3162	3652	4084	4472	4831	5165	5774
#23 Cream	9.13 mm	2087	2696	3302	3811	4263	4670	5042	5392	6028
#23.5	9.32 mm	2176	2810	3441	3972	4443	4867	5256	5619	6282
#24 Dk. Blue	9.53 mm	2267	2925	3584	4138	4627	5067	5474	5853	6543
#24.5	9.73 mm	2358	3043	3727	4304	4811	5269	5692	6085	6805
#25 Copper	9.92 mm	2448	3162	3872	4472	4999	5476	5914	6323	7070
#25.5	10.11 mm	2542	3282	4018	4640	5188	5683	6139	6562	7336
#26 Bronze	10.32 mm	2635	3402	4168	4811	5378	5892	6364	6805	7606

# Product Warranty

## WARRANTY & DISCLAIMER

This warranty supersedes all other warranties expressed or implied.

No person has the authority to incur or assume for Senninger Irrigation. (“Senninger”) any other liability as to the products manufactured by Senninger®.

This warranty does not extend to any product or part that has been repaired, altered, or modified in any way outside the Senninger factory, nor shall it apply to any product which has been subject to misuse, negligence or accident, or improper operation contrary to the Senninger published instructions.

Under no circumstances will Senninger be held responsible or liable for any consequential, incidental or punitive damages resulting from the use of Senninger products, or resulting from any product defects, failure or malfunction.

This warranty extends only to the original purchaser of the Senninger product. This warranty does not extend to any product or part manufactured by others.

## MATERIALS AND WORKMANSHIP

Products manufactured by Senninger for use in agriculture, turf, or nursery applications are warranted to be free of defects in materials or workmanship under normal use for a period of two (2) years from the date of manufacture.

Senninger warranties the i-Wob®2 to be free of defects in materials or workmanship under normal use for a period of three (3) years from the date of manufacture.

Senninger warranties the following products to be free of defects in materials or workmanship under normal use for a period of one (1) year from date of manufacture: End Spray, PRLV regulators, mining models.

Senninger warranties nozzles to retain their original orifice size under normal use for a period of five (5) years from the date of manufacture.

## PERFORMANCE

Products manufactured by Senninger for use in agriculture, turf, or nursery applications are warranted to maintain their original performance for a period of two (2) years from the date of manufacture if installed and operated in accordance with Senninger’s published specifications and used as intended for irrigation purposes.

Senninger warranties the i-Wob®2 to maintain its original performance under normal use for a period of three (3) years from the date of manufacture.

Senninger warranties the following products to maintain their original performance under normal use for a period of one (1) year from date of manufacture: End Spray, PRLV regulators, mining models.

## REPAIR OR REPLACEMENT

If a Senninger product is suspected of failure during the applicable warranty period, Senninger will repair or replace, at its option, the product or the defective part. Contact Senninger customer service in Clermont, Florida USA for specific instructions on how to proceed with a warranty claim. If after inspection of the product and documentation the failure is deemed a warranty issue, a replacement or credit will be authorized.

Senninger is not obligated to pay for repairs or replacements made by anyone other than itself. No labor allowances will be made for removal or replacement of warranted parts nor for any travel to and from the product to make said repairs or replacement without prior written authorization from Senninger.

## SUITABILITY

There are no other warranties, expressed or implied, including warranties of merchantability and warranties of fitness for a particular purpose. It is the sole responsibility of the purchaser to consider and analyze the product and its design to be suitable for specific applications.



The Senninger commitment to world-class products, local support and technical expertise ensure we provide the most efficient and reliable agricultural irrigation solutions available in the world today.

A handwritten signature in white ink, appearing to read 'Steve Abernethy', is centered on the page.

Steve Abernethy, President of Senninger Irrigation