SENNINGER PRODUCTS

'We work with long-lasting brands for our customers'




UP3 NOZZLE FLOWS

FEATURES

*Easy change nozzle introduced in 2008

*Color-coded for easy size identification

*Excellent durability

*Warranted to maintain correct orifice size for five years

Nozzle Number and Nozzle color	Nozzle Orifice Size	6 psi 0.41 bar		10 psi 0.69 bar		15 psi 1.03 bar		20 psi 1.38 bar		25 psi 1.72 bar		30 psi 2.07 bar		35 psi 2.42 bar		40 psi 2.76 bar		50 psi 3.45 bar	
		gpm	(L/hr)	gpm	(L/hr)	gpm	(L/hr)	gpm	(L/hr)	gpm	(L/hr)	gpm	(L/hr)	gpm	(L/hr)	gpm	(L/hr)	gpm	(L/hr)
#2 Pink	1/32" 0.79 mm	0.07	16	0.09	20	0.11	25	0.12	27	0.14	32	0.15	34	0.16	36	0.18	41	0.20	45
#2.5	5/128" 0.99 mm	0.11	25	0.14	32	0.17	39	0.19	43	0.22	50	0.24	55	0.26	59	0.28	64	0.31	70
#3 Ice	3/64" 1.19 mm	0.15	34	0.20	45	0.24	55	0.28	64	0.31	70	0.34	77	0.37	84	0.40	91	0.44	100
#3.5	7/128" 1.4 mm	0.21	48	0.27	61	0.33	75	0.38	86	0.43	98	0.47	107	0.50	114	0.54	123	0.60	136
#4 Light Blue	1/16" 1.59 mm	0.27	61	0.35	79	0.43	98	0.50	114	0.56	127	0.61	139	0.66	150	0.70	159	0.79	179
#4.5	9/128" 1.78 mm	0.35	79	0.45	102	0.55	125	0.63	143	0.71	161	0.77	175	0.84	191	0.89	202	1.00	227
#5 Beige	5/64" 1.98 mm	0.43	98	0.55	125	0.68	154	0.78	177	0.87	198	0.96	218	1.04	236	1.11	252	1.24	282
#5.5	11/128" 2.16 mm	0.52	118	0.67	152	0.82	186	0.95	216	1.06	241	1.16	263	1.26	286	1.34	304	1.50	341
#6 Gold	3/32" 2.38 mm	0.62	141	0.80	182	0.98	223	1.13	257	1.26	286	1.38	313	1.50	341	1.60	363	1.79	407
#6.5	13/128" 2.59 mm	0.73	166	0.94	213	1.15	261	1.33	302	1.49	338	1.63	370	1.76	400	1.88	427	2.10	477
#7 Lime	7/64" 2.78 mm	0.85	193	1.09	248	1.34	304	1.54	350	1.73	393	1.89	429	2.04	463	2.18	495	2.44	554
#7.5	15/128" 2.97 mm	0.97	220	1.26	286	1.54	350	1.77	402	1.98	450	2.17	493	2.35	534	2.51	570	2.81	638
#8 Lavender	1/8" 3.18 mm	1.11	252	1.43	325	1.75	397	2.02	459	2.26	513	2.48	563	2.68	609	2.86	650	3.20	727
#8.5	17/128" 3.38 mm	1.25	284	1.62	368	1.98	450	2.29	520	2.56	581	2.80	636	3.02	686	3.23	734	3.61	820
#9 Grey	9/64" 3.57 mm	1.40	318	1.81	411	2.22	504	2.56	581	2.87	652	3.14	713	3.39	770	3.63	824	4.06	922
#9.5	19/128" 3.76 mm	1.57	357	2.02	459	2.48	563	2.86	650	3.20	727	3.50	795	3.78	859	4.04	918	4.52	1027
#10 Turquoise	5/32" 3.97 mm	1.74	395	2.24	509	2.75	625	3.17	720	3.55	806	3.88	881	4.20	954	4.49	1020	5.01	1138
#10.5	21/128" 4.17 mm	1.92	436	2.47	561	3.03	688	3.50	795	3.91	888	4.29	974	4.63	1052	4.95	1124	5.53	1256
#11 Yellow	11/64" 4.37 mm	2.10	477	2.72	618	3.33	756	3.84	872	4.30	977	4.71	1070	5.08	1154	5.43	1233	6.08	1381
#11.5	23/128" 4.57 mm	2.30	522	2.97	675	3.64	827	4.20	954	4.70	1067	5.15	1170	5.56	1263	5.94	1349	6.65	1510
#12 Red	3/16" 4.76 mm	2.51	570	3.24	736	3.97	902	4.58	1040	5.12	1163	5.61	1274	6.06	1376	6.48	1472	7.24	1644
#12.5	25/128" 4.95 mm	2.72	618	3.52	799	4.31	979	4.97	1129	5.56	1263	6.09	1383	6.58	1494	7.03	1597	7.86	1785
#13 White	13/64" 5.16 mm	2.95	670	3.81	865	4.66	1058	5.38	1222	6.02	1367	6.59	1497	7.12	1617	7.61	1728	8.51	1933
#13.5	27/128" 5.36 mm	3.18	722	4.11	933	5.03	1142	5.81	1320	6.49	1474	7.11	1615	7.68	1744	8.21	1865	9.18	2085
#14 Blue	7/32" 5.56 mm	3.42	777	4.42	1004	5.41	1229	6.25	1420	6.99	1588	7.65	1738	8.27	1878	8.84	2008	9.88	2244
#14.5	29/128" 5.77 mm	3.67	834	4.74	1077	5.81	1320	6.71	1524	7.50	1703	8.21	1865	8.87	2015	9.48	2153	10.60	2408
#15 Dk. Brown	15/64" 5.95 mm	3.93	893	5.08	1154	6.22	1413	7.18	1631	8.03	1824	8.79	1996	9.50	2158	10.15	2305	11.35	2578
#15.5	31/128" 6.15 mm	4.20	954	5.42	1231	6.64	1508	7.67	1742	8.57	1946	9.39	2133	10.14	2303	10.84	2462	12.12	2753
#16 Orange	1/4" 6.35 mm	4.48	1018	5.78	1313	7.08	1608	8.17	1856	9.14	2076	10.01	2274	10.81	2455	11.56	2626	12.92	2934
#16.5	33/128" 6.55 mm	4.76	1081	6.15	1397	7.53	1710	8.69	1974	9.72	2208	10.65	2419	11.50	2612	12.30	2794	13.75	3123
#17 Dk. Green	17/64" 6.75 mm	5.06	1149	6.53	1483	7.99	1815	9.23	2096	10.32	2344	11.31	2569	12.21	2773	13.06	2966	14.60	3316
#17.5	35/128" 6.93 mm	5.36	1217	6.92	1572	8.47	1924	9.78	2221	10.94	2485	11.98	2721	12.94	2939	13.84	3143	15.47	3514
#18 Purple	9/32" 7.14 mm	5.67	1288	7.32	1663	8.96	2035	10.35	2351	11.57	2628	12.68	2880	13.69	3109	14.64	3325	16.37	3718
#18.5	37/128" 7.34 mm	5.99	1360	7.73	1756	9.47	2151	10.93	2482	12.22	2775	13.39	3041	14.46	3284	15.46	3511	17.28	3925
#19 Black	19/64" 7.54 mm	6.31	1433	8.15	1851	9.98	2267	11.53	2619	12.89	2928	14.12	3207	15.25	3464	16.30	3702	18.23	4140
#19.5	39/128" 7.75 mm	6.65	1510	8.58	1949	10.51	2387	12.14	2757	13.57	3082	14.86	3375	16.05	3645	17.16	3897	19.19	4359
#20 Dk. Turquoise	5/16" 7.94 mm	6.99	1588	9.02	2049	11.05	2510	12.76	2898	14.27	3241	15.63	3550	16.88	3834	18.05	4100	20.18	4583
#20.5	41/128" 8.13 mm	7.34	1667	9.47	2151	11.60	2635	13.40	3043	14.98	3402	16.41	3727	17.72	4025	18.95	4304	21.18	4811
#21 Mustard	21/64" 8.33 mm	7.70	1749	9.93	2255	12.17	2764	14.05	3191	15.71	3568	17.21	3909	18.59	4222	19.87	4513	22.21	5044
#21.5	43/128" 8.53 mm	8.06	1831	10.40	2362	12.74	2894	14.71	3341	16.45	3736	18.02	4093	19.46	4420	20.80	4724	23.26	5283
#22 Maroon	11/32" 8.73 mm	8.43	1915	10.88	2471	13.33	3028	15.39	3495	17.20	3907	18.85	4281	20.36	4624	21.76	4942	24.33	5526
#22.5	45/128" 8.94 mm	8.81	2001	11.37	2582	13.92	3162	16.08	3652	17.98	4084	19.69	4472	21.27	4831	22.74	5165	25.42	5774
#23 Cream	23/64" 9.13 mm	9.19	2087	11.87	2696	14.54	3302	16.78	3811	18.77	4263	20.56	4670	22.20	5042	23.74	5392	26.54	6028
#23.5	47/128" 9.32 mm	9.58	2176	12.37	2810	15.15	3441	17.49	3972	19.56	4443	21.43	4867	23.14	5256	24.74	5619	27.66	6282
#24 Dk. Blue	3/8" 9.53 mm	9.98	2267	12.88	2925	15.78	3584	18.22	4138	20.37	4627	22.31	5067	24.10	5474	25.77	5853	28.81	6543
#24.5	49/128" 9.73 mm	10.38	2358	13.40	3043	16.41	3727	18.95	4304	21.18	4811	23.20	5269	25.06	5692	26.79	6085	29.96	6805
#25 Copper	25/64" 9.92 mm	10.78	2448	13.92	3162	17.05	3872	19.69	4472	22.01	4999	24.11	5476	26.04	5914	27.84	6323	31.13	7070
#25.5	51/128" 10.11 mm	11.19	2542	14.45	3282	17.69	4018	20.43	4640	22.84	5188	25.02	5683	27.03	6139	28.89	6562	32.30	7336
#26 Bronze	13/32" 10.32 mm	11.60	2635	14.98	3402	18.35	4168	21.18	4811	23.68	5378	25.94	5892	28.02	6364	29.96	6805	33.49	7606

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CENTER PIVOT & LINEAR IRRIGATION SYSTEMS

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UP3 | UNIVERSAL PIVOT PRODUCTS PLATFORM

Developed in 2008, Senninger's exclusive UP3 (Universal Pivot Products Platform) product line adds significant benefits to the proven technologies of the i-Wob, Xi-Wob, LDN, Super Spray and Xcel-Wobbler UP3 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 NOZZLE DESIGN (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 (Patent Pending)

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 in in use. If LOW is visible on the carrier, the higher flow nozzle is in use.

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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.

XI-WOB® | WOBBLERS

The Senninger Xi-Wob provides the same low application intensity and uniform distribution pattern that has made the i-Wob 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 Magnum Weight.

FEATURES

Wobbler technology produces low application intensity to preserve soil integrity.

Low pressure operation - 10 to 15 psi (0.69 to 1.03 bar) - saves money and energy.

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.

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

THREE MODELS AVAILABLE!

(610 Model shown above)

XI-WOB SYSTEM ASSEMBLY

The Xi-Wob must be mounted no more than 1 ft (0.3 m) below the truss rod on semirigid Polyethylene or steel drops. Do not use PVC drops.

The Xi-Wob can also be mounted on flexible hose drops when used with the Magnum Weight.

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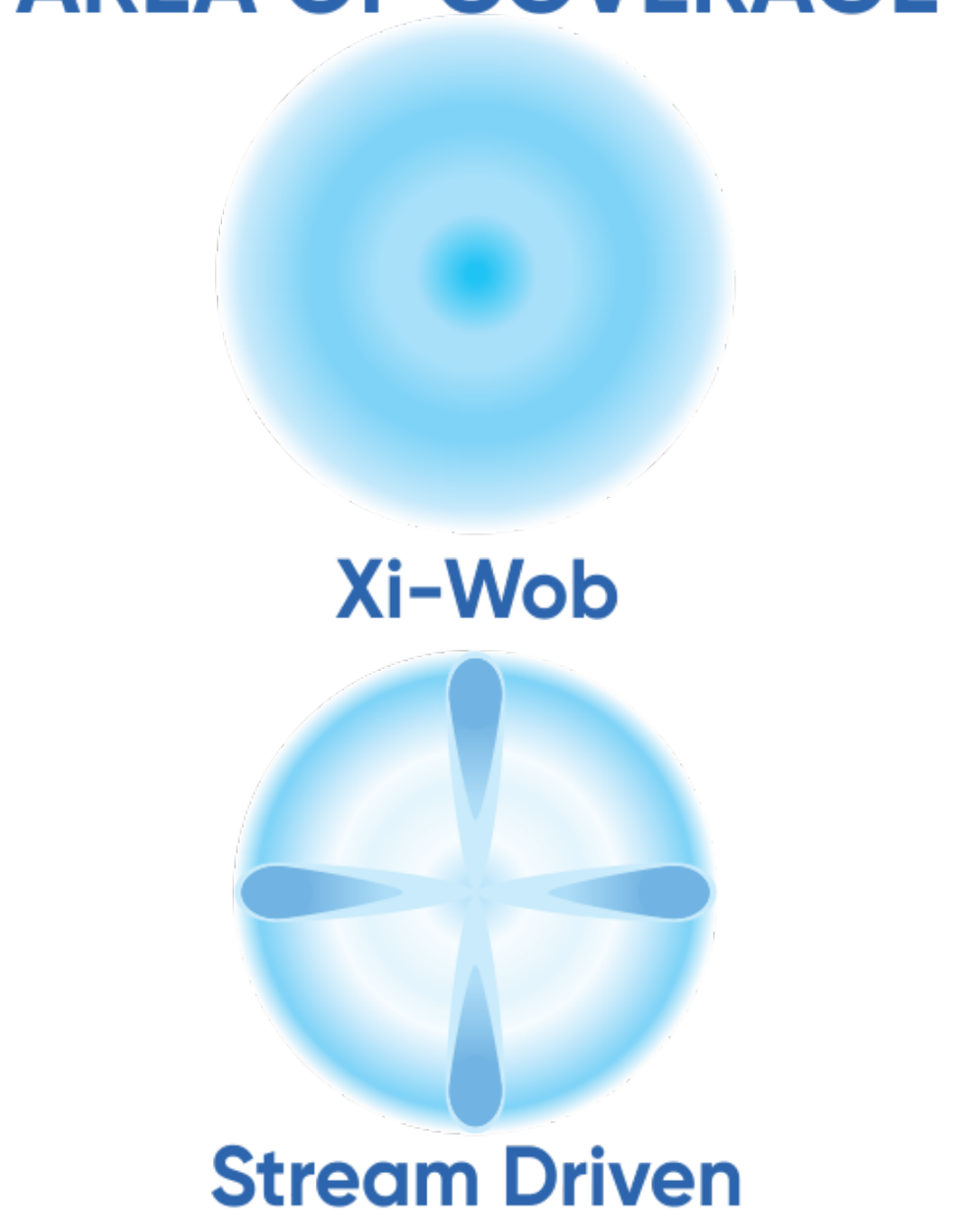
XI-WOB® | WOBBLERS
LOW APPLICATION INTENSITY

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.

LOW APPLICATION INTENSITY

The Xi-Wob offers a gentle, more uniform delivery and an even droplet size. Consistently sized droplets help maintain a sprinkler's pattern integrity in wind conditions and are more resistant to evaporation. The Xi-Wob's droplet size can be tailored to the needs of the soil through the selection of proper deflectors and operating pressures.

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



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.

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 Smaller Droplets
Nozzle sizes			
Minimum	#7 7/64" (2.78 mm)	#10 5/32" (3.97 mm)	#10 5/32" (3.97 mm)
Maximum*	#24 3/8" (9.53 mm)	#24 3/8" (9.53 mm)	#24 3/8" (9.53 mm)
Flows			
Minimum	1.09 gpm (248 L/hr)	2.24 gpm (509 L/hr)	2.24 gpm (509 L/hr)
Maximum	15.78 gpm (3584 L/hr)	15.78 gpm (3584 L/hr)	15.78 gpm (3584 L/hr)
Diameters			
Minimum at 3 ft (0.91 m)	30 ft (9.1 m)	38 ft (11.6 m)	33 ft (10.1 m)
Maximum at 3 ft (0.91 m)	41 ft (12.5 m)	43 ft (13.1 m)	36 ft (11.0 m)
Minimum at 6 ft (1.83 m)	35 ft (10.7 m)	43 ft (13.1 m)	38 ft (11.6 m)
Maximum at 6 ft (1.83 m)	45 ft (13.7 m)	50 ft (15.2 m)	43 ft (13.1 m)
Minimum at 9 ft (2.74 m)	37 ft (11.3 m)	46 ft (14.0 m)	43 ft (13.1 m)
Maximum at 9 ft (2.74 m)	47 ft (14.3 m)	55 ft (16.8 m)	50 ft (15.2 m)
Maximum Spacing**			
at 6 ft (1.8 m) ground clearance	18 ft (5.5 m)	20 ft (6.1 m)	18 ft (5.5 m)
at 9 ft (2.74 m) ground clearance	18 ft (5.5 m)	20 ft (6.1 m)	18 ft (5.5 m)
Pressure at the Nozzle			
Minimum	10 psi (0.69 bar)	10 psi (0.69 bar)	10 psi (0.69 bar)
Maximum	15 psi (1.03 bar)	15 psi (1.03 bar)	15 psi (1.03 bar)

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 10 ft (3.0 m), keep Xi-Wobs above crop canopy. This is especially important on high profile crops. Not warranted for rigid installation on offsets or booms larger than 10.5 ft (3.2 m). Longer offsets and booms require a minimum of 2 ft (0.61 m) reinforced flex hose.

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XCEL-WOBBLER® TOP | WOBBLERS

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

Wobbler technology provides outstanding uniformity over a large wetted area
More economical than other sprinkler packages
Low pressure operation – 10 psi (0.69 bar)–saves energy and provides larger droplet size
UP3 snap-in nozzle is easy to remove for cleaning.

XCEL-WOBBLER SYSTEM ASSEMBLY

The Xcel-Wobbler TOP must employ a 10 psi (0.69 bar) pressure regulator (PSR or PSR-2 recommended).
Use a 3/4' galvanized nipple or Senninger's impact-modified thermoplastic nipple into the mainline (maximum 2 feet length). PVC nipples are not recommended.
The Xcel-Wobbler UP3 TOP is designed specifically for upright installation on top-of-pipe.
The Xcel-Wobbler UP3 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.
It is recommended that larger nozzle sizes be used only on soils that can handle higher application rates.

XCEL-WOBBLER TOP DESIGN CRITERIA	(Blue) 6-groove 5-degrees Large Droplets
Nozzle sizes	
Minimum	#6 3/32" (2.38 mm)
Maximum*	#26 13/32" (10.32 mm)
Flows	
Minimum	0.80 gpm (182 L/hr)
Maximum	14.98 gpm (3402 L/hr)
Diameters	
Minimum at 12 ft. (3.66 m)	44 ft (13.4 m)
Maximum at 12 ft. (3.66 m)	51 ft (15.5 m)
Maximum Spacing**	
at 12 ft (3.66 m) ground clearance	20 ft (6.1 m)
Pressure at the Nozzle	
	10 psi (0.69 bar)

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PIVOT MASTER® | IMPACT SPRINKLER

Senninger's 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.

NOW With Hand-Tight

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.

PIVOT MASTER IMPACT DESIGN CRITERIA	 3006 - Orange	 4006 - White	 5006 - Blue	 5006-2 - Blue
Nozzle sizes				
Minimum	#7 7/64" (2.78 mm)	#10 5/32" (3.97 mm)	#13 1 3/64" (5.16 mm)	#13 x 12 13/64" x 3/16" (5.16 x 4.76 mm)
Maximum*	#9 9/64" (3.57 mm)	#12 3/16" (4.76 mm)	#18 9/32" (7.14 mm)	#18 x 18 9/32" x 9/32" (7.1 4 x 7.14mm)
Flows				
Minimum	1.87 gpm (425 L/hr)	3.80 gpm (863 L/hr)	6.20 gpm (1408 L/hr)	11.34 gpm (2576 L/hr)
Maximum	4.35 gpm (988 L/hr)	7.70 gpm (1749 L/hr)	16.0 gpm (3634 L/hr)	36.0 gpm (8177 L/hr)
Diameters				
Minimum at 12 ft (3.66 m)	73 ft (22.3 m)	80 ft (24.4 m)	84 ft (25.6 m)	84 ft (25.6 m)
Maximum at 12 ft (3.66 m)	87 ft (26.5 m)	93 ft (28.3 m)	105 ft (32.0 m)	105 ft (32.0 m)
Pressure at the Nozzle				
Minimum	30 psi (2.07 bar)	30 psi (2.07 bar)	30 psi (2.07 bar)	30 psi (2.07 bar)
Maximum	60 psi (4.14 bar)	60 psi (4.14 bar)	60 psi (4.14 bar)	60 psi (4.14 bar)

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
- Hand Tight Nozzles eliminate the need for tools during renozzling; simply place and twist to install. Nozzles sizes are easily identified with color-coding. Warranted to maintain their correct orifice size for five years

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LEPA & CLOSE SPACING

Close Spacing is a water-efficient irrigation practice featuring low-pressure LEPA bubblers.

LDN UP3 BUBBLER ASSEMBLY

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. It can also be used to prevent wetting row crop foliage.

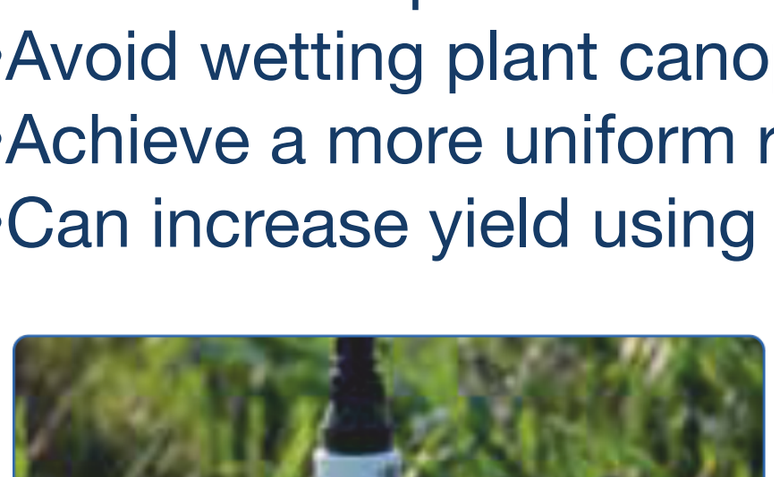
LDN LEPA SHROUD WITH BUBBLE INSERTS

The Shroud is used in conjunction with deflector pads containing an insert. Growers can choose either the beige bubble pad insert or the red CM1 pad insert opposite a variety of deflectors based on their soil type and crop. The Shroud deflects the water from the bubbler insert down in a gentle dome-shaped pattern providing complete coverage of the field. Due to its less concentrated distribution pattern, the LDN Shroud can be used on fields without furrows and is often used for germination as well as irrigation.

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

LDN with Shroud and beige bubble insert



LDN with Shroud and red CM1 insert

LDN with UP3 Bubbler Pad Assembly

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LDN LEPA PAD ASSEMBLY OPTIONS

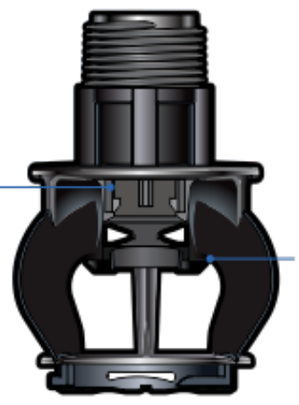
Zinc Weight

Magnum Weight

LDN Shroud

LDN Shroud
Bubble Spacer-UP3
(Used in place
of weight)

Up3 Nozzle

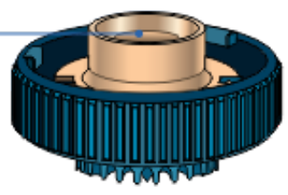


LDN-UP3 Bracket

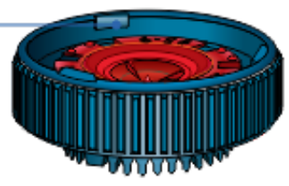
LDN PAD WITH BUBBLE INSERTS (Shroud required)

Concave Pads (CC)
Blue

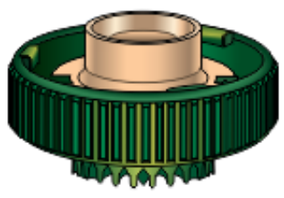
Beige bubble Insert

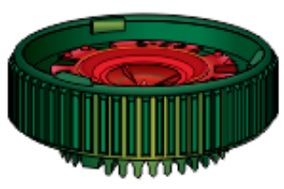


Red CM1 insert

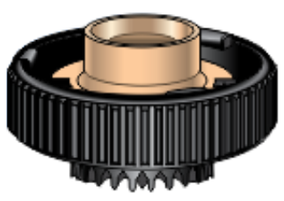


Convex Pads (CV)
Green

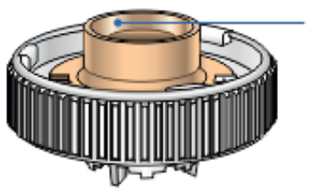


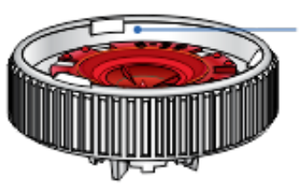


Flat Pads (FL)
Black

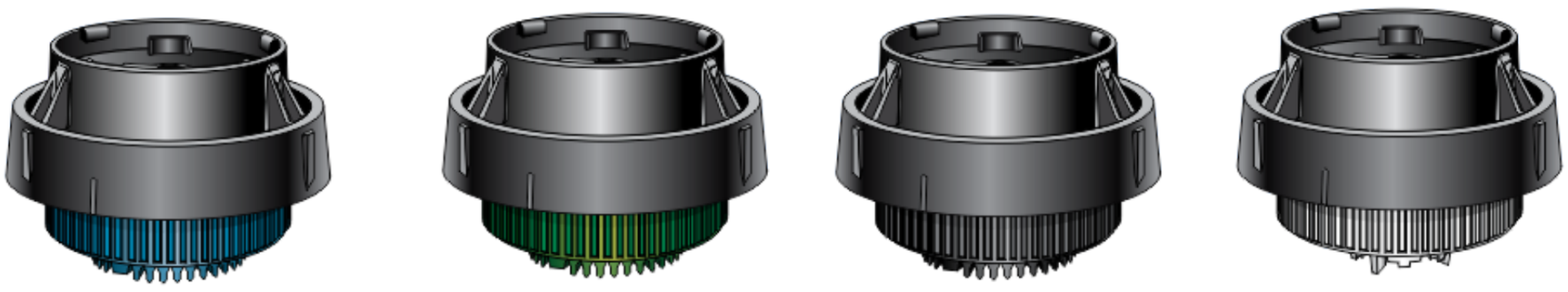


Germination Pads
White





LDN BUBBLER PAD ASSEMBLIES (Shroud not required)



Small 12-grooved pads available (Used with UP3 Nozzles #2, #2.5, #3, #3.5, #4, #4.5).
120-Mesh Filtration Recommended.

Bubble Recommendations

Flow: 0.27 to 18.35 gpm (61 to 4168 L/hr)
Pressure: 6 to 15 psi (0.41 to 1.03 bar)
#4 - 26 Nozzles

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EASY CONVERSION TO SPRAY IRRIGATION

For spray irrigation with either the LDN Bubbler Assembly or the LDN with the Shroud, simply twist and flip the deflector. Growers use this mode for germination. Deflectors are available with different trajectories - blue (concave) for a slightly upward spray, black (flat), green (convex) for a slightly downward spray, and white for a higher spray. They are available with different surfaces -grooved or smooth.

FOR OPTIMUM RESULTS, INCORPORATE:

Ball Valve - for easy water shut-off when converting between spray, LEPA and chemigation mode.

*Ball Valve requires F x M adapter when installed over a weight.

LDN® SINGLE

The Senninger LDN (Low Drift Nozzle) was the first spray nozzle providing the option to stack multiple deflector-pads. This widens the wetted footprint of larger flows and produces more uniform droplets that helps match the soil's infiltration rate to reduce run-off.

EASY CONVERSION TO AND FROM SPRAY IRRIGATION

For spray irrigation with either the LDN Bubbler Assembly or the LDN with the Shroud, simply twist and unlock the deflector pad. Flip it over and twist to lock it back in place.

The LDN is incredibly versatile thanks to its various deflector pad options. The surfaces of the deflector pads (smooth, grooved, medium groove, or deep groove) each deliver a different spray pattern and droplet size. 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.

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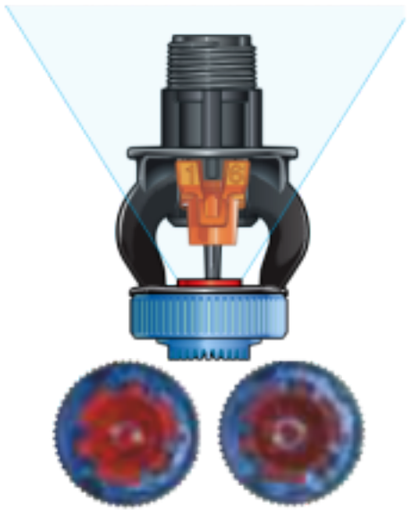
CHEMIGATION CONVERSION

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.

LDN DESIGN CRITERIA	Single Mini Pad 12 groove	Single Pad 24 Deep Groove	Single Pad 33 Groove
Nozzle sizes			
Minimum	#4 1/16" (1.59 mm)	#4 1/16" (1.59 mm)	#10 5/32" (3.97 mm)
Maximum*	#9 9/64" (3.57 mm)	#26 13/32" (10.32 mm)	#26 13/32" (10.32 mm)
Flows			
Minimum	0.27 gpm (61 L/hr)	0.27 gpm (61 L/hr)	1.74 gpm (395 L/hr)
Maximum	2.56 gpm (581 L/hr)	21.18 gpm (4811 L/hr)	21.18 gpm (4811 L/hr)
Maximum Spacing at 6 ft (1.8 m) ground clearance			
	10 ft (3.0 m)	10 ft (3.0 m)	10 ft (3.0 m)
Pressure at the Nozzle			
Minimum	6 psi (0.41 bar)	6 psi (0.41 bar)	6 psi (0.41 bar)
Maximum	20 psi (1.38 bar)	20 psi (1.38 bar)	20 psi (1.38 bar)

Corn
Chemigation Pad Inserts: 58° upward throw



CM-1 Insert | CM-2 Insert

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

Cotton Pad | CT-5 Insert

LDN® PART-CIRCLE

The Senninger Part-Circle LDN is specifically designed to distribute water away from wheel tracks to minimize tracking.

FEATURES

- Can be used in conjunction with standard full circle LDNs or other Senninger sprinklers on the remainder of a pivot.
- Distributes water in a 170° pattern with 17 streams at a 10° trajectory for minimum evaporative loss.
- Integrated base allows the applicator to be installed directly into a pressure regulator or onto a standard 3/4' NPT female connection with no special threads or fittings required.
- Maximum radius of throw- up to 29 ft (8.8 m)
- 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.

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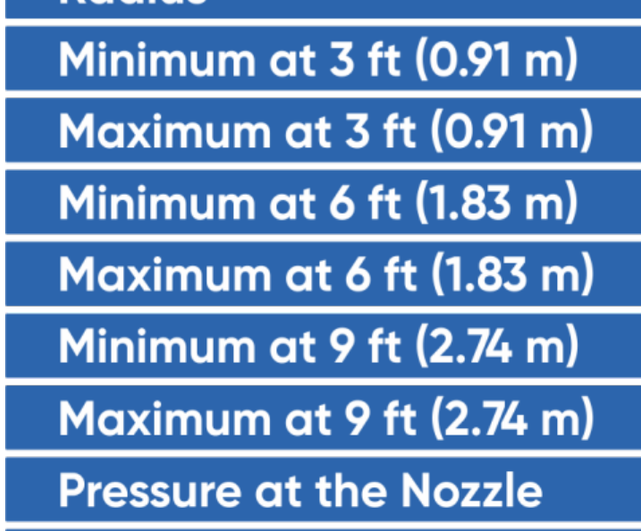
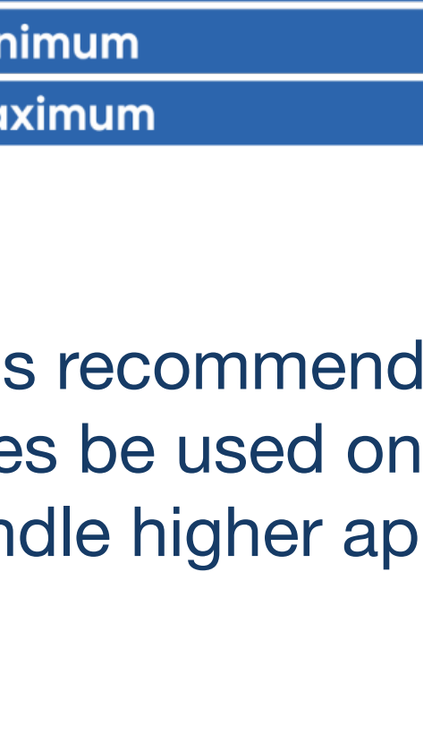
LDN PART-CIRCLE DESIGN CRITERIA	Part-Circle
Nozzle sizes	
Minimum	#6 3/32" (2.38 mm)
Maximum*	#18 9/32" (7.14 mm)
Flows	
Minimum	0.62 gpm (141 L/hr)
Maximum	10.35 gpm (2351 L/hr)
Radius	
Minimum at 3 ft (0.91 m)	9 ft (2.7 m)
Maximum at 3 ft (0.91 m)	25 ft (7.6 m)
Minimum at 6 ft (1.83 m)	11 ft (3.4 m)
Maximum at 6 ft (1.83 m)	28 ft (8.5 m)
Minimum at 9 ft (2.74 m)	13.5 ft (4.1 m)
Maximum at 9 ft (2.74 m)	29 ft (8.8 m)
Pressure at the Nozzle	
Minimum	6 psi (0.41 bar)
Maximum	15 psi (1.03 bar)

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

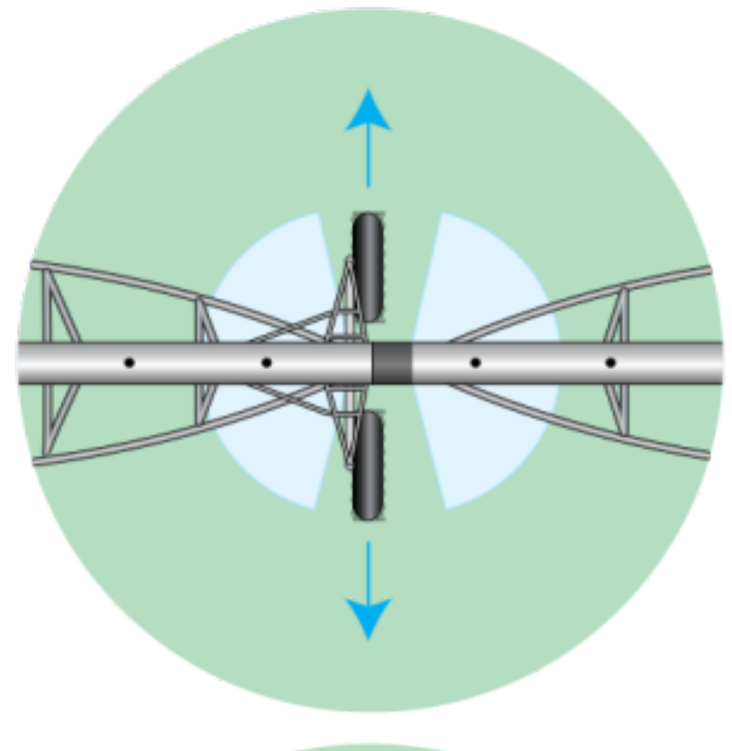
SUPER SPRAY®

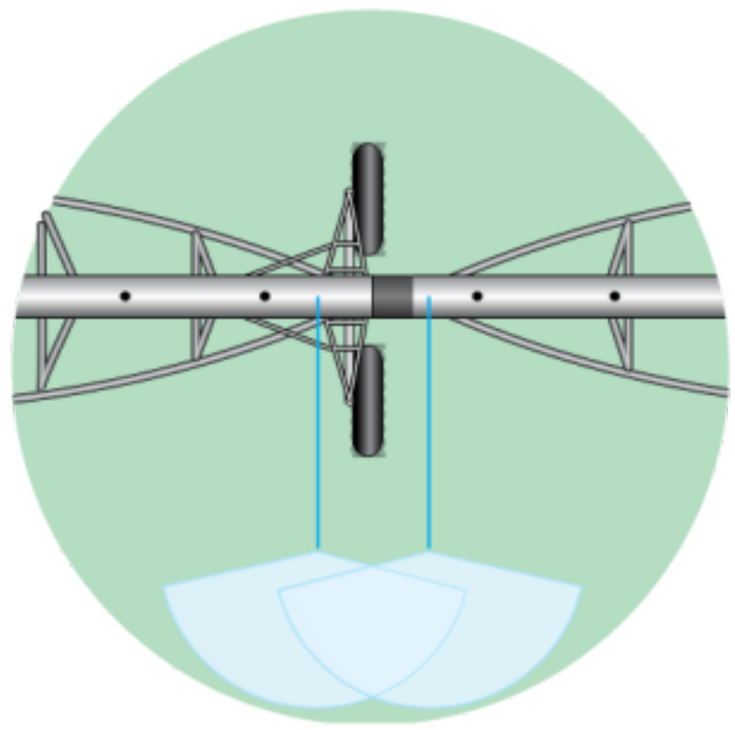
The Senninger Super Spray has interchangeable deflector pad options to meet various droplet size, crop, climatic, and soil requirements. Its design makes it ideal for surface water due to the distance between the nozzle, deflector and bracket legs.





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





THE PART-CIRCLE LDN DISTRIBUTES WATER AWAY FROM WHEEL TRACKS.

For use on rigid drops only. Distribution pattern varies by nozzle size and pressure.

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.

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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)
Nozzle sizes				
Minimum	#4 1/16" (1.59 mm)	#4 1/16" (1.59 mm)	#10 5/32" (3.97 mm)	#4 1/16" (1.59 mm)
Maximum*	#26 13/32" (10.32 mm)	#9.5 19/128" (3.76 mm)	#26 13/32" (10.32 mm)	#9.5 19/128" (3.76 mm)
Flows				
Minimum	0.27 gpm (61 L/hr)	0.27 gpm (61 L/hr)	1.74 gpm (395 L/hr)	0.27 gpm (61 L/hr)
Maximum	29.96 gpm (6805 L/hr)	2.02 gpm (459 L/hr)	29.96 gpm (6805 L/hr)	2.02 gpm (459 L/hr)
Maximum Spacing				
at 6 ft (1.8 m) ground clearance	10 ft (3.0 m)	10 ft (3.0 m)	10 ft (3.0 m)	10 ft (3.0 m)
at 9 ft (2.74 m) ground clearance	10 ft (3.0 m)	10 ft (3.0 m)	10 ft (3.0 m)	10 ft (3.0 m)
Pressure at the Nozzle				
Minimum	6 psi (0.41 bar)	6 psi (0.41 bar)	6 psi (0.41 bar)	6 psi (0.41 bar)
Maximum	40 psi (2.76 bar)	40 psi (2.76 bar)	40 psi (2.76 bar)	40 psi (2.76 bar)

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

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 in high profile (corn) and low profile (cotton) 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.

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Concave-Grooved

Concave-Smooth

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

CORN CHEMIGATION	
	Corn Chemgation
	Mini Corn Chemigation

COTTON CHEMIGATION	
	Cotton Chemigation
	Mini Cotton Chemigation

Flat-Grooved

Flat-Smooth

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

Convex-Grooved

Convex-Smooth

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

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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: 180º single, 125º single, and 125º double
- Lightweight for easier handling and installation
- Lower freight costs
- Available with either a 3/4' hose or 3/4' NPT male threaded outlet connection or the 180° single is also available with 19mm barb outlet connection.

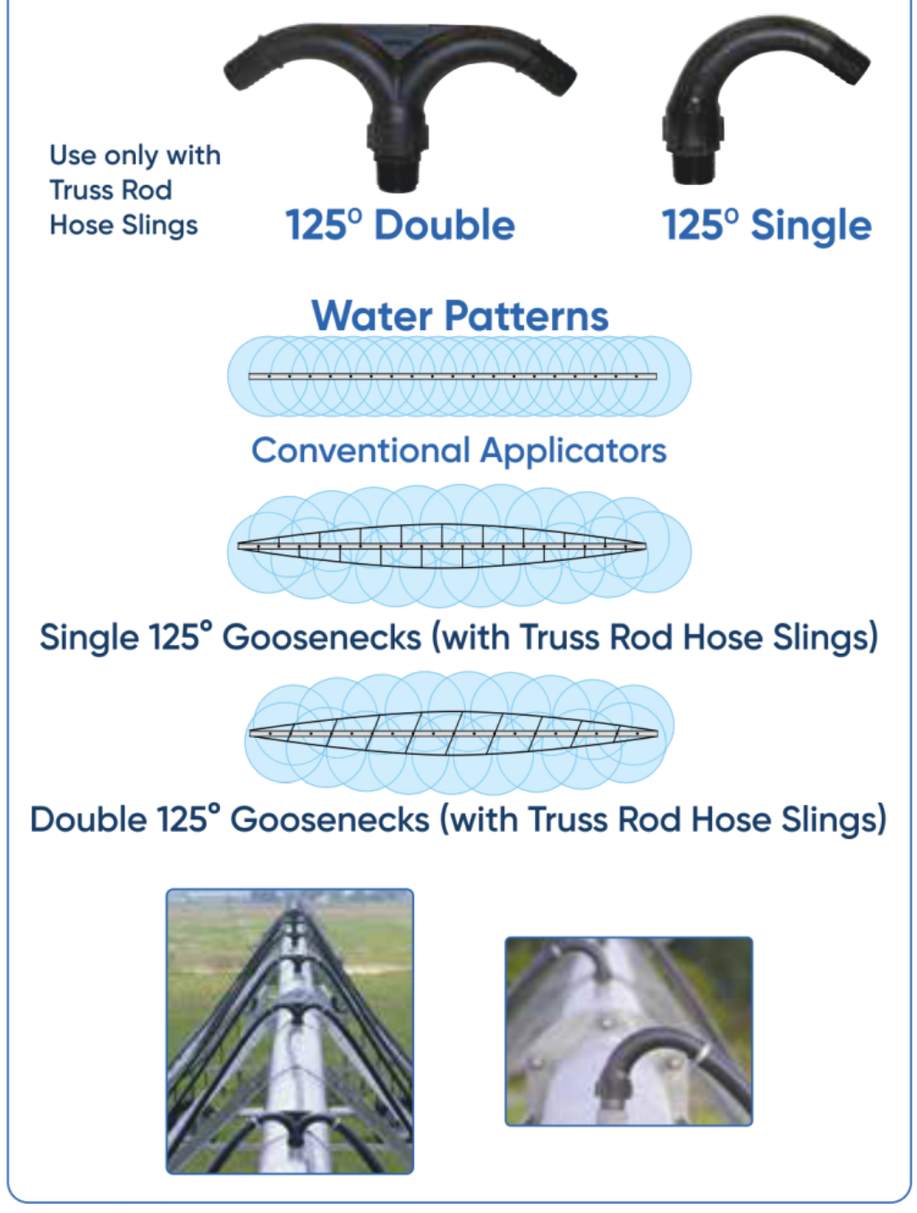
180º Single

The Senninger line of 125° goosenecks and truss rod hose slings allow the conversion of wide-spaced machines to closer drop spacing and reduces or eliminates the need for adding extra outlets.

GOOSENECK SYSTEM ASSEMBLY

- Max recommended pressure: 120 psi (8.27 bar).
- Max recommended flow: 20 gpm (4543 L/hr) or 15 gpm per side for the double model.
- Max recommended water temperature: 110ºF (43º C).
- Ambient temperatures to 150º F (66º C) will not damage goosenecks.

- Attaches to mainline using galvanized nipple or Senninger's impactmodified 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 shown are pre-assembled with Senninger's impactmodified thermoplastic nipple. Use of other plastic nipples is not recommended. Also available without nipple.

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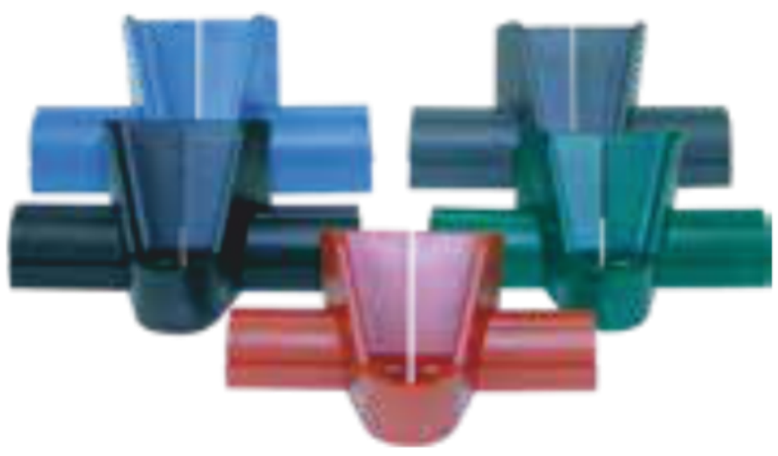
TRUSS ROD HOSE SLINGS

Senninger's single and double 125° goosenecks used with truss rod hose slings provide easy positioning of drops along the span. They help lower application intensity by increasing the wetted area of coverage to promote better soil infiltration.



FEATURES

- Easy to install
- Color coded models for various truss rod sizes: 5/8' (rust), 11/ 16' (green), 3/4' (black), 13/ 16' (grey), 7/8' (blue)
- Securely fastens 3/4' flexible hose to the truss rod to maintain the drop/sprinkler position and allows for easy adjustments
- Supports flexible hose to prevent kinking and abrasive wear
- Used in conjunction with the 125° model goosenecks
- Helps reduce pattern interruption from colliding streams

PSR-2 | PRESSURE REGULATORS

Senninger pressure regulators maintain a constant preset outlet pressure that can be matched to the applicator design, regardless of variations in inlet pressure. This helps maintain sprinkler pattern integrity and performance.

The patented PSR-2 is ideal for systems pumping surface water.

Senninger introduced the first highquality in-line pressure regulator to the irrigation industry in 1966.

FEATURES

- Flows: 0.5 to 15 gpm (114 to 3407 L/hr) allows the use of the same model along the entire machine.
- Each regulator maintains a constant preset outlet pressure based on its flow/inlet pressure.
- Outlet pressures: 6 to 50 psi (0.41 to 3.45 bar)
- Tamper-proof housing
- Very low hysteresis and friction losses
- 100% pressure tested, to ensure quality and performance

APPLICATION INTENSITY

Uncontrolled pressure fluctuations in irrigation systems result in unwanted flow deviations and over and under-watering. These fluctuations occur with the cycling on/off of an end gun, activation of a corner arm, variations in field elevation or water supply. Proper use of pressure regulators helps maintain the overall efficiency of an irrigation system.

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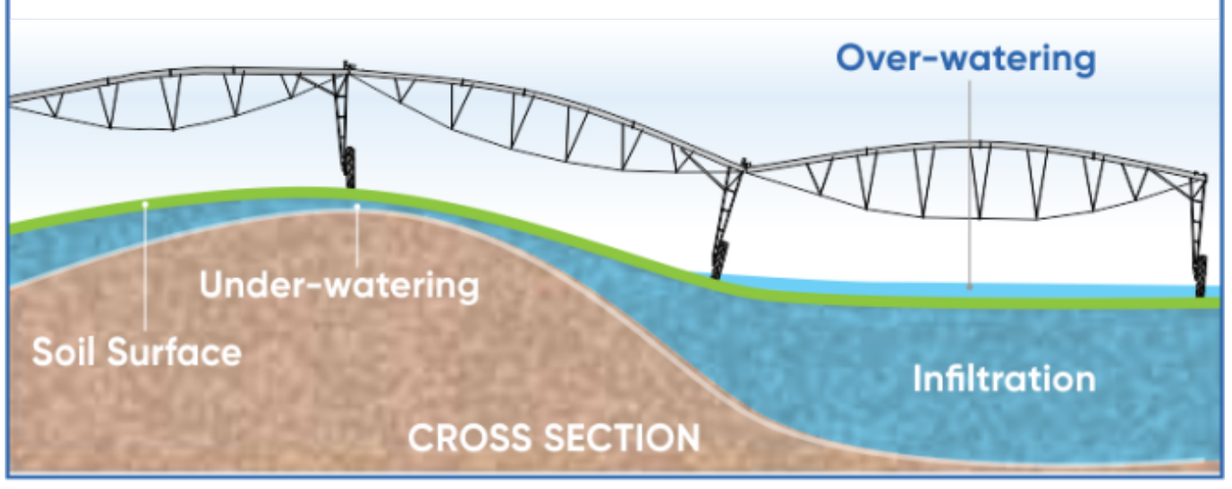
PSR-2 DESIGN CRITERIA	Preset Operating Pressure	Maximum Inlet Pressure	Flow Range
PSR-2-06	6 psi (0.41 bar)	80 psi (5.51 bar)	0.5 - 15 gpm 114 - 3407 L/hr
PSR-2-10	10 psi (0.69 bar)	90 psi (6.20 bar)	
PSR-2-12	12 psi (0.83 bar)	90 psi (6.20 bar)	
PSR-2-15	15 psi (1.03 bar)	95 psi (6.55 bar)	
PSR-2-20	20 psi (1.38 bar)	100 psi (6.89 bar)	
PSR-2-25	25 psi (1.72 bar)	105 psi (7.24 bar)	
PSR-2-30	30 psi (2.07 bar)	110 psi (7.58 bar)	
PSR-2-35	35 psi (2.41 bar)	115 psi (7.93 bar)	
PSR-2-40	40 psi (2.76 bar)	120 psi (8.27 bar)	
PSR-2-50	50 psi (3.45 bar)	130 psi (8.96 bar)	

Without Pressure Regulators

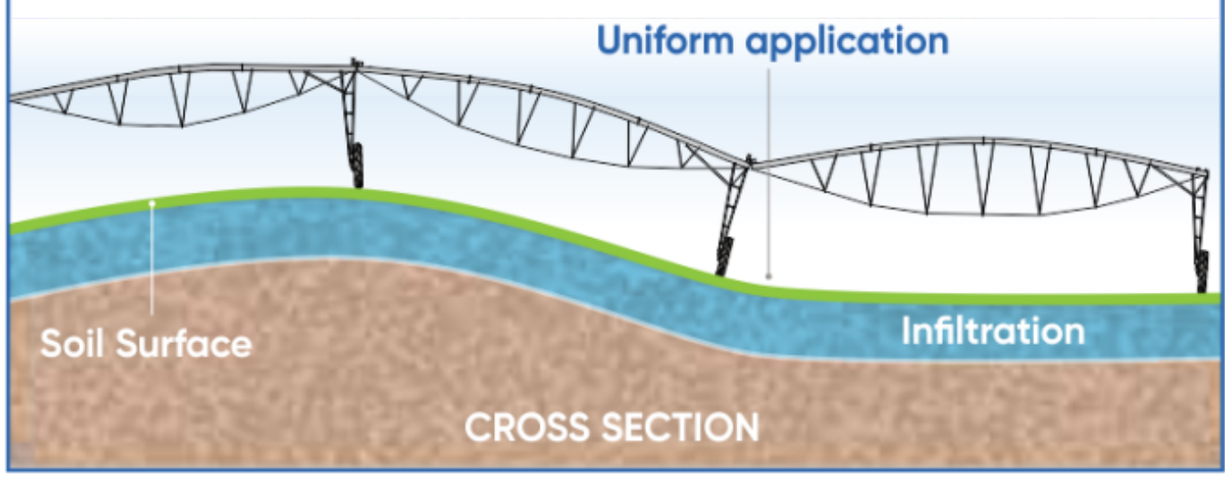
Many irrigation systems have the potential to experience elevation and pressure changes, which cause flow fluctuations on unregulated systems.



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, 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.

With Pressure Regulators

Distribution remains uniform even as elevation changes.



PSL / PMR | PRESSURE REGULATORS

PRL DESIGN CRITERIA	Preset Operating Pressure	Maximum Inlet Pressure	Flow Range
PRL06	6 psi (0.41 bar)	80 psi (5.51 bar)	0.5 - 5 gpm 114 - 1136 L/hr
PRL10	10 psi (0.69 bar)	90 psi (6.20 bar)	0.5 - 8 gpm 114 - 1817 L/hr
PRL12	12 psi (0.83 bar)	90 psi (6.20 bar)	
PRL15	15 psi (1.03 bar)	95 psi (6.55 bar)	
PRL20	20 psi (1.38 bar)	100 psi (6.89 bar)	
PRL25	25 psi (1.72bar)	105 psi (7.24 bar)	
PRL30	30 psi (2.07 bar)	110 psi (7.58 bar)	
PRL35	35 psi (2.41 bar)	115 psi (7.93 bar)	
PRL40	40 psi (2.76 bar)	120 psi (8.27 bar)	

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, 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.

PRL
Low Flow

FEATURES

- Flows: 0.5 to 8.0 gpm (114 to 1817 L/hr) depending on model
- Each regulator maintains a constant preset outlet pressure based on its flow/inlet pressure.
- Outlet pressures: 6 to 40 psi (0.41 to 2.76 bar)
- Tamper-proof housing
- Very low hysteresis and friction losses
- 100% pressure tested, to ensure quality and performance

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PMR
Medium Flow

- Flows: 2.0 to 20 gpm (454 to 4542 L/hr) depending on model
- Each regulator maintains a constant preset outlet pressure based on its flow/inlet pressure.
- Outlet pressures: 6 to 60 psi (0.41 to 4.14 bar)
- Very low hysteresis and friction losses
- 100% pressure tested, to ensure quality and performance

PMR-MF DESIGN CRITERIA	Preset Operating Pressure	Maximum Inlet Pressure	Flow Range
PRL06 MF	6 psi (0.41 bar)	80 psi (5.51 bar)	4 - 16 gpm 909 - 3634 L/hr
PRL10 MF	10 psi (0.69 bar)	90 psi (6.20 bar)	**2 - 20 gpm 454 - 4542 L/hr**
PRL12 MF	12 psi (0.83 bar)	90 psi (6.20 bar)	
PRL15 MF	15 psi (1.03 bar)	95 psi (6.55 bar)	
PRL20 MF	20 psi (1.38 bar)	100 psi (6.89 bar)	
PRL25 MF	25 psi (1.72bar)	105 psi (7.24 bar)	
PRL30 MF	30 psi (2.07 bar)	110 psi (7.58 bar)	
PRL35 MF	35 psi (2.41 bar)	115 psi (7.93 bar)	
PRL40 MF	40 psi (2.76 bar)	120 psi (8.27 bar)	
PRL50 MF	50 psi (3.45 bar)	130 psi (8.96 bar)	
PRL60 MF	60 psi (4.14 bar)	140 psi (9.65 bar)	

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, 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.

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COUNT ON IT