



Horticultural Products Catalog



VOLUME 1



The Intelligent Use of Water.™

With roots firmly established in Agriculture, Rain Bird now applies its cutting edge, industry leading irrigation expertise to the realm of Horticulture. Rain Bird's focus is partnering with you, the irrigation professional, through design and manufacturing that will make your job easier and more profitable. From pump stations to dripline, there are solutions available to meet every grower's needs. Our products will automate your growing process, maximize your labor, and efficiently deliver water and nutrients to exactly where it's needed, during all stages of the plant's life.

As always, Rain Bird backs our products with top of the line customer service and warranties. We aren't just a product solution, we are your growing partner.



Water efficient irrigation technology for every landscape application

When you design and install Rain Bird complete irrigation solutions, you can be confident knowing that the system will perform better and last longer for many years to come. No matter what your irrigation needs are, Rain Bird has a solution that will help save water for every application in your next green project.



Spray Nozzles

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Central Controls

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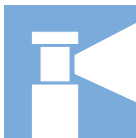
Impact Sprinklers

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Low Volume Irrigation

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Together, we can make a difference

At Rain Bird, we believe that saving water is a responsibility that we all share. Our industry can have a tremendous impact on water conservation by installing more efficient systems and teaching customers how to use them correctly. By working together, we can really make a difference.

Rain Bird's 25 Ways offers practical, effective tips and advice drawn from the company's 80-plus years of experience in the irrigation industry. Available at 25ways.rainbird.com, these resources can be used anywhere and by anyone who wants to improve their watering efficiency.

Water Saving Tips from Rain Bird

Visit 25ways.rainbird.com for a complete list of water saving tips and techniques in each of the following categories.



Improve Your Existing System



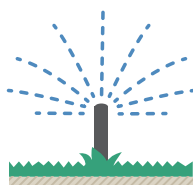
Water Only At The Right Times



Don't Overwater



Use The Right Products



Keep Your Water In Place



Update Your Landscape



Spray Nozzles

Major Products										
	Rotary Nozzles	Variable ARC Sprays			Fixed ARC Sprays			Micro Irrigation		Adapters
Primary Applications	R-VAN Best	HE-VAN Best	VAN Standard	U-Series Best	SQ Nozzles Standard	MPR Standard	Micro-Quick™ Sprays	Micro Bird® Spinners	PA-85 PA-85-NP PA-85-PRS	
Turfgrass	●	●	●	●	●	●			●	
Slopes	●								●	
Narrow Strips					●	●	●	●	●	
Small Areas	●	●			●		●	●	●	
Landscape Beds	●	●	●	●	●	●	●	●	●	
High Efficiency	●	●		●					●	
High Winds	●	●		●				●	●	
High Pressure	●	●							●	



Water Saving Tips

- Rotary Nozzles have efficient water distribution through rotating streams that uniformly deliver water at a low precipitation rate, significantly reducing runoff and erosion.
- HE-VAN nozzles are fully adjustable from 0 to 360 degrees with high uniformity and efficiency. HE-VAN nozzles can reduce the number of variations that need to be carried to cover just about any field challenge. Available in radii from 8' to 15', this high efficient nozzle has you covered.
- U-Series Nozzles are dual-orifice nozzles that have better, more uniform water distribution. Water flowing from both orifices combines to form a continuous water stream and eliminates gaps for more uniform coverage throughout the entire watering area.



What is a High-Efficiency Nozzle?

Typical nozzles – Un-Even Watering

With typical nozzles, part of the plants may not have enough water and other parts may be over-watered. A large portion of water may be lost to evaporation / misting, and over-spray.

High-efficiency nozzles – Even Watering

High-efficiency nozzles provide better coverage. Better coverage means shorter zone run-times while keeping plants healthy. Shorter run-times means you will save up to 25%+ water vs. typical nozzles. Rain Bird's high-efficiency nozzles are also engineered to produce large water droplets to reduce wind drift.

Standard or Low Precipitation Rate?

Low Precipitation Rate Nozzles

Low precipitation rate nozzles are best used in sloped or compacted soil areas to minimize run-off. The low watering rate makes run-times longer.

Standard Precipitation Rate Nozzles

Standard precipitation rate nozzles are best used for shorter distance irrigation.

Low Precipitation Rate

Standard Precipitation Rate

High-Efficiency Rotary Nozzles

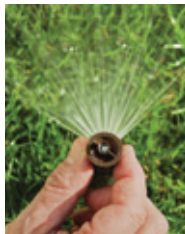


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Adjustable Arc (45° - 270°)

Full Circle (360°)

High-Efficiency Nozzles



HE-VAN



U-Series

Adjustable Arc (0° - 360°)

Fixed Arc

Standard Nozzles



VAN



MPR and SQ

Adjustable Arc

Fixed Arc

R-VAN Nozzles



High Efficiency, Multi-Stream

Rain Bird® R-VAN Adjustable Rotary Nozzles save more water, are easier to use, and are lower priced compared to leading rotating nozzles. R-VANs thick streams and large water droplets cut through the wind to deliver water where you want it. R-VANs are easier to use thanks to its hand-adjustable arc and radius.

Features

- Matched precipitation across radius, arcs, and pattern types
- Low precipitation rate reduces run-off and erosion
- Adjust arc and radius without tools
- A pull-up to flush feature clears the nozzle of dirt and debris
- Maintains efficient performance at high operating pressures without misting or fogging
- Compatible with all models of Rain Bird spray bodies, risers and adapters
- Installing with Rain Bird 5000 MPR Series Rotors allows for matched precipitation from 8' to 35' (2.4m to 10.7m)
- Three year trade warranty

Operating Specifications

- Pressure Range: 30 to 55 psi (2.1 to 3.8 bar)
- Recommended Operating Pressure: 45 psi (3.1 bar)
- Spacing: 8' to 24' (2.4 to 7.3m)
- Adjustments: Arc and radius should be adjusted while water is running

Models

8' - 14' (2.4 to 4.6m)

- R-VAN14: 45° - 270° Adjustable Arc
- R-VAN14-360: 360° Full Circle

13' - 18' (4.0 to 5.5m)

- R-VAN18: 45° - 270° Adjustable Arc
- R-VAN18-360: 360° Full Circle

17' - 24' (5.2 to 7.3m)

- R-VAN24: 45° - 270° Adjustable Arc
- R-VAN24-360: 360° Full Circle

Strip Nozzles

- R-VAN-LCS: 5' x 15' (1.5 x 4.6m) Left Corner Strip
- R-VAN-RCS: 5' x 15' (1.5 x 4.6m) Right Corner Strip
- R-VAN-SST: 5' x 30' (1.5 x 9.1m) Side Strip

¹ Rain Bird recommends using 1800 P45 Spray Bodies to maintain optimum nozzle performance in higher pressure situations



R-VAN Nozzles

For Optimum Performance, Use
Rain Bird 1800 45 PSI Regulated or
RD1800 45 PSI Regulated Spray Bodies



How to Specify

R-VAN 18-360

Radius Range

8' - 14' (2.4 to 4.6m)

R-VAN14: 45° - 270°

R-VAN14-360: 360°

13' - 18' (4.0 to 5.5m)

R-VAN18: 45° - 270°

R-VAN18-360: 360°

17' - 24' (5.2 to 7.3m)

R-VAN24: 45° - 270°

R-VAN24-360: 360°

Strip Nozzles

R-VAN-LCS: 5' x 15' (1.5 x 4.6m)

R-VAN-RCS: 5' x 15' (1.5 x 4.6m)

R-VAN-SST: 5' x 30' (1.5 x 9.1m)

Model

R-VAN Adjustable Rotary Nozzle

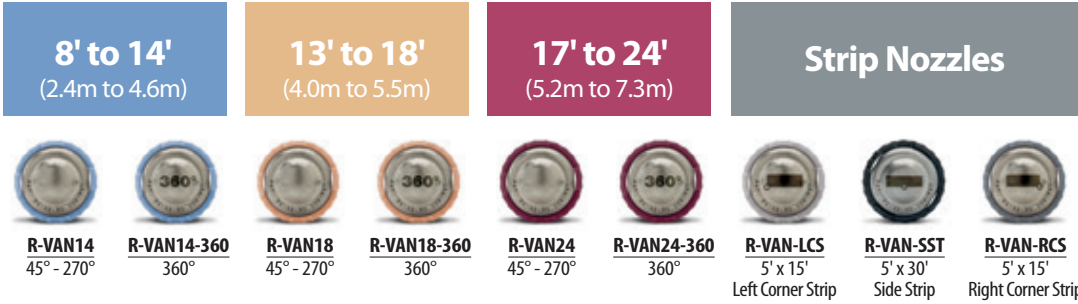


R-VAN Nozzles meet the requirements of the ASABE/ICC 802-2014 standard





The average DU(LQ) of the applicable products exceed 0.65 distribution uniformity.





Product	Type	Radius	DU(LQ)
R-VAN	Multi-stream	8 - 24 ft.	> 0.70

To view the complete document of compliance for Rain Bird products that have been tested to meet the requirements of the ASABE/ICC 802-2014 standard and the California MWELQ go to: www.rainbird.com/agency/california/MWELQ.htm





Adjustable Arc Nozzles (45° to 270°)

R-VAN14 8' - 14'					
Nozzle	Pressure psi	Radius ft.	Flow gpm	Precip In/h	Precip In/h
270° 	30	13	0.84	0.64	0.76
	35	13	0.87	0.66	0.74
	40	14	0.92	0.60	0.71
	45	14	0.94	0.62	0.70
	50	15	1.11	0.63	0.73
210° 	30	13	0.65	0.64	0.76
	35	13	0.68	0.66	0.74
	40	14	0.72	0.60	0.71
	45	14	0.73	0.62	0.70
	50	15	0.86	0.63	0.73
180° 	30	13	0.56	0.64	0.76
	35	13	0.58	0.66	0.74
	40	14	0.61	0.60	0.71
	45	14	0.63	0.62	0.70
	50	15	0.74	0.63	0.73
90° 	30	13	0.28	0.64	0.76
	35	13	0.29	0.66	0.74
	40	14	0.31	0.62	0.71
	45	14	0.32	0.61	0.70
	50	15	0.37	0.63	0.73
55	15	0.39	0.67	0.77	

R-VAN14 2.4 to 4.6m						METRIC
Nozzle	Pressure bar	Radius m	Flow l/m	Precip mm/h	Precip mm/h	
270° 	2.1	4.0	3.18	16	19	
	2.4	4.0	3.29	17	19	
	2.8	4.3	3.48	15	18	
	3.1	4.3	3.56	16	18	
	3.4	4.6	4.20	16	19	
210° 	2.1	4.0	2.46	16	19	
	2.4	4.0	2.57	17	19	
	2.8	4.3	2.73	15	18	
	3.1	4.3	2.76	16	18	
	3.4	4.6	3.26	16	19	
180° 	2.1	4.0	2.12	16	19	
	2.4	4.0	2.20	17	19	
	2.8	4.3	2.31	15	18	
	3.1	4.3	2.38	16	18	
	3.4	4.6	2.80	16	19	
90° 	2.1	4.0	1.06	16	19	
	2.4	4.0	1.10	17	19	
	2.8	4.3	1.17	16	18	
	3.1	4.3	1.21	15	18	
	3.4	4.6	1.40	16	19	
3.8	4.6	1.48	17	20		

Full Circle Nozzles (360°)





R-VAN14 8' - 14'					
Nozzle	Pressure psi	Radius ft.	Flow gpm	Precip In/h	Precip In/h
360° 	30	13	1.10	0.63	0.72
	35	13	1.12	0.64	0.74
	40	14	1.22	0.60	0.69
	45	14	1.27	0.62	0.72
	50	15	1.41	0.60	0.70
	55	15	1.45	0.62	0.72





R-VAN14-360 2.4 to 4.6m						METRIC
Nozzle	Pressure bar	Radius m	Flow l/m	Precip mm/h	Precip mm/h	
360° 	2.1	4.0	4.16	16	18	
	2.4	4.0	4.24	16	19	
	2.8	4.3	4.62	15	18	
	3.1	4.3	4.81	16	18	
	3.4	4.6	5.34	15	18	
	3.8	4.6	5.49	16	18	

Note: All R-VAN nozzles tested on 4" (10.2 cm) pop-ups
 ■ Square spacing based on 50% diameter of throw
 ▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions
 R-VAN24 and R-VAN24-360: "Do not reduce the radius below 17' (5.2 m)
 R-VAN18 and R-VAN18-360: "Do not reduce the radius below 13' (4.0 m)
 R-VAN14 and R-VAN18-360: "Do not reduce the radius below 8' (2.4 m)


Adjustable Arc Nozzles (45° to 270°)


R-VAN18		13' - 18'			
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
270° 	30	16	1.26	0.65	0.75
	35	16	1.35	0.64	0.74
	40	17	1.42	0.63	0.73
	45	17	1.51	0.64	0.73
	50	18	1.57	0.60	0.69
55	18	1.62	0.60	0.69	
210° 	30	16	0.98	0.63	0.73
	35	16	1.05	0.68	0.78
	40	17	1.10	0.63	0.73
	45	17	1.17	0.64	0.77
	50	18	1.22	0.62	0.72
55	18	1.26	0.64	0.74	
180° 	30	16	0.85	0.65	0.75
	35	16	0.91	0.64	0.74
	40	17	0.98	0.63	0.73
	45	17	1.01	0.64	0.73
	50	18	1.07	0.60	0.69
55	18	1.09	0.60	0.69	
90° 	30	16	0.42	0.65	0.75
	35	16	0.47	0.64	0.74
	40	17	0.50	0.63	0.73
	45	17	0.50	0.64	0.73
	50	18	0.54	0.60	0.69
55	18	0.58	0.60	0.69	

R-VAN18		4.0 to 5.5m				METRIC
Nozzle	Pressure bar	Radius m	Flow l/m	■ Precip mm/h	▲ Precip mm/h	
270° 	2.1	4.9	4.77	17	19	
	2.4	4.9	5.11	16	19	
	2.8	5.2	5.38	16	19	
	3.1	5.2	5.72	16	19	
	3.4	5.5	5.94	15	18	
3.8	5.5	6.13	0	18		
210° 	2.1	4.9	3.71	16	19	
	2.4	4.9	3.97	17	20	
	2.8	5.2	4.16	16	19	
	3.1	5.2	4.43	16	20	
	3.4	5.5	4.62	16	18	
3.8	5.5	4.77	16	19		
180° 	2.1	4.9	3.22	17	19	
	2.4	4.9	3.44	16	19	
	2.8	5.2	3.71	16	19	
	3.1	5.2	3.82	16	19	
	3.4	5.5	4.05	15	18	
3.8	5.5	4.13	15	18		
90° 	2.1	4.9	1.59	17	19	
	2.4	4.9	1.78	16	19	
	2.8	5.2	1.89	16	19	
	3.1	5.2	1.89	16	19	
	3.4	5.5	2.04	15	18	
3.8	5.5	2.20	15	18		

Spray Nozzles

Full Circle Nozzles (360°)

R-VAN18		13' - 18'			
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
360° 	30	16	1.65	0.62	0.72
	35	16	1.67	0.63	0.73
	40	17	1.80	0.60	0.69
	45	17	1.85	0.62	0.71
	50	18	2.05	0.61	0.70
55	18	2.11	0.63	0.72	

R-VAN18		4.0 to 5.5m				METRIC
Nozzle	Pressure bar	Radius m	Flow l/m	■ Precip mm/h	▲ Precip mm/h	
360° 	2.1	4.9	6.25	16	18	
	2.4	4.9	6.32	16	19	
	2.8	5.2	6.81	15	18	
	3.1	5.2	7.00	16	18	
	3.4	5.5	7.76	15	18	
3.8	5.5	7.99	16	18		

Note: All R-VAN nozzles tested on 4" (10.2 cm) pop-ups

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions

R-VAN24 and R-VAN24-360: "Do not reduce the radius below 17' (5,2 m)

R-VAN18 and R-VAN18-360: "Do not reduce the radius below 13' (4,0 m)

R-VAN14 and R-VAN18-360: "Do not reduce the radius below 8' (2,4 m)

Did you know?




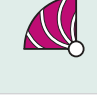
You can use R-VAN Nozzles and 5000 Series MPR Rotors on the same zone!




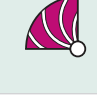
- Matched precipitation rate (MPR) from 8' to 35'
- Superior coverage – >0.70 DU[LQ]
- Thick, wind-resistant streams – near to far




Adjustable Arc Nozzles (45° to 270°)


Spray Nozzles

R-VAN24		17' - 24'				
Nozzle	Pressure psi	Radius ft.	Flow gpm	Precip In/h	Precip In/h	
270° 	30	19	1.80	0.64	0.74	
	35	20	1.95	0.63	0.72	
	40	22	2.31	0.61	0.71	
	45	23	2.52	0.61	0.71	
	50	24	2.82	0.63	0.73	
210° 	30	19	1.40	0.64	0.74	
	35	20	1.52	0.63	0.72	
	40	22	1.80	0.61	0.71	
	45	23	1.96	0.61	0.71	
	50	24	2.19	0.63	0.73	
180° 	30	19	1.20	0.64	0.74	
	35	20	1.30	0.63	0.72	
	40	22	1.54	0.61	0.71	
	45	23	1.68	0.61	0.71	
	50	24	1.88	0.63	0.73	
90° 	30	19	0.60	0.64	0.74	
	35	20	0.65	0.63	0.72	
	40	22	0.77	0.61	0.71	
	45	23	0.84	0.61	0.71	
	50	24	0.94	0.63	0.73	

R-VAN24		5.2 to 7.3m				METRIC
Nozzle	Pressure bar	Radius m	Flow l/m	Precip mm/h	Precip mm/h	
270° 	2.1	5.8	6.81	16	19	
	2.4	6.1	7.38	16	18	
	2.8	6.7	8.74	15	18	
	3.1	7.0	9.54	15	18	
	3.4	7.3	10.67	16	19	
210° 	2.1	5.8	5.30	16	19	
	2.4	6.1	5.75	16	18	
	2.8	6.7	6.81	15	18	
	3.1	7.0	7.42	15	18	
	3.4	7.3	8.29	16	19	
180° 	2.1	5.8	4.54	16	19	
	2.4	6.1	4.92	16	18	
	2.8	6.7	5.83	15	18	
	3.1	7.0	6.36	15	18	
	3.4	7.3	7.12	16	19	
90° 	2.1	5.8	2.27	16	19	
	2.4	6.1	2.46	16	18	
	2.8	6.7	2.91	15	18	
	3.1	7.0	3.18	15	18	
	3.4	7.3	3.56	16	19	

Full Circle Nozzles (360°)

R-VAN24		17' - 24'				
Nozzle	Pressure psi	Radius ft.	Flow gpm	Precip In/h	Precip In/h	
360° 	30	19	2.35	0.63	0.72	
	35	20	2.52	0.61	0.70	
	40	22	3.13	0.62	0.72	
	45	23	3.48	0.63	0.73	
	50	24	3.61	0.60	0.70	

R-VAN24		5.2 to 7.3m				METRIC
Nozzle	Pressure bar	Radius m	Flow l/m	Precip mm/h	Precip mm/h	
360° 	2.1	5.8	8.90	16	18	
	2.4	6.1	9.54	15	18	
	2.8	6.7	11.85	16	18	
	3.1	7.0	13.17	16	19	
	3.4	7.3	13.67	15	18	

Note: All R-VAN nozzles tested on 4" (10.2 cm) pop-ups
 ■ Square spacing based on 50% diameter of throw
 ▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions
 R-VAN24 and R-VAN24-360: "Do not reduce the radius below 17" (5.2 m)
 R-VAN18 and R-VAN18-360: "Do not reduce the radius below 13" (4.0 m)
 R-VAN14 and R-VAN14-360: "Do not reduce the radius below 8" (2.4 m)


R-VAN Requires Half the Models to Cover 45° to 360°





Offering Valuable Bottom-Line Savings


- Shorter zone run times save water and energy
- Lower precipitation rates reduce wasteful runoff and costly erosion
- Fewer nozzles needed to cover any area, reducing your inventory costs


Strip Nozzles (Left Corner, Side, Right Corner)


R-VAN-LCS 5' x 15'					
Nozzle	Pressure psi	Size ft.	Flow gpm	Precip In/h	Precip In/h
Left	30	4'x14'	0.18	0.62	0.62
Corner	35	5'x15'	0.22	0.56	0.56
Strip	40	5'x15'	0.23	0.59	0.59
	45	5'x15'	0.24	0.62	0.62
	50	5'x15'	0.25	0.64	0.64
	55	6'x16'	0.28	0.56	0.56

R-VAN-LCS 1.5 x 4.6m METRIC					
Nozzle	Pressure bar	Size m	Flow l/m	Precip mm/h	Precip mm/h
Left	2.1	1.2x4.3	0.68	16	16
Corner	2.4	1.5x4.6	0.83	14	14
Strip	2.8	1.5x4.6	0.87	15	15
	3.1	1.5x4.6	0.91	16	16
	3.4	1.5x4.6	0.95	16	16
	3.8	1.8x4.9	1.06	14	14

R-VAN-SST 5' x 30'					
Nozzle	Pressure psi	Size ft.	Flow gpm	Precip In/h	Precip In/h
Side	30	4'x28'	0.36	0.62	0.62
Strip	35	5'x30'	0.44	0.56	0.56
	40	5'x30'	0.46	0.59	0.59
	45	5'x30'	0.48	0.62	0.62
	50	5'x30'	0.50	0.64	0.64
	55	6'x32'	0.56	0.56	0.56

R-VAN-SST 1.5 x 9.1m METRIC					
Nozzle	Pressure bar	Size m	Flow l/m	Precip mm/h	Precip mm/h
Left	2.1	1.2x8.5	1.36	16	16
Corner	2.4	1.5x9.1	1.67	14	14
Strip	2.8	1.5x9.1	1.74	15	15
	3.1	1.5x9.1	1.82	16	16
	3.4	1.5x9.1	1.89	16	16
	3.8	1.8x9.8	2.12	14	14

R-VAN-RCS 5' x 15'					
Nozzle	Pressure psi	Size ft.	Flow gpm	Precip In/h	Precip In/h
Right	30	4'x14'	0.18	0.62	0.62
Corner	35	5'x15'	0.22	0.56	0.56
Strip	40	5'x15'	0.23	0.59	0.59
	45	5'x15'	0.24	0.62	0.62
	50	5'x15'	0.25	0.64	0.64
	55	6'x16'	0.28	0.56	0.56

R-VAN-RCS 1.5 x 4.6m METRIC					
Nozzle	Pressure bar	Size m	Flow l/m	Precip mm/h	Precip mm/h
Left	2.1	1.2x4.3	0.68	16	16
Corner	2.4	1.5x4.6	0.83	14	14
Strip	2.8	1.5x4.6	0.87	15	15
	3.1	1.5x4.6	0.91	16	16
	3.4	1.5x4.6	0.95	16	16
	3.8	1.8x4.9	1.06	14	14

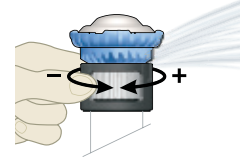
Note: All R-VAN nozzles tested on 4" (10.2 cm) pop-ups
Performance data taken in zero wind conditions

— Straight-line spacing based on 50% overlap of throw for LCS, SST, and RCS
▲ Triangular spacing based on 50% overlap of throw for LCS, SST, and RCS

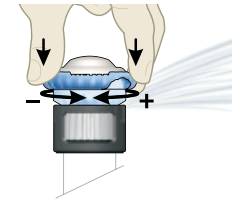
Easy Adjustments

Adjustable Arc Nozzles
R-VAN14, R-VAN18, R-VAN24

RADIUS ADJUSTMENT

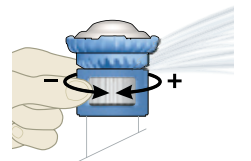


ARC ADJUSTMENT



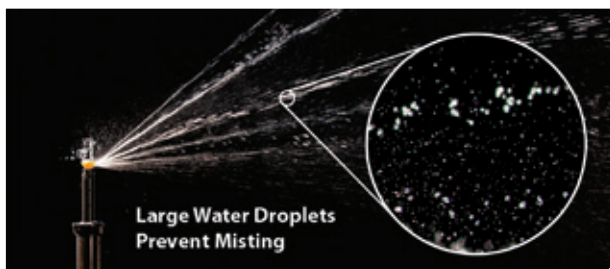
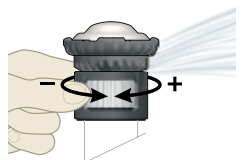
Full Circle Nozzles
R-VAN14-360, R-VAN18-360, RVAN24-360

RADIUS ADJUSTMENT



Strip Nozzles
R-VAN-LCS, R-VAN-RCS, R-VAN-SST

SIZE ADJUSTMENT



Improving Watering Efficiencies Up to 30%

- Gentle, rotating streams create uniform coverage at lower precipitation rates
- Multi-stream technology optimizes absorption for healthier plants
- Larger droplets and thicker streams cut through wind and keep water in target zone

HE-VAN Series Nozzles

High-Efficiency Variable Arc Spray Nozzles

Features

- HE-VAN's even coverage allows you to shorten run times by up to 35%, saving you water and money. HE-VAN has more than a 40 percent even-coverage improvement over existing variable arc nozzles
- HE-VAN nozzles have a unique stream pattern, designed for superior coverage and wind resistance. Low-trajectory spray and large water droplets prevent misting and airborne evaporation so the right amount of water is delivered to the right place. Gentle close-in watering eliminates dry-spots around the spray head
- HE-VAN nozzles throw to the exact specified radius, delivering the cleanest edge of any VAN on the market today
- Reduced zone run times, compared to competitive nozzles, help stay within tight watering windows, conserve water, and save money
- With full adjustability from 0° to 360°, you'll be able to efficiently water nurseries of all shapes, while saving time and stocking fewer nozzles
- Matched precipitation rates allow you to install Rain Bird HE-VAN, MPR and U-Series nozzles on the same zone
- HE-VAN nozzles have a tactile click to keep the arc setting from drifting over time
- Three year trade warranty

Operating Range

- Spacing: 6 to 15 feet (1.8 to 4.6m) ¹
- Pressure: 15 to 30 psi (1.0 to 2.1 bar)
- Optimum pressure: 30 psi (2.1 bar) ²

Models

- HE-VAN-08: 6 to 8 feet (1.8 to 2.4 m)
- HE-VAN-10: 8 to 10 feet (2.4 to 3.0 m)
- HE-VAN-12: 9 to 12 feet (2.7 to 3.7 m)
- HE-VAN-15: 12 to 15 feet (3.7 to 4.6 m)

¹ These ranges are based on proper pressure at nozzle

² Rain Bird recommends using 1800/RD1800 PRS Spray Bodies to maintain optimum nozzle performance in higher pressure situations

HE-VAN Nozzles meet the requirements of the ASABE/ICC 802-2014 standard

The average DU(LQ) of the applicable products exceed 0.65 distribution uniformity.

Product	Type	Radius	DU(LQ)
HE-VAN	Spray, Variable Arc	6 - 15 ft.	> 0.70

To view the complete document of compliance for Rain Bird products that have been tested to meet the requirements of the ASABE/ICC 802-2014 standard and the California MWELD go to: www.rainbird.com/agency/california/MWELD.htm



Available in popular 8', 10', 12' and 15' models

Stainless steel adjustment screw to adjust flow and radius, up to a 25% reduction in radius

Fits on all Rain Bird® 1800® Series Spray Heads, UNI-Spray™ Series Spray Heads and Rain Bird Shrub Adapters



How to Specify

HE-VAN-15

Radius Range





- 8: 6 to 8 feet (1.8 to 2.4 m)
- 10: 8 to 10 feet (2.4 to 3.0 m)
- 12: 9 to 12 feet (2.7 to 3.7 m)
- 15: 12 to 15 feet (3.7 to 4.6 m)





Feature





VAN: Variable Arc





Model

High Efficiency Nozzle

8 Series HE-VAN					
24° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	5	0.83	3.19	3.68
	20	6	0.96	2.56	2.95
	25	7	1.07	2.10	2.42
	30	8	1.17	1.76	2.03
	15	5	0.62	3.19	3.68
	20	6	0.72	2.56	2.95
	25	7	0.80	2.10	2.42
	30	8	0.88	1.76	2.03
	15	5	0.41	3.19	3.68
	20	6	0.48	2.56	2.95
	25	7	0.53	2.10	2.42
	30	8	0.59	1.76	2.03
	15	5	0.21	3.19	3.68
	20	6	0.24	2.56	2.95
	25	7	0.27	2.10	2.42
	30	8	0.29	1.76	2.03





8 Series HE-VAN						METRIC	
24° Trajectory							
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h	
	1.03	1.52	0.19	3.14	82	95	
	1.38	1.83	0.22	3.62	66	76	
	1.72	2.13	0.25	4.05	54	62	
	2.07	2.44	0.27	4.43	45	52	
	1.03	1.52	0.14	2.35	82	95	
	1.38	1.83	0.16	2.72	66	76	
	1.72	2.13	0.18	3.04	54	62	
	2.07	2.44	0.20	3.33	45	52	
	1.03	1.52	0.10	1.57	82	95	
	1.38	1.83	0.11	1.81	66	76	
	1.72	2.13	0.12	2.02	54	62	
	2.07	2.44	0.13	2.22	45	52	
	1.03	1.52	0.05	0.78	82	95	
	1.38	1.83	0.05	0.91	66	76	
	1.72	2.13	0.06	1.01	54	62	
	2.07	2.44	0.07	1.11	45	52	





10 Series HE-VAN					
27° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	7	1.26	2.48	2.86
	20	8	1.46	2.19	2.53
	25	9	1.63	1.94	2.24
	30	10	1.78	1.72	1.98
	15	7	0.95	2.48	2.86
	20	8	1.09	2.19	2.53
	25	9	1.22	1.94	2.24
	30	10	1.34	1.72	1.98
	15	7	0.63	2.48	2.86
	20	8	0.73	2.19	2.53
	25	9	0.81	1.94	2.24
	30	10	0.89	1.72	1.98
	15	7	0.32	2.48	2.86
	20	8	0.36	2.19	2.53
	25	9	0.41	1.94	2.24
	30	10	0.45	1.72	1.98





10 Series HE-VAN						METRIC	
27° Trajectory							
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h	
	1.03	2.13	0.29	4.78	64	74	
	1.38	2.44	0.34	5.52	56	65	
	1.72	2.74	0.37	6.17	50	57	
	2.07	3.05	0.41	6.76	44	51	
	1.03	2.13	0.22	3.59	64	74	
	1.38	2.44	0.25	4.14	56	65	
	1.72	2.74	0.28	4.63	50	57	
	2.07	3.05	0.31	5.07	44	51	
	1.03	2.13	0.15	2.39	64	74	
	1.38	2.44	0.17	2.76	56	65	
	1.72	2.74	0.19	3.09	50	57	
	2.07	3.05	0.21	3.38	44	51	
	1.03	2.13	0.07	1.20	64	74	
	1.38	2.44	0.08	1.38	56	65	
	1.72	2.74	0.09	1.54	50	57	
	2.07	3.05	0.10	1.69	44	51	





Note: All HE-VAN nozzles tested on 4" (10.2 cm) pop-ups
 ■ Square spacing based on 50% diameter of throw
 ▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions
Note: Radius reduction over 25% of the normal throw of the nozzle is not recommended

12 Series HE-VAN					
23° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	9	1.67	1.99	2.30
	20	10	1.93	1.86	2.15
	25	11	2.16	1.72	1.99
	30	12	2.37	1.58	1.83
	15	9	1.25	1.99	2.30
	20	10	1.45	1.86	2.15
	25	11	1.62	1.72	1.99
	30	12	1.77	1.58	1.83
	15	9	0.84	1.99	2.30
	20	10	0.97	1.86	2.15
	25	11	1.08	1.72	1.99
	30	12	1.18	1.58	1.83
	15	9	0.42	1.99	2.30
	20	10	0.48	1.86	2.15
	25	11	0.54	1.72	1.99
	30	12	0.59	1.58	1.83

12 Series HE-VAN						METRIC	
23° Trajectory							
Nozzle	Pressure bar	Radius m	Flow m ³ /h	Flow l/m	■ Precip mm/h	▲ Precip mm/h	
	1.0	2.7	0.38	6.33	50.5	58.3	
	1.4	3.0	0.44	7.31	47.3	54.6	
	1.7	3.4	0.49	8.18	43.7	50.4	
	2.1	3.7	0.54	8.96	40.2	46.4	
	1.0	2.7	0.28	4.75	50.5	58.3	
	1.4	3.0	0.33	5.48	47.3	54.6	
	1.7	3.4	0.37	6.16	43.7	50.4	
	2.1	3.7	0.40	6.72	40.2	46.4	
	1.0	2.7	0.19	3.17	50.5	58.3	
	1.4	3.0	0.22	3.66	47.3	54.6	
	1.7	3.4	0.25	4.09	43.7	50.4	
	2.1	3.7	0.27	4.48	40.2	46.4	
	1.0	2.7	0.09	1.58	50.5	58.3	
	1.4	3.0	0.11	1.83	47.3	54.6	
	1.7	3.4	0.12	2.04	43.7	50.4	
	2.1	3.7	0.13	2.24	40.2	46.4	

15 Series HE-VAN					
25° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	11	2.62	2.08	2.40
	20	12	3.02	2.02	2.33
	25	14	3.38	1.66	1.92
	30	15	3.70	1.58	1.83
	15	11	1.96	2.08	2.40
	20	12	2.27	2.02	2.33
	25	14	2.53	1.66	1.92
	30	15	2.78	1.58	1.83
	15	11	1.31	2.08	2.40
	20	12	1.51	2.02	2.33
	25	14	1.69	1.66	1.92
	30	15	1.85	1.58	1.83
	15	11	0.65	2.08	2.40
	20	12	0.76	2.02	2.33
	25	14	0.84	1.66	1.92
	30	15	0.93	1.58	1.83

15 Series HE-VAN						METRIC	
25° Trajectory							
Nozzle	Pressure bar	Radius m	Flow m ³ /h	Flow l/m	■ Precip mm/h	▲ Precip mm/h	
	1.0	3.4	0.59	9.91	52.9	61.1	
	1.4	3.7	0.69	11.44	51.3	59.3	
	1.7	4.3	0.77	12.79	42.2	48.7	
	2.1	4.6	0.84	14.01	40.2	46.5	
	1.0	3.4	0.45	7.43	52.9	61.1	
	1.4	3.7	0.51	8.58	51.3	59.3	
	1.7	4.3	0.58	9.59	42.2	48.7	
	2.1	4.6	0.63	10.51	40.2	46.5	
	1.0	3.4	0.30	4.95	52.9	61.1	
	1.4	3.7	0.34	5.72	51.3	59.3	
	1.7	4.3	0.38	6.39	42.2	48.7	
	2.1	4.6	0.42	7.00	40.2	46.5	
	1.0	3.4	0.15	2.48	52.9	61.1	
	1.4	3.7	0.17	2.86	51.3	59.3	
	1.7	4.3	0.19	3.20	42.2	48.7	
	2.1	4.6	0.21	3.50	40.2	46.5	

Note: All HE-VAN nozzles tested on 4" (10.2 cm) pop-ups
 ■ Square spacing based on 50% diameter of throw
 ▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions
Note: Radius reduction over 25% of the normal throw of the nozzle is not recommended

U-Series Nozzles

Dual orifice spray nozzles that use 30% less water¹

Features

- Additional orifice for close-in watering minimizes brown spots around the spray head and eliminates gaps in coverage so the entire watering area is more uniformly covered
- Superior coverage for efficient watering. Use up to 30% less water
- Matched precipitation rate with Rain Bird HE-VAN and MPR nozzles
- Five year trade warranty

Operating Range

- Spacing: 5 to 15 feet (1.7 to 4.6 m)²
- Pressure: 15 to 30 psi (1.0 to 2.1 bar)
- Optimum pressure: 30 psi (2.1 bar)³

Models

- U-8 Series: 8-foot Quarter, Half, Full nozzles
- U-10 Series: 10-foot Quarter, Half, Full nozzles
- U-12 Series: 12-foot Quarter, Half, Full nozzles
- U-15 Series: 15-foot Quarter, Half, Full nozzles

¹ When U-Series dual-orifice nozzles are installed instead of standard nozzles on every spray body in the zone. Results may vary based on site-specific conditions such as sprinkler spacing, wind, temperature, soil and grass type.

² These ranges are based on proper pressure at nozzle.

³ Rain Bird recommends using 1800/RD1800 PRS Spray Bodies to maintain optimum nozzle performance in higher pressure situations.



U-Series Nozzles



U-Series Nozzle with screen

U-Series Nozzles meet the requirements of the ASABE/ICC 802-2014 standard

The average DU(LQ) of the applicable products exceed 0.65 distribution uniformity.

Product	Type	Radius	DU(LQ)
U-Series	Spray, Fixed Arc	6 - 15 ft.	> 0.70

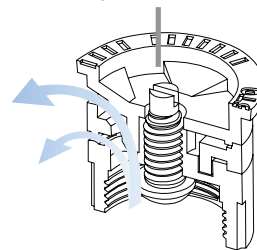
To view the complete document of compliance for Rain Bird products that have been tested to meet the requirements of the ASABE/ICC 802-2014 standard and the California MWELQ go to: www.rainbird.com/agency/california/MWELQ.htm



U-Series nozzles offer better, more uniform water distribution. Water flowing from both orifices combines to form a continuous water stream. Eliminates gaps for more uniform coverage throughout the entire watering area



Stainless steel adjustment screw to adjust flow and radius



Fits all Rain Bird Spray Bodies and Shrub Adapters




How to Specify




U12H




Radius Range
8: 5-8 feet (1.7-2.4 m)
10: 7-10 feet (2.1-3.1 m)
12: 9-12 feet (2.7-3.7 m)
15: 11-15 feet (3.4-4.6 m)




Pattern
F: Full
H: Half
Q: Quarter

Model
U-Series Nozzle

U8 Series					
10° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	5	0.74	2.85	3.29
	20	6	0.86	2.30	2.66
	25	7	0.96	1.89	2.18
	30	8	1.05	1.58	1.83
	15	5	0.37	2.85	3.29
	20	6	0.42	2.25	2.59
	25	7	0.47	1.85	2.13
	30	8	0.52	1.58	1.83
	15	5	0.18	2.77	3.20
	20	6	0.21	2.25	2.59
	25	7	0.24	1.89	2.18
	30	8	0.26	1.58	1.83

U8 Series						METRIC	
10° Trajectory						■	▲
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	Precip mm/h	Precip mm/h	
	1.0	1.7	0.16	2.8	72	84	
	1.5	2.1	0.20	3.4	58	68	
	2.0	2.4	0.23	3.9	48	55	
	2.1	2.4	0.24	4.0	40	46	
	1.0	1.7	0.08	1.4	72	84	
	1.5	2.1	0.10	1.7	57	66	
	2.0	2.4	0.12	1.9	47	54	
	2.1	2.4	0.12	2.0	40	46	
	1.0	1.7	0.04	0.7	70	81	
	1.5	2.1	0.05	0.8	57	66	
	2.0	2.4	0.06	1.0	48	55	
	2.1	2.4	0.06	1.0	40	46	

U10 Series					
12° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	7	1.16	2.07	2.39
	20	8	1.34	2.01	2.32
	25	9	1.50	1.62	1.87
	30	10	1.64	1.58	1.83
	15	7	0.58	2.07	2.39
	20	8	0.67	2.01	2.32
	25	9	0.75	1.62	1.87
	30	10	0.82	1.58	1.83
	15	7	0.29	2.07	2.39
	20	8	0.33	2.01	2.32
	25	9	0.37	1.62	1.87
	30	10	0.41	1.58	1.83

U10 Series						METRIC	
12° Trajectory						■	▲
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	Precip mm/h	Precip mm/h	
	1.0	2.1	0.26	4.4	52	60	
	1.5	2.6	0.30	5.3	47	55	
	2.0	3.0	0.34	6.1	41	48	
	2.1	3.1	0.37	6.2	40	46	
	1.0	2.1	0.13	2.2	52	60	
	1.5	2.6	0.15	2.6	47	55	
	2.0	3.0	0.17	3.1	41	48	
	2.1	3.1	0.19	3.1	40	46	
	1.0	2.1	0.07	1.1	52	60	
	1.5	2.6	0.08	1.3	47	55	
	2.0	3.0	0.08	1.5	41	48	
	2.1	3.1	0.09	1.6	40	46	




Note: All U-Series nozzles tested on 4" (10.2 cm) pop-ups




■ Square spacing based on 50% diameter of throw




▲ Triangular spacing based on 50% diameter of throw




Performance data taken in zero wind conditions

Radius refers to recommended product spacing. Actual radii along arc may vary

U12 Series					
23° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
 U-12F	15	9	1.80	2.14	2.47
	20	10	2.10	2.02	2.34
	25	11	2.40	1.91	2.21
	30	12	2.60	1.74	2.01
 U-12H	15	9	0.90	2.14	2.47
	20	10	1.05	2.02	2.34
	25	11	1.20	1.91	2.21
	30	12	1.30	1.74	2.01
 U-12Q	15	9	0.45	2.14	2.47
	20	10	0.53	2.02	2.34
	25	11	0.60	1.91	2.21
	30	12	0.65	1.74	2.01

U12 Series						METRIC	
23° Trajectory						■	▲
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	Precip mm/h	Precip mm/h	
 U-12F	1.0	2.7	0.40	6.8	55	63	
	1.5	3.2	0.48	8.3	47	54	
	2.0	3.6	0.59	9.7	46	53	
	2.1	3.7	0.60	9.8	44	51	
 U-12H	1.0	2.7	0.20	3.4	55	63	
	1.5	3.2	0.24	4.2	47	54	
	2.0	3.6	0.30	4.8	46	53	
	2.1	3.7	0.30	4.9	44	51	
 U-12Q	1.0	2.7	0.10	1.7	55	63	
	1.5	3.2	0.12	2.1	47	54	
	2.0	3.6	0.15	2.4	46	53	
	2.1	3.7	0.15	2.5	44	51	

U15 Series					
23° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
 U-15F	15	11	2.60	2.07	2.39
	20	12	3.00	2.01	2.32
	25	14	3.30	1.62	1.87
	30	15	3.70	1.58	1.83
 U-15H	15	11	1.30	2.07	2.39
	20	12	1.50	2.01	2.32
	25	14	1.65	1.62	1.87
	30	15	1.85	1.58	1.83
 U-15Q	15	11	0.65	2.07	2.39
	20	12	0.75	2.01	2.32
	25	14	0.82	1.62	1.87
	30	15	0.92	1.58	1.83

U15 Series						METRIC	
23° Trajectory						■	▲
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	Precip mm/h	Precip mm/h	
 U-15F	1.0	3.4	0.60	9.8	52	60	
	1.5	3.9	0.72	11.8	47	55	
	2.0	4.5	0.84	13.7	41	48	
	2.1	4.6	0.84	14.0	40	46	
 U-15H	1.0	3.4	0.30	4.9	52	60	
	1.5	3.9	0.36	5.9	47	55	
	2.0	4.5	0.42	6.9	41	48	
	2.1	4.6	0.42	7.0	40	46	
 U-15Q	1.0	3.4	0.15	2.5	52	60	
	1.5	3.9	0.18	2.9	47	55	
	2.0	4.5	0.21	3.4	41	48	
	2.1	4.6	0.21	3.5	40	46	

Note: All U-Series nozzles tested on 4" (10.2 cm) pop-ups

- Square spacing based on 50% diameter of throw
- ▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions

Radius refers to recommended product spacing. Actual radii along arc may vary

VAN Series Nozzles

Variable Arc Nozzles

Features

- A simple twist of the center collar with no special tools increases or decreases the arc setting making it ideal for watering odd shaped areas
- Quickly identify radius with Top Color-coded™ nozzles even when system is not operating
- 12, 15, and 18-VAN have matched precipitation rates with Rain Bird MPR Nozzles
- Three year trade warranty

Operating Range

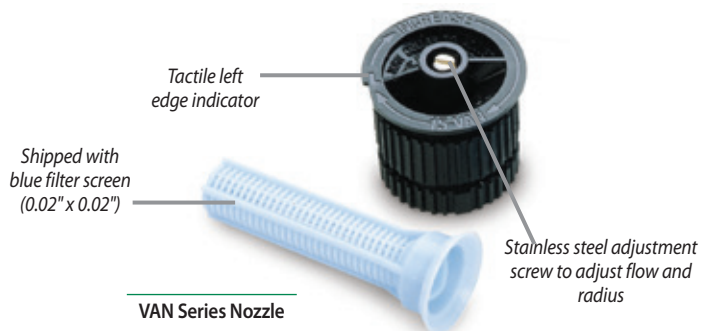
- Spacing: 3 to 18 feet (0.9 m to 5.5 m)¹
- Pressure: 15 to 30 psi (1.0 to 2.1 bar)
- Optimum pressure: 30 psi (2.1 bar)²

Models

- 4-VAN Series: 3 to 4 feet (0.9 to 1.2 m)
- 6-VAN Series: 4 to 6 feet (1.2 to 1.8 m)
- 8-VAN Series: 6 to 8 feet (1.8 to 2.4 m)
- 10-VAN Series: 7 to 10 feet (2.1 to 3.1 m)
- 12-VAN Series: 9 to 12 feet (2.7 to 3.7 m)
- 15-VAN Series: 11 to 15 feet (3.4 to 4.6 m)
- 18-VAN Series: 14 to 18 feet (4.3 to 5.5 m)

¹ These ranges are based on proper pressure at nozzle.

² Rain Bird recommends using 1800 PRS Spray Bodies to maintain optimum nozzle performance in higher pressure situations.



Easy to Adjust

How to Specify

8 VAN

Radius Range

- 4: 3-4 feet (0.9-1.2 m)
- 6: 4-6 feet (1.2-1.8 m)
- 8: 6-8 feet (1.8-2.4 m)
- 10: 7-10 feet (2.1-3.0 m)
- 12: 9-12 feet (2.7-3.7 m)
- 15: 11-15 feet (3.4-4.6 m)
- 18: 14-18 feet (4.3-5.5 m)

Nozzle Type





VAN: Variable Arc Nozzle





Did you know?





You can use HE-VAN nozzles to have better coverage and save water vs. VAN nozzles.





- Stronger streams and larger water droplets for increased wind resistance.
- Superior close-in watering and edges provide better coverage.
- Shortened run times saves up to 35% in water



4 Series VAN					
0° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	3	0.62	7.23	8.35
	20	3	0.70	8.17	9.43
	25	4	0.80	5.25	6.06
	30	4	0.88	5.78	6.67
	15	3	0.52	7.42	8.57
	20	3	0.58	8.27	9.55
	25	4	0.66	5.29	6.11
	30	4	0.73	5.86	6.77
	15	3	0.32	6.84	7.90
	20	3	0.37	7.91	9.13
	25	4	0.41	4.93	5.69
	30	4	0.45	5.41	6.25
	15	3	0.21	8.98	10.37
	20	3	0.24	10.27	11.86
	25	4	0.26	6.26	7.23
	30	4	0.29	6.98	8.06

4 Series VAN						METRIC
0° Trajectory						
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
	1.0	0.9	0.14	2.3	189	218
	1.5	1.0	0.17	2.8	183	215
	2.0	1.2	0.20	3.3	152	176
	2.1	1.2	0.20	3.3	152	176
	1.0	0.9	0.12	2.0	198	229
	1.5	1.0	0.14	2.3	187	216
	2.0	1.2	0.16	2.7	148	171
	2.1	1.2	0.17	2.8	157	181
	1.0	0.9	0.07	1.2	173	200
	1.5	1.0	0.09	1.5	180	208
	2.0	1.2	0.10	1.7	139	161
	2.1	1.2	0.10	1.7	139	161
	1.0	0.9	0.05	0.8	247	285
	1.5	1.0	0.06	0.9	240	277
	2.0	1.2	0.06	1.1	167	193
	2.1	1.2	0.07	1.1	194	224





6 Series VAN					
0° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	4	0.85	5.58	6.44
	20	5	0.96	4.03	4.65
	25	5	1.09	4.58	5.29
	30	6	1.20	3.50	4.04
	15	4	0.79	6.34	7.32
	20	5	0.88	4.52	5.22
	25	5	1.00	5.13	5.92
	30	6	1.10	3.92	4.53
	15	4	0.42	5.05	5.83
	20	5	0.49	3.77	4.35
	25	5	0.55	4.24	4.90
	30	6	0.60	3.21	3.71
	15	4	0.26	6.26	7.23
	20	5	0.30	4.62	5.33
	25	5	0.34	5.24	6.05
	30	6	0.37	3.96	4.57





6 Series VAN						METRIC
0° Trajectory						
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
	1.0	1.2	0.19	3.2	144	166
	1.5	1.5	0.23	3.8	112	129
	2.0	1.8	0.27	4.5	91	105
	2.1	1.8	0.27	4.5	91	105
	1.0	1.2	0.18	3.0	167	193
	1.5	1.5	0.21	3.5	124	143
	2.0	1.8	0.24	4.1	99	114
	2.1	1.8	0.25	4.2	103	119
	1.0	1.2	0.10	1.6	139	161
	1.5	1.5	0.11	1.9	98	113
	2.0	1.8	0.13	2.2	80	92
	2.1	1.8	0.14	2.3	86	99
	1.0	1.2	0.06	1.0	167	193
	1.5	1.5	0.07	1.2	124	143
	2.0	1.8	0.08	1.4	99	114
	2.1	1.8	0.08	1.4	99	114





Note: All VAN nozzles tested on 4" (10.2 cm) pop-ups
 ■ Square spacing based on 50% diameter of throw
 ▲ Triangular spacing based on 50% diameter of throw





Performance data taken in zero wind conditions
 Note: Radius reduction over 25% of the normal throw of the nozzle is not recommended

Spray Nozzles

8 Series VAN					
5° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	6	1.21	3.53	4.07
	20	7	1.36	2.91	3.36
	25	7	1.55	3.32	3.83
	30	8	1.70	2.79	3.22
	15	6	1.11	3.95	4.55
	20	7	1.24	3.24	3.74
	25	7	1.41	3.69	4.25
	30	8	1.55	3.10	3.58
	15	6	0.84	4.49	5.18
	20	7	0.97	3.81	4.40
	25	7	1.09	4.28	4.94
	30	8	1.19	3.58	4.13
	15	6	0.51	5.46	6.29
	20	7	0.59	4.64	5.35
	25	7	0.66	5.19	5.98
	30	8	0.72	4.33	5.00

8 Series VAN						METRIC	
5° Trajectory							
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h	
	1.0	1.8	0.27	4.6	91	105	
	1.5	2.1	0.32	5.4	79	91	
	2.0	2.3	0.38	6.3	78	90	
	2.1	2.4	0.39	6.4	74	86	
	1.0	1.8	0.25	4.2	103	119	
	1.5	2.1	0.30	4.9	91	105	
	2.0	2.3	0.34	5.8	86	99	
	2.1	2.4	0.35	5.9	81	94	
	1.0	1.8	0.19	3.2	117	135	
	1.5	2.1	0.23	3.8	104	120	
	2.0	2.3	0.26	4.4	98	113	
	2.1	2.4	0.27	4.5	94	109	
	1.0	1.8	0.12	1.9	148	171	
	1.5	2.1	0.14	2.3	127	147	
	2.0	2.3	0.16	2.7	121	140	
	2.1	2.4	0.16	2.7	111	128	

10 Series VAN					
10° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	7	1.93	3.80	4.39
	20	8	2.32	3.50	4.04
	25	9	2.52	3.00	3.46
	30	10	2.60	2.50	2.89
	15	7	1.45	3.80	4.39
	20	8	1.75	3.50	4.04
	25	9	1.89	3.00	3.46
	30	10	2.10	2.70	3.12
	15	7	0.97	3.80	4.39
	20	8	1.20	3.50	4.04
	25	9	1.26	3.00	3.46
	30	10	1.45	2.80	3.23
	15	7	0.48	3.80	4.39
	20	8	0.58	3.50	4.04
	25	9	0.63	3.00	3.46
	30	10	0.75	2.90	3.35

10 Series VAN						METRIC	
10° Trajectory							
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h	
	1.0	2.1	0.44	7.3	96	111	
	1.5	2.4	0.53	9.0	89	103	
	2.0	2.7	0.57	9.8	76	88	
	2.1	3.1	0.59	9.8	63	73	
	1.0	2.1	0.33	5.5	96	111	
	1.5	2.4	0.4	6.8	89	103	
	2.0	2.7	0.43	7.8	76	88	
	2.1	3.1	0.48	7.9	68	79	
	1.0	2.1	0.22	3.7	96	111	
	1.5	2.4	0.27	4.6	89	103	
	2.0	2.7	0.29	5.3	76	88	
	2.1	3.1	0.33	5.5	71	82	
	1.0	2.1	0.11	1.8	96	111	
	1.5	2.4	0.13	2.3	89	103	
	2.0	2.7	0.14	2.7	76	88	
	2.1	3.1	0.17	2.8	73	85	

Note: All VAN nozzles tested on 4" (10.2 cm) pop-ups
 ■ Square spacing based on 50% diameter of throw
 ▲ Triangular spacing based on 50% diameter of throw





Performance data taken in zero wind conditions
Note: Radius reduction over 25% of the normal throw of the nozzle is not recommended





Did you know?





You can use HE-VAN nozzles to have better coverage and save water vs. VAN nozzles.





- Stronger streams and larger water droplets for increased wind resistance.
- Superior close-in watering and edges provide better coverage.
- Shortened run times saves up to 35% in water



12 Series VAN					
15° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	9	1.56	1.86	2.14
	20	10	1.86	1.79	2.06
	25	11	2.12	1.68	1.95
	30	12	2.36	1.58	1.82
	15	9	1.17	1.86	2.14
	20	10	1.39	1.79	2.06
	25	11	1.59	1.68	1.94
	30	12	1.77	1.58	1.82
	15	9	0.78	1.86	2.14
	20	10	0.93	1.79	2.06
	25	11	1.06	1.68	1.95
	30	12	1.18	1.58	1.82
	15	9	0.39	1.86	2.14
	20	10	0.46	1.79	2.06
	25	11	0.53	1.68	1.95
	30	12	0.59	1.58	1.82





12 Series VAN						METRIC	
15° Trajectory						■	▲
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	Precip mm/h	Precip mm/h	
	1.0	2.7	0.35	5.80	48	55	
	1.5	3.2	0.44	7.37	43	50	
	2.0	3.6	0.52	8.75	41	47	
	2.1	3.7	0.54	9.02	40	46	
	1.0	2.7	0.26	4.35	48	55	
	1.5	3.2	0.33	5.53	43	50	
	2.0	3.6	0.39	6.56	41	47	
	2.1	3.7	0.41	6.76	40	46	
	1.0	2.7	0.17	2.90	48	55	
	1.5	3.2	0.22	3.69	43	50	
	2.0	3.6	0.26	4.37	41	47	
	2.1	3.7	0.27	4.51	40	46	
	1.0	2.7	0.09	1.45	48	55	
	1.5	3.2	0.11	1.84	43	50	
	2.0	3.6	0.13	2.19	41	47	
	2.1	3.7	0.14	2.25	40	46	





15 Series VAN					
23° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
	15	11	2.60	2.07	2.39
	20	12	3.00	2.01	2.32
	25	14	3.30	1.62	1.87
	30	15	3.70	1.58	1.83
	15	11	1.95	2.07	2.39
	20	12	2.25	2.01	2.32
	25	14	2.48	1.62	1.87
	30	15	2.78	1.58	1.83
	15	11	1.30	2.07	2.39
	20	12	1.50	2.01	2.32
	25	14	1.65	1.62	1.87
	30	15	1.85	1.58	1.83
	15	11	0.65	2.07	2.39
	20	12	0.75	2.01	2.32
	25	14	0.82	1.62	1.87
	30	15	0.92	1.58	1.83

15 Series VAN						METRIC	
23° Trajectory						■	▲
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	Precip mm/h	Precip mm/h	
	1.0	3.4	0.60	9.8	52	60	
	1.5	3.9	0.72	11.8	47	55	
	2.0	4.5	0.84	13.7	41	48	
	2.1	4.6	0.84	14.0	40	46	
	1.0	3.4	0.45	7.4	52	60	
	1.5	3.9	0.54	8.8	47	55	
	2.0	4.5	0.63	10.3	41	48	
	2.1	4.6	0.63	10.5	40	46	
	1.0	3.4	0.30	4.9	52	60	
	1.5	3.9	0.36	5.9	47	55	
	2.0	4.5	0.42	6.9	41	48	
	2.1	4.6	0.42	7.0	40	46	
	1.0	3.4	0.15	2.5	52	60	
	1.5	3.9	0.18	2.9	47	55	
	2.0	4.5	0.21	3.4	41	48	
	2.1	4.6	0.21	3.5	40	46	

Note: All VAN nozzles tested on 4" (10.2 cm) pop-ups
 ■ Square spacing based on 50% diameter of throw
 ▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions
Note: Radius reduction over 25% of the normal throw of the nozzle is not recommended

18 Series VAN					
26° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
360° Arc 	15	14	4.21	2.07	2.39
	20	15	4.70	2.01	2.32
	25	17	4.86	1.62	1.87
	30	18	5.32	1.58	1.83
270° Arc 	15	14	3.16	2.07	2.39
	20	15	3.52	2.01	2.32
	25	17	3.65	1.62	1.87
	30	18	3.99	1.58	1.83
180° Arc 	15	14	2.11	2.07	2.39
	20	15	2.35	2.01	2.32
	25	17	2.43	1.62	1.87
	30	18	2.66	1.58	1.83
90° Arc 	15	14	1.05	2.07	2.39
	20	15	1.17	2.01	2.32
	25	17	1.22	1.62	1.87
	30	18	1.33	1.58	1.83

18 Series VAN						METRIC
26° Trajectory						
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
360° Arc 	1.0	4.3	0.96	15.9	52	60
	1.5	4.8	1.07	18.0	47	55
	2.0	5.4	1.20	19.8	41	48
	2.1	5.5	1.21	20.1	40	46
270° Arc 	1.0	4.3	0.72	12.0	52	60
	1.5	4.8	0.80	13.5	47	55
	2.0	5.4	0.90	14.8	41	48
	2.1	5.5	0.91	15.1	40	46
180° Arc 	1.0	4.3	0.48	8.0	52	60
	1.5	4.8	0.54	9.0	47	55
	2.0	5.4	0.60	9.9	41	48
	2.1	5.5	0.61	10.1	40	46
90° Arc 	1.0	4.3	0.24	4.0	52	60
	1.5	4.8	0.27	4.5	47	55
	2.0	5.4	0.30	5.0	41	48
	2.1	5.5	0.30	5.0	40	46

Note: All VAN nozzles tested on 4" (10.2 cm) pop-ups
 ■ Square spacing based on 50% diameter of throw
 ▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions
Note: Radius reduction over 25% of the normal throw of the nozzle is not recommended

Did you know?

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- Stronger streams and larger water droplets for increased wind resistance.
- Superior close-in watering and edges provide better coverage.
- Shortened run times saves up to 35% in water



MPR Spray Nozzles

Matched Precipitation Rate Nozzles

Features

- Matched precipitation rates across sets and patterns in 5 Series, 8 Series, 10 Series, 12 Series, and 15 Series for even water distribution and design flexibility
- MPR Nozzles are installed by more contractors than all other brands combined
- Quickly identify radius and arc with Top Color-coded™ nozzles even when system is not operating
- Three year trade warranty

Operating Range

- Spacing: 3 to 15 feet (0.9 to 4.6 m)¹
- Pressure: 15 to 30 psi (1 to 2.1 bar)
- Optimum pressure: 30 psi (2.1 bar)²

Models

- 5 Series: Quarter, Half, Full Nozzles
- 5 Series: Bubbler Nozzles
- 8 Series: Quarter, Half, Full Nozzles
- 8 FLT Series: Designed for lower trajectory applications, such as windy areas
- 10 Series Nozzles
- 12 Series Nozzles
- 15 Series: Quarter, Half, Full Nozzles
- 15 Strip Series Nozzles

¹ These ranges are based on proper pressure at nozzle.

² Rain Bird recommends using 1800 PRS Spray Bodies to maintain optimum nozzle performance in higher pressure situations.



MPR Nozzle and Screen

How to Specify

5 F




Pattern
F: Full
H: Half
Q: Quarter




MPR Radius Range




5: 3-5 feet (1.1-1.5 m)
8: 5-8 feet (1.7-2.4 m)
10: 7-10 feet (2.1-3.1 m)
12: 19-2 feet (2.7-3.7 m)
15: 11-15 feet (3.4-4.6 m)






Rain Bird® MPR Nozzles, The Industry Standard

5 Series MPR					
5° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
5F 	15	3	0.29	3.10	3.58
	20	4	0.33	1.99	2.29
	25	4	0.37	2.23	2.57
	30	5	0.41	1.58	1.83
5H 	15	3	0.14	3.00	3.46
	20	4	0.16	1.93	2.22
	25	4	0.18	2.17	2.50
	30	5	0.20	1.54	1.78
5Q 	15	3	0.07	3.00	3.46
	20	4	0.08	1.93	2.22
	25	4	0.09	2.17	2.50
	30	5	0.10	1.54	1.78

5 Series MPR						METRIC	
5° Trajectory						■	▲
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	Precip mm/h	Precip mm/h	
5F 	1.0	1.1	0.06	1.1	79	91	
	1.5	1.3	0.08	1.4	51	58	
	2.0	1.5	0.09	1.6	57	65	
	2.1	1.5	0.09	1.6	40	46	
5H 	1.0	1.1	0.03	0.5	76	88	
	1.5	1.3	0.04	0.7	49	56	
	2.0	1.5	0.04	0.7	55	64	
	2.1	1.5	0.05	0.9	39	45	
5Q 	1.0	1.1	0.02	0.4	76	88	
	1.5	1.3	0.02	0.4	49	56	
	2.0	1.5	0.02	0.4	55	64	
	2.1	1.5	0.02	0.4	39	45	

8 Series MPR					
10° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
8F 	15	5	0.74	2.85	3.29
	20	6	0.86	2.30	2.66
	25	7	0.96	1.89	2.18
	30	8	1.05	1.58	1.82
8H 	15	5	0.37	2.85	3.29
	20	6	0.42	2.25	2.59
	25	7	0.47	1.85	2.13
	30	8	0.52	1.56	1.81
8Q 	15	5	0.18	2.77	3.20
	20	6	0.21	2.25	2.59
	25	7	0.24	1.89	2.18
	30	8	0.26	1.56	1.81

8 Series MPR						METRIC	
10° Trajectory						■	▲
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	Precip mm/h	Precip mm/h	
8F 	1.0	1.7	0.16	2.8	72	84	
	1.5	2.1	0.20	3.4	58	68	
	2.0	2.4	0.23	3.9	48	55	
	2.1	2.4	0.24	4.0	40	46	
8H 	1.0	1.7	0.08	1.4	72	84	
	1.5	2.1	0.10	1.7	57	66	
	2.0	2.4	0.12	1.9	47	54	
	2.1	2.4	0.12	2.0	40	46	
8Q 	1.0	1.7	0.04	0.7	70	81	
	1.5	2.1	0.05	0.8	57	66	
	2.0	2.4	0.06	1.0	48	55	
	2.1	2.4	0.06	1.0	40	46	

Note: All MPR nozzles tested on 4" (10.2 cm) pop-ups
 ■ Square spacing based on 50% diameter of throw
 ▲ Triangular spacing based on 50% diameter of throw




Performance data taken in zero wind conditions
Note: Radius reduction over 25% of the normal throw of the nozzle is not recommended




Did you know?




You can use HE-VAN or U-Series nozzles to have better coverage and save water vs. VAN nozzles.




- Stronger streams and larger water droplets for increased wind resistance.
- Superior close-in watering and edges provide better coverage.
- Shortened run times saves up to 35% in water



10 Series MPR					
15° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
10F 	15	7	1.16	2.28	2.63
	20	8	1.30	1.96	2.26
	25	9	1.44	1.71	1.98
	30	10	1.58	1.52	1.75
10H 	15	7	0.58	2.28	2.63
	20	8	0.65	1.96	2.26
	25	9	0.72	1.71	1.98
	30	10	0.79	1.52	1.75
10Q 	15	7	0.29	2.28	2.63
	20	8	0.33	1.96	2.26
	25	9	0.36	1.71	1.98
	30	10	0.39	1.52	1.75

10 Series MPR						METRIC	
15° Trajectory						■	▲
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	Precip mm/h	Precip mm/h	
10F 	1.0	2.1	0.26	4.2	58	67	
	1.5	2.4	0.29	4.8	50	58	
	2.0	3.0	0.35	6.0	39	45	
	2.1	3.1	0.36	6.0	37	43	
10H 	1.0	2.1	0.13	2.4	58	67	
	1.5	2.4	0.14	2.4	50	58	
	2.0	3.0	0.18	3.0	39	45	
	2.1	3.1	0.18	3.0	37	43	
10Q 	1.0	2.1	0.06	1.2	58	67	
	1.5	2.4	0.07	1.2	50	58	
	2.0	3.0	0.09	1.2	39	45	
	2.1	3.1	0.09	1.2	37	43	

12 Series MPR					
30° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
12F 	15	9	1.80	2.14	2.47
	20	10	2.10	2.02	2.34
	25	11	2.40	1.91	2.21
	30	12	2.60	1.74	2.01
12H 	15	9	0.90	2.14	2.47
	20	10	1.05	2.02	2.34
	25	11	1.20	1.91	2.21
	30	12	1.30	1.74	2.01
12Q 	15	9	0.45	2.14	2.47
	20	10	0.53	2.02	2.34
	25	11	0.60	1.91	2.21
	30	12	0.65	1.74	2.01




12 Series MPR						METRIC	
30° Trajectory						■	▲
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	Precip mm/h	Precip mm/h	
12F 	1.0	2.7	0.40	6.8	55	63	
	1.5	3.2	0.48	8.3	47	54	
	2.0	3.6	0.59	9.7	46	53	
	2.1	3.7	0.60	9.8	44	51	
12H 	1.0	2.7	0.20	3.4	55	63	
	1.5	3.2	0.24	4.2	47	54	
	2.0	3.6	0.30	4.9	46	53	
	2.1	3.7	0.30	4.9	44	51	
12Q 	1.0	2.7	0.10	1.7	55	63	
	1.5	3.2	0.12	2.1	47	54	
	2.0	3.6	0.15	2.4	46	53	
	2.1	3.7	0.15	2.5	44	51	

Note: All MPR nozzles tested on 4" (10.2 cm) pop-ups
 ■ Square spacing based on 50% diameter of throw
 ▲ Triangular spacing based on 50% diameter of throw

Performance data taken in zero wind conditions
Note: Radius reduction over 25% of the normal throw of the nozzle is not recommended

15 Series MPR

30° Trajectory




Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
15F 	15	11	2.60	2.07	2.39
	20	12	3.00	2.01	2.32
	25	14	3.30	1.62	1.87
	30	15	3.70	1.58	1.83
15H 	15	11	1.30	2.07	2.39
	20	12	1.50	2.01	2.32
	25	14	1.65	1.62	1.87
	30	15	1.85	1.58	1.83
15Q 	15	11	0.65	2.07	2.39
	20	12	0.75	2.01	2.32
	25	14	0.82	1.62	1.87
	30	15	0.92	1.58	1.83

Note: All MPR nozzles tested on 4" (10.2 cm) pop-ups
 ■ Square spacing based on 50% diameter of throw
 ▲ Triangular spacing based on 50% diameter of throw

15 Series MPR

METRIC





30° Trajectory

Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
15F 	1.0	3.4	0.60	9.8	52	60
	1.5	3.9	0.72	11.8	47	55
	2.0	4.5	0.84	13.7	41	48
	2.1	4.6	0.84	14.0	40	46
15H 	1.0	3.4	0.30	4.9	52	60
	1.5	3.9	0.36	5.9	47	55
	2.0	4.5	0.42	6.8	41	48
	2.1	4.6	0.42	7.0	40	46
15Q 	1.0	3.4	0.15	2.5	52	60
	1.5	3.9	0.18	2.9	47	55
	2.0	4.5	0.21	3.4	41	48
	2.1	4.6	0.21	3.5	40	46

Performance data taken in zero wind conditions
Note: Radius reduction over 25% of the normal throw of the nozzle is not recommended

5 Series MPR Stream Bubbler Nozzles

0° Trajectory





Nozzle	Pressure psi	Radius ft.	Flow gpm
5F-B 	15	5	1.50
	20	5	1.50
	25	5	1.50
	30	5	1.50
5H-B 	15	5	1.00
	20	5	1.00
	25	5	1.00
	30	5	1.00
5Q-B 	15	5	0.50
	20	5	0.50
	25	5	0.50
	30	5	0.50
5CST-B 	15	5	0.50
	20	5	0.50
	25	5	0.50
	30	5	0.50







Note: Indicates adjusted radius at psi shown
Note: Flow at adjusted radius of 5 feet (1.5 m)

5 Series MPR Stream Bubbler Nozzles







METRIC

0° Trajectory



Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m
5F-B 	1.0	1.5	0.35	5.7
	1.5	1.5	0.35	5.7
	2.0	1.5	0.35	5.7
	2.1	1.5	0.35	5.7
5H-B 	1.0	1.5	0.23	3.8
	1.5	1.5	0.23	3.8
	2.0	1.5	0.23	3.8
	2.1	1.5	0.23	3.8
5Q-B 	1.0	1.5	0.12	1.9
	1.5	1.5	0.12	1.9
	2.0	1.5	0.12	1.9
	2.1	1.5	0.12	1.9
5CST-B 	1.0	1.5	0.12	1.9
	1.5	1.5	0.12	1.9
	2.0	1.5	0.12	1.9
	2.1	1.5	0.12	1.9

15 Strip Series			
30° Trajectory			
Nozzle	Pressure psi	W x L ft.	Flow gpm
 15EST	15	4 x 13	0.45
	20	4 x 14	0.50
	25	4 x 14	0.56
	30	4 x 15	0.61
 15CST	15	4 x 26	0.89
	20	4 x 28	1.00
	25	4 x 28	1.11
	30	4 x 30	1.21
 15RCS	15	3 x 11	0.35
	20	3 x 12	0.40
	25	4 x 14	0.45
	30	4 x 15	0.49
 15LCS	15	3 x 11	0.35
	20	3 x 12	0.40
	25	4 x 14	0.45
	30	4 x 15	0.49
 15SST	15	4 x 26	0.89
	20	4 x 28	1.00
	25	4 x 28	1.11
	30	4 x 30	1.21
 9SST	15	9 x 15	1.34
	20	9 x 16	1.47
	25	9 x 18	1.60
	30	9 x 18	1.73



W = Width of coverage pattern L = Length of coverage pattern
Note: Radius reduction over 25% of the normal throw of the nozzle is not recommended

15 Strip Series				METRIC	
30° Trajectory					
Nozzle	Pressure bar	W x L m	Flow m ³ /h	Flow l/m	
 15EST	1.0	1.2 x 4.0	0.10	1.7	
	1.5	1.2 x 4.3	0.11	2.0	
	2.0	1.2 x 4.3	0.13	2.3	
	2.1	1.2 x 4.6	0.14	2.3	
 15CST	1.0	1.2 x 7.9	0.20	3.4	
	1.5	1.2 x 8.5	0.23	4.0	
	2.0	1.2 x 8.5	0.25	4.5	
	2.1	1.2 x 9.2	0.27	4.6	
 15RCS	1.0	0.8 x 3.2	0.08	1.3	
	1.5	1.0 x 3.9	0.09	1.6	
	2.0	1.2 x 4.5	0.11	1.8	
	2.1	1.2 x 4.6	0.11	1.9	
 15LCS	1.0	0.8 x 3.2	0.08	1.3	
	1.5	1.0 x 3.9	0.09	1.6	
	2.0	1.2 x 4.5	0.11	1.8	
	2.1	1.2 x 4.6	0.11	1.9	
 15SST	1.0	1.2 x 7.9	0.20	3.4	
	1.5	1.2 x 8.5	0.23	4.0	
	2.0	1.2 x 8.5	0.25	4.5	
	2.1	1.2 x 9.2	0.27	4.6	
 9SST	1.0	2.7 x 4.6	0.30	5.1	
	1.5	2.7 x 4.9	0.33	5.8	
	2.0	2.7 x 5.5	0.36	6.5	
	2.1	2.7 x 5.5	0.39	6.5	

Performance data taken in zero wind conditions

8 FLT Series MPR					
5° Trajectory					
Nozzle	Pressure psi	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
 8H-FLT	15	6	0.56	3.36	3.88
	20	7	0.65	2.91	3.36
	25	7	0.72	2.60	3.01
	30	8	0.79	2.38	2.75
 8Q-FLT	15	6	0.28	3.32	3.83
	20	7	0.32	2.87	3.32
	25	7	0.36	2.57	2.97
	30	8	0.39	2.35	2.71

Note: All MPR nozzles tested on 4" (10.2 cm) pop-ups
 ■ Square spacing based on 50% diameter of throw
 ▲ Triangular spacing based on 50% diameter of throw

8 FLT Series MPR				METRIC		
5° Trajectory						
Nozzle	Pressure bar	Radius m	Flow m ³ /h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
 8H-FLT	1.0	1.7	0.12	2.1	87	101
	1.5	2.1	0.15	2.6	71	82
	2.0	2.4	0.18	2.9	62	71
	2.1	2.4	0.18	3.0	60	70
 8Q-FLT	1.0	1.7	0.06	1.1	86	100
	1.5	2.1	0.07	1.3	71	81
	2.0	2.4	0.09	1.4	61	71
	2.1	2.4	0.09	1.5	60	69

Performance data taken in zero wind conditions
Note: Radius reduction over 25% of the normal throw of the nozzle is not recommended

1300A-F

Adjustable Full-Circle Bubbler

Features

- Stainless Steel adjustment screw regulates flow and radius for spacing between from 1 to 3 feet (0.3 m to 0.9 m) apart
- Non-corrosive plastic and stainless steel construction for long life
- Shipped with SR-050 1/2" (15/21) inlet filter screen for easy installation and resistance to debris
- Operates over a wide range of pressures
- Five year trade warranty

Operating Range

- Flow: 1.0 to 2.3 gpm (3.6 to 8.4 l/m)
- Spacing: 1 to 3 feet (0.3 to 0.9 m)¹
- Pressure: 10 to 60 psi (0.7 to 4.1 bar)²

Model

- 1300A-F

¹ These ranges are based on proper pressure at nozzle

² Rain Bird recommends using 1800 PRS Spray Bodies to maintain optimum nozzle performance in higher pressure situations

1300A-F		
Nozzle	Pressure psi	Flow gpm
F	10	1.0
	20	1.4
	30	1.7
	40	1.9
	50	2.1
	60	2.3

1300A-F		METRIC	
Nozzle	Pressure bar	Flow m ³ /h	Flow l/m
F	0.7	0.23	3.6
	1.0	0.26	4.2
	1.5	0.30	4.8
	2.0	0.34	5.4
	2.5	0.39	6.0
	3.0	0.43	7.2
	3.5	0.48	7.8
	4.0	0.52	8.4
	4.1	0.53	8.4



1300A-F

1400 Series

Pressure Compensating Full-Circle Bubblers

Features

- Low flow rates allow water to be absorbed as needed. Reduces runoff
- Flow will not fluctuate at pressures between 20 and 90 psi (1.4 to 6.2 bar)
- Flow is not adjustable for increased vandal resistance
- Shipped with special SR-050 1/2" (15/21) bubbler filter screen for easy installation and resistance to debris
- Trickle pattern on models 1401 and 1402; umbrella pattern on models 1404 and 1408
- Five-year trade warranty

Operating Range

- Flow: 0.25 to 2.00 gpm (1.2 to 7.2 l/m)
- Spacing: 1 to 3 feet (0.3 to 0.9 m)*
- Pressure: 20 to 90 psi (1.4 to 6.2 bar)

Models

- 1401: 0.25 gpm (0.06 m³/h; 0.9 l/m); full-circle, trickle pattern
- 1402: 0.50 gpm (0.11 m³/h; 1.8 l/m); full-circle, trickle pattern
- 1404: 1.00 gpm (0.23 m³/h; 3.6 l/m); full-circle, umbrella pattern
- 1408: 2.00 gpm (0.46 m³/h; 7.2 l/m); full-circle, umbrella pattern

* These ranges are based on proper pressure at nozzle. Rain Bird recommends using 1800/RD1800 PRS Spray Bodies to maintain optimum nozzle performance in higher pressure situations.



1400 Series

Micro-Quick™ Sprays



The unique design of the Rain Bird® micro spray deflectors allow the system to grow along with the maturation of the crop. Micro-Quick™ Sprays help provide for a more efficient use of water, chemicals and energy.

Features

- No tools required for assembly, disassembly, or cleaning maintenance with easy snap fit nozzles and deflectors
- Interchangeable nozzles and deflectors to change flow rates or spray patterns as needed
- Color-coded nozzles for easy identification
- Less maintenance required with no moving parts
- Constructed with Ultraviolet (UV) stabilized resin to protect from sun damage and chemicals
- Order preassembled from the factory or as individual components for field customization

Applications

- For agriculture, greenhouse, and nursery use
- Operates in both an upright or inverted installation, making it ideal for nurseries, orchards, vineyards, vegetables, nut and citrus crops

Specifications

Operating pressure:

- 10 to 30 psi (0.69 to 2.07 bar)

Flow Range:

- 3.7 to 30.6 gph (13.8 to 115.7 l/h)
- Wetted Diameter Range:
- 3 to 28 feet (0.91 to 8.5m)

Filtration:

- Recommendation varies by nozzle selection
- Ranges from 80 to 200 mesh (74 to 180 micron)

Distribution/Transfer tubing:

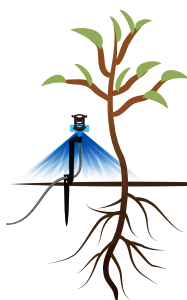
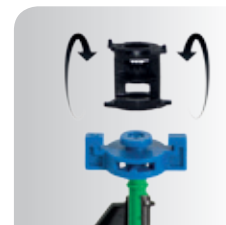
- Standard length in assembly: 36" (0.91 m), call for custom length options
- Tubing Size: OD: 0.25" (6.4 mm), ID: 0.17" (4.3 mm), wall thickness: 0.04" (1 mm)

Packaging Data

- Assembled sprays can be ordered in increments of 1; case quantity of 400
- Nozzles and deflectors can be ordered in increments of 200 pieces; case quantity of nozzles is 3,000, case quantity of deflectors is 5,000
- Stakes can be ordered in increments of 1; case quantity of 130
- Transfer assemblies can be ordered in increments of 100; case quantity of 700

Dual Pattern Deflector to Optimize Water Application

With no tools required, the convenient two-sided deflector can be flipped over to quickly change the pattern and size of the wetted area.



Young Tree: Pattern E
(Deflector Side 1)



Mature Tree: Pattern D
(Deflector Side 2)

Spray Nozzles

How to Order Micro-Quick Sprays

MQ

MQ = Micro-Quick™ Spray

36

Tubing Length

36 = 36" (0.9m) Tubing

*Call for custom spacing

BS

Stake

BS = Black Stake

AA

Deflector
(Down x Up)

AA – A x A Pattern
AC – A x C Pattern
AE – A x E Pattern
BC – B x C Pattern
BE – B x E Pattern
DC – D x C Pattern
DE – D x E Pattern
EA – E x A Pattern
ED – E x D Pattern
EF – E x F Pattern
EG – E x G Pattern
FE – F x E Pattern
GE – G x E Pattern

05

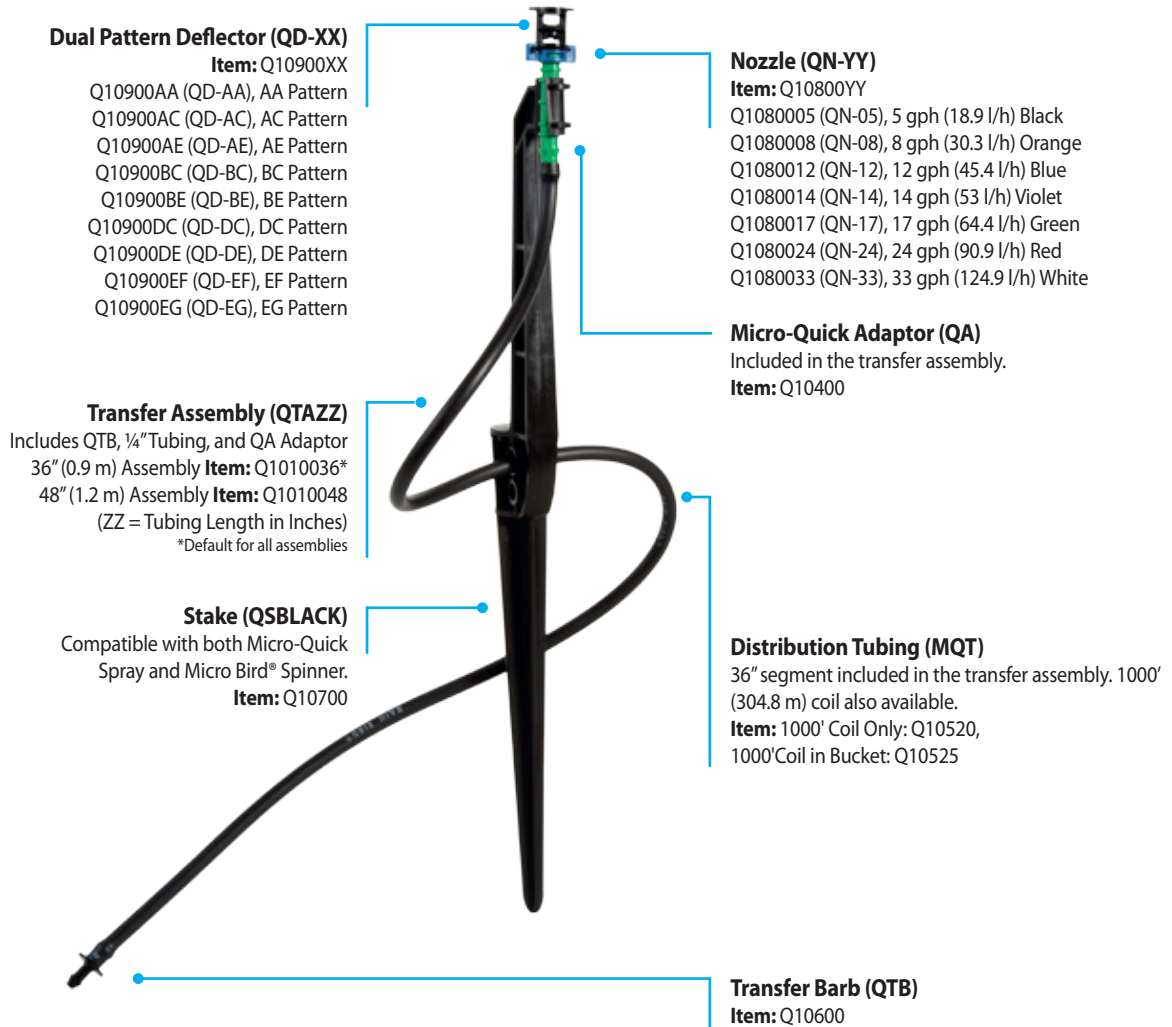
Nozzle Size

05 – 5 gph (18.9 l/h) Black
08 – 8 gph (30.3 l/h) Orange
12 – 12 gph (45.4 l/h) Blue
14 – 14 gph (53 l/h) Violet
17 – 17 gph (64.4 l/h) Green
24 – 24 gph (90.8 l/h) Red
33 – 33 gph (124.9 l/h) White

The Micro-Quick™ Sprays and Micro Bird® Spinner families can be ordered fully assembled or as individual components.

- To place an order in the United States call (800) HELLO AG (435-5624) or, use the Toll-FREE Fax Ordering number at (800) 843-4162.
- Customers outside the U.S. can contact the International Customer Service Department at (520) 878-2400 to place an order.

System Components



Other Available Parts



Conversion Adaptor
10-32 thread inlet x snap
outlet to connect Rain Bird®
Micro-Quick™ to non-Rain Bird
transfer assemblies.
Model: QCA
Item: Q11200



Deflector Removal Tool
Model: QDT
Item: Q11400



Nozzle Plug
Model: QNP
Item: Q1080099

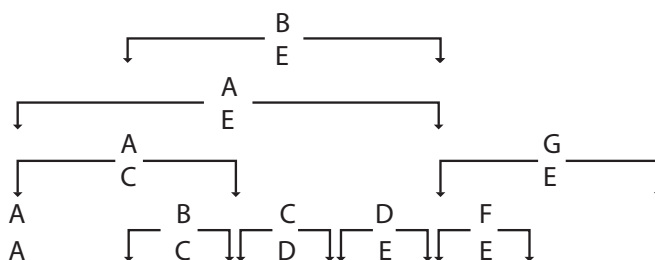









Line/Goof Plug
Model: EMA-GP
Item: D24695

Performance Data

US Units

Spray Nozzles



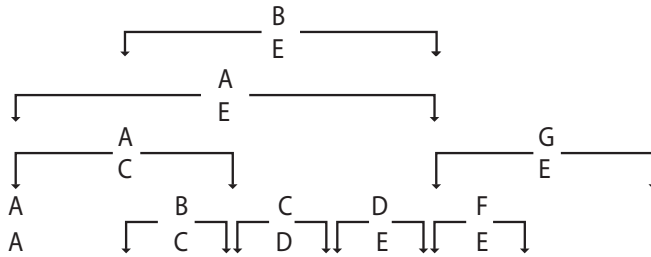
Nozzle	Pressure (psi)	Pattern Flow (gph)	A		B		C		D		E		F		G		Recommended Filtration (mesh/micron)
			Star Bird™ Diameter (ft)	360° Diameter (ft)	Length (ft)	Width (ft)	Fan Spray Radius (ft)	120° Radius (ft)	24 Stream Diameter (ft)	360° Diameter (ft)	Down Spray Diameter (ft)	Notched Diameter (ft)	Rectangular Length (ft)	Rectangular Width (ft)			
 QN-05 0.026" (0.66 mm) Black Q1080005	10	3.7	8.5	8.0	7.5	4.0	8.0	3.0	10.0	9.0	6.0						200/74
	15	4.5	9.5	10.0	8.5	4.5	9.5	3.0	11.0	10.0	6.5						
	20	5.2	10.5	11.0	9.0	5.0	11.0	3.0	12.0	11.0	7.0						
	25	5.9	11.0	11.5	9.5	5.3	11.0	3.0	12.5	12.0	7.5						
 QN-08 0.033" (0.84 mm) Orange Q1080008	10	5.6	13.0	10.0	7.5	4.5	9.5	3.0	12.5	12.0	7.0					170/93	
	15	6.9	13.5	11.5	8.5	5.0	11.0	3.0	13.5	13.5	8.0						
	20	8.0	14.0	12.5	9.5	5.5	12.5	3.0	14.0	15.0	9.0						
	25	9.2	14.5	12.5	9.5	6.0	13.5	3.0	14.0	16.5	10.0						
 QN-12 0.038" (0.97 mm) Blue Q1080012	10	7.3	17.0	11.0	9.5	4.5	11.0	3.0	14.5	15.0	8.0					150/105	
	15	9.1	17.5	13.0	10.0	5.3	12.5	3.0	15.5	16.5	9.0						
	20	10.6	18.0	14.5	10.5	6.0	13.5	3.0	16.0	18.0	9.5						
	25	11.8	18.0	15.0	11.5	6.5	15.8	3.0	17.0	20.5	10.5						
 QN-14 0.044" (1.12 mm) Violet Q1080014	10	9.7	19.0	13.0	10.0	5.0	12.0	3.0	16.5	15.5	8.5					130/118	
	15	11.8	20.0	16.0	11.5	5.5	14.0	3.0	17.5	17.5	9.5						
	20	13.7	20.5	17.0	12.0	6.0	15.5	3.0	18.5	19.5	10.0						
	25	15.5	20.5	18.0	12.5	6.0	18.0	3.0	19.5	22.0	11.0						
 QN-17 0.048" (1.22 mm) Green Q1080017	10	10.7	21.0	15.0	10.5	6.0	13.0	3.0	17.0	16.0	9.0					120/125	
	15	13.3	22.0	15.0	12.0	6.0	15.0	3.0	18.5	18.5	10.0						
	20	15.5	22.5	19.0	12.5	6.0	17.0	3.0	20.0	20.5	10.5						
	25	17.4	23.0	20.0	13.0	6.5	20.0	3.0	21.5	23.0	11.0						
 QN-24 0.057" (1.45 mm) Red Q1080024	10	14.2	23.0	16.0	11.5	6.5	15.0	3.0	18.0	18.5	11.0					100/150	
	15	17.3	25.5	18.0	12.5	7.0	17.0	3.0	20.0	20.5	12.0						
	20	20.1	28.0	19.5	13.0	7.5	19.0	3.0	21.5	22.0	13.0						
	25	22.4	28.0	21.0	13.5	7.5	24.0	3.0	23.5	24.0	13.5						
 QN-33 0.068" (1.73 mm) White Q1080033	10	17.2	25.0	18.0	11.0	7.5	17.5	3.0	19.0	21.0	13.0					80/180	
	15	21.0	26.0	21.0	13.0	8.3	19.2	3.0	21.0	22.5	14.0						
	20	25.2	27.0	23.0	14.5	9.0	21.0	3.0	23.0	23.5	14.5						
	25	27.9	28.0	24.0	15.0	9.4	23.0	3.0	25.0	25.0	15.5						
	30	30.6	28.0	25.0	15.5	9.5	25.0	3.0	27.0	26.0	16.0						








Transfer Tube Assembly Pressure Loss Chart

Flow (gph)	U.S. UNITS		METRIC UNITS		
	Pressure Loss (psi)		Flow (l/h)	Pressure Loss (bar)	
	24"	36"		61cm	91cm
05	0.2	0.2	20	0.01	0.02
10	0.6	0.8	40	0.04	0.06
15	1.2	1.7	60	0.10	0.13
20	2.2	3.0	80	0.17	0.23
25	3.3	4.5	100	0.25	0.35
30	4.7	6.4	120	0.36	0.49
35	6.2	8.5	140	0.48	0.65

Performance Data

Metric Units



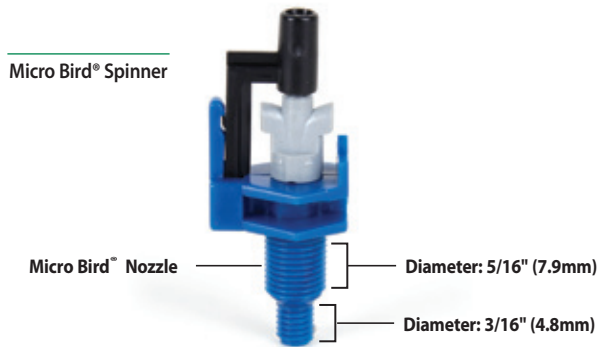
Nozzle	Pressure (bar)	Pattern Flow (l/h)	Spray Pattern									Recommended Filtration (mesh/micron)
			A 360° Star Bird™ Diameter (m)	B Butterfly Length (m) Width (m)		C 120° Fan Spray Radius (m)	D 360° 24 Stream Diameter (m)	E Down Spray Diameter (m)	F Notched Diameter (m)	G Rectangular Length (m) Width (m)		
 QN-05 0.026" (0.66 mm) Black Q1080005	0.75	13.8	2.6	2.4	2.3	1.2	2.4	0.9	3.0	2.7	1.8	200/74
	1.00	17.2	2.9	3.0	2.6	1.4	2.9	0.9	3.3	3.0	2.0	
	1.50	19.8	3.3	3.3	2.7	1.6	3.2	0.9	3.6	3.3	2.1	
	1.75	22.3	3.4	3.5	2.9	1.6	3.4	0.9	3.8	3.6	2.3	
2.00	24.5	3.5	3.7	3.0	1.7	3.4	0.9	4.0	4.0	2.4		
 QN-08 0.033" (0.84 mm) Orange Q1080008	0.75	21.0	3.7	3.0	2.3	1.4	2.9	0.9	3.8	3.6	2.1	170/93
	1.00	26.3	3.8	3.5	2.6	1.5	3.3	0.9	4.1	4.1	2.4	
	1.50	30.1	4.3	3.8	2.9	1.7	3.8	0.9	4.2	4.6	2.7	
	1.75	34.6	4.4	3.8	2.9	1.8	4.0	0.9	4.2	5.0	3.0	
2.00	37.8	4.5	4.0	3.0	2.0	4.2	0.9	4.4	5.4	3.2		
 QN-12 0.038" (0.97 mm) Blue Q1080012	0.75	27.6	5.1	3.4	2.9	1.4	3.3	0.9	4.4	4.6	2.4	150/105
	1.00	34.5	5.3	4.0	3.0	1.6	3.7	0.9	4.7	5.0	2.7	
	1.50	40.0	5.4	4.4	3.2	1.9	4.0	0.9	4.9	5.4	2.9	
	1.75	44.7	5.5	4.6	3.5	2.0	4.8	0.9	5.1	6.2	3.2	
2.00	49.9	5.5	4.7	3.7	2.1	5.3	0.9	5.3	7.0	3.3		
 QN-14 0.044" (1.12 mm) Violet Q1080014	0.75	36.5	5.8	4.0	3.0	1.5	3.6	0.9	5.0	4.7	2.6	130/118
	1.00	44.6	6.1	4.9	3.5	1.7	4.2	0.9	5.3	5.3	2.9	
	1.50	52.0	6.3	5.2	3.7	1.8	5.0	0.9	5.6	5.9	3.0	
	1.75	58.7	6.3	5.5	3.8	1.9	5.5	0.9	5.9	6.7	3.3	
2.00	65.0	6.4	5.8	4.0	2.1	6.1	0.9	6.2	7.3	3.5		
 QN-17 0.048" (1.22 mm) Green Q1080017	0.75	40.5	6.4	4.6	3.2	1.8	4.0	0.9	5.1	4.9	2.7	120/125
	1.00	50.5	6.7	5.2	3.7	1.8	4.5	0.9	5.6	5.6	3.0	
	1.50	58.5	6.9	5.8	3.8	1.9	5.5	0.9	6.1	6.2	3.2	
	1.75	65.9	7.0	6.1	4.0	2.0	6.0	0.9	6.5	7.0	3.3	
2.00	72.3	7.1	6.4	4.1	2.1	6.8	0.9	7.0	7.6	3.7		
 QN-24 0.057" (1.45 mm) Red Q1080024	0.75	53.9	7.1	4.9	3.5	2.0	4.6	0.9	5.4	5.6	3.3	100/150
	1.00	65.6	7.8	5.5	3.8	2.2	5.1	0.9	6.1	6.2	3.7	
	1.50	76.0	8.2	5.9	4.0	2.2	6.3	0.9	6.5	6.7	3.9	
	1.75	84.9	8.5	6.4	4.1	2.3	7.0	0.9	7.1	7.3	4.1	
2.00	98.4	8.5	6.7	4.3	2.3	7.3	0.9	7.6	7.7	4.2		
 QN-33 0.068" (1.73 mm) White Q1080033	0.75	65.1	7.6	5.5	3.4	2.3	5.4	0.9	5.8	6.4	3.9	80/180
	1.00	79.5	7.9	6.4	4.0	2.5	5.8	0.9	6.4	6.9	4.2	
	1.50	95.3	8.3	7.0	4.4	2.8	6.6	0.9	7.0	7.1	4.4	
	1.75	105.7	8.4	7.3	4.6	2.9	7.1	0.9	7.6	7.6	4.7	
2.00	115.7	8.5	7.6	4.7	2.9	7.5	0.9	8.2	7.9	4.9		

Micro Bird® Spinners

The Micro Bird® Spinner is a low-flow, micro-sprinkler ideal for applications of mature trees, greenhouses, nurseries, gardens, and landscapes.

Features

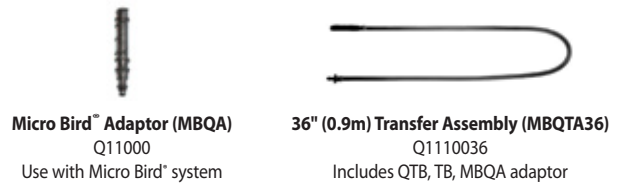
- "Tall Bridge" and superior plastic design reduces wear and stalling
- All components are protected by UV inhibitors and resist agricultural chemicals
- "Two-Step" thread configuration to accommodate both large and small sizes of distribution tubing
- Four color-coded nozzle bodies for easy identification
- 340° pattern design provides uniform coverage without wetting tree trunks
- Low 10° trajectory angle to fight wind drift
- Filtration mesh hole size should be approximately 10 times smaller than nozzle size



Performance Data*							
MODEL (Nominal Nozzle Diameter)	Filtration Requirements Mesh (Microns)	U.S.			Metric		
		Pres (psi)	Flow (gph)	Dia (ft)	Pres (bar)	Flow (l/h)	Dia (m)
SP12-340 Blue (0.99mm/0.039")	150 (105)	15	10.1	18	1.0	38.0	5.6
		20	11.6	19	1.5	45.0	6.0
		25	12.9	20	2.0	53.0	6.4
		30	14.1	21	2.5	58.0	6.6
		35	15.3	21	3.0	65.0	6.8
40	16.3	22					
SP16-340 Green (1.21mm/0.048")	120 (125)	15	15.1	20	1.0	57.0	6.0
		20	17.4	21	1.5	67.0	6.6
		25	19.4	22	2.0	80.2	7.0
		30	21.2	23	2.5	86.3	7.2
		35	22.8	23	3.0	95.0	7.2
40	24.2	24					
SP24-340 Red (1.45mm/0.057")	100 (150)	15	20.9	21	1.0	79.0	6.4
		20	24.1	23	1.5	95.0	7.0
		25	26.9	24	2.0	110.0	7.4
		30	29.3	24	2.5	118.0	7.6
		30	31.4	25	3.0	130.0	7.8
40	33.3	25					
SP30-340 Orange (1.73mm/0.068")	80 (180)	15	28.9	23	1.0	110.0	7.0
		20	33.4	24	1.5	129.0	7.6
		25	37.2	26	2.0	153.0	8.0
		30	40.5	26	2.5	164.0	8.2
		35	43.3	27	3.0	180.0	8.4
40	45.8	27					

GENERAL NOTE: Performance data is obtained under ideal test conditions and may be adversely affected by wind, hydraulic conditions, and other factors.

*Flow and diameter are based on pressure at the base of the Micro Bird™ Spinner and a 6 in. (15cm) riser height.



PA

Plastic Shrub Adapter

Features

- Adapts Rain Bird Nozzles for use with 1/2" (15/21) NPT threaded risers
- Accepts protective, non-clogging 1800 Series filter screen (shipped with nozzle) and PCS Series screens
- Durable, non-corrosive plastic construction
- Non-Potable Plastic Shrub Adapter

Specifications

- 1/2" (15/21) female inlet threads
- Fine top threads accept all Rain Bird nozzles

Model

- PA-8S
- PA-8S-NP



PA-8S-PRS & PA-8S-P45

30 psi and 45 psi Pressure Regulating Shrub Adapters

Features

- Adapts nozzles for use with 1/2" (15/21) NPT threaded risers
- Patented PRS pressure regulator built into the stem. No parts to be installed at the site. Saves time and money
 - Maintains constant pressure at 30 psi (2,1 bar) or 45 psi (3,1 bar)
 - Restricts water loss by up to 70% if nozzle is removed or damaged. Saves water and money. Reduces liability. Recommended for vandal-prone areas
- Fits all Rain Bird plastic nozzles
- Rugged thermoplastic construction resists UV rays

Operating Range

- Pressure: 15 to 70 psi (1.0 to 4.8 bar)
- Flow: 0.2 to 4.0 gpm (0.05 to 0.91 m³/h; 0.06 to 15.0 l/m)

Specifications

- 1/2" (15/21) female inlet threads
- Fine top threads accept all Rain Bird nozzles
- Height: 5 1/4" (13.3 cm)

Models

- PA-8S-PRS
- PA-8S-P45





Impact Sprinklers

Introduction

Spray Nozzles

Impact Sprinklers

Rotors

Valves

Controllers

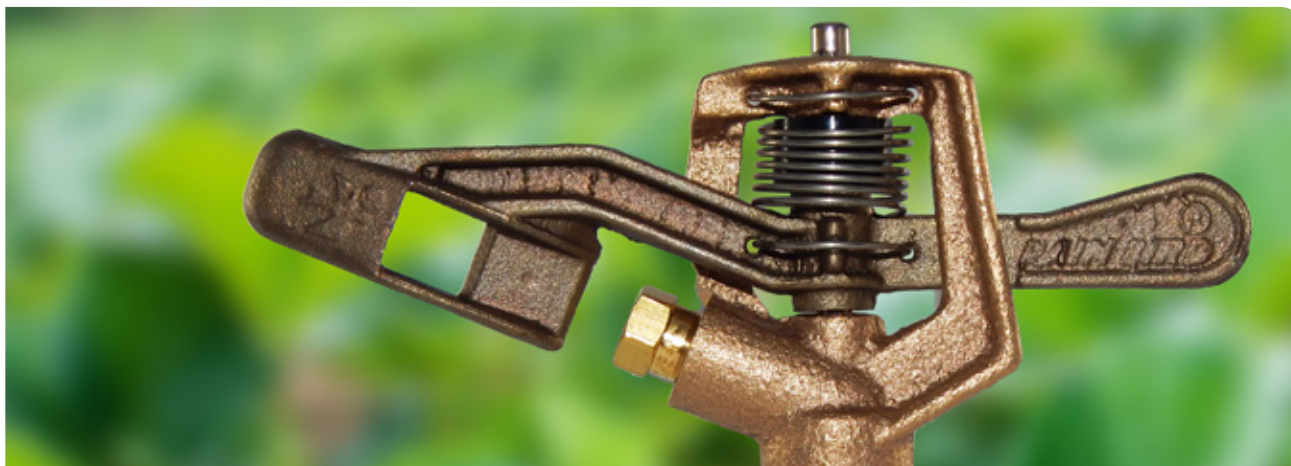
Central Controls

Low Volume Irrigation

Pumps & Filtration

Resources

Impact Sprinklers



Rain Bird® agricultural impact sprinklers have set the industry standard, offering smooth performance and unmatched grit tolerance under the most demanding field conditions.

How to Order Impact Sprinklers

Sprinkler Only		Nozzle Only		XX = Nozzle Size					
Sprinkler without Nozzle	A01619			U.S. Standard	1/16"	51 DRILL	3/32"	7/64"	1/8"
				Metric	1.59 mm	1.70mm	2.38 mm	2.78 mm	3.18 mm
Assembled Sprinkler Factory Combination		Brass Straight Bore Nozzle	SBN-1	105780-XX	04	51	06	07	—
Sprinkler with Nozzle SBN-1 5/64"	A0162005								

Part number for Sprinkler Only Part number for Assembled Sprinkler and Nozzle, when available Part number for Nozzle Only Available Nozzle Size. Use this number to complete the Nozzle part number

Option Guide (where available)

FP	Full or Part Circle	W	Single Nozzle Spreader Plugged
BPJ	Brass Precision Jet	E	Straightening Vane
ADJ	Adjustable Nozzle	LPN	Low Pressure Nozzle
DA	Distance Control Flap	LAN	Low Angle Nozzle Spreader Nozzle
H	Superior H bearing	P	Anodized Aluminum Arm
TNT	PTFE, Nylon, PTFE Washer Stack	PM	Plastic Bearing
PJ	Precision Jet Spoon	V	Wedge
D	Durable Plastic Arm and Body	F	Frost/Chemically Resistant Washers
LA	Low Angle	M	Male Bearing
WS	Single Nozzle Body		

The majority of the brass impact sprinklers and nozzles are ordered separately.

Where applicable, part numbers for assembled combinations are provided.

- To place an order in the United States call (800) HELLO AG (435-5624) or, use the Toll-FREE Fax Ordering number at (800) 843-4162.
- Customers outside the U.S. can contact the International Customer Service Department at (520) 878-2400 to place an order.

Quick Reference Selection Guide

Full Circle Impact Sprinklers										Operating Pressure Range (psi)										Must Order Nozzle Separately*									
Model	Drive	Arm	Spreader Nozzle Port	Throw Radius (ft)	Bearing Size					20	25	30	35	40	45	50	55	60	65		70	75	80	85	90	95	100		
14VH	Wedge	Brass	No	29-38	•						20	25	30	35	40	45	50	55	60										
L20VH	Wedge	Brass	No	23-32	•						20	25	30	35	40	45	50											✓	
L20H	Spoon	Brass	No	28-35	•						20	25	30	35	40	45	50											✓	
M20VH-PM	Wedge	Brass	No	25-35	•						25	30	35	40	45	50											✓		
20JH	Spoon	Brass	No	38-44	•						35	40	45	50	55	60													
29JH	Spoon	Brass	No	35-46	•						20	25	30	35	40	45	50	55	60	65	70	75	80				✓		
L36H	Spoon	Plastic	Yes	40-61	•						20	25	30	35	40	45	50	55	60									✓	
48H	Spoon	Plastic	Yes	42-60	•						25	30	35	40	45	50	55	60	65	70	75	80							
30H	Spoon	Brass	Yes	40-56	•						20	25	30	35	40	45	50	55	60	65	70	75	80					✓	
30WH	Spoon	Brass	Plugged	40-56	•						20	25	30	35	40	45	50	55	60	65	70	75	80					✓	
30PWH	Spoon	Aluminum	Plugged	38-46	•						20	25	30	35	40	45	50	55	60	65	70	75	80					✓	
14070H	Spoon	Brass	Yes	44-71	•						20	25	30	35	40	45	50	55	60	65	70	75	80					✓	
30FH	Spoon	Brass	Yes	39-43	•						20	25	30	35	40	45	50	55	60	65	70	75	80					✓	
30FWH	Spoon	Brass	Plugged	39-43	•						20	25	30	35	40	45	50	55	60	65	70	75	80					✓	
70CH	Spoon	Brass	Yes	57-82			•				35	40	45	50	55	60	65	70	75	80								✓	
70CHM	Spoon	Brass	Yes	57-82				•			35	40	45	50	55	60	65	70	75	80								✓	
80EHD	Spoon	Brass	No	61-116					•		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	✓	

Full or Part Circle Impact Sprinklers										Operating Pressure Range (psi)										Must Order Nozzle Separately*								
Model	Drive	Arm	Spreader Nozzle Port	Throw Radius (ft)	Bearing Size					20	25	30	35	40	45	50	55	60	65		70	75	80	85	90	95	100	
25BPJ-FP-ADJ	Precision Jet	Brass	No	38-41	•						25	30	35	40	45	50												
25BPJ-FP-ADJ-DA-TNT	Precision Jet	Brass	No	38-41	•						25	30	35	40	45	50												
2045PJ	Precision Jet	Plastic	No	22-45	•						25	30	35	40	45	50												
35A-TNT	Spoon	Brass	No	38-41		•					25	30	35	40	45	50												
35A-ADJ-TNT	Spoon	Brass	No	42-51		•					25	30	35	40	45	50												
35A-PJ-ADJ-TNT	Precision Jet	Brass	No	42-51		•					25	30	35	40	45	50												
35A-PJ-DA-TNT	Precision Jet	Brass	No	42-51		•					25	30	35	40	45	50												
65PJ	Precision Jet	Brass	No	57-65			•				45	50	55	60	65	70												
85EHD	Spoon	Brass	Yes	61-116					•		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	✓
85EHD-LA	Spoon	Brass	Yes	48-108					•		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	✓

Impact Sprinklers

14VH

1/2" 13mm Full Circle, Brass, Wedge Drive Impact Sprinkler

Features

- Patented, self-flushing wedge drive
- Durable brass die-cast arm
- Stainless steel springs and fulcrum pin
- Chemically resistant washers

Benefits

- Wedge drive runs on smaller nozzles and lower pressures
- Self-flushing design reduces wear from grit
- Corrosion and grit resistant
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 1/2" (13mm) Male NPT, Brass
- Trajectory Angle: 23°
- Operating Range: 20-60 psi (1.4-4.1 bar)
- Flow Rate: .056-2.68 gpm (0.14-0.61 m³/h)
- Radius: 29-38 ft. (9.0-11.70 meters)
- Nozzle Port: 1/8" Female NPT



Straight Bore Nozzle (SBN-1) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 6 ft.)							
	1/16"		51 DRILL		3/32"		7/64"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
20	-	-	29	0.59	33	1.14	34	1.55
25	29	0.56	29	0.65	33	1.27	35	1.73
30	29	0.62	30	0.71	34	1.39	35	1.90
35	30	0.66	30	0.77	34	1.50	36	2.05
40	30	0.72	31	0.83	35	1.61	37	2.19
45	31	0.75	31	0.87	35	1.71	37	2.32
50	31	0.80	32	0.92	36	1.80	38	2.45
55	32	0.84	32	0.96	36	1.89	38	2.57
60	32	0.88	33	1.01	37	1.97	38	2.68

Straight Bore Nozzle (SBN-1) Performance*

bar @ Nozzle	NOZZLE SIZE (Stream Height: 1.8 m)											
	1.59 mm (1/16")		1.70 mm (51 Drill)		2.38 mm (3/32")		2.78 mm (7/64")		METRIC			
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
1.4	-	-	-	8.8	0.04	0.13	10.1	0.07	0.26	10.4	0.10	0.35
1.5	-	-	-	8.9	0.04	0.14	10.1	0.07	0.27	10.5	0.10	0.37
2.0	9.0	0.04	0.14	9.1	0.04	0.16	10.3	0.09	0.31	10.8	0.12	0.42
2.5	9.2	0.04	0.15	9.3	0.05	0.18	10.6	0.10	0.35	11.0	0.13	0.47
3.0	9.4	0.05	0.17	9.6	0.05	0.19	10.8	0.11	0.38	11.4	0.14	0.52
3.5	9.6	0.05	0.18	9.8	0.06	0.21	11.0	0.11	0.41	11.6	0.16	0.56
4.0	9.8	0.05	0.20	10.0	0.06	0.22	11.2	0.12	0.44	11.7	0.17	0.60
4.1	9.9	0.06	0.20	10.1	0.06	0.23	11.3	0.12	0.45	11.7	0.17	0.61

* Available without Nozzle or Assembled with 5/64" (05) Straight Bore Nozzle. All other Nozzles must be purchased separately. See Chart below.

Part Numbers and Ordering Information

Sprinkler Only

Sprinkler without Nozzle **A01619**

Assembled Sprinkler Factory Combination

Sprinkler with Nozzle SBN-1 5/64" **A0162005**

Nozzle Only

	U.S. Standard	XX = Nozzle Size					
		1/16"	51 DRILL	3/32"	7/64"	1/8"	
		Metric	1.59 mm	1.70mm	2.38 mm	2.78 mm	3.18 mm
Brass Straight Bore Nozzle	SBN-1	105780-XX	04	51	06	07	-

L20VH

1/2" 13mm Full Circle, Brass, Wedge Drive
Impact Sprinkler

Features

- Patented, self-flushing wedge drive
- Durable brass die-cast arm
- Stainless steel springs and fulcrum pin
Chemically resistant washers

Benefits

- Wedge drive runs on smaller nozzles and lower pressures
- Self-flushing design reduces wear from grit
- Corrosion and grit resistant
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 1/2" (13mm) Male NPT, Brass
- Trajectory Angle: 10°
- Operating Range: 25-50 psi (1.7-3.5 bar)
- Flow Rate: 0.56-2.45 gpm (0.13-0.56 m³/h)
- Radius: 23-32 ft. (7.2-9.6 meters)
- Nozzle Port: 1/8" Female NPT



Straight Bore Nozzle (SBN-1) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 2.5 ft.)									
	1/16"		51 DRILL		5/64"		3/32"		7/64"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	23	0.56	24	0.65	25	0.88	26	1.27	27	1.73
30	24	0.62	25	0.71	26	0.97	27	1.39	28	1.90
35	25	0.66	26	0.77	27	1.05	28	1.50	29	2.05
40	25	0.72	26	0.83	27	1.12	29	1.61	30	2.19
45	26	0.75	27	0.87	28	1.19	30	1.71	31	2.32
50	27	0.80	28	0.92	29	1.25	31	1.80	32	2.45

Straight Bore Nozzle (SBN-1) Performance*

bar @ Nozzle	NOZZLE SIZE (Stream Height: 0.8 m)														
	1.59 mm (1/16")			1.70 mm (51 Drill)			1.98 mm (5/64")			2.38 mm (3/32")			2.78 mm (7/64")		
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
1.7	7.2	0.04	0.13	7.3	0.04	0.15	7.6	0.06	0.20	8.1	0.08	0.29	8.2	0.11	0.39
2.0	7.3	0.04	0.14	7.6	0.04	0.16	7.9	0.06	0.22	8.3	0.09	0.31	8.5	0.12	0.42
2.5	7.7	0.04	0.15	7.9	0.05	0.17	8.3	0.07	0.24	8.8	0.10	0.35	8.9	0.13	0.47
3.0	8.0	0.05	0.17	8.2	0.05	0.20	8.6	0.07	0.27	9.1	0.11	0.38	9.4	0.14	0.52
3.5	8.2	0.05	0.18	8.5	0.06	0.21	8.8	0.08	0.28	9.4	0.11	0.41	9.6	0.15	0.56

* Nozzles must be purchased separately.
See Chart below.

Part Numbers and Ordering Information

Nozzle Only

XX = Nozzle Size

		U.S. Standard	NOZZLE SIZE				
			1/16"	51 DRILL	3/32"	7/64"	1/8"
		Metric	1.59 mm	1.70mm	2.38 mm	2.78 mm	3.18 mm
Brass Straight Bore Nozzle	SBN-1	105780-XX	04	51	06	07	—

L20H

1/2" 13mm Full Circle, Brass Impact Sprinkler

Features

- Durable brass die-cast arm
- Stainless steel springs and fulcrum pin
- Corrosion and grit resistant
- Chemically resistant washers

Benefits

- Spoon drive arm runs on larger nozzles and higher pressures
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 1/2" (13mm) Male NPT, Brass
- Trajectory Angle: 10°
- Operating Range: 25-50 psi (1.7-3.5 bar)
- Flow Rate: 1.73-4.05 gpm (0.39-0.92 m³/h)
- Radius: 28-35 ft. (8.5-10.83 meters)
- Nozzle Port: 1/8" Female NPT



Straight Bore Nozzle (SBN-1) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 2.5 ft.)					
	7/64"		1/8"		9/64"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	28	1.73	29	2.26	30	2.86
30	29	1.90	30	2.48	31	3.14
35	30	2.05	31	2.68	33	3.39
40	31	2.19	32	2.86	33	3.62
45	32	2.32	33	3.03	34	3.84
50	32	2.45	34	3.20	35	4.05

Straight Bore Nozzle (SBN-1) Performance*

bar @ Nozzle	NOZZLE SIZE (Stream Height: 0.8 m)								
	2.78 mm (7/64")			3.18 mm (1/8")			3.57 mm (9/64")		
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
1.7	8.5	0.11	0.39	9.0	0.14	0.51	9.3	0.18	0.65
2.0	8.8	0.12	0.42	9.2	0.15	0.55	9.5	0.19	0.70
2.5	9.2	0.13	0.47	9.7	0.17	0.62	10.1	0.22	0.78
3.0	9.7	0.14	0.52	10.0	0.19	0.68	10.4	0.24	0.86
3.5	9.9	0.15	0.56	10.4	0.20	0.73	10.8	0.26	0.92

* Nozzles must be purchased separately. See Chart below.

Part Numbers and Ordering Information

Sprinkler Only

Sprinkler without Nozzle

A06015

Nozzle Only

XX = Nozzle Size

	U.S. Standard	Metric			
		2.78 mm	3.18 mm	3.57 mm	
Brass Straight Bore Nozzle	SBN-1	105780-XX	07	08	09

M20VH-PM

1/2" 13mm Full Circle, Brass, Wedge Drive Impact Sprinkler

Features

- Patented, self-flushing wedge drive
- Durable brass die-cast arm
- Stainless steel springs and fulcrum pin
- Chemically resistant washers

Benefits

- Wedge drive runs on smaller nozzles and lower pressures
- Self-flushing design reduces wear from grit
- Corrosion and grit resistant
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 1/2" (13mm) Male NPT, Plastic
- Trajectory Angle: 15°
- Operating Range: 25-50 psi (1.7-3.5 bar)
- Flow Rate: 0.56-2.45 gpm (0.13-0.56 m³/h)
- Radius: 25-35 ft. (7.8-10.8 meters)
- Nozzle Port: 1/8" Female NPT



Straight Bore Nozzle (SBN-1) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 3.5 ft.)									
	1/16"		51 DRILL		5/64"		3/32"		7/64"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	25	0.56	26	0.65	27	0.88	29	1.27	31	1.73
30	26	0.62	27	0.71	28	0.97	30	1.39	32	1.90
35	27	0.66	28	0.77	29	1.05	31	1.50	33	2.05
40	28	0.72	28	0.83	30	1.12	32	1.61	34	2.19
45	29	0.75	29	0.87	31	1.19	33	1.71	35	2.32
50	29	0.80	30	0.92	32	1.25	33	1.80	35	2.45

Straight Bore Nozzle (SBN-1) Performance*

bar @ Nozzle	NOZZLE SIZE (Stream Height: 1.1 m)														
	1.59 mm (1/16")			1.70 mm (51 Drill)			1.98 mm (5/64")			2.38 mm (3/32")			2.78 mm (7/64")		
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
1.7	7.8	0.04	0.13	7.9	0.04	0.15	8.4	0.06	0.20	9.0	0.08	0.29	9.4	0.11	0.39
2.0	8.0	0.04	0.14	8.2	0.04	0.16	8.6	0.06	0.22	9.2	0.09	0.31	9.7	0.12	0.42
2.5	8.4	0.04	0.15	8.6	0.05	0.18	9.1	0.07	0.24	9.7	0.10	0.35	10.1	0.13	0.47
3.0	8.7	0.05	0.17	8.9	0.05	0.19	9.4	0.07	0.27	10.0	0.11	0.38	10.6	0.14	0.52
3.5	9.0	0.05	0.18	9.1	0.06	0.21	9.8	0.08	0.28	10.2	0.11	0.41	10.8	0.15	0.56

* Nozzles must be purchased separately. See Chart below.

Part Numbers and Ordering Information

Sprinkler Only

Sprinkler without Nozzle **A05980**

Nozzle Only

XX = Nozzle Size

	U.S. Standard	1/16"	51 DRILL	5/64"	3/32"	7/64"	1/8"	
		Metric	1.59 mm	1.70mm	1.98 mm	2.38 mm	2.78 mm	3.18 mm
Brass Straight Bore Nozzle	SBN-1	105780-XX	04	51	05	06	07	—

20JH

1/2" 13mm Full Circle, Brass Impact Sprinkler

Features

- Durable brass die-cast arm
- Stainless steel springs and fulcrum pin
- Corrosion and grit resistant
- Chemically resistant PTFE washers

Benefits

- Spoon drive arm runs on larger nozzles and higher pressures
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 1/2" (13mm) Male NPT, Brass
- Trajectory Angle: 23°
- Operating Range: 35-60 psi (2.4-4.1 bar)
- Flow Rate: 2.05-5.47 gpm (0.47-1.24 m³/h)
- Radius: 38-44 ft. (11.6-13.4 meters)
- Nozzle Port: 1/8" Female NPT



Straight Bore Nozzle (SBN-1) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 6 ft.)							
	7/64"		1/8"		9/64"		5/32"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
35	38	2.05	38	2.68	39	3.39	39	4.19
40	38	2.19	39	2.86	40	3.62	39	4.47
45	39	2.32	39	3.03	40	3.84	40	4.73
50	39	2.45	39	3.20	40	4.05	40	5.00
55	39	2.57	40	3.35	40	4.24	40	5.23
60	39	2.68	40	3.50	41	4.43	41	5.47

Straight Bore Nozzle with Vane (SBN-1V)*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 7 ft.)							
	1/8"		9/64"		5/32"			
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
35	39	2.68	41	3.39	42	4.19		
40	40	2.86	41	3.62	42	4.47		
45	40	3.03	42	3.84	42	4.73		
50	41	3.20	42	4.05	43	5.00		
55	41	3.35	43	4.24	43	5.23		
60	41	3.50	43	4.43	44	5.47		

Straight Bore Nozzle (SBN-1) Performance*

bar @ Nozzle	NOZZLE SIZE (Stream Height: 1.8 m)											
	2.78 mm (7/64")			3.18 mm (1/8")			3.57 mm (9/64")			3.97 mm (5/32")		
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
2.4	11.6	0.13	0.47	11.7	0.17	0.61	12.0	0.21	0.77	12.0	0.26	0.95
2.5	11.6	0.13	0.47	11.8	0.17	0.62	12.1	0.22	0.78	12.0	0.27	0.97
3.0	11.8	0.14	0.52	12.0	0.19	0.68	12.2	0.24	0.86	12.1	0.29	1.06
3.5	11.9	0.16	0.56	12.1	0.20	0.73	12.3	0.26	0.93	12.3	0.32	1.14
4.0	12.0	0.17	0.60	12.2	0.22	0.78	12.4	0.27	0.99	12.4	0.34	1.22
4.1	12.0	0.17	0.61	12.2	0.22	0.79	12.5	0.28	1.01	12.5	0.35	1.24

Straight Bore Nozzle with Vane (SBN-1V)* METRIC

bar @ Nozzle	NOZZLE SIZE (Stream Height: 2.1 m)								
	3.18 mm (1/8")			3.57 mm (9/64")			3.97 mm (5/32")		
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
2.4	12.0	0.17	0.61	12.5	0.21	0.77	12.8	0.26	0.95
2.5	12.1	0.17	0.62	12.5	0.22	0.78	12.8	0.27	0.97
3.0	12.3	0.19	0.68	12.8	0.24	0.86	13.0	0.29	1.06
3.5	12.5	0.20	0.73	13.0	0.26	0.93	13.1	0.32	1.14
4.0	12.5	0.22	0.78	13.2	0.27	0.99	13.3	0.34	1.22
4.1	12.5	0.22	0.79	13.3	0.28	1.01	13.4	0.35	1.24

* Available without Nozzle or Assembled with either a 7/64" (07) or 1/8" (08) Straight Bore Nozzle. All other Nozzles must be purchased separately. See Chart below.

Part Numbers and Ordering Information

Sprinkler Only

Sprinkler without Nozzle **A05840**

Assembled Sprinkler/Nozzle Factory Combination

Sprinkler with Nozzle SBN-1 7/64" **A0584107**

Sprinkler with Nozzle SBN-1 1/8" **A0584108**

Nozzle Only

XX = Nozzle Size

		U.S. Standard				
		7/64"	1/8"	9/64"	5/32"	
		Metric				
		2.78 mm	3.18 mm	3.57 mm	3.97 mm	
Brass Straight Bore Nozzle	SBN-1	105780-XX	07	08	09	10
Brass Straight Bore Nozzle with Vane	SBN-1-V	106160-XX	—	08	09	10

29JH

1/2" 13mm Full Circle, Brass Impact Sprinkler

Features

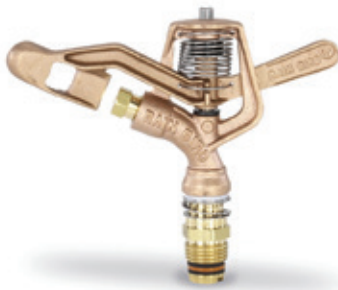
- Extra large body
- Stainless steel springs and fulcrum pin
- Large body accommodates a wide range of flow rates
- Chemically resistant washers

Benefits

- Corrosion and grit resistant
- Built to last
- Spoon drive arm runs on larger nozzles and higher pressures.
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 1/2" (13mm) Male NPT, Brass
- Trajectory Angle: 23°
- Operating Range: 20-80 psi (1.4-5.5 bar)
- Flow Rate: 1.56-6.35 gpm (0.35-1.44 m³/h)
- Radius: 35-46 ft. (10.8-14.2 meters)
- Nozzle Port: 1/4" Female NPT



Straight Bore Nozzle (SBN-3)*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 7 ft.)							
	7/64"		1/8"		9/64"		5/32"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
20	35	1.56	36	2.03	38	2.57	39	3.17
25	37	1.74	37	2.27	38	2.87	40	3.55
30	37	1.91	38	2.49	39	3.15	41	3.89
35	38	2.06	38	2.69	40	3.40	42	4.20
40	38	2.20	39	2.87	41	3.64	42	4.49
45	39	2.33	39	3.05	41	3.86	43	4.76
50	39	2.46	40	3.21	42	4.07	44	5.02
55	39	2.58	40	3.37	42	4.28	44	5.26
60	39	2.69	40	3.52	42	4.45	44	5.50
65	39	2.80	41	3.66	43	4.64	45	5.72
70	39	2.91	41	3.80	43	4.81	45	5.94
75	40	3.01	41	3.93	44	4.98	46	6.15
80	40	3.11	42	4.06	44	5.14	46	6.35

Straight Bore Nozzle (SBN-3)*

bar @ Nozzle	NOZZLE SIZE (Stream Height: 2.1 m)											
	2.78 mm (7/64")			3.18 mm (1/8")			3.57 mm (9/64")			3.97 mm (5/32")		
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
1.4	10.8	0.10	0.35	11.1	0.13	0.46	11.6	0.16	0.58	11.9	0.20	0.72
1.5	11.0	0.10	0.37	11.2	0.13	0.48	11.6	0.17	0.61	12.0	0.21	0.75
2.0	11.4	0.12	0.43	11.5	0.15	0.56	12.0	0.20	0.70	12.4	0.24	0.87
2.5	11.6	0.13	0.48	11.8	0.17	0.62	12.3	0.22	0.79	12.8	0.27	0.97
3.0	11.8	0.14	0.52	12.1	0.19	0.68	12.6	0.24	0.86	13.1	0.30	1.06
3.5	11.9	0.16	0.56	12.2	0.20	0.73	12.8	0.26	0.93	13.4	0.32	1.15
4.0	12.0	0.17	0.60	12.4	0.22	0.79	13.0	0.28	1.00	13.6	0.34	1.23
4.5	12.0	0.18	0.64	12.6	0.23	0.83	13.1	0.29	1.06	13.7	0.36	1.30
5.0	12.1	0.19	0.67	12.7	0.24	0.88	13.3	0.31	1.11	13.9	0.38	1.37
5.5	12.2	0.20	0.71	10.1	0.26	0.92	13.4	0.32	1.17	14.2	0.40	1.44

* Nozzles must be purchased separately. See Chart below.

Part Numbers and Ordering Information

Nozzle Only	XX = Nozzle Size				
	U.S. Standard	7/64"	1/8"	9/64"	5/32"
		Metric	2.78 mm	3.18 mm	3.57 mm
Brass Straight Bore Nozzle	SBN-3 105842-XX	07	08	09	10

L36H

3/4" 19 mm Full Circle, Plastic, Low Angle Impact Sprinkler

Features

- Durable Delrin™ plastic body and arm
- Slotted spoon for larger nozzles
- Wide range of quick-fit nozzles
- Stainless steel springs and fulcrum pin
- Brass bearing sleeve
- Chemically resistant washers
- Dual nozzle ports

Benefits

- Superior chemical and grit resistance
- Low angle fights strong wind conditions
- Great choice for pivot or under tree applications
- Easy maintenance
- Added design flexibility
- Built to last
- Two-year Customer Satisfaction Policy

Specifications

- Bearing: 3/4" (19mm) Male NPT, Brass
- Trajectory Angle: 10°
- Operating Range: 20-60 psi (1.4-4.1 bar)
- Flow Rate: 1.6-17.8 gpm (0.36-4.04 m³/h)
- Radius: 43-61 ft. (13.1-18.7m)
- Nozzle Port: Plastic Quick-Fit

L36H Quick-Fit Straight Bore Nozzle (QF-SBN-3) (Star Hole) Performance*

psi @ Nozzle	NOZZLE SIZE																	
	5/32"		11/64"		3/16"		13/64"		7/32"		15/64"		1/4"		17/64"		9/32"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
35	48	4.20	49	5.00	50	6.00	51	7.10	52	8.30	53	9.50	53	10.80	53	12.10	54	13.60
40	49	4.50	51	5.40	52	6.40	52	7.60	53	8.90	54	10.10	55	11.50	55	13.00	56	14.60
45	51	4.70	52	5.70	53	6.80	53	8.10	54	9.40	55	10.70	56	12.20	57	13.80	58	15.40
50	53	5.00	54	6.00	54	7.20	54	8.50	56	9.90	57	11.30	58	12.90	59	14.50	59	16.30
55	53	5.20	54	6.30	55	7.50	55	8.90	57	10.30	58	11.80	59	13.50	60	15.20	60	17.10
60	54	5.40	55	6.60	55	7.80	56	9.20	58	10.60	59	12.40	60	14.10	61	15.90	61	17.80

Note: Performance data taken using 13' (4m) riser

* Nozzles must be purchased separately. See Chart below.



Part Numbers and Ordering Information

Sprinkler Only

Sprinkler without Nozzle **A07360**

Nozzle Only

XX = Nozzle Size

	U.S. Standard	5/32"	11/64"	3/16"	13/64"	7/32"	15/64"	1/4"	17/64"	9/32"
	Metric	3.97mm	4.37mm	4.76mm	5.16mm	3.97mm	5.56mm	6.35mm	6.75mm	7.14mm
Plastic Quick-Fit Straight Bore Nozzle	QF-SBN-3 107881-XX	10	11	12	13	14	15	—	17	18

L36H Quick-Fit Straight Bore Nozzle (QF-SBN-3) (Star Hole) Performance*																									METRIC		
NOZZLE SIZE																											
bar @ Nozzle	3.97 mm (5/32")			4.37 mm (11/64")			4.76 mm (3/16")			5.16 mm (13/64")			5.56 mm (7/32")			5.95 mm (15/64")			6.35 mm (1/4")			6.75 mm (17/64")			7.14 mm (9/32")		
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
2.4	14.8	0.26	0.95	15.1	0.32	1.14	15.2	0.38	1.36	15.5	0.45	1.61	15.8	0.52	1.89	16.2	0.60	2.16	16.3	0.68	2.45	16.3	0.76	2.75	16.5	0.86	3.09
2.5	14.9	0.27	0.97	15.2	0.32	1.16	15.4	0.38	1.39	15.7	0.46	1.64	15.9	0.53	1.92	16.2	0.61	2.19	16.4	0.69	2.49	16.5	0.78	2.80	16.6	0.87	3.14
3.0	15.5	0.29	1.05	15.9	0.35	1.27	16.1	0.42	1.52	16.2	0.50	1.81	16.5	0.58	2.10	16.8	0.66	2.39	17.1	0.76	2.72	17.2	0.86	3.08	17.5	0.96	3.44
3.5	16.2	0.32	1.14	16.5	0.38	1.37	16.6	0.46	1.65	16.7	0.54	1.94	17.1	0.63	2.26	17.4	0.72	2.58	17.9	0.82	2.95	18.0	0.92	3.32	18.2	1.04	3.73
4.0	16.4	0.34	1.21	16.7	0.41	1.47	16.9	0.48	1.74	17.0	0.57	2.06	17.6	0.66	2.38	18.0	0.77	2.76	18.3	0.87	3.15	18.5	0.99	3.55	18.6	1.11	3.98
4.1	16.5	0.34	1.23	16.8	0.42	1.50	16.9	0.49	1.77	17.1	0.58	2.09	17.7	0.67	2.41	18.1	0.78	2.82	18.4	0.89	3.20	18.6	1.00	3.61	18.7	1.12	4.04

* Nozzles must be purchased separately. See chart on previous page.

48H

3/4" (19mm) Full Circle, Plastic Impact Sprinkler

Features

- Durable Delrin™ plastic body, and arm
- Stainless steel spring and fulcrum pin
- Chemically resistant, PTFE washers
- Color coded quick-fit nozzles provide easy maintenance
- 5 nozzles, 2 spreader nozzles, and a plug allow for design flexibility
- Plastic body and bearing provide increased affordability

Benefits

- PTFE washers allow for smaller nozzles and lower pressures
- Superior chemical and grit resistance
- Exceptionally wide range of flow rates
- Built to last
- Two-year Customer Satisfaction Policy

Specifications

- Bearing: 3/4" (19mm) Male NPT, Plastic
- Trajectory Angle: 23°
- Operating Range: 30-80 psi (2.1-5.5 bar)
- Flow Rate: 4.2 – 14.2 gpm (960-3230 l/h)
- Radius: 42-60 ft. (12.8-18.3 m)
- Nozzle Port: 1/4" Female NPT
- Spreader Nozzle Port: 3/32" or 1/8" Female NPT



Plastic Nozzle with Plug Performance

psi @ Nozzle	NOZZLE SIZE									
	5/32"		11/64"		3/16"		13/64"		7/32"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
30	-	-	-	-	46	5.43	49	6.18	48	7.1
35	44	4.22	46	5.02	47	5.88	50	6.68	50	7.69
40	46	4.5	48	5.48	50	6.26	52	7.22	50	8.27
45	46	4.82	50	5.78	51	6.68	52	7.67	54	8.81
50	48	5.03	51	6.17	52	7.1	53	8.12	54	9.29
55	50	5.37	51	6.44	52	7.47	54	8.54	57	9.78
60	50	5.54	51	6.67	52	7.7	55	8.93	58	10.25
65	50	5.81	52	7.09	53	8.15	56	9.27	58	10.73
70	51	6.04	54	7.33	54	8.45	56	9.66	58	11
75	51	6.22	54	7.58	55	8.72	57	10	58	11.46
80	51	6.46	55	7.84	55	8.97	57	10.31	59	11.8

Plastic Nozzle with 3/32" Spreader Nozzle Performance

psi @ Nozzle	NOZZLE SIZE									
	5/32"		11/64"		3/16"		13/64"		7/32"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
30	-	-	-	-	44	6.4	46	7.26	47	8.22
35	44	5.4	44	6.25	45	7	48	7.9	49	8.91
40	46	5.77	46	6.69	47	7.53	50	8.4	51	9.49
45	46	6.16	48	7.16	49	7.98	51	8.98	52	10.19
50	47	6.54	49	7.58	50	8.45	52	9.46	54	10.7
55	47	6.84	50	7.91	52	8.94	53	9.94	54	11.19
60	48	7.18	50	8.26	53	9.26	54	10.27	56	11.8
65	49	7.46	51	8.61	54	9.7	54	10.85	58	12.1
70	50	7.72	52	8.97	54	10.09	56	11.23	59	12.72
75	51	7.97	53	9.17	56	10.35	56	11.69	60	12.95
80	51	8.28	54	9.51	56	10.7	57	12.01	60	13.56

Plastic Nozzle with 1/8" Spreader Nozzle Performance

psi @ Nozzle	NOZZLE SIZE									
	5/32"		11/64"		3/16"		13/64"		7/32"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
30	-	-	-	-	44	6.89	45	7.7	46	8.63
35	42	5.91	44	6.73	44	7.43	47	8.34	48	9.27
40	45	6.32	45	7.24	46	8.02	49	8.91	50	10.03
45	46	6.72	46	7.66	48	8.54	50	9.46	52	10.63
50	46	7.1	48	8.1	50	9.01	52	10.04	54	11.19
55	46	7.46	49	8.4	52	9.37	54	10.54	56	11.84
60	47	7.76	50	8.88	52	9.89	54	11.04	56	12.3
65	48	8.11	50	9.32	52	10.31	56	11.5	57	12.87
70	48	8.39	51	9.59	54	10.66	56	11.95	58	13.29
75	48	8.75	51	9.92	55	11.08	57	12.33	58	13.85
80	49	8.99	52	10.25	55	11.46	58	12.75	60	14.24

* Nozzles must be purchased separately. See Chart below.

Part Numbers and Ordering Information

Sprinkler Only

Sprinkler Without Nozzle, Without Plug **A07370**

Plastic Quick-Fit Nozzle Only

5/32" (3.97 mm) Plastic Straight Bore Quick-Fit Nozzle (Black) **A07390**
 11/64" (4.37 mm) Plastic Straight Bore Quick-Fit Nozzle (Brown) **A07391**
 3/16" (4.76 mm) Plastic Straight Bore Quick-Fit Nozzle (Yellow) **A07392**
 13/64" (5.16 mm) Plastic Straight Bore Quick-Fit Nozzle (Purple) **A07393**
 7/32" (5.56 mm) Plastic Straight Bore Quick-Fit Nozzle (Orange) **A07394**

Spreader Nozzle and Plug Only

3/32" (2.38 mm) Plastic Spreader Nozzle (Green) **A07395**
 1/8" (3.18 mm) Plastic Spreader Nozzle (Blue) **A07396**
 Plastic Plug (Orange) **A07397**

Plastic Nozzle with Plug Performance											METRIC
bar @ Nozzle	NOZZLE SIZE										
	5/32"		11/64"		3/16"		13/64"		7/32"		
	Rad. (m)	Flow (l/h)	Rad. (m)	Flow (l/h)	Rad. (m)	Flow (l/h)	Rad. (m)	Flow (l/h)	Rad. (m)	Flow (l/h)	
2.1	-	-	-	-	14.0	1230	14.9	1400	14.6	1610	
2.4	13.4	960	14.0	1140	14.3	1340	15.2	1520	15.2	1750	
2.8	14.0	1020	14.6	1240	15.2	1420	15.8	1640	15.2	1880	
3.1	14.0	1090	15.2	1310	15.5	1520	15.8	1740	16.5	2000	
3.4	14.6	1140	15.5	1400	15.8	1610	16.2	1840	16.5	2110	
3.8	15.2	1220	15.5	1460	15.8	1700	16.5	1940	17.4	2220	
4.1	15.2	1260	15.5	1510	15.8	1750	16.8	2030	17.7	2330	
4.5	15.2	1320	15.8	1610	16.2	1850	17.1	2110	17.7	2440	
4.8	15.5	1370	16.5	1660	16.5	1920	17.1	2190	17.7	2500	
5.2	15.5	1410	16.5	1720	16.8	1980	17.4	2270	17.7	2600	
5.5	15.5	1470	16.8	1780	16.8	2040	17.4	2340	18.0	2680	



Plastic Nozzle with 3/32" Spreader Nozzle Performance											METRIC
bar @ Nozzle	NOZZLE SIZE										
	5/32"		11/64"		3/16"		13/64"		7/32"		
	Rad. (m)	Flow (l/h)	Rad. (m)	Flow (l/h)	Rad. (m)	Flow (l/h)	Rad. (m)	Flow (l/h)	Rad. (m)	Flow (l/h)	
2.1	-	-	-	-	13.4	1450	14.0	1650	14.3	1870	
2.4	13.4	1230	13.4	1420	13.7	1590	14.6	1790	14.9	2020	
2.8	14.0	1310	14.0	1520	14.3	1710	15.2	1910	15.5	2160	
3.1	14.0	1400	14.6	1630	14.9	1810	15.5	2040	15.8	2310	
3.4	14.3	1490	14.9	1720	15.2	1920	15.8	2150	16.5	2430	
3.8	14.3	1550	15.2	1800	15.8	2030	16.2	2260	16.5	2540	
4.1	14.6	1630	15.2	1880	16.2	2100	16.5	2330	17.1	2680	
4.5	14.9	1690	15.5	1960	16.5	2200	16.5	2460	17.7	2750	
4.8	15.2	1750	15.8	2040	16.5	2290	17.1	2550	18.0	2890	
5.2	15.5	1810	16.2	2080	17.1	2350	17.1	2650	18.3	2940	
5.5	15.5	1880	16.5	2160	17.1	2430	17.4	2730	18.3	3080	

Plastic Nozzle with 1/8" Spreader Nozzle Performance											METRIC
bar @ Nozzle	NOZZLE SIZE										
	5/32"		11/64"		3/16"		13/64"		7/32"		
	Rad. (m)	Flow (l/h)	Rad. (m)	Flow (l/h)	Rad. (m)	Flow (l/h)	Rad. (m)	Flow (l/h)	Rad. (m)	Flow (l/h)	
2.1	-	-	-	-	13.4	1560	13.7	1750	14.0	1960	
2.4	12.8	1340	13.4	1530	13.4	1690	14.3	1890	14.6	2110	
2.8	13.7	1440	13.7	1640	14.0	1820	14.9	2020	15.2	2280	
3.1	14.0	1530	14.0	1740	14.6	1940	15.2	2150	15.8	2410	
3.4	14.0	1610	14.6	1840	15.2	2050	15.8	2280	16.5	2540	
3.8	14.0	1690	14.9	1910	15.8	2130	16.5	2390	17.1	2690	
4.1	14.3	1760	15.2	2020	15.8	2250	16.5	2510	17.1	2790	
4.5	14.6	1840	15.2	2120	15.8	2340	17.1	2610	17.4	2920	
4.8	14.6	1910	15.5	2180	16.5	2420	17.1	2710	17.7	3020	
5.2	14.6	1990	15.5	2250	16.8	2520	17.4	2800	17.7	3150	
5.5	14.9	2040	15.8	2330	16.8	2600	17.7	2900	18.3	3230	

* Nozzles must be purchased separately. See chart on previous page.

30H / 30WH

3/4" 19 mm Full Circle, Brass Impact Sprinkler

Features

- Heavy duty brass construction
- Stainless steel springs and fulcrum pin
- Chemically resistant washers
- Dual nozzle ports
- 30H unit does not have a spreader plug
- 30WH unit has spreader plug

Benefits

- Wide range of flow rates
- Corrosion and grit resistant
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 3/4" (19mm) Male NPT, Brass
- Trajectory Angle: 27°
- Operating Range: 25-80 psi (1.7-5.5 bar)
- Flow Rate: 2.9-13.1 gpm (0.66-2.98 m³/h)
- Radius: 40-56 ft. (12.20-17.23 meters)
- Nozzle Port: 1/8" Female NPT
- Spreader Nozzle Port: 1/8" Female NPT



Brass Straight Bore Nozzle (SBN-3) with Spreader (LAN-1) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 9 ft.)							
	9/64"		5/32"		11/64"		3/16"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	40	4.20	41	4.80	41	5.60	42	6.40
30	40	4.60	42	5.30	44	6.10	45	7.00
35	41	4.90	43	5.70	45	6.60	47	7.50
40	41	5.20	44	6.10	46	7.00	48	8.10
45	42	5.60	44	6.50	46	7.40	49	8.50
50	42	5.90	45	6.80	47	7.90	50	9.00
55	43	6.10	45	7.10	48	8.20	50	9.40
60	43	6.40	46	7.40	48	8.60	51	9.90
65	44	6.70	46	7.80	49	8.90	51	10.20
70	44	6.90	47	8.10	49	9.30	52	10.70
75	45	7.20	47	8.30	50	9.60	52	11.00
80	45	7.50	48	8.70	50	10.00	53	11.50

Brass Straight Bore Nozzle (SBN-3) with Spreader (LAN-1) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 9 ft.)									
	9/64" x 3/32-7"		5/32" x 3/32-7"		11/64" x 3/32-7"		3/16" x 3/32-7"		3/16" x 1/8-20"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	40	4.20	41	4.80	41	5.60	42	6.40	42	7.40
30	40	4.60	42	5.30	44	6.10	45	7.00	45	8.10
35	41	4.90	43	5.70	45	6.60	47	7.50	47	8.70
40	41	5.20	44	6.10	46	7.00	48	8.10	48	9.30
45	42	5.60	44	6.50	46	7.40	49	8.50	49	9.90
50	42	5.90	45	6.80	47	7.90	50	9.00	50	10.40
55	43	6.10	45	7.10	48	8.20	50	9.40	50	10.90
60	43	6.40	46	7.40	48	8.60	51	9.90	51	11.40
65	44	6.70	46	7.80	49	8.90	51	10.20	51	11.80
70	44	6.90	47	8.10	49	9.30	52	10.70	52	12.30
75	45	7.20	47	8.30	50	9.60	52	11.00	52	12.70
80	45	7.50	48	8.70	50	10.00	53	11.50	53	13.10

Brass Straight Bore Nozzle with Vane (SBN-3V) with Plug Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 10 ft.)							
	9/64"		5/32"		11/64"		3/16"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	42	2.90	44	3.50	45	4.30	48	5.10
30	43	3.10	45	3.90	46	4.70	47	5.60
35	44	3.40	46	4.20	47	5.10	49	6.00
40	45	3.60	47	4.50	48	5.40	50	6.40
45	46	3.80	48	4.70	49	5.70	52	6.80
50	46	4.10	49	5.00	50	6.10	53	7.20
55	47	4.20	50	5.20	51	6.30	53	7.60
60	47	4.40	50	5.50	51	6.60	54	7.90
65	48	4.60	51	5.80	52	6.90	55	8.20
70	48	4.80	51	5.90	53	7.20	55	8.50
75	49	5.00	52	6.10	54	7.40	56	8.80
80	50	5.10	52	6.30	55	7.70	56	9.10

Brass Straight Bore Nozzle with Vane (SBN-3v) with Spreader (LAN-1) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 10 ft.)									
	9/64" x 3/32-7"		5/32" x 3/32-7"		11/64" x 3/32-7"		3/16" x 3/32-7"		3/16" x 1/8-20"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	42	4.20	44	4.80	45	5.60	45	6.40	46	7.40
30	43	4.60	45	5.30	46	6.10	47	7.00	47	8.10
35	44	4.90	46	5.70	47	6.60	49	7.50	49	8.70
40	45	5.20	47	6.10	48	7.00	50	8.10	50	9.30
45	46	5.60	48	6.50	49	7.40	52	8.50	52	9.90
50	46	5.90	49	6.80	50	7.90	53	9.00	53	10.40
55	47	6.10	50	7.10	51	8.20	54	9.40	54	10.90
60	47	6.40	50	7.40	51	8.60	54	9.90	54	11.40
65	48	6.70	51	7.80	52	8.90	55	10.20	55	11.80
70	48	6.90	51	8.10	53	9.30	55	10.70	55	12.30
75	49	7.20	52	8.30	54	9.60	56	11.00	56	12.70
80	50	7.50	52	8.70	55	10.00	56	11.50	56	13.10

* Nozzles must be purchased separately. See chart below.

Part Numbers and Ordering Information

Sprinkler Only

Sprinkler Without Nozzle, Without Plug	30H	A08401
Sprinkler without Nozzle, With Plug	30WH	A08411

Nozzle Only

	U.S. Standard	Metric	XX = Nozzle Size							
			3/32"	7/64"	1/8"	9/64"	5/32"	11/64"	3/16"	
			2.38mm	2.78mm	3.18mm	3.57mm	3.97mm	4.37mm	4.76mm	
Brass Straight Bore Nozzle	SBN-3	105842-XX	—	—	—	09	10	11	12	
Brass Straight Bore Nozzle with Vane	SBN-3V	106131-XX	—	—	—	09	10	11	12	
Brass 7° Low Angle Spreader	LAN-1-7	100225-XX	06	07	08	09	10	—	—	
Brass 20° Low Angle Spreader	LAN-1-20	100226-XX	06	07	08	09	10	—	—	
Brass Plug		100255								

30H Brass Straight Bore Nozzle (SBN-3) with Plug* METRIC													
NOZZLE SIZE (Stream Height: 1.1 m)													
bar@ Nozzle	3.57 mm (9/64")			3.97 mm (5/32")			4.37 mm (11/64")			4.76 mm (3/16")			Flow (m ³ /h)
	Rad. (m)	Flow (l/s)	Flow (m ² /h)	Rad. (m)	Flow (l/s)	Flow (m ² /h)	Rad. (m)	Flow (l/s)	Flow (m ² /h)	Rad. (m)	Flow (l/s)	Flow (m ² /h)	
1.7	12.2	0.18	0.66	12.5	0.22	0.79	12.6	0.27	0.98	13.0	0.32	1.16	
2.0	12.3	0.19	0.69	12.9	0.24	0.87	13.3	0.29	1.05	13.7	0.35	1.25	
2.5	12.5	0.22	0.78	13.3	0.27	0.97	13.8	0.33	1.18	14.4	0.38	1.39	
3.0	12.8	0.24	0.85	13.5	0.29	1.05	14.1	0.35	1.27	14.8	0.42	1.52	
3.5	13.0	0.26	0.93	13.7	0.32	1.14	14.5	0.39	1.39	15.3	0.46	1.65	
4.0	13.2	0.27	0.98	14.0	0.34	1.22	14.7	0.41	1.47	15.5	0.49	1.77	
4.5	13.4	0.29	1.05	14.2	0.37	1.32	14.9	0.44	1.57	15.7	0.52	1.87	
5.0	13.6	0.31	1.11	14.4	0.38	1.36	15.2	0.46	1.66	15.9	0.55	1.96	
5.5	13.9	0.32	1.16	14.6	0.40	1.43	15.4	0.49	1.75	16.2	0.57	2.07	

30H Brass Straight Bore Nozzle (SBN-3) with Spreader (LAN-1*) METRIC																
NOZZLE SIZE (Stream Height: 1.1 m)																
bar@ Nozzle	3.57 mm x 2.38 mm (9/64" x 3/32") 7°			3.97 mm x 2.38 mm (5/32" x 3/32") 7°			4.37 mm x 2.38 mm (11/64" x 3/32") 7°			4.76 mm x 2.38 mm (3/16" x 3/32") 7°			4.76 mm x 3.18 mm (3/16" x 1/8") 20°			Flow (m ³ /h)
	Rad. (m)	Flow (l/s)	Flow (m ² /h)	Rad. (m)	Flow (l/s)	Flow (m ² /h)	Rad. (m)	Flow (l/s)	Flow (m ² /h)	Rad. (m)	Flow (l/s)	Flow (m ² /h)	Rad. (m)	Flow (l/s)	Flow (m ² /h)	
1.7	12.2	0.26	0.95	12.5	0.30	1.09	12.6	0.35	1.27	13.0	0.40	1.45	13.0	0.47	1.68	
2.0	12.3	0.29	1.03	12.9	0.33	1.18	13.3	0.38	1.36	13.7	0.43	1.56	13.7	0.50	1.81	
2.5	12.5	0.31	1.13	13.3	0.37	1.32	13.8	0.42	1.52	14.4	0.48	1.74	14.4	0.56	2.01	
3.0	12.8	0.35	1.24	13.5	0.40	1.45	14.1	0.46	1.65	14.8	0.53	1.90	14.8	0.61	2.21	
3.5	13.0	0.37	1.35	13.7	0.43	1.55	14.5	0.50	1.80	15.3	0.57	2.06	15.3	0.66	2.38	
4.0	13.2	0.40	1.43	14.0	0.46	1.65	14.7	0.53	1.92	15.5	0.61	2.20	15.5	0.71	2.54	
4.5	13.4	0.42	1.52	14.2	0.49	1.77	14.9	0.56	2.03	15.7	0.64	2.32	15.7	0.75	2.69	
5.0	13.6	0.44	1.60	14.4	0.52	1.86	15.2	0.60	2.15	15.9	0.68	2.46	15.9	0.79	2.84	
5.5	13.9	0.47	1.70	14.6	0.55	1.98	15.4	0.63	2.27	16.2	0.73	2.61	16.2	0.83	2.98	

30H Brass Straight Bore Nozzle (SBN-3) with Plug* METRIC													
NOZZLE SIZE (Stream Height: 3 m)													
bar@ Nozzle	3.57 mm (9/64")			3.97 mm (5/32")			4.37 mm (11/64")			4.76 mm (3/16")			Flow (m ³ /h)
	Rad. (m)	Flow (l/s)	Flow (m ² /h)	Rad. (m)	Flow (l/s)	Flow (m ² /h)	Rad. (m)	Flow (l/s)	Flow (m ² /h)	Rad. (m)	Flow (l/s)	Flow (m ² /h)	
1.7	12.2	0.18	0.66	12.5	0.22	0.79	12.6	0.27	0.98	13.0	0.32	1.16	
2.0	12.3	0.19	0.69	12.9	0.24	0.87	13.3	0.29	1.05	13.7	0.35	1.25	
2.5	12.5	0.22	0.78	13.3	0.27	0.97	13.8	0.33	1.18	14.4	0.38	1.39	
3.0	12.8	0.24	0.85	13.5	0.29	1.05	14.1	0.35	1.27	14.8	0.42	1.52	
3.5	13.0	0.26	0.93	13.7	0.32	1.14	14.5	0.39	1.39	15.3	0.46	1.65	
4.0	13.2	0.27	0.98	14.0	0.34	1.22	14.7	0.41	1.47	15.5	0.49	1.77	
4.5	13.4	0.29	1.05	14.2	0.37	1.32	14.9	0.44	1.57	15.7	0.52	1.87	
5.0	13.6	0.31	1.11	14.4	0.38	1.36	15.2	0.46	1.66	15.9	0.55	1.96	
5.5	13.9	0.32	1.16	14.6	0.40	1.43	15.4	0.49	1.75	16.2	0.57	2.07	

30H Brass Straight Bore Nozzle (SBN-3) with Spreader (LAN-1*) METRIC																
NOZZLE SIZE (Stream Height: 3 m)																
bar@ Nozzle	3.57 mm x 2.38 mm (9/64" x 3/32") 7°			3.97 mm x 2.38 mm (5/32" x 3/32") 7°			4.37 mm x 2.38 mm (11/64" x 3/32") 7°			4.76 mm x 2.38 mm (3/16" x 3/32") 7°			4.76 mm x 3.18 mm (3/16" x 1/8") 20°			Flow (m ³ /h)
	Rad. (m)	Flow (l/s)	Flow (m ² /h)	Rad. (m)	Flow (l/s)	Flow (m ² /h)	Rad. (m)	Flow (l/s)	Flow (m ² /h)	Rad. (m)	Flow (l/s)	Flow (m ² /h)	Rad. (m)	Flow (l/s)	Flow (m ² /h)	
1.7	13.0	0.26	0.95	13.4	0.30	1.09	13.9	0.35	1.27	13.9	0.40	1.45	13.9	0.47	1.68	
2.0	13.2	0.29	1.03	13.7	0.33	1.18	14.0	0.38	1.36	14.4	0.43	1.56	14.4	0.50	1.81	
2.5	13.6	0.31	1.13	14.1	0.37	1.32	14.4	0.42	1.52	15.0	0.48	1.74	15.0	0.56	2.01	
3.0	14.0	0.35	1.24	14.5	0.40	1.45	14.8	0.46	1.65	15.7	0.53	1.90	15.7	0.61	2.21	
3.5	14.2	0.37	1.35	15.0	0.43	1.55	15.3	0.50	1.80	16.2	0.57	2.06	16.2	0.66	2.38	
4.0	14.4	0.40	1.43	15.3	0.46	1.65	15.6	0.53	1.92	16.5	0.61	2.20	16.5	0.71	2.54	
4.5	14.6	0.42	1.52	15.6	0.49	1.77	15.9	0.56	2.03	16.8	0.64	2.32	16.8	0.75	2.69	
5.0	14.9	0.44	1.60	15.8	0.52	1.86	16.3	0.60	2.15	17.0	0.68	2.46	17.0	0.79	2.84	
5.5	15.2	0.47	1.70	16.0	0.55	1.98	16.8	0.63	2.27	17.2	0.73	2.61	17.2	0.83	2.98	

* Nozzles must be purchased separately. See chart on previous page.

30PWH

3/4" 19mm Full Circle, Aluminum Arm Impact Sprinkler

Features

- Durable die-cast, anodized, aluminum arm
- Stainless steel springs and fulcrum pin
- Aluminum arm allows for smaller nozzles and lower pressures
- Chemically resistant washers

Benefits

- Wide range of flow rates
- Corrosion and grit resistant
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 3/4" (19mm) Male NPT, Brass
- Trajectory Angle: 27°
- Operating Range: 25-80 psi (1.7-5.5 bar)
- Flow Rate: 1.7-5.5 gpm (0.39-1.22 m³/h)
- Radius: 38-46 ft. (11.74-14.03 meters)
- Nozzle Port: 1/4" Female NPT
- Spreader Nozzle Port: 1/8" Female NPT



Straight Bore Nozzle (SBN-3*)								
psi @ Nozzle	NOZZLE SIZE (Stream Height: 9 ft.)							
	7/64"		1/8"		9/64"		5/32"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	38	1.70	39	2.30	40	2.90	41	3.50
30	39	1.90	39	2.50	40	3.20	42	3.90
35	39	2.10	40	2.70	41	3.40	43	4.20
40	39	2.20	40	2.90	41	3.60	44	4.50
45	40	2.30	41	3.10	42	3.80	44	4.70
50	40	2.40	41	3.20	42	4.00	45	5.00
55	40	2.60	42	3.40	43	4.20	45	5.20
60	41	2.70	42	3.60	43	4.40	46	5.50
65	41	2.80	43	3.70	44	4.70	-	-
70	41	2.90	43	3.80	44	4.80	-	-
75	41	3.00	43	4.00	-	-	-	-
80	42	3.10	43	4.10	-	-	-	-

Straight Bore Nozzle (SBN-3*)											METRIC	
bar @ Nozzle	NOZZLE SIZE (Stream Height: 2.7 m)											
	2.78 mm (7/64")			3.18 mm (1/8")			3.57 mm (9/64")			3.97 mm (5/32")		
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
1.7	11.7	0.11	0.39	11.9	0.15	0.52	12.2	0.18	0.66	12.5	0.22	0.79
2.0	11.9	0.12	0.42	12.0	0.16	0.56	12.3	0.20	0.71	12.9	0.24	0.87
2.5	11.9	0.13	0.48	12.2	0.17	0.62	12.5	0.22	0.78	13.3	0.27	0.97
3.0	12.1	0.14	0.52	12.5	0.19	0.69	12.8	0.24	0.85	13.5	0.29	1.05
3.5	12.2	0.15	0.55	12.7	0.20	0.73	13.0	0.25	0.92	13.7	0.32	1.14
4.0	12.4	0.17	0.60	12.9	0.22	0.80	13.2	0.27	0.98	14.0	0.34	1.22
4.5	12.5	0.18	0.64	13.1	0.23	0.84	13.4	0.30	1.07	-	-	-
5.0	12.6	0.19	0.67	13.2	0.25	0.89	-	-	-	-	-	-
5.5	12.8	0.20	0.70	13.3	0.26	0.93	-	-	-	-	-	-

* Nozzles must be purchased separately. See chart below.

Part Numbers and Ordering Information

Nozzle Only		XX = Nozzle Size				
	U.S. Standard	7/64"	1/8"	9/64"	5/32"	
	Metric	2.78 mm	3.18 mm	3.57 mm	3.97 mm	
Brass Straight Bore Nozzle	SBN-3	105842-XX	07	08	09	10
Brass Straight Bore Nozzle with Vane	SBN-3V	106131-XX	07	08	09	10

Bold nozzle size number denotes the most common nozzle choice.

14070H

3/4" 19mm Full Circle, Brass Impact Sprinkler

Features

- Heavy duty brass construction
- Extra large body and barrel
- Stainless steel springs and fulcrum pin
- Chemically resistant washers
- Dual nozzle ports

Benefits

- Extra large body accommodates wide range of flow rates and nozzles
- Long nozzle barrel increases distance of throw
- Corrosion and grit resistant
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 3/4" (19mm) Male NPT, Brass
- Trajectory Angle: 27°
- Operating Range: 25-80 psi (1.7-5.5 bar)
- Flow Rate: 4.2-23 gpm (0.97-5.34 m³/h)
- Radius: 44-71 ft. (13.57-22.10 meters)
- Nozzle Port: 1/4" Female NPT
- Spreader Nozzle Port: 1/8" Female NPT



Straight Bore Nozzle (SBN-3) with Spreader (LAN-1-20)*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 10 ft.)													
	3/16" x 1/8-20"		13/64" x 1/8-20"		7/32" x 1/8-20"		15/64" x 1/8-20"		1/4" x 1/8-20"		17/64" x 1/8-20"		9/32" x 1/8-20"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	44	7.40	45	8.30	46	9.20	46	10.30	47	11.40	47	12.50	48	13.80
30	47	8.10	48	9.10	49	10.10	50	11.20	51	12.40	51	13.70	52	15.10
35	49	8.70	50	9.80	51	10.90	52	12.10	52	13.40	53	14.80	54	16.30
40	50	9.30	51	10.50	52	11.70	53	13.00	54	14.40	55	15.80	56	17.40
45	51	9.90	52	11.10	54	12.40	55	13.80	56	15.20	57	16.80	58	18.50
50	52	10.40	53	11.70	55	13.10	56	14.50	57	16.10	58	17.70	59	19.50
55	53	10.90	54	12.30	56	13.70	57	15.20	59	16.90	59	18.60	61	20.40
60	53	11.40	55	12.80	57	14.30	58	15.90	60	17.60	61	19.40	62	21.30
65	54	11.90	56	13.30	58	14.90	59	16.50	61	18.30	62	20.20	63	22.20
70	55	12.40	57	13.80	59	15.40	60	17.20	62	19.00	63	21.00	65	23.00
75	55	12.80	58	14.30	60	16.00	61	17.80	63	19.70	-	-	-	-
80	56	13.20	58	14.80	61	16.50	62	18.40	64	20.30	-	-	-	-

Straight Bore Nozzle (SBN-3V) with Plug*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 10 ft.)																	
	5/32"		11/64"		3/16"		13/64"		7/32"		15/64"		1/4"		17/64"		9/32"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	-	-	-	-	44	5.10	45	6.00	46	7.00	46	8.00	47	9.10	48	10.30	48	11.50
30	-	-	-	-	47	5.60	48	6.60	49	7.60	50	8.80	51	10.00	51	11.20	52	12.60
35	46	4.20	47	5.10	49	6.10	50	7.10	51	8.20	52	9.50	52	10.80	53	12.10	54	13.60
40	46	4.50	48	5.40	50	6.50	51	7.60	52	8.80	53	10.10	54	11.50	55	13.00	56	14.60
45	47	4.80	49	5.80	51	6.90	52	8.10	54	9.30	55	10.70	56	12.20	57	13.80	58	15.40
50	48	5.00	50	6.10	52	7.20	53	8.50	55	9.80	56	11.30	57	12.90	58	14.50	59	16.30
55	48	5.30	50	6.40	53	7.60	54	8.90	56	10.30	54	11.80	59	13.50	59	15.20	61	17.10
60	49	5.50	51	6.70	53	7.90	55	9.30	57	10.80	58	12.40	60	14.10	61	15.90	62	17.80
65	49	5.70	52	6.90	54	8.30	56	9.70	58	11.20	59	12.90	61	14.70	62	16.50	63	18.50
70	50	5.90	52	7.20	55	8.60	57	10.00	59	11.60	60	13.40	62	15.20	63	17.20	65	19.20
75	50	6.20	53	7.40	55	8.90	58	10.40	60	12.10	61	13.80	63	15.70	-	-	-	-
80	50	6.40	53	7.70	56	9.10	58	10.70	61	12.40	62	14.30	64	16.30	-	-	-	-

Straight Bore Nozzle with Vane (SBN-3V) with Spreader (LAN-1-20)*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 10 ft.)													
	3/16" x 1/8-20"		13/64" x 1/8-20"		7/32" x 1/8-20"		15/64" x 1/8-20"		1/4" x 1/8-20"		17/64" x 1/8-20"		9/32" x 1/8-20"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	47	7.40	49	8.30	51	9.20	51	9.80	51	10.80	51	11.90	51	13.10
30	50	8.10	51	9.10	54	10.10	54	10.60	55	11.80	55	13.00	55	14.30
35	51	8.70	53	9.80	55	10.90	56	11.50	57	12.70	57	14.10	57	15.50
40	52	9.30	54	10.50	56	11.70	57	12.40	59	13.70	59	15.00	60	16.50
45	53	9.90	55	11.10	57	12.40	59	13.10	60	14.40	61	16.00	62	17.60
50	53	10.40	56	11.70	58	13.10	60	13.80	62	15.30	63	16.80	64	18.50
55	54	10.90	56	12.30	59	13.70	61	14.40	63	16.10	65	17.70	66	19.40
60	55	11.40	57	12.80	60	14.30	62	15.10	64	16.70	67	18.40	68	20.20
65	55	11.90	58	13.30	61	14.90	63	15.70	65	17.40	68	19.20	69	21.10
70	56	12.40	58	13.80	62	15.40	64	16.30	66	18.10	69	20.00	71	21.90
75	56	12.80	59	14.30	62	16.00	65	16.90	67	18.70	-	-	-	-
80	57	13.20	60	14.80	63	16.50	66	17.50	69	19.30	-	-	-	-

* Nozzles must be purchased separately. See chart below.

Part Numbers and Ordering Information

Sprinkler Only	Nozzle Only	XX = Nozzle Size										
		U.S. Standard	5/32"	11/64"	3/16"	13/64"	7/32"	15/64"	1/4"	17/64"	9/32"	9/32"
Sprinkler without Nozzle with Plug A12800	Brass Straight Bore Nozzle	SBN-3 105842-XX	—	10	11	12	13	14	15	16	17	18
	Brass Straight Bore Nozzle with Vane	SBN-3V 106131-XX	—	10	11	12	13	14	15	16	17	18
	Brass 20° Low Angle Spreader Nozzle	LAN-1-20 100226-XX	08	—	—	—	—	—	—	—	—	—
	Brass Plug	100255										

14070H (Continued)

Straight Bore Nozzle (SBN-3) with Spreader (LAN-1-20)* METRIC

bar @ Nozzle	NOZZLE SIZE (Stream Height: 3m)																							
	4.76 mm x 3.18 mm (3/16" x 1/8") 20°			5.16 mm x 3.18 mm (13/64" x 1/8") 20°			5.56 mm x 3.18 mm (7/32" x 1/8") 20°			5.95 mm x 3.18 mm (15/64" x 1/8") 20°			6.35 mm x 3.18 mm (1/4" x 1/8") 20°			6.75 mm x 3.18 mm (17/64" x 1/8") 20°			7.14 mm x 3.18 mm (9/32" x 1/8") 20°					
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
1.7	13.6	0.47	1.68	13.9	0.52	1.89	14.0	0.58	2.09	14.2	0.65	2.34	14.3	0.72	2.59	14.5	0.79	2.84	14.6	0.87	3.13			
2.0	14.3	0.50	1.81	14.6	0.56	2.03	14.9	0.63	2.25	15.0	0.70	2.50	15.3	0.77	2.77	15.4	0.85	3.06	15.6	0.94	3.37			
2.5	15.0	0.56	2.01	15.4	0.63	2.26	15.7	0.70	2.52	16.0	0.78	2.80	16.2	0.86	3.10	16.4	0.95	3.42	16.6	1.05	3.76			
3.0	15.5	0.61	2.21	15.9	0.69	2.48	16.3	0.77	2.77	16.6	0.86	3.08	16.9	0.94	3.40	17.2	1.04	3.75	17.5	1.15	4.13			
3.5	15.9	0.66	2.38	16.4	0.74	2.68	16.8	0.83	3.00	17.1	0.92	3.32	17.6	1.02	3.68	17.9	1.12	4.05	18.2	1.24	4.46			
4.0	16.2	0.71	2.54	16.8	0.79	2.86	17.4	0.89	3.19	17.7	0.99	3.55	18.2	1.09	3.93	18.4	1.20	4.33	18.9	1.32	4.75			
4.5	16.6	0.75	2.71	17.2	0.84	3.03	17.8	0.94	3.39	18.1	1.04	3.75	18.6	1.16	4.16	19.1	1.28	4.60	19.4	1.40	5.05			
5.0	16.8	0.79	2.86	17.5	0.89	3.19	18.1	0.99	3.56	18.6	1.10	3.97	19.1	1.22	4.39	19.6	1.35	4.86	19.9	1.48	5.34			
5.5	17.2	0.83	3.00	17.8	0.93	3.36	18.6	1.04	3.75	19.1	1.16	4.18	19.7	1.28	4.61	-	-	-	-	-	-	-	-	-

Straight Bore Nozzle (SBN-3V) with Plug* METRIC

bar @ Nozzle	NOZZLE SIZE (Stream Height: 3m)																										
	3.97 mm (5/32")			4.37 mm (11/64")			4.76 mm (3/16")			5.16 mm (13/64")			5.56 mm (7/32")			5.95 mm (15/64")			6.35 mm (1/4")			6.75 mm (17/64")			7.14 mm (9/32")		
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
1.7	-	-	-	-	-	-	13.6	0.32	1.16	13.9	0.38	1.36	14.0	0.44	1.59	14.2	0.50	1.82	14.3	0.57	2.07	14.5	0.65	2.34	14.6	0.73	2.61
2.0	-	-	-	-	-	-	14.3	0.35	1.25	14.6	0.41	1.47	14.9	0.47	1.70	15.0	0.54	1.96	15.3	0.62	2.23	15.4	0.70	2.50	15.6	0.78	2.81
2.5	14.1	0.27	0.97	14.4	0.33	1.18	15.0	0.39	1.41	15.4	0.46	1.64	15.7	0.53	1.90	16.0	0.61	2.19	16.2	0.69	2.49	16.4	0.78	2.80	16.6	0.87	3.14
3.0	14.3	0.30	1.07	14.8	0.36	1.29	15.5	0.43	1.54	15.9	0.50	1.81	16.3	0.58	2.08	16.6	0.66	2.39	16.9	0.76	2.72	17.2	0.86	3.08	17.5	0.96	3.44
3.5	14.7	0.32	1.15	15.3	0.39	1.40	15.9	0.46	1.65	16.4	0.54	1.94	16.8	0.62	2.24	17.1	0.72	2.58	17.6	0.82	2.95	17.9	0.92	3.32	18.2	1.04	3.73
4.0	14.9	0.34	1.23	15.5	0.42	1.49	16.2	0.49	1.77	16.8	0.58	2.08	17.4	0.67	2.41	17.7	0.77	2.76	18.2	0.87	3.15	18.4	0.99	3.55	18.9	1.11	3.98
4.5	15.1	0.36	1.30	15.9	0.44	1.57	16.6	0.52	1.89	17.2	0.61	2.21	17.8	0.71	2.55	18.1	0.82	2.93	18.6	0.93	3.34	19.1	1.04	3.75	19.4	1.17	4.21
5.0	15.2	0.38	1.37	16.1	0.46	1.66	16.8	0.55	1.99	17.5	0.64	2.32	18.1	0.75	2.69	18.6	0.86	3.09	19.1	0.97	3.51	19.6	1.10	3.97	19.8	1.23	4.42
5.5	15.4	0.40	1.45	16.3	0.49	1.75	17.2	0.57	2.07	17.8	0.68	2.43	18.6	0.78	2.82	19.1	0.90	3.25	19.7	1.03	3.70	-	-	-	-	-	-

Straight Bore Nozzle with Vane (SBN-3V) with Spreader (LAN-1-20)* METRIC

bar @ Nozzle	NOZZLE SIZE (Stream Height: 3m)																										
	4.76 mm x 3.18 mm (3/16" x 1/8") 20°			5.16 mm x 3.18 mm (13/64" x 1/8") 20°			5.56 mm x 3.18 mm (7/32" x 1/8") 20°			5.95 mm x 3.18 mm (15/64" x 1/8") 20°			6.35 mm x 3.18 mm (1/4" x 1/8") 20°			6.75 mm x 3.18 mm (17/64" x 1/8") 20°			7.14 mm x 3.18 mm (9/32" x 1/8") 20°								
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
1.7	14.5	0.47	1.68	14.9	0.52	1.89	15.5	0.58	2.09	15.5	0.62	2.23	15.7	0.68	2.45	15.5	0.75	2.70	15.5	0.83	2.98						
2.0	15.1	0.50	1.81	15.5	0.56	2.03	16.3	0.63	2.25	16.4	0.66	2.37	16.5	0.73	2.63	16.5	0.81	2.90	16.5	0.89	3.19						
2.5	15.6	0.56	2.01	16.2	0.63	2.26	17.0	0.70	2.52	17.2	0.74	2.66	17.5	0.82	2.94	17.7	0.90	3.25	17.7	0.99	3.58						
3.0	16.1	0.61	2.21	16.7	0.69	2.48	17.4	0.77	2.77	17.8	0.81	2.93	18.3	0.90	3.22	18.6	0.99	3.56	18.7	1.09	3.92						
3.5	16.4	0.66	2.38	17.1	0.74	2.68	17.9	0.83	3.00	18.4	0.88	3.15	18.9	0.97	3.50	19.3	1.07	3.85	19.6	1.18	4.23						
4.0	16.7	0.71	2.54	17.4	0.79	2.86	18.3	0.89	3.19	18.9	0.93	3.37	19.5	1.04	3.74	20.1	1.14	4.11	20.5	1.25	4.51						
4.5	16.9	0.75	2.71	17.7	0.84	3.03	18.8	0.94	3.39	19.4	0.99	3.57	20.0	1.10	3.96	20.7	1.21	4.37	21.2	1.33	4.80						
5.0	17.1	0.79	2.86	17.9	0.89	3.19	19.0	0.99	3.56	19.7	1.05	3.77	20.4	1.16	4.18	21.3	1.28	4.62	22.1	1.40	5.05						
5.5	17.4	0.83	3.00	18.3	0.93	3.36	19.4	1.04	3.75	20.1	1.10	3.97	21.0	1.22	4.38	-	-	-	-	-	-	-	-	-	-	-	-

* Nozzles must be purchased separately. See chart below.

Part Numbers and Ordering Information

Sprinkler Only

Sprinkler without Nozzle with Plug **A12800**

Nozzle Only

XX = Nozzle Size

		Metric	3.18 mm	3.97 mm	4.37 mm	4.76 mm	5.16 mm	5.56 mm	5.95 mm	6.35 mm	6.75 mm	7.14 mm
Brass Straight Bore Nozzle	SBN-3	105842-XX	-	10	11	12	13	14	15	16	17	18
Brass Straight Bore Nozzle with Vane	SBN-3V	106131-XX	-	10	11	12	13	14	15	16	17	18
Brass 20° Low Angle Spreader Nozzle	LAN-1-20	100226-XX	08	-	-	-	-	-	-	-	-	-
Brass Plug	100255											

30FH / 30FWH

3/4" 19mm Full Circle, Brass Impact Sprinkler

Features

- Heavy duty brass construction
- Stainless steel springs and fulcrum pin
- Chemically resistant, PTFE washers
- Dual nozzle ports

Benefits

- PTFE washers allow for faster rotation times with a smaller nozzle at lower pressures
- Wide range of flow rates
- Corrosion and grit resistant
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 3/4" (19mm) Male NPT, Brass
- Trajectory Angle: 27°
- Operating Range: 25-80 psi (1.7-5.5 bar)
- Flow Rate: 2.26-6.47 gpm (0.51-1.47 m³/h)
- Radius: 39-43 ft. (11.90-13.27 meters)
- Nozzle Port: 1/4" Female NPT
- Spreader Nozzle Port: 1/8" Female NPT



Straight Bore Nozzle (SBN-3) Performance*

NOZZLE SIZE (Stream Height: 9 ft.)			
1/8"			
psi @ Nozzle	Rad. (ft.)	Flow (gpm)	
25	39	2.26	
30	39	2.48	
35	40	2.68	
40	40	2.86	
45	41	3.03	
50	41	3.20	
55	42	3.35	
60	44	3.50	
65	43	3.65	
70	43	3.78	
75	43	3.91	
80	43	4.04	

Straight Bore Nozzle (SBN-3) with Spreader (LAN-1-20) Performance*

NOZZLE SIZE (Stream Height: 9 ft.)			
1/8" x 3/32-20"			
psi @ Nozzle	Rad. (ft.)	Flow (gpm)	
25	39	3.52	
30	39	3.87	
35	40	4.19	
40	40	4.49	
45	41	4.77	
50	41	5.02	
55	42	5.27	
60	42	5.51	
65	43	5.75	
70	43	5.99	
75	43	6.23	
80	43	6.47	

Straight Bore Nozzle (SBN-3) with Spreader (LAN-1-20) * METRIC

NOZZLE SIZE (Stream Height: 2.7 m)			
3.18 mm (1/8")			
bar @ Nozzle	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
1.7	11.9	0.14	0.51
2.0	12.0	0.15	0.55
2.5	12.2	0.17	0.62
3.0	12.5	0.19	0.68
3.5	12.7	0.20	0.73
4.0	12.9	0.22	0.78
4.5	13.1	0.23	0.83
5.0	13.2	0.24	0.87
5.5	13.3	0.25	0.92

Straight Bore Nozzle (SBN-3) with Spreader (LAN-1-20) * METRIC

NOZZLE SIZE (Stream Height: 2.7 m)			
3.18 mm x 2.38 mm (1/8" x 3/32") 20"			
bar @ Nozzle	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
1.7	11.9	0.22	0.80
2.0	12.0	0.24	0.86
2.5	12.2	0.27	0.97
3.0	12.5	0.30	1.06
3.5	12.7	0.32	1.15
4.0	12.9	0.34	1.23
4.5	13.1	0.36	1.31
5.0	13.2	0.39	1.39
5.5	13.3	0.41	1.47

* Nozzles must be purchased separately. See chart below.

Part Numbers and Ordering Information

Sprinkler Only

Sprinkler without Nozzle	30FH	A08401F
Sprinkler without Nozzle with Plug	30FWH	A08901F

Nozzle Only

		XX = Nozzle Size		
		U.S. Standard	3/32"	1/8"
		Metric	2.38 mm	3.18 mm
Brass Straight Bore Nozzle 1/8"	SBN-3	105842-XX	—	08
Brass 20" Low Angle Nozzle 3/32"	LAN-1-20	100226-XX	06	—
Brass Plug		100255		

70CH / 70CHM

1" 25 mm Full Circle, Brass Impact Sprinkler

Features

- Heavy duty brass construction
- 70CH Female NPT Bearing
- 70CHM has Male bearing Integral Straightening Vanes
- Stainless steel springs and fulcrum pin
- Chemically resistant washers
- Dual nozzle ports

Benefits

- Low angle ideal for windy conditions
- Integral straightening vanes increase distance of throw
- Wide range of flow rates
- Corrosion and grit resistant
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 1" (25mm) Female NPT, Brass (70CH)
- Bearing: 1" (25mm) Male NPT, Brass (70CHM)
- Trajectory Angle: 21°
- Operating Range: 40-80 psi (2.8-5.5 bar)
- Flow Rate: 8.8-45.8 gpm (2.00-10.40 m³/h)
- Radius: 57-82 ft. (17.39-25.01 meters)
- Nozzle Port: 3/8" Female NPT
- Spreader Nozzle Port: 3/8" Female NPT

(Spreader Nozzle Port requires Spreader Bushing to accept LAN-20 Nozzles)

Straight Bore Nozzle (SBN-4) with Plug Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 8 ft.)													
	7/32"		1/4"		9/32"		5/16"		11/32"		3/8"		13/32"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
40	57	8.80	60	11.50	62	14.60	65	17.70	66	21.10	68	24.40	70	28.50
45	58	9.40	61	12.20	64	15.50	66	18.90	68	22.50	70	26.00	72	30.40
50	59	9.90	62	12.90	65	16.30	68	20.00	70	23.80	71	27.50	73	32.30
55	60	10.40	63	13.60	66	17.20	70	21.00	71	25.00	73	29.10	75	34.00
60	61	10.90	64	14.20	67	18.00	71	22.00	73	26.20	74	30.60	77	35.70
65	62	11.40	65	14.80	68	18.80	72	23.00	74	27.40	76	32.00	78	37.30
70	63	11.80	66	15.40	70	19.50	73	23.90	76	28.50	77	33.20	79	38.90
75	64	12.20	67	16.00	71	20.30	74	24.80	77	29.60	78	34.50	81	40.40
80	65	12.60	68	16.50	72	20.90	75	25.70	78	30.60	80	35.70	82	41.80

Straight Bore Nozzle (SBN-4) with Spreader (LAN-1-20) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 8 ft.)													
	7/32" x 1/8-20"		1/4" x 1/8-20"		9/32" x 1/8-20"		5/16" x 1/8-20"		11/32" x 1/8-20"		3/8" x 1/8-20"		13/32" x 1/8-20"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
40	57	11.60	60	14.30	62	17.40	65	20.50	61	23.90	68	27.20	70	31.40
45	58	12.40	61	15.20	64	18.50	66	21.90	68	25.50	70	29.00	72	33.40
50	59	13.00	62	16.00	65	19.40	68	23.10	70	26.90	71	30.60	73	35.50
55	60	13.70	63	16.90	66	20.40	70	24.30	71	28.30	73	32.40	75	37.40
60	61	14.30	64	17.60	67	21.40	71	25.40	73	29.60	74	34.00	77	39.20
65	62	15.00	65	18.40	69	22.40	72	26.60	74	31.00	76	35.60	78	40.90
70	63	15.50	66	19.10	70	23.20	73	27.60	75	32.20	77	36.90	79	42.70
75	64	16.00	67	19.80	71	24.10	74	28.60	77	33.40	78	38.30	81	44.30
80	65	16.50	68	20.40	72	24.80	75	29.60	78	34.50	80	39.60	82	45.80

* Nozzles must be purchased separately. See Chart below.



Part Numbers and Ordering Information

Nozzle Only

XX = Nozzle Size

	U.S. Standard	1/8"	7/32"	1/4"	9/32"	5/16"	11/32"	3/8"	13/32"
	Metric	1.59mm	1.70mm	1.78mm	1.98mm	2.18mm	2.38mm	2.78mm	3.18mm
Brass Straight Bore Nozzle	SBN-4 100382-XX	—	14	16	18	20	22	24	26
Brass Spreader Bushing	SPB-1 100418	Needed for use with LAN-1-20							
Brass 20° Low Angle Spreader Nozzle	LAN-1-20 100226	08	—	—	—	—	—	—	—
Brass Plug	100417								

Straight Bore Nozzle (SBN-4) with Plug Performance*																			METRIC		
NOZZLE SIZE																			(Stream Height: 2.4 m)		
bar @ Nozzle	5.56 mm (7/32")			6.35 mm (1/4")			7.14 mm (9/32")			7.94 mm (5/16")			8.73 mm (11/32")			9.53 mm (3/8")			10.32 mm (13/32")		
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
2.8	17.4	0.56	2.00	18.3	0.73	2.61	19.1	0.92	3.32	19.8	1.12	4.02	20.3	1.33	4.79	20.7	1.54	5.54	21.3	1.80	6.47
3.0	17.7	0.58	2.09	18.5	0.76	2.72	19.4	0.96	3.46	20.1	1.17	4.21	20.6	1.39	5.01	21.2	1.61	5.79	21.8	1.88	6.77
3.5	18.2	0.63	2.26	18.9	0.82	2.95	20.0	1.04	3.73	20.8	1.27	4.58	21.4	1.51	5.45	21.9	1.75	6.30	22.5	2.05	7.39
4.0	18.6	0.67	2.43	19.4	0.88	3.17	20.5	1.12	4.01	21.6	1.36	4.90	22.1	1.62	5.84	22.5	1.89	6.81	23.3	2.21	7.95
4.5	19.1	0.72	2.59	19.8	0.94	3.37	21.0	1.19	4.28	22.1	1.45	5.23	22.7	1.73	6.23	23.2	2.02	7.28	23.9	2.35	8.47
5.0	19.5	0.76	2.72	20.3	0.99	3.56	21.5	1.26	4.52	22.6	1.54	5.53	23.3	1.83	6.60	23.8	2.14	7.69	24.3	2.45	8.82
5.5	19.8	0.79	2.86	20.7	1.04	3.75	21.9	1.32	4.75	23.0	1.62	5.84	23.8	1.93	6.95	24.5	2.25	8.11	25.0	2.64	9.49

Straight Bore Nozzle (SBN-4) with Spreader (LAN-1-20) Performance*																			METRIC		
NOZZLE SIZE																			(Stream Height: 2.4 m)		
bar @ Nozzle	5.56 mm x 3.18 mm (7/32" x 1/8") 20°			6.35 mm x 3.18 mm (1/4" x 1/8") 20°			7.14 mm x 3.18 mm (9/32" x 1/8") 20°			7.94 mm x 3.18 mm (5/16" x 1/8") 20°			8.73 mm x 3.18 mm (11/32" x 1/8") 20°			9.53 mm x 3.18 mm (3/8" x 1/8") 20°			10.32 mm x 3.18 mm (13/32" x 1/8") 20°		
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
2.8	17.4	0.73	2.63	18.3	0.90	3.25	19.1	1.10	3.95	19.8	1.29	4.66	20.3	1.51	5.43	20.7	1.72	6.18	21.3	1.98	7.13
3.0	17.7	0.77	2.76	18.5	0.94	3.39	19.4	1.15	4.13	20.1	1.35	4.88	20.6	1.58	5.68	21.2	1.80	6.46	21.8	2.07	7.45
3.5	18.2	0.83	2.98	18.9	1.02	3.66	20.0	1.23	4.44	20.8	1.47	5.29	21.4	1.71	6.16	21.9	1.95	7.01	22.5	2.26	8.13
4.0	18.6	0.89	3.19	19.4	1.09	3.93	20.5	1.32	4.77	21.6	1.57	5.67	22.1	1.83	6.60	22.5	2.10	7.57	23.3	2.43	8.74
4.5	19.1	0.95	3.41	19.8	1.16	4.19	21.0	1.42	5.10	22.1	1.68	6.05	22.7	1.96	7.05	23.2	2.25	8.10	23.9	2.58	9.29
5.0	19.5	0.99	3.58	20.3	1.23	4.42	21.5	1.49	5.37	22.6	1.77	6.38	23.3	2.07	7.45	23.8	2.37	8.54	24.3	2.69	9.67
5.5	19.8	1.04	3.75	20.7	1.29	4.63	21.9	1.56	5.63	23.0	1.87	6.72	23.8	2.18	7.84	24.5	2.50	8.99	25.0	2.89	10.40

80EHD

1 1/4" 32 mm Full Circle, Brass Impact Sprinkler

Features

- Heavy duty brass construction
- Internal plastic straightening vane
- Stainless steel springs and fulcrum pin
- Plastic bearing hood
- Chemically resistant washers
- Dual nozzle ports

Benefits

- Internal straightening vane increases distance of throw
- Plastic bearing hood protects spring and bearing sleeve from damage
- Corrosion and grit resistant
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 1 1/4" (32mm) Male NPT, Brass
- Trajectory Angle: 27°
- Operating Range: 25-100 psi (1.7-6.9 bar)
- Flow Rate: 17.1-127.7 gpm (3.88-29 m³/h)
- Radius: 61-116 ft. (18.6-35.4 meters)
- Nozzle Port: 3/4" Female NPT



Straight Bore Nozzle (SBN-5) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 14 ft.)																			
	11/32"		3/8"		13/32"		7/16"		15/32"		1/2"		17/32"		9/16"		5/8"		11/16"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	61	17.10	62	20.30	64	23.40	66	26.70	66	30.30	66	33.80	66	37.10	66	42.30	66	51.50	66	61.90
30	64	18.80	65	22.30	68	25.70	69	29.30	72	33.20	73	37.10	73	40.80	73	46.40	73	56.50	73	68.10
35	67	20.30	68	24.10	72	27.80	74	31.70	77	35.90	79	40.10	79	44.10	79	50.20	79	61.10	79	73.80
40	69	21.80	71	25.80	75	29.70	77	33.90	80	38.50	83	42.90	83	47.20	86	53.70	86	65.40	86	79.20
45	71	23.10	73	27.40	77	31.60	79	36.00	82	40.80	85	45.60	88	50.10	90	57.10	92	69.50	92	84.20
50	73	24.40	75	28.90	79	33.30	81	38.00	84	43.10	87	48.10	90	52.90	94	60.20	95	73.30	97	88.90
55	75	25.50	77	30.30	81	34.90	83	39.70	86	45.30	89	50.30	92	55.60	96	63.20	99	77.30	100	93.50
60	77	25.80	79	30.80	83	35.90	86	41.60	88	47.40	91	53.00	94	58.80	97	65.50	101	80.10	104	97.80
65	79	26.90	81	32.00	84	37.40	87	43.30	90	49.90	93	55.30	96	61.20	99	69.40	102	84.40	106	102.00
70	81	28.10	83	33.30	86	38.90	89	45.10	91	51.40	94	57.50	98	63.50	101	72.20	104	87.80	108	106.00
75	82	29.20	84	34.50	87	40.30	90	46.80	93	53.30	96	59.60	99	65.80	102	74.90	105	91.00	109	109.90
80	83	30.40	86	35.70	89	41.80	92	48.40	94	55.10	97	61.60	101	68.10	104	77.50	107	94.10	110	113.70
85	85	31.50	87	37.00	90	43.20	93	50.00	96	56.90	99	63.50	102	70.30	105	80.00	108	97.10	112	117.30
90	86	32.70	89	38.30	92	44.60	95	51.50	97	58.50	100	65.30	104	72.40	106	82.20	110	99.90	113	120.90
95	87	33.90	90	39.50	93	46.00	96	53.00	98	60.00	101	67.10	105	74.40	108	84.30	111	102.60	115	124.30
100	88	34.00	91	40.70	94	47.40	97	54.50	99	61.50	102	68.90	106	76.40	109	87.20	112	105.20	116	127.70

Straight Bore Nozzle (SBN-5) and Spreader (LAN-1-20) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 14 ft.)									
	11/32" x 7/32-20"		3/8" x 7/32-20"		13/32" x 7/32-20"		7/16" x 7/32-20"		15/32" x 7/32-20"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	61	23.30	62	26.50	64	29.60	66	32.90	66	36.40
30	64	25.60	65	29.10	68	32.40	69	36.10	72	40.00
35	67	27.70	68	31.40	72	35.10	74	39.00	77	43.30
40	69	29.60	71	33.60	75	37.60	77	41.80	80	46.30
45	71	31.50	73	35.70	77	39.90	79	44.40	82	49.20
50	73	33.20	75	37.70	79	42.10	81	46.80	84	51.90
55	75	34.90	77	39.70	81	44.30	83	49.10	86	54.70
60	77	36.50	79	41.40	83	46.60	86	51.50	88	57.20
65	79	38.00	81	43.20	84	48.60	87	53.80	90	59.80
70	81	40.10	83	44.90	86	50.40	89	55.90	91	62.10
75	82	41.00	84	46.70	87	52.40	90	57.90	93	64.30
80	83	42.60	86	48.30	89	54.30	92	60.00	94	66.70
85	85	43.80	87	49.80	90	56.00	93	62.00	96	68.80
90	86	45.70	89	51.40	92	57.90	95	63.90	97	70.70
95	87	46.60	90	53.00	93	59.60	96	65.80	98	72.80
100	88	47.90	91	54.50	94	61.20	97	67.50	99	74.80

*Nozzle must be purchased separately. See chart below.

Part Numbers and Ordering Information

Nozzle Only

XX = Nozzle Size

	U.S. Standard	7/32"	11/32"	3/8"	13/32"	7/16"	15/32"	1/2"	17/32"	9/16"	11/16"
	Metric	5.56mm	8.7mm	9.5mm	10.3mm	11.1mm	11.9mm	12.7mm	13.5mm	14.3mm	17.5mm
Brass Straight Bore Nozzle	BN-5 103043-XX	—	10	11	12	13	14	15	16	17	18
Brass 20° Low Angle Spreader Nozzle	LAN-1-20 100226-XX	—	10	11	12	13	14	15	16	17	18

Straight Bore Nozzle (SBN-5) with Plug Performance*																												METRIC		
NOZZLE SIZE																												(Stream Height: 4.3 m)		
bar @ Nozzle	8.7 mm (11/32")			9.5 mm (3/8")			10.3 mm (13/32")			11.1 mm (7/16")			11.9 mm (15/32")			12.7 mm (1/2")			13.5 mm (17/32")			14.3 mm (9/16")			15.9 mm (5/8")			17.5 mm (11/16")		
	Rad.	Flow	Flow	Rad.	Flow	Flow	Rad.	Flow	Flow	Rad.	Flow	Flow	Rad.	Flow	Flow	Rad.	Flow	Flow	Rad.	Flow	Flow	Rad.	Flow	Flow	Rad.	Flow	Flow	Rad.	Flow	Flow
(m)	(l/s)	(m ³ /h)	(m)	(l/s)	(m ³ /h)	(m)	(l/s)	(m ³ /h)	(m)	(l/s)	(m ³ /h)	(m)	(l/s)	(m ³ /h)	(m)	(l/s)	(m ³ /h)	(m)	(l/s)	(m ³ /h)	(m)	(l/s)	(m ³ /h)	(m)	(l/s)	(m ³ /h)	(m)	(l/s)	(m ³ /h)	
1.7	18.6	1.08	3.88	18.9	1.28	4.61	19.5	1.48	5.31	20.1	1.68	6.06	20.1	1.91	6.88	20.1	2.13	7.68	20.1	2.34	8.43	20.1	2.67	9.61	20.1	3.25	11.70	20.1	3.91	14.06
2.0	19.3	1.16	4.19	19.6	1.38	4.97	20.5	1.59	5.73	20.8	1.82	6.53	21.6	2.06	7.41	21.8	2.30	8.27	21.8	2.53	9.10	21.8	2.87	10.35	21.8	3.50	12.60	21.8	4.22	15.18
2.5	20.6	1.30	4.69	21.0	1.55	5.57	22.2	1.78	6.42	22.8	2.03	7.32	23.7	2.31	8.30	24.4	2.57	9.26	24.4	2.83	10.19	24.6	3.22	11.60	24.6	3.92	14.12	24.6	4.74	17.06
3.0	21.5	1.43	5.16	22.1	1.70	6.11	23.3	1.96	7.05	23.9	2.23	8.03	24.8	2.53	9.11	25.7	2.83	10.17	26.4	3.11	11.18	27.1	3.54	12.73	27.5	4.31	15.50	27.5	5.22	18.78
3.5	22.3	1.55	5.58	22.9	1.84	6.61	24.2	2.12	7.62	24.8	2.41	8.69	25.7	2.74	9.86	26.6	3.05	11.00	27.5	3.36	12.10	28.7	3.83	13.77	29.1	4.66	16.78	29.7	5.65	20.34
4.0	23.2	1.62	5.83	23.8	1.93	6.95	25.1	2.24	8.06	25.8	2.58	9.27	26.6	2.94	10.57	27.5	3.27	11.79	28.4	3.63	13.06	29.4	4.07	14.66	30.5	4.98	17.93	31.2	6.06	21.82
4.5	24.1	1.70	6.12	24.7	2.02	7.28	25.6	2.36	8.51	26.5	2.74	9.85	27.4	3.15	11.35	28.4	3.49	12.58	29.3	3.87	13.92	30.2	4.39	15.79	31.1	5.33	19.20	32.3	6.45	23.21
5.0	24.8	1.81	6.51	25.4	2.14	7.70	26.4	2.50	8.99	27.3	2.90	10.43	28.0	3.30	11.89	29.0	3.69	13.29	30.0	4.08	14.68	30.9	4.64	16.70	31.8	5.64	20.30	33.1	6.81	24.51
5.5	25.3	1.91	6.89	26.2	2.25	8.09	27.1	2.63	9.47	28.0	3.05	10.97	28.6	3.47	12.49	29.5	3.88	13.96	30.7	4.29	15.44	31.7	4.88	17.57	32.6	5.93	21.33	33.5	7.16	25.77
6.0	26.0	2.02	7.26	26.8	2.37	8.52	27.7	2.76	9.94	28.6	3.19	11.49	29.4	3.63	13.07	30.3	4.05	14.58	31.3	4.49	16.15	32.1	5.10	18.37	33.2	6.20	22.30	34.3	7.49	26.96
6.5	26.5	2.13	7.66	27.4	2.48	8.93	28.3	2.89	10.40	29.2	3.33	11.98	29.8	3.77	13.57	30.7	4.22	15.17	32.0	4.67	16.83	32.8	5.30	19.07	33.8	6.45	23.21	35.0	7.81	28.11
6.9	26.8	2.15	7.72	27.7	2.57	9.24	28.7	2.99	10.77	29.6	3.44	12.38	30.2	3.88	13.97	31.1	4.35	15.65	32.3	4.82	17.35	33.2	5.50	19.81	34.1	6.64	23.89	35.4	8.06	29.00

Straight Bore Nozzle (SBN-5) and Spreader (LAN-1-20) Performance*																METRIC
NOZZLE SIZE																(Stream Height: 4.3 m)
bar @ Nozzle	8.7 mm x 5.56 mm (11/32" x 7/32") 20°			9.5 mm x 5.56 mm (3/8" x 7/32") 20°			10.3 mm x 5.56 mm (13/32" x 7/32") 20°			11.1 mm x 5.56 mm (7/16" x 7/32") 20°			11.9 mm x 5.56 mm (15/32" x 7/32") 20°			
	Rad.	Flow	Flow	Rad.	Flow	Flow	Rad.	Flow	Flow	Rad.	Flow	Flow	Rad.	Flow	Flow	
(m)	(l/s)	(m ³ /h)	(m)	(l/s)	(m ³ /h)	(m)	(l/s)	(m ³ /h)	(m)	(l/s)	(m ³ /h)	(m)	(l/s)	(m ³ /h)		
1.7	18.6	1.47	5.29	18.9	1.67	6.02	19.5	1.87	6.72	20.1	2.08	7.47	20.1	2.30	8.27	
2.0	19.3	1.59	5.71	19.6	1.80	6.49	20.5	2.01	7.23	20.8	2.24	8.05	21.6	2.48	8.92	
2.5	20.6	1.78	6.40	21.0	2.02	7.25	22.2	2.25	8.11	22.8	2.50	9.01	23.7	2.78	10.00	
3.0	21.5	1.95	7.02	22.1	2.21	7.96	23.3	2.47	8.90	23.9	2.75	9.90	24.8	3.05	10.97	
3.5	22.3	2.11	7.60	22.9	2.40	8.63	24.2	2.68	9.63	24.8	2.97	10.71	25.7	3.30	11.88	
4.0	23.2	2.26	8.14	23.8	2.57	9.25	25.1	2.88	10.37	25.8	3.19	11.48	26.6	3.54	12.76	
4.5	24.1	2.40	8.65	24.7	2.73	9.83	25.6	3.07	11.06	26.5	3.40	12.24	27.4	3.78	13.60	
5.0	24.8	2.56	9.21	25.4	2.89	10.40	25.5	3.24	11.67	27.3	3.59	12.92	28.0	3.99	14.35	
5.5	25.3	2.68	9.65	26.2	3.04	10.95	27.0	3.42	12.31	28.0	3.78	13.60	28.6	4.20	15.12	
6.0	26.0	2.81	10.12	26.8	3.18	11.45	27.7	3.58	12.89	28.6	3.96	14.25	29.4	4.39	15.79	
6.5	26.5	2.93	10.55	27.4	3.33	11.98	28.3	3.74	13.48	29.2	4.13	14.88	29.8	4.57	16.46	
6.9	26.8	3.02	10.88	27.7	3.44	12.38	28.7	3.86	13.90	29.6	4.26	15.33	30.2	4.72	16.99	

* Nozzles must be purchased separately. See chart on previous page.

25BPJ-FP-ADJ 25BPJ-FP-ADJ-DA-TNT

1/2" 13mm Full or Part Circle, Brass Impact Sprinklers

Features

- Durable brass die-cast, 'precision jet' (PJ) arm
- Stainless steel springs and fulcrum pin
- PJ arm reduces side splash
- Chemically resistant washers
- All models include integral (to sprinkler body) break-up pin for adjustable distribution (ADJ)
- DA option also includes integral (to sprinkler body) distance control flap
- Full or Part Circle operation

Benefits

- Many options provide design and application flexibility
- Corrosion and grit resistant
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 1/2" (13mm) Male NPT, Brass
- Trajectory Angle: 25°
- Operating Range: 30-50 psi (2.1-3.5 bar)
- Flow Rate: 3.1-5.0 gpm (0.7-1.14 m³/h)
- Radius: 38-41 ft. (11.6-12.5 meters)
- Nozzle Port: 1/8" Female NPT



Straight Bore Nozzle (SBN-1) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 7 ft.)			
	9/64"		5/32"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
30	38	3.10	39	3.80
35	38	3.40	39	4.10
40	39	3.60	40	4.40
45	39	3.80	40	4.70
50	40	4.00	41	5.00

Straight Bore Nozzle (SBN-1) Performance*

bar @ Nozzle	NOZZLE SIZE (Stream Height: 2.1 m)					
	3.57 mm (9/64")			3.97 mm (5/32")		
	Rad. (m)	Flow (l/s)	Flow (m³/h)	Rad. (m)	Flow (l/s)	Flow (m³/h)
2.1	11.6	0.20	0.70	11.9	0.24	0.86
2.5	11.8	0.22	0.77	12.0	0.26	0.95
3.0	12.0	0.24	0.85	12.2	0.29	1.05
3.5	12.2	0.25	0.91	12.5	0.32	1.14

Part Numbers and Ordering Information

Assembled Sprinkler/Nozzle Factory Combination

25BPJ-FP-ADJ w/SBN-1 9/64" 3.57mm	A32901-09
25BPJ-FP-ADJ w/SBN-1 5/32" 3.97mm	A32901-10
25BPJ-FP-ADJ-DA-TNT w/SBN-1 9/64" 3.57mm	A34403-09
25BPJ-FP-ADJ-DA-TNT w/SBN-1 5/32" 3.57mm	A34403-10

Nozzle Only

	U.S. Standard	XX = Nozzle Size	
		9/64"	5/32"
		Metric	3.57 mm
Brass Straight Bore Nozzle	SBN-1	105780-XX	09 10

2045-PJ

1/2" 13mm Full or Part Circle, Plastic Impact Sprinkler

Features

- Durable Delrin™ plastic, body arm, bearing sleeve, nipple and break up pin
- Stainless steel springs and fulcrum pin
- Chemically resistant washers
- Plastic Quick Fit Nozzles
- Low Angle (10°) Nozzles available
- Integral straightening vane for greater distance
- Full or Part Circle operation

Benefits

- Superior chemical and grit resistance
- Smooth rotation at lower pressures
- Design flexibility
- Built to last
- Two-year Customer Satisfaction Policy

Specifications

- Bearing: 1/2" (13mm) Male NPT, Plastic
- Trajectory Angle: Standard 23°
Low Angle 10° available.
- Operating Range: 25-60 psi (1.7-4.1 bar)
- Flow Rate: 1.5-8.4 gpm (0.34-1.91 m³/h)
- Radius: 22-45 ft. (6.7-13.7 meters)
- Nozzle: QuickFit Nozzle Port

Straight Bore Nozzle (SBN-1) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 6 ft.)									
	3/32" Red		7/64" Black		1/8" Blue		5/32" Yellow		3/16" Beige	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	-	-	32	2.20	35	2.80	38	4.20	39	5.50
35	37	2.00	37	2.70	38	3.30	41	4.80	42	6.30
45	38	2.30	39	3.00	40	3.70	42	5.40	44	7.10
55	38	2.50	41	3.30	41	4.10	43	6.00	45	7.90
60	38	2.60	41	3.50	42	4.20	44	6.40	45	8.40

Low Angle Nozzle (LAN-1)

psi @ Nozzle	NOZZLE SIZE (Stream Height: 3 ft.)			
	7/64" Black		5/32" Yellow	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	22	1.5	25	3.4
35	23	1.9	29	4.0
45	25	2.1	31	4.0
55	25	2.3	32	5.0
60	25	2.4	32	5.4

Straight Bore Nozzle (SBN-1) Performance*

bar @ Nozzle	NOZZLE SIZE (Stream Height: 1.8 m)														
	2.38 mm (3/32") Red			2.78 mm (7/64") Black			3.18 mm (1/8") Blue			3.97 mm (5/32") Yellow			4.76 mm (3/16") Beige		
	Rad. (m)	Flow (l/s)	Flow (m³/h)	Rad. (m)	Flow (l/s)	Flow (m³/h)	Rad. (m)	Flow (l/s)	Flow (m³/h)	Rad. (m)	Flow (l/s)	Flow (m³/h)	Rad. (m)	Flow (l/s)	Flow (m³/h)
1.7	-	-	-	9.8	0.14	0.5	10.7	0.18	0.64	11.6	0.26	0.95	11.9	0.35	1.25
2.0	-	-	-	10.4	0.15	0.55	11.0	0.19	0.68	11.9	0.28	1.01	12.3	0.37	1.32
2.5	11.3	0.13	0.46	11.4	0.17	0.62	11.7	0.21	0.76	12.5	0.31	1.11	12.9	0.40	1.45
3.0	11.5	0.14	0.51	11.8	0.19	0.67	12.1	0.23	0.83	12.8	0.34	1.21	13.3	0.44	1.59
3.5	11.6	0.15	0.55	12.2	0.20	0.72	12.4	0.25	0.89	13.0	0.36	1.30	13.6	0.48	1.72
4.0	11.6	0.16	0.58	12.5	0.22	0.78	12.7	0.26	0.94	13.3	0.39	1.42	13.7	0.52	1.86
4.1	11.6	0.16	0.59	12.5	0.22	0.79	12.8	0.26	0.95	13.4	0.40	1.45	13.7	0.53	1.91

Low Angle Nozzle (LAN-1-10) METRIC

bar @ Nozzle	NOZZLE SIZE (Stream Height: 0.9 m)					
	2.78 mm (7/64") Black			3.97 mm (5/32") Yellow		
	Rad. (m)	Flow (l/s)	Flow (m³/h)	Rad. (m)	Flow (l/s)	Flow (m³/h)
1.7	6.7	0.09	0.34	7.06	0.21	0.77
2.0	6.8	0.10	0.38	8.1	0.23	0.83
2.5	7.1	0.12	0.44	8.9	0.26	0.92
3.0	7.5	0.13	0.47	9.4	0.28	1.01
3.5	7.6	0.14	0.50	9.6	0.30	1.09
4.0	7.6	0.15	0.54	9.8	0.33	1.19
4.1	7.6	0.15	0.54	9.8	0.34	1.23



Part Numbers and Ordering Information

Assembled Sprinkler/Nozzle Factory Combination

Sprinkler with Nozzle **2045-PJ-AG B4610008**

The assembled sprinkler comes with a blue 1/8" nozzle. Other nozzles are available on request at no charge.

Nozzle Only

	U.S. Standard	XX = Nozzle Size				
		3/32"	7/64"	1/8"	5/32"	3/16"
	Metric	2.38 mm	2.78 mm	3.18 mm	3.97 mm	4.76 mm
Plastic Quick-Fit Straight Bore Nozzle	PQFN 206592-XX	06	07	08	10	12
Low Angle Quick-Fit Nozzle	PQLAN 115902-XX	-	07	-	10	-

35A-TNT 35A-ADJ-TNT 35A-PJ-ADJ-TNT 35A-PJ-DA-TNT

3/4" 19 mm Full or Part Circle, Brass Impact Sprinklers

Features

- "Precision jet" (PJ) arm (35A-PJ)
- Standard spoon style arm also available (35A-TNT)
- Stainless steel springs and fulcrum pin
- Chemically resistant washers
- ADJ-3 Nozzles have break-up pins
- DAN-3 Nozzles have a distance control flap

Benefits

- PJ arm reduces side splash
- Many options provide design and application flexibility
- Corrosion and grit resistant
- Available less Nozzle with standard spoon only
- Standard spoon model also available with 3/16" (#12) Nozzle
- PJ model available with 3/16" (#12) ADJ pr 3/16" (#12) DA Nozzles only
- Full or Part Circle operation
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 3/4" (19mm) Male NPT, Brass
- Trajectory Angle: 27°
- Operating Range: 30-60 psi (2.1-4.1 bar)
- Flow Rate: 3.9-7.8 gpm (0.89-1.77 m³/h)
- Radius: 42-51 ft. (12.8-15.5 meters)
- Nozzle Port: 1/4" Female NPT



Brass Straight Bore Nozzle (ADJN-3) or (DAN-3)

psi @ Nozzle	NOZZLE SIZE (Stream Height: 9 ft.)					
	5/32" Red		11/64" Black		3/16" Blue	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
30	42	3.90	43	4.60	44	5.50
35	43	4.20	44	5.00	46	6.00
40	44	4.50	45	5.40	47	6.40
45	44	4.70	46	5.70	48	6.80
50	45	5.00	47	6.00	49	7.20
55	45	5.20	48	6.30	50	7.50
60	46	5.40	48	6.60	51	7.80

Brass Straight Bore Nozzle (ADJN-3) or (DAN-3) METRIC

bar @ Nozzle	NOZZLE SIZE (Stream Height: 2.7 m.)								
	3.97 mm (5/32")			4.37 mm (11/64")			4.76 mm (3/16")		
	Rad. (m)	Flow (l/s)	Flow (m³/h)	Rad. (m)	Flow (l/s)	Flow (m³/h)	Rad. (m)	Flow (l/s)	Flow (m³/h)
2.1	12.8	0.25	0.89	13.1	0.29	1.04	13.4	0.35	1.25
2.5	13.2	0.27	0.97	13.5	0.32	1.16	14.1	0.38	1.39
3.0	13.4	0.29	1.05	13.9	0.35	1.27	14.5	0.42	1.52
3.5	13.7	0.32	1.14	14.4	0.38	1.37	15.0	0.46	1.65
4.0	13.9	0.34	1.21	14.6	0.41	1.47	15.4	0.48	1.74
4.1	14.0	0.34	1.23	14.6	0.42	1.50	15.5	0.49	1.77

Part Numbers and Ordering Information

Sprinkler Only

35A-TNT Sprinkler without Nozzle	A39200
35A-TNT Sprinkler with KHN-3	A38810-12
35A-PJ-TNT Sprinkler without Nozzle	A39400
35A-ADJ-TNT Sprinkler with ADJN-3	A38820-12
35A-PJ-ADJ-TNT Sprinkler with ADJN-3	A40613-12
35A-PJ-DA-TNT Sprinkler with DAN-3	A40614-12

Nozzle Only

		XX = Nozzle Size			
		U.S. Standard	5/32"	11/64"	3/16"
		Metric	3.97 mm	4.37 mm	4.76 mm
Brass Straight Bore Adjustable Nozzle	ADJN-3	100328-XX	10	11	12
Brass Adjustable Do-All Nozzle	DAN-3	100332-XX	10	—	12
Brass Keyhole Nozzle	KHN-3	106353-XX	10	11	

65PJ

1" 25 mm Full or Part Circle, Brass Impact Sprinkler

Features

- Heavy duty brass construction
- 1" Female NPT Bearing
- "Precision jet" (PJ) arm
- Stainless steel springs and fulcrum pin
- Chemically resistant washers
- ADJN-4 Nozzles include integral to Nozzle break-up pin
- Full or Part Circle operation

Benefits

- PJ arm reduces side splash
- Many options provide design and application flexibility
- Corrosion and grit resistant
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 1" (25mm) Female NPT, Brass
- Trajectory Angle: 27°
- Operating Range: 50-80 psi (3.5-5.5 bar)
- Flow Rate: 12.9-16.5 gpm (2.93-3.75 m³/h)
- Radius: 57-65 ft. (17.4-19.8 meters)
- Nozzle Port: 3/8" Female NPT

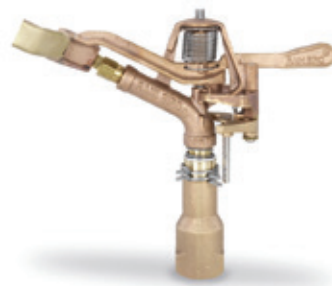
Adjustable Straight Bore Nozzle (ADJN-4) Performance

NOZZLE SIZE (Stream Height: 9.5 - 14 ft.)		
1/4"		
psi @ Nozzle	Rad. (ft.)	Flow (gpm)
50	57	12.90
55	57	13.60
60	58	14.20
65	62	14.80
70	63	15.40
75	64	16.00
80	65	16.50

Available without Nozzle or assembled with a 1/4" (16) Straight Bore Nozzle.

Adjustable Straight Bore Nozzle (ADJN-4) Performance METRIC

NOZZLE SIZE (Stream Height: 2.9 - 4.3 m)			
6.35 mm (1/4")			
bar @ Nozzle	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
3.5	17.4	0.82	2.93
4.0	17.9	0.88	3.16
4.5	18.5	0.93	3.37
5.0	19.2	0.99	3.55
5.5	19.8	1.04	3.75



Part Numbers and Ordering Information

Sprinkler Only		Nozzle Only		XX = Nozzle Size
Sprinkler without Nozzle	AG2001		U.S. Standard	1/4"
			Metric	6.35 mm
Assembled Sprinkler/Nozzle Factory Combination		Brass Straight Bore Adjustable Nozzle	ADJN-4	100385-XX
Sprinkler with Nozzle	65PJ-ADJ-TNT A4200316			16

85EHD Tough Bird®

1 1/4" 32 mm Full or Part Circle,
Brass Impact Sprinklers

Features

- Heavy duty brass construction
- Stainless steel wear buttons, springs and fulcrum pin
- Locking stainless steel trip collars
- Chemically resistant washers
- Full or Part Circle operation

Benefits

- Internal straightening vane increases distance of throw
- Stainless steel buttons protect trip mechanism from wear
- Corrosion and grit resistant
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 1 1/4" (32mm) Male NPT, Brass
- Trajectory Angle: 23°
- Operating Range: 25-100 psi (1.7-6.9 bar)
- Flow Rate: 17.1-127.7 gpm (3.88-29 m³/h)
- Radius: 61-116 ft. (18.6-35.4 meters)
- Nozzle Port: 3/4" Female NPT
- Spreader Nozzle Port: 1/8" Female NPT



Straight Bore Nozzle (SBN-5) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 14 ft.)																			
	11/32"		3/8"		13/32"		7/16"		15/32"		1/2"		17/32"		9/16"		5/8"		11/16"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	61	17.10	62	20.30	64	23.40	66	26.70	66	30.30	66	33.80	66	37.10	66	42.30	66	51.50	66	61.90
30	64	18.80	65	22.30	68	25.70	69	29.30	72	33.20	73	37.10	73	40.80	73	46.40	73	56.50	73	68.10
35	67	20.30	68	24.10	72	27.80	74	31.70	77	35.90	79	40.10	79	44.10	79	50.20	79	61.10	79	73.80
40	69	21.80	71	25.80	75	29.70	77	33.90	80	38.50	83	42.90	83	47.20	86	53.70	86	65.40	86	79.20
45	71	23.10	73	27.40	77	31.60	79	36.00	82	40.80	85	45.60	88	50.10	90	57.10	92	69.50	92	84.20
50	73	24.40	75	28.90	79	33.30	81	38.00	84	43.10	87	48.10	90	52.90	94	60.20	95	73.30	97	88.90
55	75	25.50	77	30.30	81	34.90	83	39.70	86	45.30	89	50.30	92	55.60	96	63.20	99	77.30	100	93.50
60	77	25.80	79	30.80	83	35.90	86	41.60	88	47.40	91	53.00	94	58.80	97	65.50	101	80.10	104	97.80
65	79	26.90	81	32.00	84	37.40	87	43.30	90	49.90	93	55.30	96	61.20	99	69.40	102	84.40	106	102.00
70	81	28.10	83	33.30	86	38.90	89	45.10	91	51.40	94	57.50	98	63.50	101	72.20	104	87.80	108	106.00
75	82	29.20	84	34.50	87	40.30	90	46.80	93	53.30	96	59.60	99	65.80	102	74.90	105	91.00	109	109.90
80	83	30.40	86	35.70	89	41.80	92	48.40	94	55.10	97	61.60	101	68.10	104	77.50	107	94.10	110	113.70
85	85	31.50	87	37.00	90	43.20	93	50.00	96	56.90	99	63.50	102	70.30	105	80.00	108	97.10	112	117.30
90	86	32.70	89	38.30	92	44.60	95	51.50	97	58.50	100	65.30	104	72.40	106	82.20	110	99.90	113	120.90
95	87	33.90	90	39.50	93	46.00	96	53.00	98	60.00	101	67.10	105	74.40	108	84.30	111	102.60	115	124.30
100	88	34.00	91	40.70	94	47.40	97	54.50	99	61.50	102	68.90	106	76.40	109	87.20	112	105.20	116	127.70

Straight Bore Nozzle (SBN-5) and Spreader (LAN-1-20) Performance*

psi @ Nozzle	NOZZLE SIZE (Stream Height: 14 ft.)									
	11/32" x 7/32-20"		3/8" x 7/32-20"		13/32" x 7/32-20"		7/16" x 7/32-20"		15/32" x 7/32-20"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	61	23.30	62	26.50	64	29.60	66	32.90	66	36.40
30	64	25.60	65	29.10	68	32.40	69	36.10	72	40.00
35	67	27.70	68	31.40	72	35.10	74	39.00	77	43.30
40	69	29.60	71	33.60	75	37.60	77	41.80	80	46.30
45	71	31.50	73	35.70	77	39.90	79	44.40	82	49.20
50	73	33.20	75	37.70	79	42.10	81	46.80	84	51.90
55	75	34.90	77	39.70	81	44.30	83	49.10	86	54.70
60	77	36.50	79	41.40	83	46.60	86	51.50	88	57.20
65	79	38.00	81	43.20	84	48.60	87	53.80	90	59.80
70	81	40.10	83	44.90	86	50.40	89	55.90	91	62.10
75	82	41.00	84	46.70	87	52.40	90	57.90	93	64.30
80	83	42.60	86	48.30	89	54.30	92	60.00	94	66.70
85	85	43.80	87	49.80	90	56.00	93	62.00	96	68.80
90	86	45.70	89	51.40	92	57.90	95	63.90	97	70.70
95	87	46.60	90	53.00	93	59.60	96	65.80	98	72.80
100	88	47.90	91	54.50	94	61.20	97	67.50	99	74.80

* Nozzles must be purchased separately.
See Chart below.

Part Numbers and Ordering Information

Nozzle Only

XX = Nozzle Size

	U.S. Standard	7/32"	11/32"	3/8"	13/32"	7/16"	15/32"	1/2"	17/32"	9/16"	5/8"	11/16"	
	Metric	5.56mm	8.7MM	9.5MM	10.3MM	11.1MM	11.9MM	12.7MM	13.5MM	14.3MM	15.9MM	17.5MM	
Brass Straight Bore Nozzle	SBN-5	103043-XX	—	22	24	26	28	30	32	34	36	40	44
Brass 20° Low Angle Spreader Nozzle	LAN-1-20	100226-XX	14	—	—	—	—	—	—	—	—	—	—
1/8" Male NPT Plug for Spreader port	100255												

Straight Bore Nozzle (SBN-5) with Plug Performance*																												METRIC		
NOZZLE SIZE																												(Stream Height: 4.3 m)		
bar @ Nozzle	8.7 mm (11/32")			9.5 mm (3/8")			10.3 mm (13/32")			11.1 mm (7/16")			11.9 mm (15/32")			12.7 mm (1/2")			13.5 mm (17/32")			14.3 mm (9/16")			15.9 mm (5/8")			17.5 mm (11/16")		
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)			
1.7	18.6	1.08	3.88	18.9	1.28	4.61	19.5	1.48	5.31	20.1	1.68	6.06	20.1	1.91	6.88	20.1	2.13	7.68	20.1	2.34	8.43	20.1	2.67	9.61	20.1	3.25	11.70	20.1	3.91	14.06
2.0	19.3	1.16	4.19	19.6	1.38	4.97	20.5	1.59	5.73	20.8	1.82	6.53	21.6	2.06	7.41	21.8	2.30	8.27	21.8	2.53	9.10	21.8	2.87	10.35	21.8	3.50	12.60	21.8	4.22	15.18
2.5	20.6	1.30	4.69	21.0	1.55	5.57	22.2	1.78	6.42	22.8	2.03	7.32	23.7	2.31	8.30	24.4	2.57	9.26	24.4	2.83	10.19	24.6	3.22	11.60	24.6	3.92	14.12	24.6	4.74	17.06
3.0	21.5	1.43	5.16	22.1	1.70	6.11	23.3	1.96	7.05	23.9	2.23	8.03	24.8	2.53	9.11	25.7	2.83	10.17	26.4	3.11	11.18	27.1	3.54	12.73	27.5	4.31	15.50	27.5	5.22	18.78
3.5	22.3	1.55	5.58	22.9	1.84	6.61	24.2	2.12	7.62	24.8	2.41	8.69	25.7	2.74	9.86	26.6	3.05	11.00	27.5	3.36	12.10	28.7	3.83	13.77	29.1	4.66	16.78	29.7	5.65	20.34
4.0	23.2	1.62	5.83	23.8	1.93	6.95	25.1	2.24	8.06	25.8	2.58	9.27	26.6	2.94	10.57	27.5	3.27	11.79	28.4	3.63	13.06	29.4	4.07	14.66	30.5	4.98	17.93	31.2	6.06	21.82
4.5	24.1	1.70	6.12	24.7	2.02	7.28	25.6	2.36	8.51	26.5	2.74	9.85	27.4	3.15	11.35	28.4	3.49	12.58	29.3	3.87	13.92	30.2	4.39	15.79	31.1	5.33	19.20	32.3	6.45	23.21
5.0	24.8	1.81	6.51	25.4	2.14	7.70	26.4	2.50	8.99	27.3	2.90	10.43	28.0	3.30	11.89	29.0	3.69	13.29	30.0	4.08	14.68	30.9	4.64	16.70	31.8	5.64	20.30	33.1	6.81	24.51
5.5	25.3	1.91	6.89	26.2	2.25	8.09	27.1	2.63	9.47	28.0	3.05	10.97	28.6	3.47	12.49	29.5	3.88	13.96	30.7	4.29	15.44	31.7	4.88	17.57	32.6	5.93	21.33	33.5	7.16	25.77
6.0	26.0	2.02	7.26	26.8	2.37	8.52	27.7	2.76	9.94	28.6	3.19	11.49	29.4	3.63	13.07	30.3	4.05	14.58	31.3	4.49	16.15	32.1	5.10	18.37	33.2	6.20	22.30	34.3	7.49	26.96
6.5	26.5	2.13	7.66	27.4	2.48	8.93	28.3	2.89	10.40	29.2	3.33	11.98	29.8	3.77	13.57	30.7	4.22	15.17	32.0	4.67	16.83	32.8	5.30	19.07	33.8	6.45	23.21	35.0	7.81	28.11
6.9	26.8	2.15	7.72	27.7	2.57	9.24	28.7	2.99	10.77	29.6	3.44	12.38	30.2	3.88	13.97	31.1	4.35	15.65	32.3	4.82	17.35	33.2	5.50	19.81	34.1	6.64	23.89	35.4	8.06	29.00

Straight Bore Nozzle (SBN-5) and Spreader (LAN-1-20) Performance*																METRIC
NOZZLE SIZE																(Stream Height: 4.3 m)
bar @ Nozzle	8.7 mm x 5.56 mm (11/32" x 7/32") 20°			9.5 mm x 5.56 mm (3/8" x 7/32") 20°			10.3 mm x 5.56 mm (13/32" x 7/32") 20°			11.1 mm x 5.56 mm (7/16" x 7/32") 20°			11.9 mm x 5.56 mm (15/32" x 7/32") 20°			
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	
1.7	18.6	1.47	5.29	18.9	1.67	6.02	19.5	1.87	6.72	20.1	2.08	7.47	20.1	2.30	8.27	
2.0	19.3	1.59	5.71	19.6	1.80	6.49	20.5	2.01	7.23	20.8	2.24	8.05	21.6	2.48	8.92	
2.5	20.6	1.78	6.40	21.0	2.02	7.25	22.2	2.25	8.11	22.8	2.50	9.01	23.7	2.78	10.00	
3.0	21.5	1.95	7.02	22.1	2.21	7.96	23.3	2.47	8.90	23.9	2.75	9.90	24.8	3.05	10.97	
3.5	22.3	2.11	7.60	22.9	2.40	8.63	24.2	2.68	9.63	24.8	2.97	10.71	25.7	3.30	11.88	
4.0	23.2	2.26	8.14	23.8	2.57	9.25	25.1	2.88	10.37	25.8	3.19	11.48	26.6	3.54	12.76	
4.5	24.1	2.40	8.65	24.7	2.73	9.83	25.6	3.07	11.06	26.5	3.40	12.24	27.4	3.78	13.60	
5.0	24.8	2.56	9.21	25.4	2.89	10.40	25.5	3.24	11.67	27.3	3.59	12.92	28.0	3.99	14.35	
5.5	25.3	2.68	9.65	26.2	3.04	10.95	27.0	3.42	12.31	28.0	3.78	13.60	28.6	4.20	15.12	
6.0	26.0	2.81	10.12	26.8	3.18	11.45	27.7	3.58	12.89	28.6	3.96	14.25	29.4	4.39	15.79	
6.5	26.5	2.93	10.55	27.4	3.33	11.98	28.3	3.74	13.48	29.2	4.13	14.88	29.8	4.57	16.46	
6.9	26.8	3.02	10.88	27.7	3.44	12.38	28.7	3.86	13.90	29.6	4.26	15.33	30.2	4.72	16.99	

* Nozzles must be purchased separately. See chart on previous page.

85EHD-LA Tough Bird®

1 1/4" 32 mm Full or Part Circle,
Brass Impact Sprinklers

Features

- Heavy duty brass construction
- Stainless steel wear buttons, springs and fulcrum pin
- Locking stainless steel trip collars
- Chemically resistant washers
- Full or Part Circle operation

Benefits

- Internal straightening vane increases distance of throw
- Stainless steel buttons protect trip mechanism from wear
- Corrosion and grit resistant
- Built to last
- Five-year Customer Satisfaction Policy

Specifications

- Bearing: 1 1/4" (32mm) Male NPT, Brass
- Trajectory Angle: 17°
- Operating Range: 25-100 psi (1.7-6.9 bar)
- Flow Rate: 17.1-127.7 gpm (3.88-29.0 m³/h)
- Radius: 52-108 ft. (15.8-32.9 meters)
- Nozzle Port: 3/4" Female NPT

Straight Bore Nozzle (SBN-5) with Plug Performance*

psi @ Nozzle	NOZZLE SIZE																			
	11/32"		3/8"		13/32"		7/16"		15/32"		1/2"		17/32"		9/16"		5/8"		11/16"	
	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)	Rad. (ft.)	Flow (gpm)
25	52	17.10	55	20.30	57	23.40	60	26.70	60	30.30	60	33.80	60	37.10	60	42.30	60	51.50	60	61.90
30	57	18.80	59	22.30	62	25.70	63	29.30	65	33.20	67	37.10	67	40.80	67	46.40	67	56.50	67	68.10
35	60	20.30	62	24.10	65	27.80	67	31.70	70	35.90	71	40.10	73	44.10	73	50.20	73	61.10	73	73.80
40	62	21.80	65	25.80	67	29.70	70	33.90	72	38.50	75	42.90	76	47.20	79	53.70	79	65.40	79	79.20
45	65	23.10	67	27.40	70	31.60	72	36.00	75	40.80	77	45.60	80	50.10	80	57.10	84	69.50	84	84.20
50	67	24.40	69	28.90	72	33.30	74	38.00	77	43.10	79	48.10	82	52.90	84	60.20	87	73.30	88	88.90
55	69	25.50	71	30.30	74	34.90	76	39.70	79	45.30	82	50.30	84	55.60	86	63.20	91	77.30	92	93.50
60	71	25.80	73	30.80	76	35.90	78	41.60	81	47.40	83	53.00	86	58.80	88	66.50	93	80.70	96	97.80
65	72	26.90	75	32.00	77	37.40	80	43.30	83	49.90	85	55.30	88	61.20	90	69.40	94	84.40	98	102.00
70	74	28.10	77	33.30	79	38.90	82	45.10	84	51.40	87	57.50	89	63.50	92	72.20	96	87.80	100	106.00
75	76	29.20	78	34.50	81	40.30	83	46.80	86	53.30	89	59.60	91	65.80	93	74.90	98	91.00	102	109.90
80	77	30.40	80	35.70	82	41.80	85	48.40	88	55.10	90	61.60	93	68.10	95	77.50	99	94.10	103	113.70
85	79	31.50	81	37.00	84	43.20	86	50.00	89	56.90	92	63.50	94	70.30	97	80.00	101	97.10	105	117.30
90	80	32.70	83	38.30	85	44.60	88	51.50	91	58.50	93	65.30	96	72.40	98	82.20	102	99.90	106	120.90
95	82	33.90	84	39.50	87	46.00	89	53.00	92	60.00	95	67.10	97	74.40	99	84.30	103	102.60	107	124.30
100	83	34.00	85	40.10	88	47.40	91	54.50	93	61.50	96	68.90	98	76.40	101	87.20	105	105.20	108	127.70

* Nozzles must be purchased separately.
See Chart below.



Part Numbers and Ordering Information

Sprinkler Only

Sprinkler without Nozzle **A23960**

Nozzle Only

XX = Nozzle Size

	U.S. Standard	11/32"	3/8"	13/32"	7/16"	15/32"	1/2"	17/32"	9/16"	5/8"	11/16"
	Metric	8.7mm	9.5mm	10.3mm	11.1mm	11.9mm	12.7mm	13.5mm	14.3mm	15.9mm	17.5mm
Brass Straight Bore Nozzle	SBN-5 103043-XX	22	24	26	28	30	32	34	36	40	44
Brass Low Pressure Nozzle	LPN-5 108149-XX	-	24	-	28	30	32	-	-	40	-

Straight Bore Nozzle (SBN-5) with Plug Performance*																				METRIC										
NOZZLE SIZE																				(Stream Height: 3 m)										
bar @ Nozzle	8.7 mm (11/32")			9.5 mm (3/8")			10.3 mm (13/32")			11.1 mm (7/16")			11.9 mm (15/32")			12.7 mm (1/2")			13.5 mm (17/32")			14.3 mm (9/16")			15.9 mm (5/8")			17.5 mm (11/16")		
	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)	Rad. (m)	Flow (l/s)	Flow (m ³ /h)
1.7	15.8	1.08	3.88	16.8	1.28	4.61	17.4	1.48	5.31	18.3	1.68	6.06	18.3	1.91	6.88	18.3	2.13	7.68	18.3	2.34	8.43	18.3	2.67	9.61	18.3	3.25	11.70	18.3	3.91	14.06
2.0	17.1	1.16	4.19	17.7	1.38	4.97	18.6	1.59	5.73	19.0	1.82	6.53	19.5	2.06	7.41	20.0	2.30	8.27	20.0	2.53	9.10	20.0	2.87	10.35	20.0	3.50	12.60	20.0	4.22	15.18
2.5	18.4	1.30	4.69	19.1	1.55	5.57	20.0	1.78	6.42	20.6	2.03	7.32	21.5	2.31	8.30	21.9	2.57	9.26	22.5	2.83	10.19	22.7	3.22	11.60	22.7	3.92	14.12	22.7	4.74	17.06
3.0	19.5	1.43	5.16	20.2	1.70	6.11	21.1	1.96	7.05	21.8	2.23	8.03	22.6	2.53	9.11	23.3	2.83	10.17	24.0	3.11	11.18	24.3	3.54	12.73	25.1	4.31	15.50	25.1	5.22	18.78
3.5	20.5	1.55	5.58	21.1	1.84	6.61	22.0	2.12	7.62	22.6	2.41	8.69	23.6	2.74	9.86	24.2	3.05	11.00	25.1	3.36	12.10	25.7	3.83	13.77	26.7	4.66	16.78	27.0	5.65	20.34
4.0	21.4	1.62	5.83	22.0	1.93	6.95	22.9	2.24	8.06	23.5	2.58	9.27	24.4	2.94	10.57	25.2	3.27	11.79	26.0	3.63	13.06	26.6	4.07	14.66	28.1	4.98	17.93	28.8	6.06	21.82
4.5	22.0	1.70	6.12	22.9	2.02	7.28	23.5	2.36	8.51	24.4	2.74	9.85	25.3	3.15	11.35	25.9	3.49	12.58	26.8	3.87	13.92	27.5	4.39	15.79	28.7	5.33	19.20	29.9	6.45	23.21
5.0	22.9	1.81	6.51	23.6	2.14	7.70	24.4	2.50	8.99	25.1	2.90	10.43	25.9	3.30	11.89	26.8	3.69	13.29	27.4	4.08	14.68	28.2	4.64	16.70	29.6	5.64	20.30	30.8	6.81	24.51
5.5	23.5	1.91	6.89	24.3	2.25	8.09	25.0	2.63	9.47	25.9	3.05	10.97	26.8	3.47	12.49	27.4	3.88	13.96	28.3	4.29	15.44	28.9	4.88	17.57	30.2	5.93	21.33	31.4	7.16	25.77
6.0	24.2	2.02	7.26	24.9	2.37	8.52	25.7	2.76	9.94	26.5	3.19	11.49	27.4	3.63	13.07	28.2	4.05	14.58	28.9	4.49	16.15	29.7	5.10	18.37	30.9	6.20	22.30	32.1	7.49	26.96
6.5	24.9	2.13	7.66	25.6	2.48	8.93	26.4	2.89	10.40	27.1	3.33	11.98	28.0	3.77	13.57	28.9	4.22	15.17	29.5	4.67	16.83	30.1	5.30	19.07	31.3	6.45	23.21	32.6	7.81	28.11
6.9	25.3	2.15	7.72	25.9	2.57	9.24	26.8	2.99	10.77	27.7	3.44	12.38	28.3	3.88	13.97	29.3	4.35	15.65	29.9	4.82	17.35	30.8	5.50	19.81	32.0	6.64	23.89	32.9	8.06	29.00

* Nozzles must be purchased separately. See chart on previous page.

PA-8S-PRS & PA-8S-P45

30 psi and 45 psi Pressure Regulating Shrub Adapters

Features

- Adapts nozzles for use with ½" (15/21) NPT threaded risers
- Patented PRS pressure regulator built into the stem. No parts to be installed at the site. Saves time and money
 - Maintains constant pressure at 30 psi (2,1 bar) or 45 psi (3,1 bar)
 - Restricts water loss by up to 70% if nozzle is removed or damaged. Saves water and money. Reduces liability. Recommended for vandal-prone areas
- Fits all Rain Bird plastic nozzles
- Rugged thermoplastic construction resists UV rays

Operating Range

- Pressure: 15 to 70 psi (1.0 to 4.8 bar)
- Flow: 0.2 to 4.0 gpm (0.05 to 0.91 m³/h; 0.06 to 15.0 l/m)

Specifications

- ½" (15/21) female inlet threads
- Fine top threads accept all Rain Bird nozzles
- Height: 5¼" (13.3 cm)

Models

- PA-8S-PRS
- PA-8S-P45



PA-8S-PRS & PA-8S-P45

PA

Plastic Shrub Adapter

Features

- Adapts Rain Bird Nozzles for use with ½" (15/21) NPT threaded risers
- Accepts protective, non-clogging 1800 Series filter screen (shipped with nozzle) and PCS Series screens
- Durable, non-corrosive plastic construction
- Non-Potable Plastic Shrub Adapter

Specifications

- ½" (15/21) female inlet threads
- Fine top threads accept all Rain Bird nozzles

Model

- PA-8S
- PA-8S-NP



PA-8S

PA-8S-NP

1800 PCS

Pressure Compensating Screens

Features

- Compensates* for pressure variations
- Eliminates fogging and water waste caused by high pressures
- Nozzles can be matched with screens to create short-throw, reduced-radius patterns and/or flush-mounted bubblers
- Color-coded for easy identification
- Use with all 1800 Series plastic nozzles (MPR, VAN, U-Series, Strips and Bubblers)

Operating Range

- Flow: 0.20 to 0.90 gpm (0.05 to 0.20 m³/h; 0.6 to 3.6 l/m)
- Pressure: 15 to 70 psi (1.0 to 4.8 bar)

Models

- PCS-020: 0.2 gpm (0.05 m³/h; 0.6 l/m) - Brown
- PCS-025: 0.25 gpm (0.06 m³/h; 1.2 l/m) - Pink
- PCS-030: 0.3 gpm (0.07 m³/h; 1.2 l/m) - Silver
- PCS-040: 0.4 gpm (0.09 m³/h; 1.8 l/m) - Orange
- PCS-060: 0.6 gpm (0.14 m³/h; 2.4 l/m) - Black
- PCS-090: 0.9 gpm (0.20 m³/h; 3.6 l/m) - White

* With a pressure compensator, outlet pressure will be reduced, but will fluctuate as the inlet pressure changes. A pressure compensator cannot maintain outlet pressure at a constant rate. A pressure regulator establishes and maintains a constant outlet pressure of 30 psi (2.1 bar) as long as the inlet pressure at the spray head is greater than 30 psi (2.1 bar)



1800 PCS
Screens

SPX Series Swing Pipe

Swing Pipe with Spiral Barb Fittings Provides a Flexible Swing Assembly for Sprays and Rotors

Features and Benefits

- **SPX-FLEX100**
 - Superior flexibility allows pipe to be efficiently routed around hardscape, terraces, and uneven terrain to turn landscape design into reality
 - Textured surface makes product easier to handle, contributing to labor efficiency, especially under wet conditions
 - Resists kinking
 - Quick and easy installation lowers material and labor costs
 - Installs quickly leaving time for additional system installations and incremental revenue opportunities

Specifications

- Inside diameter: 0.49" (1.24 cm)
- Operating pressure: Up to 80 psi (5.5 bar)
- Temperature: Up to 110° F (43° C)

Models

- SPX-FLEX-100: 100' (30 m) coil

SPX-FLEX

Extra Flexible Kink-Resistant Swing Pipe



- Same High Quality
- NOW 25% More Flexible



SPX-FLEX100

SB Series Spiral Barb Fittings

A Natural Product Complement to SPX Series Swing Pipe

Features and Benefits

- Fittings are made of robust acetal material to make connecting swing pipe fast and easy
- Easy twist-in insertion – no glue or clamps needed for installation
- Aggressive barb lip makes a secure connection that is less likely to leak

- Broad range of shapes and sizes allow the contractor to choose the best fitting for the application
- Extended length and aggressive barb lip prevent blow outs, reducing likelihood of contractor call backs

Specifications

- Operating pressure: Up to 80 psi (5.5 bar)
- Temperature: Up to 110° F (43° C)

Models

- SB-CPLG: 1/2" barb x 1/2" barb coupling
- SBA-050: 1/2" M NPT x 1/2" barb adapter
- SBE-075: 3/4" M NPT x 1/2" barb elbow
- SBE-050: 1/2" M NPT x 1/2" barb elbow
- SB-TEE: 1/2" barb x 1/2" barb x 1/2" barb tee

SB-CPLG



SBA-050



SBE-075



SBE-050



SB-TEE





Introduction

Spray Nozzles

Impact Sprinklers

Rotors

Valves

Controllers

Central Controls

Low Volume Irrigation

Pumps & Filtration

Resources



Rotors

Major Products	
Primary Applications	5000 Series
Turfgrass 15' to 30'	●
Turfgrass 25' to 50'	●
Turfgrass more than 50'	
Residential	●
Commercial	●
Vandalism/Damage Prone Areas	
Slopes	●
Ground Cover/Shrubs	●
Athletic Fields	
Pressure Regulating	●
High Wind Areas	●
Taller Turfgrass	●
Non-Potable Water	●

Water Saving Water Saving Tips

- Rain Curtain™ nozzle technology is the standard in water-saving nozzle performance. Rain Curtain™ performance is available in all Rain Bird Rotors
- 5000 Series Rotors with PRS reduce water waste from 15%-45%. By eliminating pressure variation and/or over pressurization, you'll save water and deliver greener results
- All rotors with Seal-a-Matic™ (SAM) check valves prevent drainage from heads at lower elevations, stop water waste and eliminate damage due to flooding and/or erosion

5000 Series

Engineered to be the Industry's Most Reliable and Best Performing Rotor

Features


- Oversized wiper seal prevents leaks and protects internals from debris
- Rain Curtain™ nozzles deliver even distribution over the entire radius including large wind resistant droplets and gentle close-in watering resulting in greener plants using less water
- A history of proven performance and reliability tested in millions of installations
- Self-flushing arc adjustment port that prevents buildup of debris
- 5 year trade warranty

Operating Specifications


- Precipitation rate: 0.20 to 1.50 in/hr (5 to 38 mm/h)
- Radius: 25 to 50 feet (7.6 to 15.2 m)
- Radius may be reduced up to 25% with radius reduction screw
- Pressure: 25 to 65 psi (1.7 to 4.5 bar)
- Flow Rate: 0.76 to 9.63 gpm (3.0 to 36.6 l/m; 0.17 to 2.19 m³/h)
- Optional SAM check valve holds up to 7 feet (2 m) of elevation change
- Reversing full- and part-circle adjustment from 40° - 360°
- Standard nozzle trajectory of 25°. Low angle nozzle trajectory of 10°. MPR nozzles varied nozzle trajectory between 12-25°.


Optional Features

- All features of the 5000 Series plus:
 - **Plus (+) Flow shutoff** – “The Green Top.” Reduce downtime on jobs by flushing and nozzling rotors without running back and forth to the controller or valves
 - **PRS (R)** with flow optimizer technology. The 45 psi pressure regulator lowers water bills, provides exact flow of each rotor, equalizes lateral lines, and eliminates misting and fogging
 - **SAM Seal-A-Matic** check valve
 - **Stainless steel (SS) riser** helps deter vandalism on public plant areas (available on 4 and 6" models)
 - **Purple cover (NP)** for non-potable systems

 0.20 to 1.50 in/hr
(5 to 37 mm/h)

 25 to 65 psi
(1.7 to 4.5 bar)

 0.76 to 9.63 gpm
(3.0 to 36.6 l/m)
(0.17 to 2.19 m³/h)

 Shrub: 4" (10.2 cm)
6" (15.2 cm)
12" (30.5 cm)
Shrub: 7 3/4" (19.7 cm)
4": 7 3/8" (18.5 cm)
6": 9 5/8" (24.5 cm)
12": 16 7/8" (42.9 cm)
3/4" (20/27) NPT



5000 Series

How to Specify

5004-+-S-PC-SAM-R-NP-SS

Options
SAM
R: PRS
NP: Non-potable cover
SS: Stainless Steel

Rotation
PC: Reversing Part Circle
FC: Full Circle

Model
Shrub
Plus (+)

Model
5004: 4" pop-up
5006: 6" pop-up
5012: 12" pop-up

Note: Certain specifications not available for some rotor series.



5000 Series (cont.)

- S** Shrub Model **PC** Part Circle & Reversing Full Circle **SAM** Check valve **SS** Stainless Steel
- +** Flow Shut-off **FC** Non-Reversing Full Circle **R** Pressure Regulation **NP** Non-Potable Cover

Models

Part-circle units (PC) are adjustable from 40 –350 degrees.

Full-circle units (FC) are 360 degrees only.

- 5000SPCSAM: 5000S Shrub Part Circle SAM
- 5000+SPCSAM: 5000S Shrub Plus Part Circle SAM
- 5000+SPCSAMNP: 5000S Shrub Plus Part Circle SAM Non Potable
- 5000+SPCSAMR: 5000S Shrub Plus PRS Part Circle SAM
- 5000S+PCSR: 5000S Plus Shrub PRS PC SAM NP
- 5004PC: 5004 Part Circle
- 5004PC20: 5004 Part Circle w/2.0 Nozzle
- 5004PC30: 5004 Part Circle w/3.0 Nozzle
- 5004PCSAM: 5004 Part Circle SAM
- 5004PCSAM20: 5004 Part Circle SAM w/2.0 Nozzle
- 5004PCSAM30: 5004 Part Circle SAM w/3.0 Nozzle
- 5004PCNP: 5004 Part Circle Non Potable
- 5004PCR: 5004 Part Circle PRS
- 5004PCR20: 5004 Part Circle PRS w/ 2.0 Nozzle
- 5004PCR30: 5004 Part Circle PRS w/ 3.0 Nozzle
- 5004+PC: 5004 Plus Part Circle
- 5004+PC20: 5004 Plus Part Circle w/2.0 Nozzle
- 5004+PC30: 5004 Plus Part Circle w/3.0 Nozzle
- 5004+PCSAM: 5004 Plus Part Circle SAM
- 5004+PCR 5004: Plus Part Circle PRS
- 5004+PCSAMR: 5004 Plus Part Circle SAM PRS
- 5004+PCSAMR20: 5004 Plus Part Circle SAM PRS w/2.0 Nozzle
- 5004+PCSAMR30: 5004 Plus Part Circle SAM PRS w/3.0 Nozzle
- 5004+PCSAMRNP: 5004 Plus Part Circle SAM PRS Non Potable
- 5004+PCSAMRSS: 5004 Plus Part Circle SAM PRS Stainless Steel
- 5004+PCSAMRNS: 5004 Plus Part Circle SAM PRS Stainless Steel Non Potable
- 5004FC 5004: Full Circle
- 5004+FC 5004: Plus Full Circle
- 5004+FCSAM: 5004 Plus Full Circle SAM
- 5004+FCSAMR: 5004 Plus Full Circle SAM PRS
- 5004+FCSAMRSS: 5004 Plus Full Circle Stainless Steel SAM PRS
- 5006PC: 5006 Part Circle
- 5006PC30: 5006 Part Circle w/ 3.0 Nozzle
- 5006+PC: 5006 Plus Part Circle
- 5006+PCSAM: 5006 Plus Part Circle SAM
- 5006+PCSAMNP: 5006 Plus Part Circle SAM Non Potable
- 5006+PCSAMR: 5006 Plus Part Circle SAM PRS
- 5006+PCSAMRNP: 5006 Plus Part Circle SAM PRS Non Potable
- 5006+PCSAMRSS: 5006 Plus Part Circle SAM PRS Stainless Steel
- 5006+PCSAMRNS: 5006 Plus Part Circle SAM PRS Stainless Steel Non Potable
- 5012+PCSAMR: 5012 Plus Part Circle SAM PRS
- 5012+PCSAMRNP: 5012 Plus Part Circle SAM PRS Non Potable
- 5000+SPCSAMRN: 5000S PLUS SHRUB PRS PC SAM NP

Three steps to specification:

1. Choose your rotor model and size.
2. Choose arc setting PC/FC.
3. Add available options or pre-installed nozzles.

	Model/Size (Choose 1)		Part or Full Circle (Choose 1)	Available Options (Optional Choices)	Pre-Installed nozzles (Optional Choices)	Specification Notes
Closed Case Rotors	3500S 3504		PC	SAM NP		Part circle / reversing full circle
	5000S 5004 5006	5000+S 5004+ 5006+ 5012+	PC FC	SAM R SS NP	20 30	PC only on 5000, 5006 and 5012 models. 2.0 or 3.0 nozzles.
	6504		PC FC	SS NP HS		SAM standard.
	8005			SS NP		Part circle and non-reversing full circle in one head. SAM standard.
Open Case Rotors	Maxi-Paw			SAM NP		Part circle and non-reversing full circle in one head.

5000 Series Std. Angle Rain Curtain™ Nozzle Performance					
Pressure psi	Nozzle	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
25	1.5	33	1.12	0.20	0.23
	2.0	35	1.50	0.24	0.27
	2.5	35	1.81	0.28	0.33
	3.0	36	2.26	0.34	0.39
	4.0	36	2.91	0.43	0.49
	5.0	37	3.72	0.52	0.60
	6.0	37	4.25	0.60	0.69
	8.0	33	5.90	1.26	1.50
35	1.5	34	1.35	0.22	0.26
	2.0	36	1.81	0.27	0.31
	2.5	37	2.17	0.31	0.35
	3.0	38	2.71	0.36	0.42
	4.0	40	3.50	0.42	0.49
	5.0	41	4.47	0.51	0.59
	6.0	43	5.23	0.54	0.63
	8.0	41	7.06	0.94	1.10
45	1.5	35	1.54	0.24	0.28
	2.0	37	2.07	0.29	0.34
	2.5	37	2.51	0.35	0.41
	3.0	39	3.09	0.37	0.43
	4.0	42	4.01	0.44	0.51
	5.0	43	5.09	0.48	0.56
	6.0	44	6.01	0.59	0.69
	8.0	44	8.03	0.92	1.06
55	1.5	35	1.71	0.27	0.31
	2.0	37	2.30	0.32	0.37
	2.5	37	2.76	0.39	0.45
	3.0	40	3.47	0.42	0.48
	4.0	42	4.44	0.48	0.56
	5.0	45	5.66	0.54	0.62
	6.0	50	6.63	0.51	0.59
	8.0	47	8.86	0.80	0.93
65	1.5	34	1.86	0.31	0.36
	2.0	35	2.52	0.40	0.46
	2.5	37	3.01	0.42	0.49
	3.0	40	3.78	0.45	0.53
	4.0	42	4.83	0.53	0.61
	5.0	45	6.16	0.59	0.68
	6.0	50	7.22	0.55	0.64
	8.0	48	9.63	0.84	0.97

Precipitation rates based on half-circle operation

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw

Performance data collected in zero wind conditions

Performance data derived from tests that conform with ASABE Standards; ASABE S398.1. See page 202 for complete ASABE Test Certification Statement.

5000 Series Std. Angle Rain Curtain™ Nozzle Performance METRIC						
Pressure bar	Nozzle	Radius m	Flow m³/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
2.0	1.5	10.2	0.28	4.8	5	6
	2.0	10.8	0.36	6.0	6	7
	2.5	10.9	0.44	7.2	7	9
	3.0	11.2	0.55	9.0	9	10
	4.0	11.6	0.71	12.0	11	12
	5.0	12.1	0.91	15.0	13	15
	6.0	12.4	1.05	17.4	15	17
	8.0	11.8	1.45	24.0	32	37
2.5	1.5	10.4	0.31	5.4	6	7
	2.0	11.0	0.41	6.6	7	8
	2.5	11.3	0.50	8.4	8	9
	3.0	11.2	0.62	10.2	9	11
	4.0	12.3	0.81	13.2	11	13
	5.0	12.7	1.03	17.4	13	15
	6.0	13.2	1.21	20.4	14	16
	8.0	13.3	1.63	27.0	24	28
3.0	1.5	10.6	0.34	6.0	6	7
	2.0	11.2	0.45	7.8	7	8
	2.5	11.3	0.56	9.6	9	10
	3.0	12.1	0.69	11.4	9	11
	4.0	12.7	0.89	15.0	11	13
	5.0	13.5	1.13	18.6	12	14
	6.0	13.4	1.34	22.2	13	17
	8.0	13.4	1.79	30.0	23	27
3.5	1.5	10.7	0.37	6.0	7	8
	2.0	11.3	0.49	8.4	8	9
	2.5	11.3	0.60	10.2	9	11
	3.0	12.2	0.74	12.6	10	12
	4.0	12.8	0.97	16.2	12	14
	5.0	13.7	1.23	20.4	13	15
	6.0	14.2	1.45	24.0	13	15
	8.0	14.9	1.93	32.4	20	24
4.0	1.5	10.6	0.40	6.6	7	8
	2.0	11.1	0.52	9.0	8	10
	2.5	11.3	0.64	10.8	10	12
	3.0	12.2	0.80	13.2	11	12
	4.0	12.8	1.04	17.4	13	15
	5.0	13.7	1.32	22.2	14	16
	6.0	14.9	1.55	25.8	14	16
	8.0	15.2	2.06	34.2	21	25
4.5	1.5	10.4	0.42	7.2	8	9
	2.0	10.7	0.55	9.0	10	11
	2.5	11.3	0.68	11.4	11	12
	3.0	12.2	0.84	13.8	11	13
	4.0	12.8	1.10	18.0	13	15
	5.0	13.7	1.40	23.4	15	17
	6.0	14.6	1.64	28.2	15	18
	8.0	15.2	2.19	36.6	19	22

5000 Series Low Angle Nozzle Performance

Pressure psi	Nozzle	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
25	1.0 LA	25	0.76	0.23	0.27
	1.5 LA	27	1.15	0.30	0.35
	2.0 LA	29	1.47	0.34	0.39
	3.0 LA	29	2.23	0.51	0.59
35	1.0 LA	28	0.92	0.23	0.26
	1.5 LA	30	1.38	0.30	0.34
	2.0 LA	31	1.77	0.35	0.41
	3.0 LA	33	2.68	0.47	0.55
45	1.0 LA	29	1.05	0.24	0.28
	1.5 LA	31	1.58	0.32	0.37
	2.0 LA	32	2.02	0.38	0.44
	3.0 LA	35	3.07	0.48	0.56
55	1.0 LA	29	1.17	0.27	0.31
	1.5 LA	31	1.76	0.35	0.41
	2.0 LA	33	2.24	0.40	0.46
	3.0 LA	36	3.41	0.51	0.58
65	1.0 LA	29	1.27	0.29	0.34
	1.5 LA	31	1.92	0.38	0.44
	2.0 LA	33	2.45	0.43	0.50
	3.0 LA	36	3.72	0.55	0.64

Precipitation rates based on half-circle operation

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw

Performance data collected in zero wind conditions

Performance data derived from tests that conform with ASABE Standards; ASABE S398.1.

See page 202 for complete ASABE Test Certification Statement.

5000 Series Low Angle Nozzle Performance METRIC

Pressure bar	Nozzle	Radius m	Flow m ³ /h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
1.7	1.0 LA	7.6	0.17	3.0	6	7
	1.5 LA	8.2	0.26	4.2	8	9
	2.0 LA	8.8	0.33	5.4	9	10
	3.0 LA	8.8	0.51	8.4	13	15
2.0	1.0 LA	8.0	0.18	3.0	6	6
	1.5 LA	8.6	0.28	4.8	8	9
	2.0 LA	9.1	0.36	6.0	9	10
	3.0 LA	9.3	0.55	9.0	13	15
2.5	1.0 LA	8.6	0.20	3.6	5	6
	1.5 LA	9.2	0.32	5.4	8	9
	2.0 LA	9.5	0.41	6.6	9	10
	3.0 LA	10.1	0.62	10.2	12	14
3.0	1.0 LA	8.8	0.22	3.6	6	7
	1.5 LA	9.4	0.35	6.0	8	9
	2.0 LA	9.7	0.45	7.8	10	11
	3.0 LA	10.6	0.68	11.4	12	14
3.5	1.0 LA	8.8	0.24	4.2	6	7
	1.5 LA	9.4	0.38	6.6	9	10
	2.0 LA	9.9	0.49	8.4	10	11
	3.0 LA	10.8	0.74	12.6	13	15
4.0	1.0 LA	8.8	0.26	4.2	7	8
	1.5 LA	9.4	0.41	6.6	9	11
	2.0 LA	10.1	0.52	9.0	10	12
	3.0 LA	11.0	0.80	13.2	13	15
4.5	1.0 LA	8.8	0.27	4.8	7	8
	1.5 LA	9.4	0.44	7.2	10	11
	2.0 LA	10.1	0.56	9.0	11	13
	3.0 LA	11.0	0.84	13.8	14	16

Tools

Holdup Tool with Bubble Level

Features

- Combination holdup tool/bubble level makes proper installation easier
- Works with 5000, Falcon® 6504, and 8005

Model

- HOLDUPTOOL



HOLDUPTOOL

Rotor Tool

Features

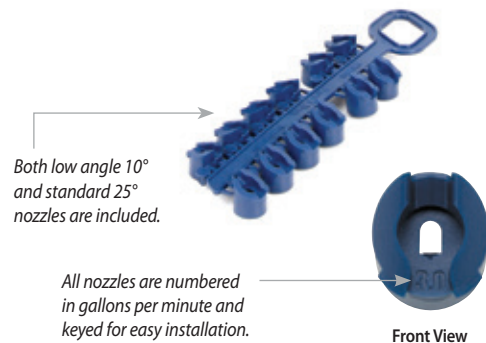
- Flat blade screwdriver and pull-up tool all in one

Model

- ROTORTOOL



ROTORTOOL



5000 PRS Std. Angle Rain Curtain™ Nozzle Performance					
Pressure psi	Nozzle	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
25	1.5	33	1.12	0.2	0.23
	2.0	35	1.5	0.24	0.27
	2.5	35	1.81	0.28	0.33
	3.0	36	2.26	0.34	0.39
	4.0	36	2.91	0.43	0.49
	5.0	37	3.72	0.52	0.66
	6.0	37	4.25	0.60	0.69
	8.0	33	5.9	1.26	1.5
35	1.5	34	1.35	0.22	0.26
	2.0	36	1.81	0.27	0.31
	2.5	37	2.17	0.31	0.35
	3.0	38	2.71	0.36	0.41
	4.0	40	3.5	0.42	0.49
	5.0	41	4.47	0.51	0.59
	6.0	43	5.23	0.54	0.63
	8.0	41	7.06	0.94	1.1
45	1.5	35	1.54	0.24	0.28
	2.0	37	2.07	0.29	0.34
	2.5	37	2.51	0.35	0.41
	3.0	39	3.09	0.37	0.43
	4.0	42	4.01	0.44	0.51
	5.0	43	5.09	0.48	0.56
	6.0	44	6.01	0.55	0.63
	8.0	44	8.03	0.92	1.06
55 – 75	1.5	35	1.59	0.25	0.29
	2.0	37	2.14	0.3	0.35
	2.5	37	2.6	0.37	0.42
	3.0	39	3.2	0.39	0.44
	4.0	42	4.15	0.45	0.52
	5.0	43	5.27	0.5	0.58
	6.0	44	6.22	0.57	0.65
	8.0	44	8.31	0.72	0.84

5000 PRS Std. Angle Rain Curtain™ Nozzle Performance METRIC						
Pressure bar	Nozzle	Radius m	Flow m³/h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
1.7	1.5	10.1	0.25	4.2	5	6
	2.0	10.7	0.34	5.4	6	7
	2.5	10.7	0.41	6.6	7	8
	3.0	11.0	0.51	8.4	8	10
	4.0	11.3	0.66	10.8	10	12
	5.0	11.9	0.84	13.8	12	14
	6.0	11.9	0.97	16.2	14	16
	8.0	11.0	1.34	22.2	22	26
2.0	1.5	10.2	0.28	4.8	5	6
	2.0	10.8	0.36	6.0	6	7
	2.5	10.9	0.44	7.2	7	9
	3.0	11.2	0.55	9.0	9	10
	4.0	11.6	0.71	12.0	11	12.6
	5.0	12.1	0.91	15.0	13	15
	6.0	12.4	1.05	17.4	15	17
	8.0	11.8	1.45	24.0	32	37
2.5	1.5	10.4	0.31	5.4	6	7
	2.0	11.0	0.41	6.6	7	8
	2.5	11.3	0.50	8.4	8	9
	3.0	11.2	0.62	10.2	9	11
	4.0	12.3	0.81	13.2	11	13
	5.0	12.7	1.03	17.4	13	15
	6.0	13.2	1.21	20.4	14	16
	8.0	13.3	1.63	27.0	24	18
3.0	1.5	10.6	0.34	6.0	6	7
	2.0	11.2	0.45	7.8	7	8
	2.5	11.3	0.56	9.6	9	10
	3.0	12.1	0.69	11.4	9	11
	4.0	12.7	0.89	16.8	11	13
	5.0	13.5	1.13	18.6	12	14
	6.0	13.9	1.34	22.2	14	16
	8.0	14.1	1.79	30.0	23	27
3.5 – 5.2	1.5	10.6	0.35	6.0	6	7
	2.0	11.2	0.47	7.8	8	9
	2.5	11.3	0.58	10.2	9	11
	3.0	12.1	0.71	12.0	10	11
	4.0	12.7	0.92	15.6	12	13
	5.0	13.5	1.17	19.2	13	15
	6.0	13.9	1.39	22.8	14	17
	8.0	14.1	1.85	31.2	18	21

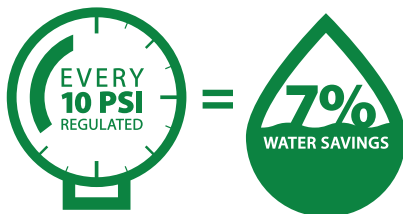
Precipitation rates based on half-circle operation

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw

Performance data collected in zero wind conditions

Performance data derived from tests that conform with ASABE Standards; ASABE S398.1. See page 202 for complete ASABE Test Certification Statement.



5000 PRS Low Angle Nozzle Performance					
Pressure psi	Nozzle	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
25	1.0 LA	25	0.76	0.22	0.26
	1.5 LA	27	1.15	0.3	0.35
	2.0 LA	29	1.47	0.34	0.39
	3.0 LA	29	2.23	0.51	0.59
35	1.0 LA	28	0.92	0.21	0.25
	1.5 LA	30	1.38	0.3	0.34
	2.0 LA	31	1.77	0.35	0.41
	3.0 LA	33	2.68	0.47	0.55
45	1.0 LA	29	1.05	0.23	0.26
	1.5 LA	31	1.58	0.32	0.37
	2.0 LA	32	2.02	0.38	0.44
	3.0 LA	35	3.07	0.48	0.56
55 – 75	1.0 LA	29	1.09	0.25	0.29
	1.5 LA	31	1.64	0.33	0.38
	2.0 LA	32	2.09	0.39	0.45
	3.0 LA	35	3.18	0.5	0.58

5000 PRS Low Angle Nozzle Performance						METRIC
Pressure bar	Nozzle	Radius m	Flow m ³ /h	Flow l/m	■ Precip mm/h	▲ Precip mm/h
1.7	1.0 LA	7.6	0.17	3.0	6	7
	1.5 LA	8.2	0.26	4.2	8	9
	2.0 LA	8.8	0.33	5.4	9	10
	3.0 LA	8.8	0.51	8.4	13	15
2.0	1.0 LA	8.0	0.18	3.0	6	6
	1.5 LA	8.6	0.28	4.8	8	9
	2.0 LA	9.1	0.36	6.0	9	10
	3.0 LA	9.3	0.55	9.0	13	15
2.5	1.0 LA	8.6	0.20	3.6	5	6
	1.5 LA	9.2	0.32	5.4	8	9
	2.0 LA	9.5	0.41	6.6	9	10
	3.0 LA	10.1	0.62	10.2	12	14
3.0	1.0 LA	8.8	0.22	3.6	6	7
	1.5 LA	9.4	0.35	6.0	8	9
	2.0 LA	9.7	0.45	7.8	10	11
	3.0 LA	10.6	0.68	11.4	12	14
3.5 – 5.2	1.0 LA	8.8	0.23	3.6	6	7
	1.5 LA	9.4	0.36	6.0	8	10
	2.0 LA	9.7	0.47	7.8	10	12
	3.0 LA	10.6	0.70	12.0	13	15

Precipitation rates based on half-circle operation

■ Square spacing based on 50% diameter of throw

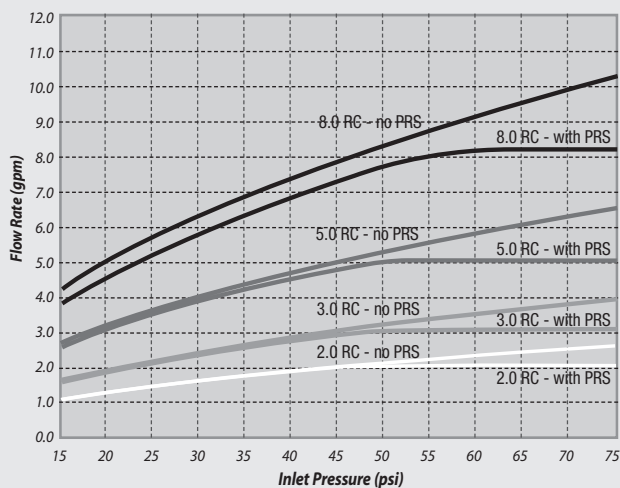
▲ Triangular spacing based on 50% diameter of throw

Performance data collected in zero wind conditions

Performance data derived from tests that conform with ASABE Standards; ASABE S398.1.

See page 202 for complete ASABE Test Certification Statement.

Flow Rate vs. Inlet Pressure – Rain Curtain™ Nozzles



How much water can you save each minute using Rain Bird® 5000 PRS Rotors with Flow Optimizer Technology?

Flow GPM	45	50	55	60	65	70	75	80
6	0	0.33	0.66	0.96	1.25	1.54	1.81	2.06
8	0	0.43	0.85	1.24	1.62	1.98	2.33	2.67
10	0	0.55	1.07	1.57	2.05	2.52	2.96	3.39
12	0	0.66	1.27	1.86	2.43	2.97	3.50	4.01
14	0	0.77	1.49	2.18	2.84	3.48	4.10	4.70
16	0	0.87	1.69	2.48	3.24	3.97	4.67	5.35
18	0	0.98	1.90	2.79	3.64	4.46	5.25	6.01
20	0	1.10	2.12	3.10	4.05	4.96	5.83	6.68
22	0	1.21	2.33	3.42	4.46	5.47	6.44	7.37
24	0	1.30	2.54	3.72	4.85	5.94	7.00	8.01
26	0	1.41	2.76	4.04	5.27	6.45	7.60	8.70
28	0	1.53	2.96	4.34	5.66	6.93	8.16	9.35
30	0	1.63	3.17	4.65	6.07	7.43	8.74	10.02

Total gallons of water saved per minute of run time
Ex: At 70 psi a zone with 20 gpm of flow would save 4.96 gallons a minute with 5000 PRS

5000 Series MPR Nozzles

Perfectly Balanced Coverage with the 5000 Series Rotor

Features

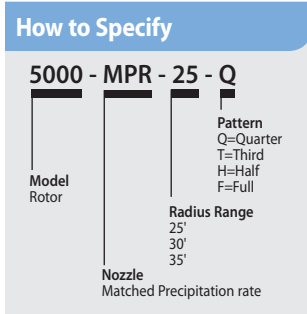
- Rain Curtain™ nozzles deliver even distribution over the entire radius including large wind resistant droplets and gentle close-in watering resulting in greener plants using less water
- Precipitation rate is automatically matched with a uniform radius that does not require stream deflection
- Matched 0.6"/hour precipitation rates enable large and small turf areas to be zoned together by mixing rotors and Rain Bird R-VAN or R-Series rotary nozzles





Models





- 5000MPRMPK: 5000/5000 Plus Series MPR nozzle tree multi pack- 25', 30', 35' radius in Quarter, Third, Half, Full arc











5000 Series MPR Nozzles











5000-MPR-25 (Red)					
Nozzle	Pressure psi	Radius ft.	Flow gpm	Precip In/h	Precip In/h
Quarter 	25	23	0.74	0.54	0.62
	35	24	0.88	0.59	0.68
	45	25	1.00	0.62	0.71
	55	25	1.11	0.68	0.79
	65	25	1.21	0.75	0.86
Third 	25	23	1.00	0.55	0.63
	35	24	1.21	0.61	0.70
	45	25	1.38	0.64	0.74
	55	25	1.53	0.71	0.82
Half 	25	23	1.44	0.52	0.61
	35	24	1.73	0.58	0.67
	45	25	1.98	0.61	0.70
	55	25	2.21	0.68	0.79
Full 	25	23	2.78	0.51	0.58
	35	24	3.34	0.56	0.64
	45	25	3.82	0.59	0.68
	55	25	4.25	0.65	0.76
	65	25	4.63	0.71	0.82

5000-MPR-25 (Red)						METRIC
Nozzle	Pressure bar	Radius m	Flow m³/h	Flow l/m	Precip mm/h	Precip mm/h
Quarter 	1.7	7.0	0.17	3.0	13.7	15.8
	2.4	7.3	0.20	3.6	14.9	17.3
	3.1	7.6	0.23	3.6	15.6	18.1
	3.8	7.6	0.25	4.2	17.4	20.1
	4.5	7.6	0.27	4.8	18.9	21.9
Third 	1.7	7.0	0.23	3.6	13.9	16.0
	2.4	7.3	0.27	4.8	15.4	17.8
	3.1	7.6	0.31	5.4	16.2	18.7
	3.8	7.6	0.35	6.0	18.0	20.7
Half 	1.7	7.0	0.33	5.4	13.3	15.4
	2.4	7.3	0.39	6.6	14.7	17.0
	3.1	7.6	0.45	7.2	15.5	17.9
	3.8	7.6	0.50	8.4	17.3	20.0
Full 	1.7	7.0	0.63	10.8	12.8	14.8
	2.4	7.3	0.76	12.6	14.2	16.4
	3.1	7.6	0.87	14.4	14.9	17.3
	3.8	7.6	0.97	16.2	16.6	19.2
	4.5	7.6	1.05	17.4	18.1	20.9

5000-MPR-30 (Green)					
Nozzle	Pressure psi	Radius ft.	Flow gpm	Precip In/h	Precip In/h
 Quarter	25	29	1.03	0.47	0.54
	35	30	1.23	0.53	0.61
	45	30	1.40	0.60	0.69
	55	30	1.56	0.67	0.77
	65	30	1.69	0.72	0.83
 Third	25	29	1.34	0.46	0.53
	35	30	1.62	0.52	0.60
	45	30	1.85	0.59	0.69
	55	30	2.06	0.66	0.76
	65	30	2.24	0.72	0.83
 Half	25	29	2.15	0.49	0.57
	35	30	2.59	0.55	0.64
	45	30	2.96	0.63	0.73
	55	30	3.30	0.71	0.82
	65	30	3.60	0.77	0.89
 Full	25	29	4.24	0.49	0.56
	35	30	5.08	0.54	0.63
	45	30	5.78	0.62	0.71
	55	30	6.39	0.68	0.79
	65	30	6.92	0.74	0.85

5000-MPR-30 (Green)						METRIC
Nozzle	Pressure bar	Radius m	Flow m ³ /h	Flow l/m	Precip mm/h	Precip mm/h
 Quarter	1.7	8.8	0.23	3.6	12.0	13.8
	2.4	9.1	0.28	4.8	13.4	15.4
	3.1	9.1	0.32	5.4	15.2	17.6
	3.8	9.1	0.35	6.0	17.0	19.6
	4.5	9.1	0.38	6.6	18.4	21.2
 Third	1.7	8.8	0.30	4.8	11.7	13.5
	2.4	9.1	0.37	6.0	13.2	15.2
	3.1	9.1	0.42	7.2	15.1	17.4
	3.8	9.1	0.47	7.8	16.8	19.4
	4.5	9.1	0.51	8.4	18.3	21.1
 Half	1.7	8.8	0.49	8.4	12.5	14.4
	2.4	9.1	0.59	9.6	14.1	16.2
	3.1	9.1	0.67	11.4	16.1	18.6
	3.8	9.1	0.75	12.6	17.9	20.7
	4.5	9.1	0.82	13.8	19.6	22.6
 Full	1.7	8.8	0.96	16.2	12.3	14.2
	2.4	9.1	1.15	19.2	13.8	15.9
	3.1	9.1	1.31	21.6	15.7	18.1
	3.8	9.1	1.45	24.0	17.4	20.0
	4.5	9.1	1.57	26.4	18.8	21.7

5000-MPR-35 (Beige)					
Nozzle	Pressure psi	Radius ft.	Flow gpm	Precip In/h	Precip In/h
 Quarter	25	32	1.40	0.53	0.61
	35	34	1.67	0.56	0.64
	45	35	1.92	0.60	0.70
	55	35	2.13	0.67	0.77
	65	35	2.31	0.73	0.84
 Third	25	32	1.77	0.50	0.58
	35	34	2.15	0.54	0.62
	45	35	2.46	0.58	0.67
	55	35	2.74	0.65	0.75
	65	35	2.99	0.70	0.81
 Half	25	32	2.75	0.52	0.60
	35	34	3.33	0.55	0.64
	45	35	3.81	0.60	0.69
	55	35	4.23	0.66	0.77
	65	35	4.62	0.73	0.84
 Full	25	32	5.36	0.50	0.58
	35	34	6.62	0.55	0.64
	45	35	7.58	0.60	0.69
	55	35	8.43	0.66	0.76
	65	35	9.18	0.72	0.83

5000-MPR-35 (Beige)						METRIC
Nozzle	Pressure bar	Radius m	Flow m ³ /h	Flow l/m	Precip mm/h	Precip mm/h
 Quarter	1.7	9.8	0.32	5.4	13.4	15.4
	2.4	10.4	0.38	6.6	14.1	16.3
	3.1	10.7	0.44	7.2	15.3	17.7
	3.8	10.7	0.48	7.8	17.0	19.6
	4.5	10.7	0.52	9.0	18.4	21.3
 Third	1.7	9.8	0.40	6.6	12.7	14.6
	2.4	10.4	0.49	8.4	13.6	15.8
	3.1	10.7	0.56	9.6	14.7	17.0
	3.8	10.7	0.62	10.2	16.4	18.9
	4.5	10.7	0.68	11.4	17.9	20.7
 Half	1.7	9.8	0.62	10.2	13.1	15.2
	2.4	10.4	0.76	12.6	14.1	16.3
	3.1	10.7	0.87	14.4	15.2	17.6
	3.8	10.7	0.96	16.2	16.9	19.5
	4.5	10.7	1.05	17.4	18.4	21.3
 Full	1.7	9.8	1.22	20.4	12.8	14.8
	2.4	10.4	1.50	25.2	14.0	16.2
	3.1	10.7	1.72	28.8	15.1	17.5
	3.8	10.7	1.91	31.8	16.8	19.4
	4.5	10.7	2.09	34.8	18.3	21.2

■ Square spacing based on 50% diameter of throw
 ▲ Triangular spacing based on 50% diameter of throw
 Performance data collected in zero wind conditions

Performance data derived from tests that conform with ASABE Standards; ASABE S398.1.
 See page 202 for complete ASABE Test Certification Statement.



Introduction

Spray Nozzles

Impact Sprinklers

Rotors

Valves

Controllers

Central Controls

Low Volume Irrigation

Pumps & Filtration

Resources



Valves

Major Products										
Primary Applications	DV	DVF	HV	HVF	PGA	PEB	PESB/PESB-R	EFB-CP	BPES	QC
Manual Bleed	I/E	I/E	I/E	I/E	I	I/E	I/E	I/E	E	
Flow Control		•		•	•	•	•	•	•	
Bottom Inlet	DV-A				•				•	•
Low Flow	•	•	•	•		•	•	•		
PRS-Dial Compatible					•	•	•	•	•	
Dirty Water							•	•	•	
Non-Potable Water					•	•	•	•	•	•
Sites Requiring Brass								•	•	•
Sites Requiring Plastic	•	•	•	•	•	•	•			
Decoder System Compatible					•	•	•	•	•	

• DV/DVF available in globe, angle, slip x slip, and male x barb configurations. • Flows below 3 gpm (0.68 m³/h; 0.19 l/s) install 200 mesh filter upstream. • I/E = Internal/External
 • The PESB-R and EFB-CP are specifically designed with chlorine-resistant components for reclaimed water applications.



Water Saving Tips

- The PRS-Dial is an excellent means of regulating outlet pressure at the valve regardless of incoming pressure fluctuations. It helps ensure optimal pressure performance at the head.
- Rain Bird valves provide excellent filtration characteristics for maximum reliability in a wide range of environments.
- PESB-R and EFB-CP reclaimed valves provide reliable operation in all water conditions. Valve diaphragms are composed of EPDM, a rubber material which is chlorine and chemical resistant.

DV / DVF Series

Diaphragm Valve – The Industry Leader for Over 25 Years

Features

- Double-filtered (diaphragm and solenoid) pilot-flow design for maximum reliability and grit resistance
- Buna-N, balanced pressure diaphragm with self-cleaning 90 mesh (200 micron) pilot water filter and captive spring
- Energy-efficient, low-power encapsulated solenoid with captured plunger and 90-mesh (200 micron) solenoid filter
- Unique, easy-to-turn pressure assisted flow control mechanism (DVF models only)
- External bleed to manually flush system of dirt and debris during installation and system start-up
- Internal bleed for spray-free manual operation
- Accepts Rain Bird TBOS latching solenoid for use with most battery-operated controllers
- Operates in low-flow and Landscape Drip applications when a 200 mesh filter is installed upstream
- **Not recommended for use with two-wire control systems**

Specifications

- Pressure: 15 to 150 psi (1,0 to 10,4 bar)
- 075-DV Non-Flow Control Model: 0.2 to 22 GPM (0,05 to 5,0 m³/h; 0,01 to 1,39 l/s). For flows below 3 GPM (0,68 m³/h; 0,19 l/s) or any Landscape Drip application, use a 200 mesh filter installed upstream
- 100-DV Non-Flow Control Model: 0.2 to 40 gpm (0,05 to 9,085 m³/h; 0,01 to 2,52 l/s). For flows below 3 gpm (0,68 m³/h; 0,19 l/s) or any Landscape Drip application, use a 200 mesh filter installed upstream
- 100-DVF Flow Control Model: 0.2 to 40 gpm (0,05 to 9,085 m³/h; 0,01 to 2,52 l/s); For flows below 3 gpm (0,68 m³/h; 0,19 l/s) or any Landscape Drip application, use a 200 mesh filter installed upstream
- Water Temperature: Up to 110° F (43° C)
- Ambient air temperature: Up to 125° F (52° C)
- 24 VAC 50/60 Hz (cycles per second) solenoid power requirement: 0.450A inrush current; 0.250A holding current
- Solenoid coil resistance: 38 Ohms



075-DV



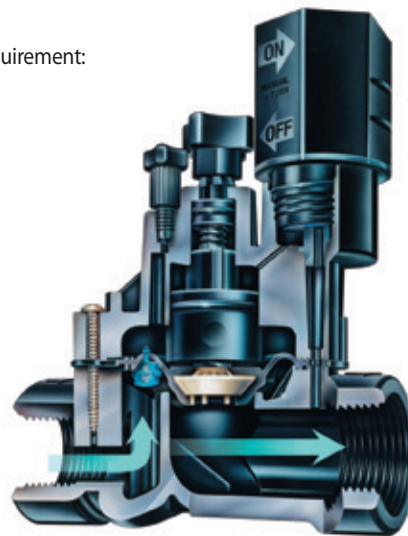
100-DVF-MB



100-DV-A



100-DVF



DVF Cutaway

How to Specify

100 - DV - MB

Optional Configuration:
MB: Male x Barb
A: Angle
SS: Slip x Slip

Model
DV: Remote Control Valve
DVF: Remote Control Valve with Flow Control

Size
075: 3/4" (20/27);
100: 1" (26/34)

*This specifies a 100-DV valve; 1" (26/34) male x barb.
Note: For non-U.S. applications it is necessary to specify NPT or BSP thread type (1" only).*

DV / DVF Series (cont.)

Dimensions

DV Valves

- Height: 4½" (11.4 cm)
- Height (Angle): 5½" (14 cm)
- Length: 4¾" (11.1 cm)
- Length (Angle): 3¾" (9.5 cm)
- Length (MB): 5¾" (14.6 cm)
- Width: 3⅓" (8.4 cm)

DVF Valves

- Height: 5¾" (14.2 cm)
- Length: 4¾" (11.1 cm)
- Length (MB): 5¾" (14.6 cm)
- Width: 3⅓" (8.4 cm)

Models

- 075-DV: ¾" (20/27) NPT
- 100-DV: 1" (26/34) NPT female x female*
- 100-DV-SS: 1" (26/34) slip x slip
- 100-DV-A: 1" (26/34) NPT female x female
- 100-DV-MB: 1" (26/34) male x barb
- 100-DVF: 1" (26/34) NPT female x female*
- 100-DVF-SS: 1" (26/34) slip x slip
- 100-DVF-MB: 1" (26/34) male x barb

* Available with BSP threads

Recommendations

1. Rain Bird recommends flow rates that result in discharge velocities in the supply line not to exceed 7.5 ft/sec (2.3 m/s) in order to reduce the effects of water hammer.
2. Rain Bird residential valves cannot be used with PRS pressure regulating modules.
3. **Not recommended for use with two-wire systems.**

DV and DVF Valve Pressure Loss (psi)

Flow gpm	075-DV ¾" psi	100-DV/100-DVF 1" psi
1	3.2	3.3
3	3.9	3.6
5	4.2	3.8
10	5.0	3.8
20	7.7	5.1
30	-	6.4
40	-	8.6

DV and DVF Valve Pressure Loss (bar)

		METRIC	
Flow m³/h	l/m	075-DV ¾" bar	100-DV/100-DVF 1" bar
0.23	4	0.22	0.23
0.60	10	0.26	0.24
1.20	20	0.29	0.26
3.60	60	0.45	0.32
4.50	75	0.53	0.35
6.00	100	-	0.41
9.00	150	-	0.59

100-DV Angle, MxB Valve Pressure Loss (psi)

Flow gpm	075-DV ¾" psi	100-DV/100-DVF 1" psi
1	2.8	2.5
3	3.0	2.9
5	3.2	3.0
10	3.9	3.1
20	4.3	4.3
30	5.4	7.4
40	8.2	12.7

100-DV Angle, MxB Valve Pressure Loss (bar)

		METRIC	
Flow m³/h	l/m	075-DV ¾" bar	100-DV/100-DVF 1" bar
0.23	4	0.19	0.17
0.60	10	0.20	0.19
1.20	20	0.22	0.21
3.60	60	0.28	0.26
4.50	75	0.30	0.30
6.00	100	0.35	0.44
9.00	150	0.56	0.86

Note: DV/DVF Male x barb not recommended for flows exceeding 30 gpm (6.81 m³/h, 113.56 l/m)

HV Series

High Value Valve. High Performance. Big Savings.

Features

- Patented, eccentric, balanced pressure, Buna-N diaphragm with self-cleaning 90-mesh (200 micron) pilot water filter and captured stainless steel spring – Eccentric design provides smoother closing, less water hammer
- Only four durable, captured multi-drive bonnet screws that come out with half the number of turns for fast and easy servicing – at least twice as fast as the competition
- Glass-filled polypropylene body for strength (slip by slip model bodies are PVC)
- All popular model configurations available
- Compact design, 2.54" spin radius for tight installations
- Reverse flow, normally closed design
- External bleed to manually flush system of dirt and debris during installation and system start-up
- Internal bleed for spray-free manual operation
- Operates in low-flow and Landscape Drip applications when a 200 mesh filter is installed upstream

Specifications

- Pressure: 15 to 150 PSI (1,0 to 10,3 bar)
- Flow: 0.2 to 30 GPM (0,05 to 6,82 m³/h; 0,01 to 1,89 l/s); for flows below 3 GPM (0,68 m³/h; 0,19 l/s) or any Landscape Drip application, use a 200 mesh filter installed upstream
- Operating Temperatures: Water temperature up to 110° F (43° C); ambient temperature up to 125° F (52° C)
- 24 VAC 50/60 Hz (cycles/sec.) solenoid
- Inrush current: 0.290A at 60 Hz
- Holding current: 0.091A at 60 Hz
- Solenoid Coil resistance: 70-85 Ohms (40° F - 110° F)



HV Valve Pressure Loss (psi)		
Flow gpm	1" HV psi	1" HV-MB psi
1	1.57	1.73
3	2.07	2.03
5	2.38	2.25
10	3.33	2.80
20	4.59	4.45
30	6.14	7.85
40	8.23	13.68

HV Valve Pressure Loss (psi)			METRIC	
Flow m ³ /h	l/s	1" HV bar	1" HV-MB bar	
0.25	0.06	0.11	0.12	
0.75	0.21	0.14	0.14	
1.00	0.28	0.16	0.16	
2.00	0.56	0.23	0.19	
5.00	1.39	0.32	0.31	
7.50	2.08	0.42	0.54	
9.10	2.52	0.57	0.94	

* Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.3 m/s) in order to reduce the effects of water hammer

Dimensions

- Height: 4.62" (11.7 cm)
- Height (F): 5.62" (14.3 cm)
- Height (MB): 4.50" (11.4 cm)
- Length: 4.4" (11.2 cm)
- Length (MB): 5.68" (14.4 cm)
- Width: 3.1" (7.9 cm)

Models

- 100-HV-NPT: 1" (26/34) NPT female x female*
- 100-HV-SS: 1" (26/34) slip x slip
- 100 HV-MB: 1" (26/34) male x barb
- 100 HVF: 1" (26/34) NPT female x female*
- 100 HVF-SS: 1" (26/34) slip x slip

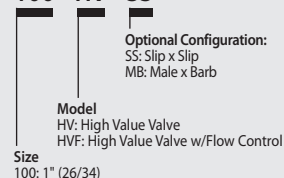
*Available with BSP threads

Recommendations

1. Rain Bird recommends flow rates that result in discharge velocities in the supply line not to exceed 7.5 ft/sec (2.3 m/s) in order to reduce the effects of water hammer.
2. Rain Bird residential valves cannot be used with PRS pressure regulating modules.
3. **Not recommended for use with two-wire systems.**

How to Specify

100 - HV - SS



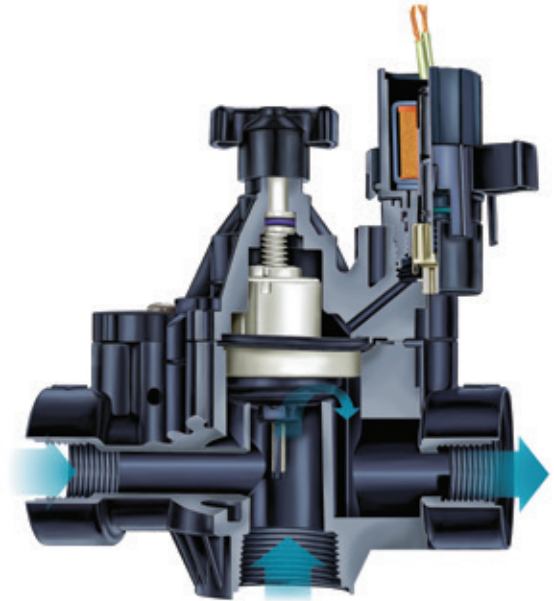
Note: For non-U.S. applications it is necessary to specify NPT or BSP thread type (1" only)

PGA Series

Plastic Globe and Angle Valves. The Toughest, Most Reliable Valves In their Class

Features

- Water-tight seal between the body and bonnet for maximum confidence, even in the most extreme conditions
- Robust construction and electrical design for quiet performance you can count on
- Filtered pilot flow to resist debris and clogging
- Slow closing to prevent water hammer and subsequent system damage
- Normally closed, forward flow design Accepts latching solenoid for use with Rain Bird battery-operated controllers
- Multi-drive screws (Phillips, flathead, hexagonal) for easy maintenance*
- Manual internal bleed operates the valve without allowing water into the valve box. This allows the pressure regulator to be adjusted without turning the valve on at the controller
- One-piece solenoid design with captured plunger and spring for easy servicing. Prevents loss of parts during field service
- Three-year trade warranty
- Accommodates optional, field-installed PRS-D pressure regulating dial to ensure optimum sprinkler performance
- Accepts latching solenoid for use with Rain Bird battery-operated controllers
- Optional purple flow control handle for non-potable water applications
PGA-NP-HAN1 (1" and 1 1/2"); PGA-NP-HAN2 (2")



PGA Cutaway



150-PGA



Extreme Durability

The PGA valve maintains a strong, worry-free seal between the body and bonnet, no matter the conditions. PGA valves were exposed to extreme temperature swings and intense pressures. The result—zero leaks.*



Pressure-Resistant Seal

The PGA valve's body-to-bonnet seal is built to overcome the intense water pressure typical of many commercial sites. Faced with repeated pressure surges well into the triple digits, our valves outlasted the nearest competitor more than 2 1/2 times to 1.*

*Based on 2013 testing conducted at Rain Bird's Product Research Facility in Tucson, AZ.

How to Specify

100 - PGA - PRS-D

Size	Model	Optional Feature
100: 1" (26/34)	PGA	PRS-Dial: pressure regulating module (must be ordered separately)
150: 1 1/2" (40/49)		
200: 2" (50/60)		

Note: Valve and PRS-Dial module must be ordered separately. For non-U.S. applications, it is necessary to specify NPT or BSP thread type.

PGA Series (cont.)

Options

- Accommodates optional, field installed PRS-D pressure regulating module to ensure optimum sprinkler performance. Regulates up to 100 psi (6.9 bar)
- Accepts latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10,35 bar)
- Compatible with ESP-LXD decoders

Specifications

- Pressure: 15 to 150 psi (1.04 to 10.4 bar)
- Flow without PRS-D option: 2 to 150 gpm (0.45 to 34.05 m³/h; 7.8 to 568 l/m)
- Flow with PRS-D option: 5 to 150 gpm (1.14 to 34.05 m³/h; 19.2 to 568 l/m)
- Water temperature: Up to 110° F (43° C) - refer to chart
- Ambient temperature: Up to 125° F (52° C)
- 24VAC 50/60Hz (cycles/sec) solenoid power requirement
- Inrush current: 0.41A (9.9VA) at 60Hz
- Holding current: 0.14A (3.43VA) at 60Hz
- Solenoid coil resistance: 30-39 Ohms, nominal

Dimensions

Model	Height	Length	Width
• 100-PGA	7 ¼" (18.4 cm)	5 ½" (14.0 cm)	3 ¼" (8.3 cm)
• 150-PGA	8" (20.3 cm)	6 ¾" (17.2 cm)	3 ½" (8.9 cm)
• 200-PGA:	10" (25.4 cm)	7 ¾" (19.7 cm)	5" (12.7 cm)

Note: PRS-Dial adds 2" (5.1 cm) to valve height

Models

- 100-PGA: 1" (26/34)
- 150-PGA: 1 ½" (40/49)
- 200-PGA: 2" (50/60)

BSP threads available; specify when ordering

Recommendations

1. Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.29 m/s) in order to reduce the effects of water hammer
2. For flows below 5 gpm (1.14 m³/h; 19.2 l/m), Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm
3. For flows below 10 gpm (2.27 m³/h; 37.8 l/m) Rain Bird recommends the flow control stem be turned down two full turns from the fully open position

PGA Series Valve Pressure Loss (psi)

Flow gpm	100-PGA Globe 1"	100-PGA Angle 1"	150-PGA Globe 1½"	150-PGA Angle 1½"	200-PGA Globe 2"	200-PGA Angle 2"
2	5.1	4.3	-	-	-	-
5	5.5	5.0	-	-	-	-
10	5.9	5.5	-	-	-	-
20	6.0	5.6	-	-	-	-
30	6.4	5.5	1.9	1.3	-	-
40	7.0	7.5	3.2	2.0	1.2	1.0
50	-	-	4.8	3.0	1.5	0.9
75	-	-	11.1	6.5	3.0	1.7
100	-	-	19.2	11.7	5.5	3.0
125	-	-	-	-	8.6	4.8
150	-	-	-	-	12.0	6.5

PGA Series Valve Pressure Loss (psi)

Flow m ³ /h	Flow l/m	100-PGA Globe 2.5cm	100-PGA Angle 2.5cm	150-PGA Globe 3.8cm	150-PGA Angle 3.8cm	200-PGA Globe 5.1cm	200-PGA Angle 5.1cm
0.5	7.6	0.35	0.30	-	-	-	-
1.2	20	0.38	0.35	-	-	-	-
3	50	0.41	0.38	-	-	-	-
6	100	0.43	0.38	0.10	0.07	-	-
9	150	0.48	0.51	0.22	0.14	0.08	0.07
12	200	-	-	0.38	0.23	0.12	0.07
15	250	-	-	0.61	0.36	0.17	0.10
18	300	-	-	0.86	0.51	0.24	0.13
21	350	-	-	1.16	0.70	0.33	0.18
24	400	-	-	-	-	0.43	0.23
27	450	-	-	-	-	0.54	0.30
30	500	-	-	-	-	0.66	0.36
34	568	-	-	-	-	0.83	0.45

PGA Series Valve Pressure Loss (psi)

Water Temperature	Continuous Pressure
73° F	150 psi
80° F	132 psi
90° F	112 psi
100° F	93 psi
110° F	75 psi

PGA Series Valve Pressure Loss (bar)

METRIC

Water Temperature	Continuous Pressure
23° C	10.4 bar
27° C	9.1 bar
32° C	7.7 bar
38° C	6.4 bar
43° C	5.2 bar

PEB / PESB Series

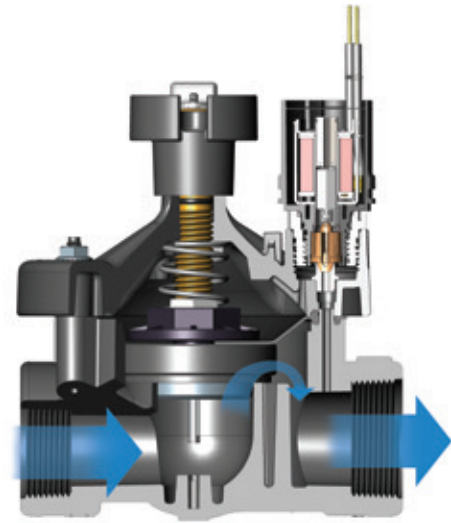
Best-in-class Professional Series Plastic Irrigation Valves

Features

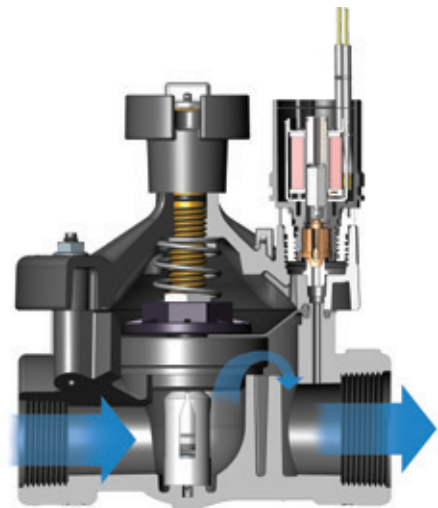
- Durable glass-filled nylon construction with fabric-reinforced rubber diaphragm for long life and reliable performance
- Globe configuration
- Normally closed, forward flow design
- Slow closing to prevent water hammer and subsequent system damage
- Low flow capability for a wide range of applications
- One-piece solenoid design with captured plunger and spring for easy servicing. Prevents loss of parts during field service
- Flow control handle adjusts water flows as needed
- Manual internal bleed manually operates the valve without allowing water into the valve box; allows pressure regulator to be adjusted without turning the valve on at the controller first
- Manual external bleed permits flushing debris from the system. Recommended for system start up and after repairs
- Stainless steel studs molded into the body. Bonnet can be attached and removed more easily and more often without damaging threads
- Nylon scrubber scrapes a stainless steel screen to clean and break down grit and plant material. Prevents debris build-up and clogging (PESB Series only)
- Five-year trade warranty

Specifications

- Pressure: 20 to 200 psi (1.4 to 13.8 bar)
- Flow without PRS-D option: 0.25 to 200 GPM (0.06 to 45 m³/h; 0.02 to 12.60 l/s)
- Flow with PRS-D option: 5 to 200 GPM (1.14 to 45 m³/h; 0.32 to 12.60 l/s)
- Temperature: Up to 150° F (66° C)
- 24VAC 50/60Hz (cycles/sec) solenoid power requirement
- Inrush current: 0.41A (9.9VA) at 60Hz
- Holding current: 0.14A (3.43VA) at 60Hz
- Solenoid coil resistance: 30-39 Ohms, nominal



PEB Cutaway



PESB Cutaway



150-PEB



150-PESB

How to Specify

100 - PEB - PRS-D

Size
100: 1" (26/34)
150: 1½" (40/49)
200: 2" (50/60)

Model
PEB

Optional Feature
PRS-Dial: pressure
regulating module
(must be ordered
separately)

Note: Valve and PRS-Dial module must be ordered separately. For non-U.S. applications, it is necessary to specify NPT or BSP thread type.

PEB / PESB Series (cont.)

Options

- Accommodates optional, field installed PRS-D pressure regulating module to ensure optimum sprinkler performance. Regulates up to 100 psi (6.9 bar)
- Accepts latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10,35 bar)
- Compatible with ESP-LXD decoders
- Optional purple flow control handle for non-potable water applications PEB-NP-HAN1 (1"); PEB-NP-HAN2 (1 1/2" and 2")

Dimensions

Model	Height	Length	Width
• 100-PEB and 100-PESB:	6½" (16.5 cm)	4" (10.2 cm)	4" (10.2 cm)
• 150-PEB and 150-PESB:	8" (20.3 cm)	6" (15.2 cm)	6" (15.2 cm)
• 200-PEB and 200-PESB:	8" (20.3 cm)	6" (15.2 cm)	6" (15.2 cm)

Note: The PRS-Dial option adds 2" (5.1 cm) to valve height

Models

- 100-PEB and 100-PESB: 1" (26/34)
- 150-PEB and 150-PESB: 1½" (40/49)
- 200-PEB and 200-PESB: 2" (50/60)

BSP threads available; specify when ordering

Recommendations

1. Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.29 m/s) in order to reduce the effects of water hammer
2. For flows below 5 gpm (1.14 m³/h; 19.2 l/m), Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm
3. For flows below 10 gpm (2.27 m³/h; 37.8 l/m) Rain Bird recommends the flow control stem be turned down two full turns from the fully open position
4. For PRS-Dial applications, Rain Bird recommends the installation of a pressure-regulating master valve or inline pressure regulator when the inlet pressure exceeds 100 psi (6.9 bar)

PEB and PESB Series Valve Pressure Loss (psi)

Flow gpm	100-PEB 1"	150-PEB 1½"	200-PEB 2"
0.25	0.8	-	-
0.5	1.0	-	-
1	1.3	-	-
5	1.7	-	-
10	1.8	-	-
20	2.9	3.9	-
30	5.6	3.6	-
40	10.0	3.5	-
50	15.6	3.6	4.8
75	-	5.4	4.5
100	-	9.6	5.2
125	-	14.6	8.2
150	-	21.2	11.8
175	-	-	15.5
200	-	-	19.5

PEB and PESB Series Valve Pressure Loss (bar)

METRIC

Flow m³/h	Flow l/m	100-PEB 2.5cm	150-PEB 3.8cm	200-PEB 5.1cm
0.06	1	0.06	-	-
0.3	5	0.09	-	-
0.6	10	0.10	-	-
1.2	20	0.12	-	-
3	50	0.15	-	-
6	100	0.32	0.26	-
9	150	0.68	0.24	-
12	200	-	0.26	0.33
15	250	-	0.33	0.32
18	300	-	0.42	0.32
21	350	-	0.57	0.34
24	400	-	0.74	0.41
27	450	-	0.92	0.51
30	500	-	1.14	0.64
33	550	-	1.38	0.77
36	600	-	-	0.90
39	650	-	-	1.04
42	700	-	-	1.18
45	757	-	-	1.34

Notes

1. Loss values are with flow control fully open
2. PRS-Dial recommended for use in shaded area only

PESB-R Series Valves

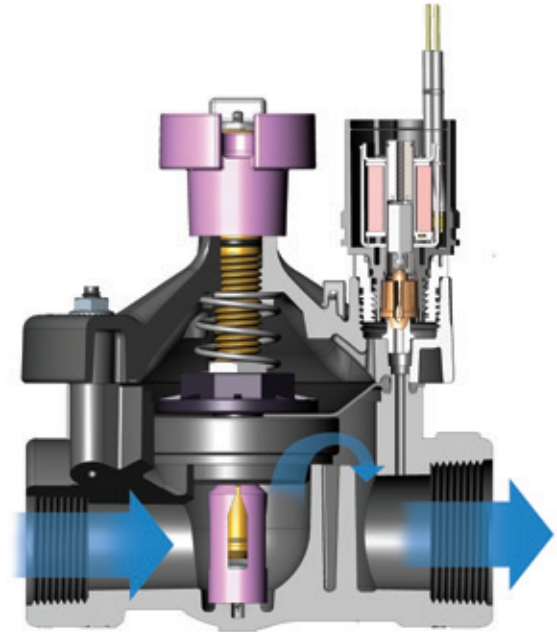
Durable Plastic – chlorine resistant Professional Plastic Irrigation Valves for reclaimed water irrigation applications

Features

- Plastic diaphragm and scrubber components molded of chlorine- and chemical-resistant plastic material
- Durable glass-filled nylon construction for long life and heavy-duty performance at 200 psi (13.80 bars) pressure
- Stainless steel studs molded into the body. Bonnet can be attached and removed easily without damaging threads
- One-piece solenoid design with captured plunger and spring for easy servicing. Prevents loss of parts during field service
- External bleed protects the solenoid ports from debris when system is flushed
- Internal bleed operates the valve without allowing water into the valve box; allows pressure regulator to be adjusted without turning on the valve at the controller first
- Slow closing to prevent water hammer and subsequent system damage
- Scrubber mechanism scrapes stainless steel screen clean to break down grit and plant material
- Purple flow control handle standard on PESB-R Series valves
- Five-year trade warranty

Options

- Accommodates optional, field installed PRS-D pressure regulating module to ensure optimum sprinkler performance. Regulates up to 100 psi (6.9 bar)
- Accepts latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10.35 bar)
- Compatible with ESP-LXD decoders



PESB-R Cutaway

150-PESB-R



How to Specify

100 - PESBR - PRS-D

Size	Model	Optional Feature
100: 1" (26/34)	PESB-R: scrubber model	PRS-Dial: pressure regulating module (must be ordered separately)
150: 1½" (40/49)		
200: 2" (50/60)		

Note: Valve and PRS-Dial module must be ordered separately.

PESB-R Series (cont.)

Specifications

- Pressure: 20 to 200 psi (1.38 to 13.80 bar)
- Flow: 0.25 to 200 gpm (0.06 to 45.40 m³/h; 0.02 to 12.60 l/s)
- Flow with PRS-Dial: 5 to 200 gpm (1.14 to 45.40 m³/h; 0.32 to 12.60 l/s)
- Temperature: Up to 150° F (66° C)
- 24VAC 50/60Hz (cycles/sec) solenoid power requirement
- Inrush current: 0.41A (9.9VA) at 60Hz
- Holding current: 0.14A (3.43VA) at 60Hz
- Solenoid coil resistance: 30-39 Ohms, nominal

Dimensions

Model	Height	Length	Width
• 100-PESB-R	6½" (16.5 cm)	4" (10.2 cm)	4" (10.2 cm)
• 150-PESB-R	8" (20.3 cm)	6" (15.2 cm)	6" (15.2 cm)
• 200-PESB-R	8" (20.3 cm)	6" (15.2 cm)	6" (15.2 cm)

Note: The PRS-Dial option adds 2" (5.1 cm) to valve height

Models

- 100-PESB-R: 1" (26/34)
- 150-PESB-R: 1½" (40/49)
- 200-PESB-R: 2" (50/60)

BSP threads available, specify when ordering

Recommendations

1. Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.29 m/s) in order to reduce the effects of water hammer
2. For flows below 5 gpm (1.14 m³/h; 19.21 l/m), Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm
3. For flows below 10 gpm (2.27 m³/h; 37.8 l/m) Rain Bird recommends the flow control stem be turned down two full turns from the fully open position

PESB-R Series Valve Pressure Loss (psi)			
Flow gpm	100-PESB-R 1"	150-PESB-R 1½"	200-PESB-R 2"
0.25	1.6	-	-
0.5	3.0	-	-
1	1.8	-	-
5	2.9	-	-
10	2.9	-	-
20	2.6	3.5	-
30	5.8	3.1	-
40	10.2	2.3	-
50	16.0	2.1	3.7
75	-	4.3	3.3
100	-	7.5	4.7
125	-	11.9	8.6
150	-	17.0	12.6
175	-	-	14.8
200	-	-	18.9

PESB-R Series Valve Pressure Loss (bar)				METRIC
Flow m ³ /h	Flow l/m	100-PESB-R 2.5cm	150-PESB-R 3.8cm	200-PESB-R 5.1cm
0.06	1	0.11	-	-
0.3	5	0.13	-	-
0.6	10	0.15	-	-
1.2	20	0.20	-	-
3	50	0.19	-	-
6	100	0.32	0.22	-
9	150	0.69	0.16	-
12	200	-	0.16	0.25
15	250	-	0.24	0.24
18	300	-	0.33	0.25
21	350	-	0.45	0.30
24	400	-	0.59	0.38
27	450	-	0.75	0.53
30	500	-	0.91	0.67
33	550	-	1.10	0.82
36	600	-	-	0.92
39	650	-	-	1.00
42	700	-	-	1.13
45	757	-	-	1.30

Notes

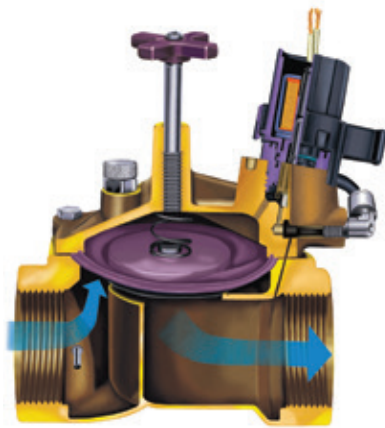
1. Loss values are with flow control fully open
2. PRS-Dial recommended for use in shaded area only

EFB-CP Series Brass Valves

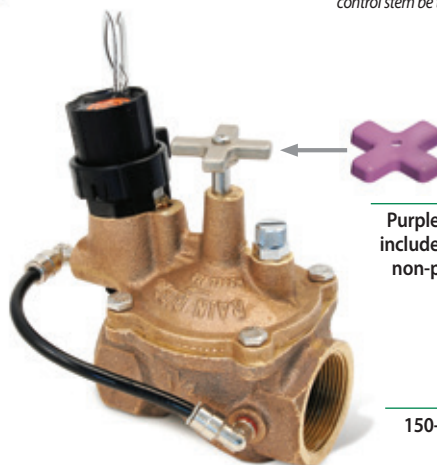
Highly durable Brass Irrigation Valves - Globe Configuration

Features

- Reliable performance even in dirty water applications. Self-flushing filter resists debris build-up
- Rugged red brass construction for longer life
- Durable, fabric-reinforced diaphragm composed of EPDM, a rubber material which is chlorine and chemical resistant
- Normally closed, reverse flow design ensures valve will fail in the closed position if a tear or rip in the diaphragm occurs. Prevents flooding, water waste and site damage
- Slow closing to prevent water hammer and subsequent system damage
- One-piece solenoid design with captured plunger and spring for easy servicing. Prevents loss of parts during field service
- Manual internal bleed operates the valve without allowing water into the valve box. Allows pressure regulator adjustment without turning on the controller
- Manual external bleed permits flushing debris from the system. Recommended for system start up and other repairs
- Contamination-proof, self-flushing filter screen resists debris build-up. Water flow continuously flushes the screen, dislodging particles and debris before they can accumulate and clog the filter
- Reclaimed water compatible: all models now feature EPDM diaphragms and chlorine-resistant parts as standard equipment
- Three-year trade warranty



EFB-CP Cutaway



Purple handle cover included to designate non-potable water

150-EFB-CP

Options

- Accommodates optional, field installed PRS-D pressure regulating module to ensure optimum sprinkler performance. Regulates up to 100 psi (6.9 bar)
- Accepts latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10.35 bar)
- Compatible with ESP-LXD decoders

Specifications

- Pressure: to 200 psi (1.04 to 13.80 bar)
- Flow with/without PRS-D: 5 to 200 GPM (1.14 to 45.40 m³/h; 0.32 to 12.60 l/s)
- Temperature: up to 150° F (66° C)
- 24VAC 50/60Hz (cycles/sec) solenoid power requirement
- Inrush current: 0.41A (9.9VA) at 60Hz
- Holding current: 0.14A (3.43VA) at 60Hz
- Solenoid coil resistance: 30-39 Ohms, nominal

Dimensions

Model	Height	Length	Width
• 100-EFB-CP:	6" (15.2 cm)	4½" (11.4 cm)	3¼" (8.3 cm)
• 150-EFB-CP:	6½" (16.5 cm)	5½" (14 cm)	4½" (11.4 cm)
• 200-EFB-CP:	7" (17.8 cm)	6¾" (17.1 cm)	5¾" (14.6 cm)

Note: The PRS-Dial option adds 2" (5.1 cm) to the valve height

Models

- 100-EFB-CP: 1" (26/34)*
- 150-EFB-CP: 1½" (40/49)*
- 200-EFB-CP: 2" (50/60)*

* BSP threads available; specify when ordering

Recommendations

1. Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.29 m/s) in order to reduce the effects of water hammer
2. For flows below 5 gpm (1.14 m³/h; 19.21 l/m), Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm
3. For flows below 10 gpm (2.27 m³/h; 37.8 l/m) Rain Bird recommends the flow control stem be turned down two full turns from the fully open position

How to Specify

100 - EFB-CP - PRS-D

Size	Model	Optional Feature
100: 1"	EFB-CP	PRS-Dial: pressure regulating module (must be ordered separately)
150: 1½"		
200: 2"		

Note: Valve and PRS-Dial module must be ordered separately.

EFB-CP Series (cont.)

EFB-CP Series Valve Pressure Loss (psi)			
Flow gpm	100-EFB-CP 1"	150-EFB-CP 1½"	200-EFB-CP 2"
5	0.2	-	-
10	0.7	-	-
15	1.2	-	-
20	2.1	2.3	0.5
30	5	2.9	0.6
40	8.2	2	0.8
50	13	3.3	1.1
60	-	4.6	1.8
80	-	7.5	2.4
100	-	11.8	3.8
120	-	16.6	5.9
140	-	-	7.8
160	-	-	10
180	-	-	12.5
200	-	-	15.8

EFB-CP Series Valve Pressure Loss (bar)				METRIC
Flow m³/h	Flow l/m	100-EFB-CP 2.5cm	150-EFB-CP 3.8cm	200-EFB-CP 5.1cm
1	19	0.01	-	-
3	50	0.07	-	-
6	100	0.27	0.19	0.04
9	150	0.56	0.14	0.05
12	200	-	0.25	0.09
15	250	-	0.38	0.14
18	300	-	0.51	0.16
21	350	-	0.70	0.23
24	400	-	0.91	0.30
27	450	-	1.13	0.40
30	500	-	-	0.49
33	550	-	-	0.58
36	600	-	-	0.68
39	650	-	-	0.79
42	700	-	-	0.92
45	757	-	-	1.09

- Notes**
- Loss values are with flow control fully open
 - PRS-Dial module recommended for all flow rates

300-BPES Brass Valves

3" Brass Master Valve - Globe and angle configuration

Features

- Unique hybrid construction featuring durable red brass body and glass-filled nylon bonnet for long life at a value price
- Normally closed, forward flow design
- Slow closing to prevent water hammer and subsequent system damage
- Robust solenoid provides dependable performance even during constant operation
- Flow control handle adjusts water flows as needed and incorporates a brass thread insert for longer life
- Manual internal bleed operates the valve without allowing water into the valve box. Allows pressure regulator adjustment without turning the valve on at the controller
- Manual external bleed permits flushing debris from the system. Recommended for system start up and repairs
- Highly efficient operation with extremely low pressure loss
- Patented nylon scrubber scrapes a stainless steel screen to clean and break down grit and plant material. Prevents debris build-up and clogging
- Three-year trade warranty

Options

- Accommodates field-installed PRS-D pressure regulating module to ensure optimum sprinkler performance
- Purple flow control handle for non-potable water applications (BPE-NP-HAN)
- Latching solenoid for use with Rain Bird battery-operated controllers up to 150 psi (10.4 bar)

Specifications

- Pressure: 20 to 200 psi (1.4 to 13.8 bar)
- Flow with/without PRS-D option: 60 to 300 gpm (13.6 to 68.1 m³/h; 3.78 to 18.90 l/s)
- Temperature: up to 140° F (60° C)
- Power: 24 VAC 50/60 Hz (cycles per second) solenoid
- Inrush current: 0.41 A (9.8 VA) at 60Hz
- Holding current: 0.28 A (6.7 VA) at 60Hz
- Coil resistance: 28 Ohms, nominal

How to Specify

300 - BPES - PRS-D

Model
BPES

Optional Feature
PRS-Dial: pressure
regulating module
(must be ordered
separately)

Size
3" (80/90)

Note: Valve and PRS-Dial module must be ordered separately. For non-U.S. applications, it is necessary to specify NPT or BSP thread type.



300-BPES

BPES 3" Valve Pressure Loss (psi)			
Flow gpm	Globe	Angle	
60	6.6	6.8	
80	5.1	5.9	
100	3.2	3.5	
120	1.8	1.8	
140	1.8	2.1	
160	2.0	2.1	
180	2.2	2.0	
200	2.7	2.5	
250	4.0	3.4	
300	4.9	4.5	

BPES 3" Valve Pressure Loss (bar)			METRIC	
Flow m ³ /h	l/s	Globe	Angle	
13.6	227	0.46	0.47	
24	400	0.19	0.21	
36	600	0.14	0.14	
48	800	0.21	0.19	
60	1000	0.29	0.26	
68	1136	0.34	0.31	

Notes

1. Loss values are with flow control fully open
2. PRS-Dial module recommended for all flow rates

Dimensions

Model	Height	Length	Width
• 300	13 ⁵ / ₈ " (34.61 cm)	8" (20.32 cm)	7" (17.78 cm)

Models

- 300-BPES: 3" (80/90)

BSP threads available; specify when ordering

Recommendations

1. Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.29 m/s) in order to reduce the effects of water hammer.
2. For flows below 5 gpm (1.14 m³/h; 19.2 l/m), Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm.
3. For flows below 10 gpm (2.27 m³/h; 37.8 l/m) Rain Bird recommends the flow control stem be turned down two full turns from the fully open position.



BPES Cutaway

WC Series Wire Connector

Connections Made Easy

Features and Benefits

- Install Faster – the WC Series Wire Connector is quick to install and provides reliable moisture sealing for controller and valve electrical connections you can count on
- Simplify Inventory – This is the only wire connector you'll need! It is ideal for use on two wire decoder control systems
- Avoid Call Backs – Locating and repairing a corroded wire splice costs your business time and money. Avoid unnecessary service call backs
- Use for standard controllers, valve boxes and soil moisture sensors
- Wire combinations ranging from 22ga to 8ga
- Use on connections from 24 VAC to 600 VAC
- UL 486D certified for direct burial
- The Strain Relief ensures wires are secure and won't pull apart
- Waterproof silicone sealant protects against corrosion
- UV-resistant material ensures product performance does not degrade even after long periods of exposure to sunlight

Models

- WC20: Direct Bury Silicone Tube, Red Yellow Wire Nut, Bag of 20



WC20

Wire Combinations (for solid and stranded wire)

WC20	
2-3 #10	2#18
2-5 #12	1 #8 w/2 #18
2-5 #14	3 #10 w/1 #18
4-6 #16	3 #12 w/3 #18
3 #14 w/2 #18	

The combinations listed are only a sample of the most common wire combinations.

PRS-Dial

Pressure Regulating Module

Features

- The PRS-Dial is an excellent means of regulating outlet pressure at the valve regardless of incoming pressure fluctuations. The visible scale makes adjustment quick and easy. The regulator fits all Rain Bird PGA, PEB, PESB, PESB-R, EFB-CP, and BPES series valves
- Regulates and maintains constant outlet pressure between 15 and 100 psi (1.04 to 6.9 bar) within ± 3 psi (± 0.21 bar)
- Adjustment knob with detents permits fine-tune setting in 1/3 psi (0.02 bar) increments. Dial cartridge makes installation and adjustment quick, easy and accurate. Improved spike reduction capabilities reduce water hammer
- Ergonomic design with snap-tight cover to prevent vandalism
- Waterproof dial cartridge eliminates fogging and binding
- Dial cartridge retrofits into all existing PRS-D units
- Schrader valve connects pressure hose gauge, ordered separately
- Easy field installation. PRS-Dial threads underneath the solenoid and adapter
- Corrosion-resistant glass-filled nylon for rugged performance

Operating Range

- Pressure: Up to 100 psi (6.9 bar)*
- Regulation: 15 to 100 psi (1.04 to 6.9 bar)
- Flow: Refer to chart

* While the PRS-Dial unit can withstand pressures up to 200 psi (13.8 bar), accurate pressure regulation can be maintained only up to 100 psi (6.9 bar)

Model

- PRS-D

Application Information

- Proper operation requires inlet pressure to be a minimum of 15 psi (1.04 bar) higher than desired outlet pressure
- For areas with very high pressure or uneven terrain, install sprinklers with PRS pressure regulating stems and/or SAM check valves
- When inlet pressure exceeds 100 psi (6.9 bar), a pressure regulating master valve or inline pressure regulator is required
- Rain Bird does not recommend using the pressure regulating module for applications outside the recommended flow ranges
- To reduce the effects of water hammer, Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2.29 m/s)
- For flows below 10 gpm (2.27 m³/h; 37.8 l/m), Rain Bird recommends the flow control stem be turned down two full turns from the fully open position

† Note: Valve and PRS-Dial module must be ordered separately.

Valve Flow Ranges*

Model	gpm	m ³ /h	l/m
100-PGA	5-40	1.14-9.08	19.2-151
150-PGA	30-100	6.81-22.70	113-378
200-PGA	40-150	9.08-34.05	151-568
100-PEB	5-50	1.14-11.35	19.2-189
150-PEB	20-150	4.54-34.05	76-568
200-PEB	75-200	17.03-45.40	284-757
100-PESB/PESB-R	5-50	1.14-11.35	19.2-189
150-PESB/PESB-R	20-150	4.54-34.05	76-568
200-PESB/PESB-R	75-200	17.03-45.40	284-757
100-EFB-CP	5-50	1.14-11.35	19.2-189
125-EFB-CP	20-80	4.54-18.16	76-302
150-EFB-CP	20-120	4.54-31.78	76-529
200-EFB-CP	20-200	4.54-45.40	76-757
300-BPES	60-300	13.62-68.10	227-1136

* These are the valve flow ranges. The PRS-Dial regulates only up to 100 psi (6.9 bar)



Quick-Coupling Valves

Convenient water access in potable and non-potable systems

Features

- Optional locking cover on models 33-DLRC, 44-LRC, 5-LRC, 33-DNP, 44-NP, 44-NP ACME, and 5-NP (use 2049 key to unlock). Metal cover on model 7 only
- One-piece body design (models 3-RC, 5-RC and 7)
- Two-piece body design for easy servicing (models 33-DRC, 44-LRC, 44-RC, 44-NP ACME, 33-DNP, and 44-NP)
- Strong corrosion-resistant stainless steel spring prevents leakage
- Thermoplastic cover for durability
- 33-DNP, 44-NP, 44-NP ACME, and 5-NP covers marked with "Do Not Drink!" warnings in English and Spanish
- Three-year trade warranty

Specifications

- Pressure: 5 to 125 psi (0.35 to 8.63 bar)
- Flow: 10 to 125 gpm (2.27 to 28.38 m³/h; 37.8 to 473 l/m)
- 33-DNP, 44-NP, 44-NP ACME and 5-NP flow: 10 to 70 gpm (2.27 to 15.89 m³/h; 37.8 to 265 l/m)

Dimensions (height)

- 3-RC: 4¼" (10.8 cm) • 44-RC: 6" (15.2 cm) • 7: 5¾" (14.6 cm)
- 33-DRC: 4¾" (11.1 cm) • 44-LRC: 6" (15.2 cm) • 33-DNP: 4¾" (11.1 cm)
- 33-DLRC: 4¾" (11.7 cm) • 5-RC: 5½" (14.0 cm) • 44-NP: 6" (15.2 cm)
- 5-LRC: 5½" (14.0 cm) • 5-NP: 5½" (14.0 cm)

Models

- 3-RC: ¾" (20/27) Rubber Cover, 1-Piece Body
- 33-DRC: ¾" (20/ 27) Double Track Key Lug, Rubber Cover, 2-Piece Body
- 33-DLRC: ¾" (20/27) Double Track Key Lug, Locking Rubber Cover, 2-Piece Body
- 44-RC: 1" (26/34) Rubber Cover, 2-Piece Body
- 44-LRC: 1" (26/34) Locking Rubber Cover, 2-Piece Body
- 5-RC: 1" (26/34) Rubber Cover, 1-Piece Body
- 5-LRC: 1" (26/34) Locking Rubber Cover, 1-Piece Body
- 7: 1½" (40/49) Metal Cover, 1-Piece Body
- 5-RC-BSP: 1" (26/34) Rubber Cover, 1-Piece Body, BSP threaded
- 5-LRC-BSP: 1" (26/34) Locking Rubber Cover, 1-Piece Body, BSP threaded
- 33-DNP: ¾" (20/27) Non-potable, Purple Locking Rubber Cover, 2-Piece Body
- 44-NP: 1" (26/34) Non-potable, Purple Locking Rubber Cover, 2-Piece Body
- 44-NP ACME: 1" (26/34) Non-potable, Purple Locking Rubber Cover, 2-Piece Body, ACME thread
- 5-NP: 1" (26/34) Non-potable, Purple Locking Rubber Cover, 1-Piece Body

Note: For non-US applications, it is necessary to specify NPT or BSP thread type

Quick-Coupling Valves Pressure Loss (psi)

Flow	3-RC	33-DRC 33-DLRC 33-DNP	44-RC 44-LRC 44-NP 44-NP ACME	5-RC 5-LRC 5-NP	7
gpm	¾"	¾"	1"	1"	1½"
10	1.8	2	-	-	-
15	4.7	4.3	2.2	-	-
20	7.2	7.6	4.4	-	-
30	-	-	11.5	4.1	-
40	-	-	-	7.3	-
50	-	-	-	11	1.7
60	-	-	-	15.7	2.5
70	-	-	-	21.5	3.6
80	-	-	-	-	4.9
100	-	-	-	-	8.4
125	-	-	-	-	14

Quick-Coupling Valves Pressure Loss (psi)

Flow	3-RC	33-DRC 33-DLRC 33-DNP	44-RC 44-LRC 44-NP 44-NP ACME	5-RC 5-LRC 5-NP	7
m³/h	1.9 cm	1.9 cm	2.5 cm	2.5 cm	3.8 cm
l/m	38	41	42	0.23	-
2.3	38	0.12	0.12	-	-
4	67	0.41	0.42	0.23	-
5	83	0.57	0.62	0.4	-
6	100	-	-	0.62	-
7	117	-	-	0.83	0.3
8	133	-	-	-	0.4
9	150	-	-	-	0.5
10	167	-	-	-	0.61
12	200	-	-	-	0.85
14	233	-	-	-	1.15
16	267	-	-	-	1.5
22	367	-	-	-	0.54
28	473	-	-	-	0.97



Quick-Coupling Valve Cutaway



Quick Coupling Valves

Valve Keys

Quick-Coupling Keys

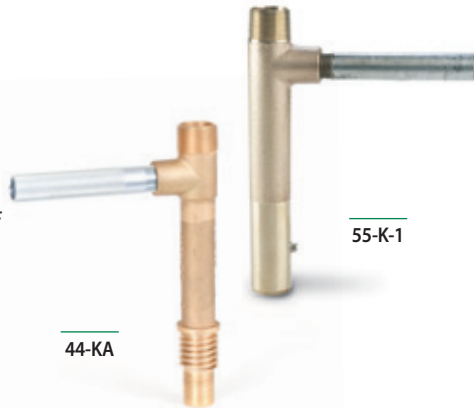
Features

- Key threads into top of quick-coupling valve to provide water access

Models

- 33-DK: 3/4" (20/27)
- 44-K: 1" (26/34)
- 44-KA: 1" (26/34)
- 55-K-1: 1" (26/34)*
- 7-K: 1 1/2" (40/49)*

* Available with BSP threads; specify when ordering



Corresponding Valve Keys

Valve	Key	Top Pipe Threads	
		Valve	Valve
3-RC	33-DK	3/4"	1/2"
33-DRC/33-NP	33-DK	3/4"	1/2"
44-RC/44-NP	44-K/44-KA	1"	3/4"
5-RC/5-NP	55-K-1	1"	-
7	7-K	1 1/2"	1 1/4"

Corresponding Valve Keys

METRIC

Valve	Key	Top Pipe Threads	
		Valve	Valve
3-RC	33-DK	20/27	15/21
33-DRC/33-NP	33-DK	20/27	15/21
44-RC/44-NP	44-K/44-KA	26/34	20/27
5-RC/5-NP	55-K-1	26/34	-
7	7-K	40/49	33/42

SH Series

Hose Swivel

Features

- Attaches water hose to quick-coupling valve key
- Swivels up to 360°
- Allows hose to be pulled in any direction
- Prevents hose damage

Specifications

- SH-0: 3/4" (20/27) female pipe thread x 3/4" (20/27) male hose thread
- SH-1: 1" (26/34) female pipe thread x 3/4" (20/27) male hose thread
- SH-2: 1" (26/34) female pipe thread x 1" (26/34) male hose thread
- SH-3: 1 1/2" (40/49) female pipe thread x 1" (26/34) male hose thread

Models

- SH-0
- SH-1
- SH-2*
- SH-3

*Available with BSP threads



SH-0

Locking Cover Key

Features

- Locks and unlocks the optional locking cover on quick-coupling valves
- Operates the valve marker compression lock
- Compatible with models 33-DLRC, 33-DNP, 44-LRC, 44-NP, 44-NP ACME, 5-LRC, and 5-NP

Model

- 2049 Cover Key



2049

Purple Valve Handle Assembly

Features

- Purple flow control handle identifies valve as part of a non-potable system
- Easily field installed
- Sizes for all Rain Bird Commercial Valves

Models

- PGA-NP-HAN1 (1" and 1 1/2" PGA Valves)
- PGA-NP-HAN2 (2" PGA Valves)
- PEB-NP-HAN1 (1" PEB/PESB Valves)
- PEB-NP-HAN2 (1 1/2" and 2" PEB/PESB Valves)
- BPE-NP-HAN (3" BPE/BPES Valves)



PEB-NP-HAN PGA-NP-HAN



BPES-NP-HAN



Controllers

Introduction

Spray Nozzles

Impact Sprinklers

Rotors

Valves

Controllers

Central Controls

Low Volume Irrigation

Pumps & Filtration

Resources



Water Saving Tips

- A Seasonal Adjust feature is available on all Rain Bird AC-powered controllers, allowing users to easily adjust irrigation schedules to changing seasonal nursery water requirements. The ESP-LX Series Controllers also feature an automated Monthly Seasonal Adjust feature to help save water through automatic adjustments every month of the year
- Water savings can also be optimized through daily irrigation schedule adjustments which fine-tune watering based on current weather. All ESP-LX series controllers can easily be upgraded to include smart weather-based/ET or soil moisture irrigation control capability by adding a local rain sensor or soil moisture sensor
- All Rain Bird controllers simplify conservation through a variety of flexible programming features. With the touch of a button, the ESP-Me can recall a previously saved "Contractor Default" irrigation program; the ESP-LX Series "Delayed Recall" feature automatically reverts to typical watering programs after a user-set time period

Major Products	Wi-Fi READY						Bluetooth™
	ESP-TM2	ESP-Me	ESP-LX BASIC	ESP-LXME ESP-LXMEF	ESP-LXD	ESP-9V	TBOS BT
Primary Applications							
Residential	•	•				•	•
Light Commercial	•	•	•	•	•	•	•
Commercial/Industrial			•	•	•		•
Type of Controller							
Hybrid	•	•	•	•	•		
Solid State						•	•
Battery Operated						•	•
Indoor Location	•	•	•	•	•		
Outdoor Location	•	•	•	•	•		
Features							
Stations (up to)	12	22	48	48	200	6	6
Programs (up to)	3	4	4	4	4	6	3
Station Timing (up to)	6 hr ¹	6 hr ¹	12 hr ¹	12 hr ¹	12 hr ¹	12 hr	12 hr
Number of Starts per Program (up to)	4	6	8	8	8	6	8
Surge protection	•	•	•	•	•		
230VAC Option		•	•	•	•		
Master Valve/Pump Start	•	•	• ²	• ²	• ²	Multi-station models only	
Water Budgeting	•	•	• ⁴	• ⁴	• ⁴	•	
Individual Program/Zone Shut-Off	•	•	•	•	•		
Rain Delay	•	•	•	•	•		
Battery Programmable		•	•	•	•	•	•
Sensor Terminals, Status Indicator and Override	•	•	•	•	•	•	
Delay Between Stations (up to)	9 hrs	9 hrs	0 - 10 min.	0 - 10 min.	0 - 10 min.		
Flow Sensing				• ⁵	•		
Simultaneous Multi-Station Operation			•	•	•		•
Cycle + Soak™			•	•	•		
Overlapping Programs			•	•	•	•	
Manual On/Off	•	•	•	•	•	•	•
Remote Control Compatible	•	•	•	•	•		
Diagnostic Test			•	•	•		
Diagnostic Valve Circuit Breaker	•	•	•	•	•		
Out-of-Valve Box Programming							•
Submersible (up to)						3.3 ft (1 m)	3.3 ft (1 m)
Vandal/Tamper Resistant							•
Self-Cleaning Solenoid							•
Low Battery Indicator						•	•
Save / Restore Programs	•	•	•	•	•	•	•
Master Valve ON/OFF by Station	•	•	•	•	•		•
Total Run Time Calculator by Program		•	•	•	•		•
Bypass Rain Sensor by Station	•	•	•	•	•		
Programming Schedule							
7 Day-of-Week	•	•	•	•	•	•	•
1-7 Variable Cycle	•	•	•	•	•	•	•
1-31 Variable Cycle	•	•	•	•	•	•	•
Odd/Even Cycle	•	•	•	•	•	•	•
Odd 31st	•	•	•	•	•		•
365-Day Calendar	•	•	•	•	•	•	
Event Day Off			•	•	•		
Central Control Compatibility							
IQ™ Upgradeable				•	•		
Cabinet							
Plastic-Indoor	•	•					
Plastic-Outdoor	•	•	•	•	•	•	•
Powder-Coated Metal Outdoor			•	•	•		
Stainless Steel Pedestal			•	•	•		
Powder-Coated Metal Pedestal			•	•	•		
Hardware/Accessories							
Two-Wire Decoders and Accessories					•		
Rain Sensing (need Rain Sensor)	•	•	•	•		•	•
Flow Sensing (need Flow Sensor)				ESP-LXMEF only	•		
SMRT-Y Soil Moisture Sensor	•	•	•				

¹ With water budgeting, timing can be extended ² Programmable by station ³ 6 independent start times per zone ⁴ Selectable for each program and by month ⁵ With Flow Smart Module

LNK WiFi Module

Irrigation System Control from Anywhere

Features

- Upgrades WiFi-ready controllers (ESP-Me and ESP-TM2) to make them fully accessible and programmable from iOS or Android compatible devices*
- Operates like a wireless remote control for your irrigation system while onsite or an internet-based monitoring and control system when offsite
- Streamlines and simplifies initial irrigation timer setup and seasonal adjustment
- Instant access allows for real-time system management and timer settings
- Compatible professional app features allow for simple multi-site management and as well as remote diagnostics by landscape professionals
- Built-in mobile notifications provide troubleshooting access, simplify service calls, and warn of freezing conditions when expected
- Automatic weather adjustments provide daily run time changes, saving up to 50% in water
- Superior programming capabilities that are designed to meet the most stringent water restrictions

Specifications

- 2.4 GHz (only) WiFi router compatible with WEP and WPA security settings
- Compatible with iOS 8.0 and Android 4.4 (KitKat) or later mobile devices*
- Operating Temperature: 14° F (-10° C) to 149°F (65°C)
- Storage Temperature: -40°F (-40°C) to 150°F (66°C)
- Operating Humidity: 95% max @ 50°F to 120°F (10°C to 49°C) non-condensing environment

Electrical Specifications

- Input: 24VAC(RMS) 50/60Hz; 55mA max

Certifications

- cULus, CE, CSA, FCC Part 15c, WEEE, IFETEL

Dimensions

- Width: 1.13" (2.87 cm)
- Height: 1.83" (4.65 cm)
- Depth: 0.48" (1.22 cm)

Model

- LNKWIFI



LNK WiFi Module



Upgrades Rain Bird ESP-Me and ESP-TM2 Controllers

ESP-TM2 Series Controller

Simple, Flexible, and Reliable

Features

- Upgradeable for WiFi-based remote monitoring and control via iOS and Android mobile devices (with LNK WiFi Module sold separately)
- Internet-based weather information can be used to make daily adjustments to the irrigation schedule, saving up to 30% in water (with LNK WiFi Module sold separately)
- 4, 6, 8, and 12 station models
- Set Permanent Days Off per program to ensure watering never occurs on days when maintenance crews are on site (for Odd/Even/ Cyclic schedules)
- Easy to install indoors or outdoors with pre-installed power cord
- Quick programming in just 3 steps for ease of setup
- 3 available programs with up to 4 start times for each program
- One-touch manual watering capability for ease of use
- Large back-lit LCD display for improved visibility in low-light and direct sun conditions
- Contractor Default™ allows you to easily save and restore your custom schedule
- Delay Watering up to 14 days and automatically resume watering after the set delay has elapsed
- Bypass Rain Sensor for any station gives you the ability to customize which stations react to a rain sensor
- Seasonal Adjust by program allows you to easily reduce or increase watering by program

Specifications

- Operating Temperature: Up to 149°F (65°C)
- Storage Temperature: -40°F (-40°C) to 150°F (66°C)
- Operating Humidity: 95% max @ 50°F to 120°F (10°C to 49°C) non-condensing environment

Electrical Specifications

- Input required: 120VAC (±10%) @ 60Hz
- Output: 1A at 24VAC
- Master Valve/Pump Start Relay
- External battery back-up not required. Nonvolatile memory permanently saves the current programming and a 10 year life lithium battery maintains the controllers time and date during power outages

Certifications

- cULus, FCC Part 15b, IPX4, NOM

Dimensions

- Width: 7.92 in. (20.1 cm)
- Height: 7.86 in. (20.0 cm)
- Depth: 3.51 in. (9.0 cm)

Models

- TM2-4-120V: 4-station 120VAC
- TM2-6-120V: 6-station 120VAC
- TM2-8-120V: 8-station 120VAC
- TM2-12-120V: 12-station 120VAC

Accessories

- LNKWIFI: LNK WiFi Module for remote control and notification via iOS or Android device
- WR2 Series Wireless Rain + Freeze Sensors
- RSD Series Rain Sensors



ESP-TM2



Look for the WaterSense labeled LNK WiFi Module and a Rain Bird Rain Sensor to improve the water efficiency capabilities of this controller

ESP-Me Series Controllers

The industry's most flexible irrigation controller solution. Supports up to 22 stations

Features

- Large LCD display with easy to navigate user interface
- Rain Sensor input with override capability
- Master valve/pump start circuit
- Non-Volatile (100 year) storage memory
- Remotely Programmable under 9V battery power (not included)
- Program based scheduling allows 4 individual programs with 6 independent start times per program for 24 total start times
- Watering schedule options: By days of week, ODD calendar days, EVEN calendar days, or Cyclic (every 1 – 30 days) Advanced Features
- Advanced diagnostics and short detection with LED alert
- Contractor Default™ Program Save/Restore saved program(s)
- Rain Sensor bypass by Station
- Total Run Time Calculator by program
- One Touch manual watering
- Delay Watering up to 14 days (applies only to stations not set to ignore Rain Sensor)
- Manual Watering option by program or station
- Seasonal Adjust applied to all programs or individual program
- Adjustable delay between valves (default set to 0)
- Master Valve on/off by station
- Upgradeable for WiFi-based remote monitoring and control via iOS and Android mobile devices (with LNK WiFi Module sold separately).
- Internet-based weather information can be used to make daily adjustments to the irrigation schedule, saving up to 30% in water (with LNK WiFi Module sold separately).

Operating Specifications

- Station timing: 1 minute to 6 hours
- Seasonal Adjust: 5% to 200%
- Max operating temperature: 149°F (65°C)

Electrical Specifications

- Input Required: 120VAC ± 10%, 60Hz (International models: 230/240VAC ± 10%, 50/60Hz)
- Master Valve/Pump Start Relay
- Operating Voltage: 24VAC 50/60Hz
- Max Coil Inrush: 11VA
- Max Coil Holding: 5VA
 - Idle/Off power draw 0.06 amps at 120VAC
- Power back-up not required. Nonvolatile memory permanently saves the current programming and a 10 year life lithium battery maintains the controllers time and date during power outages.

Certifications

- cULus, CE, RCM, FCC Part 15b, WEEE, RoHS, NOM, IPX4



Look for the WaterSense labeled LNK WiFi Module and a Rain Bird Rain Sensor to improve the water efficiency capabilities of this controller

Dimensions

- Width: 10.7" (27.2 cm)
- Height: 7.7" (19.5 cm)
- Depth: 4.4" (11.2 cm)

North America Models (120VAC)

- Controller Base Models
 - ESP4ME1: 4 station indoor model
 - ESP4ME: 4 station outdoor model*
- Modules
 - ESPSM3: 3 station module
 - ESPSM6: 6 station module (compatible with ESP-Me Series controllers only)

Accessories

- LNKWiFi: LNK WiFi Module for remote control and notification via iOS or Android device
- WR2: Wireless Rain + Freeze Sensors
- RSD Series Rain Sensors

*Also available in 230VAC and 240VAC models



ESP-Me Series Controller and Modules

ESP-9V Series

Battery-Operated Controller

Features

Controller Features

- Waterproof case ensures long life, even when installed in a valve box
- Common programming features are easily accessed on one screen, making programming quick and easy
- Operates for approximately one full year using one 9-volt alkaline battery, or two years with two 9-volt alkaline batteries
- Large LCD display with easy to navigate user interface
- Sensor input with bypass override
- Mast valve/pump-start circuit (multi-zone units only)
- Non-volatile (100-year) program memory
- IP68 certified for protection against dust and water intrusion
- Plastic controller case has outstanding resistance to weather, yellowing and aging

Scheduling Features

- Dedicated manual watering button for easy operation
- Automatic zone-stacking ensures that only one valve irrigates at the same time. ESP-9V will automatically irrigate the lower number zone first if zones are scheduled to water at the same time
- Contractor Rapid Programming™ automatically copies the start times and watering days from zone 1 to all remaining zones at initial setup
- Run times, start times, and watering days are customizable by zone
- 6 start times per zone
- 4 watering day options per zone: Custom days of the week, Cyclic, and ODD or EVEN calendar days
- Delay watering (1 to 9 days)

Valve Compatibility

- Rain Bird K80920
- Hunter 458200
- Irritrol DCL
- Toro DCLS-P

Controller Dimensions

- Width: 5.35" (13.59 cm)
- Height: 4.04" (10.26 cm)
- Depth: 2.42" (6.15 cm)
- Weight: 2 lbs (907 g)

LCD Screen Size

- Width: 2.25" (5.72 cm)
- Height: 1.25" (3.18 cm)



With optional Wall Mount

Optional Wall Mount Dimensions

- Width: 4.25" (10.76 cm)
- Height: 6.930" (17.60 cm)
- Depth: 1.965" (4.99 cm)
- Weight: 3.6 oz (107 g)

Certifications

- cULus, FCC, IC, CE, RCM, IP68, RoHS, WEEE

Models

- ESP9V1: 1-Zone ESP-9V Controller
- ESP9V2: 2-Zone ESP-9V Controller
- ESP9V4: 4-Zone ESP-9V Controller
- ESP9V6: 6-Zone ESP-9V Controller
- ESP9V1SOL: 1-Zone + 9V Solenoid
- ESP9VDVKIT: 1-Zone + 1" DV Valve (SLIP)
- 9VMOUNT: Wall-mount kit



ESP-9V Series
Battery-Operated Controller



TBOS-BT

Bluetooth Battery-Operated Controller.
Install anywhere. Program from a Smartphone.



Features

Rain Bird App Features (TBOS-BT)

- Create, review and transmit irrigation programs
- Capability to set zones or programs to manually irrigate
- Basic programming includes 3 independent programs A,B and C, each with 8 start times per day
- Stations can be assigned to several programs with different watering run times
- Run time is from 1 minute to 12 hours in 1-minute increments
- Five watering day cycle modes (Custom, even, odd, odd-31, cyclical) selectable by program for maximum flexibility and watering
- Program and global Monthly Seasonal Adjust; 0% to 300% (1% increments)
- Built-in ID with naming capability. The control module and stations can be individually named.
- Optional passcode
- Delay watering from 1 to 14 days
- Permanently turn the controller off to prevent irrigation
- Battery indicator reports the status of the control module's battery
- Capability to clear the control module's irrigation program

Controller Features

- Operates for approximately one full year using one 9-volt alkaline battery
- Completely potted to obtain IP68 conformity
- Independent station operation allows sequential start times (with stacking in case of overlap) restriction compliance
- Master valve output (on TBOS-II 2, 4, and 6 Control Modules)
- No loss of irrigation program after a battery replacement
- Backwardly compatible with the TBOS-II Field Transmitter

Valve Compatibility

- Rain Bird TBOS Potted Latching Solenoid (K80920)
 - DV, DVF, ASVF, PGA, PEB, PESB, GB, EFB-CP, BPE and BPES series
- Hunter 458200
- Irritrol DCL
- Toro DCLS-P

Certifications

- cULus, CE, RoHS, WEEE, FCC

TBOS-BT System Components

Rain Bird App (TBOS-BT)

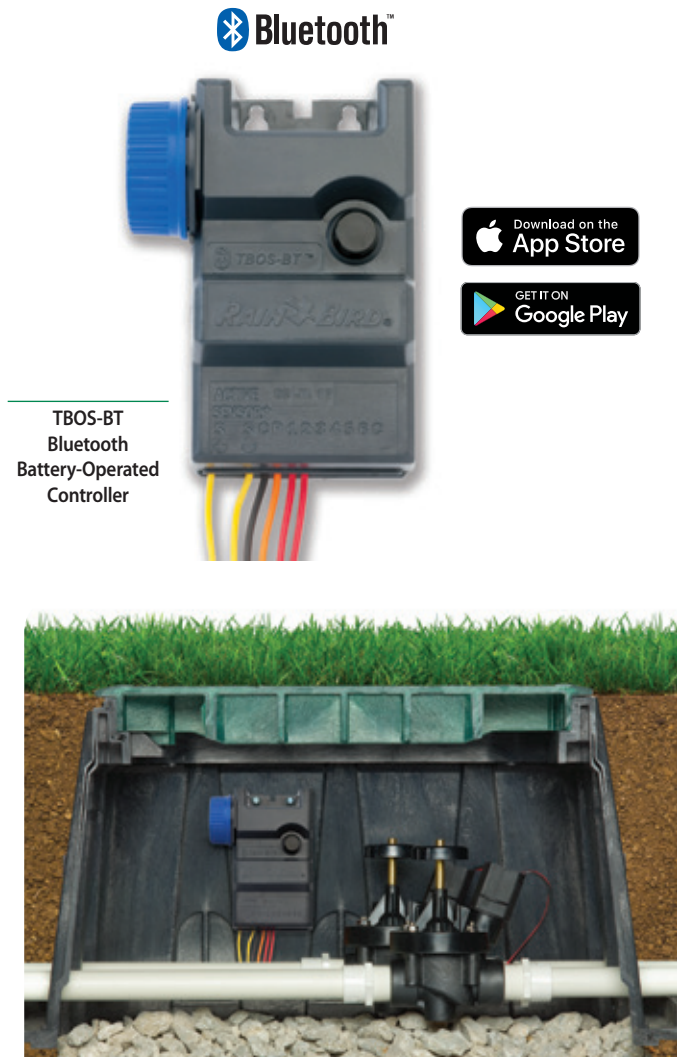
- Available for Android and IOS devices

Models

- TBOS-BT1 (1 Station)
- TBOS-BT2 (2 Station)
- TBOS-BT4 (4 Station)
- TBOS-BT6 (6 Station)

Accessories

- TBOS Potted Latching Solenoid
- RSD Series Rain Sensors
- The TBOS solenoid adapters will adapt the potted latching solenoid for use in retrofit applications with selected Irritrol® (Hardie/Richdel) and Buckner® valves or Champion® and Superior® valve actuators.



TBOS-BT
Bluetooth
Battery-Operated
Controller

ESP-LX Basic Controller

The easiest to use commercial controller

Features

- Two Languages, One Dial: English and Spanish are both on one simple dial making it easy to install and maintain
- Larger Station Count compared to competitive commercial controllers. The ESP-LX Basic base model has 12 stations and has capacity for 48 stations using 12-station modules
- Flexible features and modular options make the controller ideal for a wide variety of applications including large residential, light commercial, and large commercial irrigation systems
- ESP = Extra-Simple Programming user interface and large LCD display with softkey text labels
- Simple, Three-Step Programming can be done using minimal dial positions. Additional programming options can be accessed through the Basic Setup and Station Timing dial positions
- Water Management Features: SimulStations™ (Operate two stations simultaneously), Cycle+Soak™, Station Delay, Seasonal Adjust, Sensor & Master Valve Programmable by Station
- Contractor Default™ allows the user to create a customized default program that can be automatically recalled up to 90 days in the future. This allows a temporary schedule to be created for new seed or a fast fix
- Enhanced Diagnostic Feedback™ with RASTER™ Wiring Test with external alarm light and on-screen messaging alert the user of conditions that may disrupt controller operation
- ESP-LX Basic is not compatible with IQ NCC Cartridges

Electrical Specifications

- Power Supply Voltage: 120 VAC ± 10%, 60Hz
- Output: 26.5 VAC 1.9A
- Power back-up: Lithium coin-cell battery maintains time and date while nonvolatile memory maintains the programming
- Multi-valve capacity: Maximum two 24 VAC, 7VA solenoid valves simultaneous operation including master valve

Certifications

- cULus, CE, RCM, FCC Part 15b, IPX4

Controller Hardware

- Plastic, locking, UV resistant, wall-mount case
- Optional Metal/Stainless Steel Case & Pedestal
- 12-station base unit expandable to 48 stations with 12-Station Modules

Dimensions

- Width: 14.32 in. (36.4 cm)
- Height: 12.69 in. (32.2 cm)
- Depth: 5.50 in. (14.0 cm)

Models

- ESPLXBASIC: ESP-LX Basic 12 Station Controller, 120VAC
- ESPLXBFP: ESP-LX Basic Controller Front Panel
- LXBASEMOD: ESP-LX Series Base Module for LX Basic and non flow LXME
- ESPLXMSM8: 8-Station Module for ESP-LXME/F and ESP-LX Basic Controller
- ESPLXMSM12: 12-Station Module for ESP-LXME/F and ESP-LX Basic Controller

Optional Accessories

- Painted Metal and Stainless Steel Pedestal/Enclosure Options available (see page 102)

For more information call the ESP-LX Hotline: 1-866-544-1406

Note: The ESP-LX Basic is not compatible with IQ NCC Communication Cartridges



ESP-LX Basic Controller

ESP-LXME/F Controllers

Modular - Easily expandable from 8 or 12 stations up to 48 stations with 8- and 12-station modules

Features

- Hot-swappable modules, no need to power down the controller to add/remove modules
- 8- or 12-stations base unit expandable to 48 stations with 8- and 12-Station Modules
- Flow Smart Module™ factory installed (ESP-LXMEF) or field upgradable (ESP-LXME)
- Dynamic station numbering eliminates station numbering gaps
- Master valve/pump start circuit
- Weather Sensor input with override switch
- 6 user-selectable languages
- Standard 10kV surge protection
- Non-Volatile (100-year) program memory
- Front panel is removable and programmable under battery power
- Compatible with Rain Bird Landscape Irrigation and Maintenance Remote
- Plastic, locking, UV resistant, wall-mount case , Optional Metal and Stainless Steel Case & Pedestal

Water Management Features

- Optional Flow Smart Module™ with Learn Flow utility and flow usage totalizer — standard on ESP-LXMEF
- FloWatch™ protection for high and low flow conditions with user defined reactions (requires flow sensor)
- FloManager™ manages hydraulic demand, making full use of available water to shorten total watering time
- SimulStations™ are programmable to allow up to 5 stations to operate at the same time
- Station sequencing by station numbers or station priorities
- Water Windows by program plus Manual MV Water Window
- Cycle+Soak™ by station
- Rain Delay
- 365-Day Calendar Day Off
- Programmable Station Delay by program
- Normally Open or Closed Master Valve programmable by station
- Weather Sensor programmable by station to prevent or pause watering
- Program Seasonal Adjust
- Global Monthly Seasonal Adjust

Operating Specifications

- Station run times: 0 min to 12 hrs
- Seasonal Adjust; 0% to 300% (16 hrs maximum station run time)
- 4 independent programs (ABCD)
- ABCD programs can overlap
- 8 start times per program

- Program Day Cycles include Custom days of the week, Odd, Odd31, Even, & Cyclical dates
- Manual station, program, test program

Electrical Specifications

- Power Supply Voltage: 120 VAC ± 10%, 60Hz (International models: 230 VAC ± 10%, 50Hz; Australian models: 240 VAC ± 10%,50Hz)
- Output: 26.5 VAC 1.9A
- Power back-up: Lithium coin-cell battery maintains time and date while nonvolatile memory maintains the programming
- Multi-valve capacity: Maximum five 24 VAC, 7VA solenoid valves simultaneous operation including the master valve, maximum two solenoid valves per station module
- Certifications: cULus, CE, RoHS, WEEE, RCM, FCC Part 15b, IPX4

Dimensions

- Width: 14.32 in. (36.4 cm)
- Height: 12.69 in. (32.2 cm)
- Depth: 5.50 in. (14.0 cm)

Models

- ESP8LXME: 8-Station Controller, 120VAC
- ESP12LXMEF: 12-Station Controller with Flow Smart Module, 120VAC
- IESP8LXME: 8-Station Controller for International Market, 230VAC
- FSMLXME: Flow Smart Module for ESPLXME/F Controller
- ESPLXMSM8: 8-Station Module for ESP-LXME/F Controller
- ESPLXMSM12: 12-Station Module for ESP-LXME/F Controller
- ESPLXMEFP: ESPLXME Controller Front Panel Only

Accessories

- Painted Metal and Stainless Steel Pedestal/Enclosure Options available (see page 102)
- IQ Communication Cartridge (see page 102)
- Rain Bird FS-Series Flow Sensors (see page 107)

For more information call the ESP-LX Hotline: 1-866-544-1406

ESP-LXME Controller



ESP-LXD Decoder Controller

50 – 200 station capable Two-Wire Decoder Commercial Controller

Controller Features

- 50-station capability standard expandable to 200 stations with optional ESPLXD-SM75 modules
- Four available sensor inputs (one wired plus up to three decoder-managed) with override switch
- Five flow sensors supported
- Supported decoders: FD-101TURF, FD-102TURF, FD-202TURF, FD-401TURF, FD-601TURF
- Supports SD-210TURF sensor decoders (flow sensing and weather sensor support) and LSP-1 line surge protectors (one per 500 feet of two-wire path required)
- Central Control capable with Rain Bird IQ Communications Cartridges and software (see pg. 102)
- Advanced Features From Cycle+Soak™ to Contractor Default Program™, the ESP-LXD offers innovative features proven to cut installation expenses, troubleshooting time and water use
- Program backup and barcode decoder address entry with the optional PBCLXD
- Six user-selectable languages
- Removable front panel is programmable under battery power
- Plastic, locking, UV resistant, wall-mount case, Optional Metal and Stainless Steel Case & Pedestal
- Compatible with Rain Bird Landscape Irrigation and Maintenance Remote - Flow Smart Module™ factory installed or field upgradable
- Plastic, locking, UV resistant, wall-mount case, Optional Metal and Stainless Steel Case & Pedestal

Operating Specifications

- Station timing: 0 min to 12 hrs
- Program level and global Monthly Seasonal Adjust; 0% to 300% (16 hrs maximum station run time)
- 4 independent programs (ABCD); ABC programs stack, ABCD overlap
- 8 start times per program
- Program Day Cycles include Custom days of the week, Odd, Odd no 31st, Even, and Cyclical dates
- Manual station, program, test program
- Certifications: cULus, CE, RoHS, WEEE, RCM, FCC Part 15b, IPX4

Upgrade Options

- IQ-NCC Network Communication Cartridge
- ESP-LXD-SM75 75-station module
- PBCLXD Programming Backup Cartridge



LXMMSSPED Shown
with ESP-LXD in LXMMSS
Stainless Steel Cabinet

Electrical Specifications

- Power Supply Voltage: 120 VAC ± 10%, 60Hz (International models: 230 VAC ± 10%, 50Hz; Australian Models: 240 VAC ± 10%, 50Hz)
- Power back-up: Lithium coin-cell battery maintains time and date while nonvolatile memory maintains the schedule
- Multi-valve station capacity: up to 2 solenoid valves per station; simultaneous operation of up to eight solenoids and/or master valves

Dimensions (W x H x D)

- 14.32" x 12.69" x 5.50" (36.4 x 32.2 x 14.0 cm)

Model

- ESP-LXD: 50-station, 120 VAC
- IESPLXD: 50-station for international markets, 230 VAC
- IESPLXDEU: 50-station for Europe, 230 VAC
- IESPLXDAU: 50-station for Australia, 240 VAC

Accessories

- FD-TURF: two-wire decoders (see pg. 103)
- SD-210TURF: two-wire sensor decoder (see pg. 103)
- LSP1TURF: two-wire line surge protection (see pg. 103)
- DPU-210: two-wire decoder programming unit (see pg. 104)
- Painted Metal and Stainless Steel Pedestal/Enclosure Options available (see pg. 104)
- IQ-NCC: Network Communication Cartridge for ESP-LX Series Controllers (see page 102)
- See page 107 for information on Rain Bird FS-Series Flow Sensors

¹FD-TURF decoders include peel-off barcode address labels

²Barcode scanning pen not included – sold separately; Unitech MS100NRCB00-SG recommended (www.ute.com)

For more information call the ESP-LX Hotline: 1-866-544-1406



ESP-LXD Decoder
Controller

FD-TURF Two-Wire Decoders

SiteControl and ESP-LXD with Support for 1, 2, 4 or 6 Decoder Addresses

Features

- Five different decoder options let you choose the precise amount of site irrigation control you need. Select different two-wire decoders to operate one, two, four, or six valves
- Installed out of sight and protected from the elements and vandalism
- Enables advanced diagnostic and sensor features

Specifications

- **Mounting:** In valve box (recommended) or direct burial
- **Power Draw:**
 - FD-101TURF: 0.5 mA (idle) 18 mA (per active solenoid)
 - FD-102TURF: 0.5 mA (idle) 18 mA (per active solenoid)
 - FD-202TURF: 1 mA (idle) 18 mA (per active solenoid)
 - FD-401TURF: 1 mA (idle) 18 mA (per active solenoid)
 - FD-601TURF: 1 mA (idle) 18 mA (per active solenoid)
- **Dimensions:**
 - FD-101TURF: Length: 2.77 in. (70 mm), Diameter: 1.5 in. (40 mm)
 - FD-102TURF: Length: 3.35 in. (85 mm), Diameter: 1.77 in. (45 mm)
 - FD-202TURF: Length: 3.35 in. (85 mm), Diameter: 1.97 in. (50 mm)
 - FD-401TURF: Length: 3.94 in. (100 mm), Diameter: 2.56 in. (65 mm)
 - FD-601TURF: Length: 3.94 in. (100 mm), Diameter: 2.56 in. (65 mm)
- **Solenoids:**
 - FD-101TURF: 1 with individual control
 - FD-102TURF: 1 or 2 simultaneously
 - FD-202TURF: 1 to 4 simultaneously
 - FD-401TURF: 1 to 4 with individual control
 - FD-601TURF: 1 to 6 with individual control
- **Wires:**
 - FD-101TURF: Blue to cable, white to solenoid
 - FD-102TURF: Blue to cable, white to solenoid
 - FD-202TURF: Blue to cable, white and brown to solenoids
 - FD-401TURF: Blue to cable, color-coded to solenoids
 - FD-601TURF: Blue to cable, color-coded to solenoids
- **Surge Protection: One of the following is required every 500 ft. along two-wire path (40 V, 1.5 kW transil)**
 - LSP-1 Line Surge Protector
 - FD-401TURF with built in surge protection
 - FD-601TURF with built in surge protection

Note: Minimum 10ohms resistance grounding required at controller and each surge protector

- **Input Fuse (FD-401TURF and FD-601TURF only):** 300-500 mA, thermal

Electrical Input:

- Maximum voltage: 36 Vpp
- Maximum load:
 - FD-101TURF: 1 Rain Bird solenoid (one per address)
 - FD-102TURF: 2 Rain Bird solenoids (two per address)
 - FD-202TURF: 4 Rain Bird Solenoids (two per address)
 - FD-401TURF: 4 Rain Bird Solenoids (one per address)
 - FD-601TURF: 6 Rain Bird solenoids (one per address)

Decoder/Solenoid Wires:

- Electrical resistance: Max. 3 ohms

Maximum Distance Decoder/Solenoids:

- Cable length: 14 gauge, 456 feet

Wiring: 2 x 14-gauge (1.5 mm²) solid copper, UF insulated type

Environment:

- Working range: 32° to 122° F (0° to 50° C)
- Storage range: -4° to 158° F (-20 to 70° C)
- Humidity: 100%

Note: Rain Bird recommends using Rain Bird DB Series Wire Connectors (pg. 73) waterproof connectors for all connections.

Note: FD-Series Decoders are not compatible with residential valves like the Rain Bird HV, DV, DVF, ASVF, JTV, JTVF, and Drip Control Zone Kit with ASVF/DV valves

Models

- FD-101TURF: Field Decoder interfacing signal line and valve
- FD-102TURF: Field Decoder interfacing signal line and valve or one pair of valves
- FD-202TURF: Field Decoder interfacing signal line and 2 valves or 2 pair of valves
- FD-401TURF: Field Decoder interfacing signal line and up to 4 individual valves
- FD-601TURF: Field Decoder interfacing signal line and up to 6 individual valves
- LSP-1TURF: Line Surge Protection
- SD-210TURF: Sensor Decoder interfacing signal line and analog or digital decoders



Decoders

PBCLXD Programming Backup Cartridge for ESP-LXD

Provides program backup and restore and barcode scanning capability for the ESP-LXD controller (not compatible with ESP-LXME or ESP-LX Basic)

Upgrade Kit Features

- Provides 8 full backups, including all programs, flow information and decoder addresses – allows you to easily archive 8 different controllers – restoring all information typically takes two minutes or less
- Snaps into the back of the ESP-LXD front panel; installs without tools; no additional enclosures or external wiring required
- Kit includes cable for interface to barcode scanning pen (pen not included) – allows you to quickly scan decoder addresses into the ESP-LXD controller during installation to save you time

Model

- PBCLXD (works with all versions of the ESP-LXD controller)



PBCLXD Cartridge

Controller Pedestals

Pedestals for ESP-LX Series, ESP-MC, ESP-SAT, ESP-SITE, and CCU

Features

- Includes all necessary mounting bolts, nuts, and washers

Specifications

- Material: Powder-coated steel and stainless steel
- Field wiring connection: In controller

Dimensions

Model	Height	Width	Depth
• LXMM	12 ⁷ / ₈ " (32.7 cm)	14 ¹ / ₂ " (36.8 cm)	7 ³ / ₄ " (19.7 cm)
• LXMPED	28" (71.1 cm)	14 ¹ / ₄ " (36.2 cm)	7 ¹ / ₄ " (18.4 cm)
• LXMMSS	12 ⁷ / ₈ " (32.7 cm)	14 ¹ / ₂ " (36.8 cm)	7 ³ / ₄ " (19.7 cm)
• LXMMSSPED	28" (71.1 cm)	14 ¹ / ₄ " (36.2 cm)	7 ¹ / ₄ " (18.4 cm)

Model

- LXMM: Metal Cabinet for ESP-LX Series Controllers*
- LXMPED: Metal Pedestal for ESP-LX Series Controllers*
- LXMMSS: Stainless Steel Metal Wall Mount Enclosure for ESP-LX Series Controllers
- LXMMSSPED: Stainless Steel Metal Pedestal for ESP-LX Series Controllers

* **Note:** Metal cabinets and pedestals are not standard on ESP-LX Series controllers and must be purchased separately. LXMPED requires LXMM, and LXMMSSPED requires LXMMSS.



LXMMSSPED Shown with ESP-LXD in LXMMSS Stainless Steel Cabinet

DPU-210 Decoder Programming Unit

For ESP-LXD, MDC/MDC2 and SiteControl FD-Turf Two-Wire Decoders

- Decoder Programming Unit tests and verifies operation of the ESP-LXD, MDC/MDC2, or SiteControl FD Series Field Decoders. Also allows for re-programming decoder addresses for maximum site set-up flexibility



DPU-210

Internet Connected Water Meters (ICWM)



Advanced Single-Jet Technology Water Meters

Features

- 5 year data plan works anywhere the Verizon 4G wireless network reaches avoiding costs of network integration
- Digital register with web interface for water usage data collection and analysis including monthly water budgeting and over-usage alerts
- Extreme low flow accuracy starting 0.1 gpm to easily identify leaks
- Wide operating temperature range
- Lead free NSF61 compliant
- Low flow, backflow and high usage reports and alerts
- 5 year data service plan + 5 year warranty included
- Compact design for tight installations with no upstream or downstream straight pipe requirements
- Single moving element and no strainer requirement for low maintenance
- Brass, bronze, cast iron, or composite plastic body for durable, long-lasting performance
- Unaffected by sand or small debris in line
- High resistance to freezing

Certifications

- FM Approved (ICWM600S)
- NSF Standard 61 Compliant
- AWWA C712 Standard



ICWM100S shown. All models include 5 ft. antenna.



Free ICWM web portal access included

Operating Specifications

Model	Size (in)	Description	Lay Length	Approx. weight w/ register (lbs.)	Initial Wireless Term	Body Material	End Connection	Max Op Press (PSI)	Min Test Flow (GPM)	Normal Op Range		Max Cont. Duty (GPM)	Head Loss @ SMOG (PSI)
										Min (GPM)	Max (GPM)		
ICWM075S	5/8" X 3/4"	5/8" Single-Jet Cellular IC Flow Meter	7.5"	1	5 years	Plastic	1" NPSM	230	0.0625	0.125	30	24	13
ICWM100S	1"	1" Single-Jet Cellular IC Flow Meter	10.75"	5.6	5 years	Low lead Bronze	1.25" NPSM	230	0.125	0.5	70	35	8
ICWM150S	1.5"	1.5" Single-Jet Cellular IC Flow Meter	7.87"	10	5 years	Low lead Brass	Oval Flange	230	0.250	0.500	105	88	7.25
ICWM200S	2"	2" Single-Jet Cellular IC Flow Meter	9.78"	12	5 years	Low lead Brass	Oval Flange	230	0.250	0.75	165	130	7.25
ICWM300S	3"	3" Single-Jet Cellular IC Flow Meter	11.8"	32	5 years	Low lead Brass	3" Flange	230	0.50	0.75	350	175	7.25
ICWM300SH	3"	3" High Flow Single-Jet Cellular IC Flow Meter	13.75"	48	5 years	Lead free Bronze	3" Flange	230	0.75	1.5	500	350	7.25
ICWM400S	4"	4" Single-Jet Cellular IC Flow Meter	13.75"	48	5 years	Lead free Bronze	4" Flange	230	0.75	1.5	500	350	7.25
ICWM400SH	4"	4" High Flow Single-Jet Cellular IC Flow Meter	17.75"	89	5 years	Lead free Bronze	4" Flange	230	1.00	2.00	1000	600	9.5
ICWM600S	6"	6" Single-Jet Cellular IC Flow Meter	17.75"	89	5 years	Lead free Bronze	6" Flange	230	1.00	2.00	1000	600	9.5
ICWM200T	2"	2" Turbine Cellular IC Flow Meter	7.87"	12	5 years	Epoxy coated cast Iron	2" Flange	232	1.50	2.00	396	176	NA
ICWM300T	3"	3" Turbine Cellular IC Flow Meter	8.9"	32	5 years		3" Flange	232	2.00	3.00	880	440	NA
ICWM400T	4"	4" Turbine Cellular IC Flow Meter	9.8"	48	5 years		4" Flange	232	2.00	4.00	1320	700	NA
ICWM600T	6"	6" Turbine Cellular IC Flow Meter	11.8"	91	5 years		6" Flange	232	8.00	16.00	1540	1000	NA

Note: Spool connections are available to adjust lay length.

FMD Series Landscape Water Meters

Manage What You Measure!

Features

- Lower cost than comparable brass flow meters and most plastic flow sensors.
- Passive management of irrigation using the meter's register dial.
- Delivers precise accuracy with flow ranges from 0.25 gpm to 160 gpm.
- Landscape Water Meter allows the property manager to avoid higher costs associated with tiered water rates.
- Landscape Water Meters are an integral part of an overall water efficient irrigation system.
- Supports California AB1881 and 20/20, LEED, Sustainable Sites Initiative, and the EPA WaterSense Program.
- Rebates offered by Water Agencies.
- Satisfies NSF/ANSI standard 61 Annex G.

Mechanical Properties

- Multi-Jet Totalizing Landscape Water Meter with analog register dial readout (minimum volumetric resolution of 0.1 gallons).
- Brass body and glass-filled nylon construction provide maximum protection against high pressure surges, physical damage and corrosion.
- Not to be used with an unfiltered water source containing potential debris (lakes, ponds, wells, or other unfiltered sources).
- Exposing the Landscape Water Meter, full of water, to temperatures below freezing can lead to permanent damage. To winterize the meter, allow it to drain through a downstream drain valve.

Models

- FM0625B: 5/8" with coupling inlet dimension x 3/4" NPT outlet.
- FM075B: 3/4" with coupling inlet dimension x 1" NPT outlet.
- FM100B: 1" with coupling inlet dimension of 1" NPT.
- FM150B: 1 1/2" with coupling inlet dimension of 1 1/2" NPT.
- FM200B: 2" with coupling inlet dimension of 2" NPT.



FMD Series Landscape Water Meters

Rain Bird FMD Series Landscape Water Meters Suggested Operating Range

The following tables indicate the suggested flow range for Rain Bird FMD Series Landscape Water Meters. Rain Bird Sub-Meters will operate both above and below the indicated flow rates. However, good design practice dictates the use of this range for best performance. Landscape Water Meters should be sized for flow rather than pipe size.

FMD Landscape Water Meter Operating Specifications

Model	Sub-meter Size	Flow Range	Body Thread (D)
FM0625B	5/8"	0.25 to 20 GPM	3/4" x 3/4"
FM075B	3/4"	0.50 to 30 GPM	1" x 1"
FM100B	1"	0.75 to 50 GPM	1" x 1"
FM150B	1 1/2"	1.5 to 100 GPM	1 1/2" x 1 1/2"
FM200B	2"	2.0 to 160 GPM	2" x 2"

Notes:

- Maximum operating pressure is 150 psi for all models.
- Maximum working water temperature is 80° F for all models.
- Maximum operating air temperature is 105° F for all models.
- Measurement accuracy at minimum flow is +/- 3% for each model.

FMD Landscape Water Meter Pressure Loss (psi)

Model	Sub-meter Size	1 GPM	5 GPM	7.5 GPM	10 GPM	15 GPM	20 GPM	25 GPM	30 GPM	40 GPM	50 GPM	60 GPM	70 GPM	80 GPM	90 GPM	100 GPM	120 GPM	140 GPM	160 GPM
FM0625B	5/8"	0.5	1.5	4.0	6.0	10.0	15.0	X	X	X	X	X	X	X	X	X	X	X	X
FM075B	3/4"	0.2	0.7	1.5	3.2	5.0	7.0	10.0	15.0	X	X	X	X	X	X	X	X	X	X
FM100B	1"	X	0.1	0.3	0.5	1.4	2.0	3.2	4.5	7.8	13.0	X	X	X	X	X	X	X	X
FM150B	1 1/2"	X	X	X	0.2	0.3	0.5	0.9	1.2	1.5	3.2	4.5	6.0	8.0	10.1	13.0	X	X	X
FM200B	2"	X	X	X	X	0.1	0.2	0.3	0.8	0.9	1.5	1.9	2.6	3.3	4.0	5.0	7.0	9.6	13.0

Flow Sensors and Transmitters

Maxicom²® SiteControl, IQ, ESP-LX Series Controllers or IQ™

Features (Sensors)

- Simple six-bladed impeller design
- Designed for outdoor or underground applications
- Available in PVC, brass or stainless steel construction
- Pre-installed in tee or saddle mounted insert versions

Operating Specifications (Sensors)

- Accuracy: +/- 1% (full scale)
- Velocity: 1/2-30 feet (0.15 - 9.2 meters) per second depending on model
- Pressure: 400 psi (27.5 bars) (max) on metal models; 100 psi (6.9 bars) (max) on plastic models
- Temperature: 220° F (105° C) (max) on metal models; 140° F (60° C) (max) on plastic models

Features (Transmitters)

- Programmable from a computer (PT322 – Maxicom and SiteControl Systems only – not required for ESP-LXMEF or ESP-LXD)
- Reliable solid-state design, available with or without LCD display
- Operates with MAXILink™ and (hard-wire) two-wire satellite systems
- Easy-to-program, menu-driven design
- Mounted in optional NEMA enclosure (PT3002 only)

Operating Specifications (Transmitters)

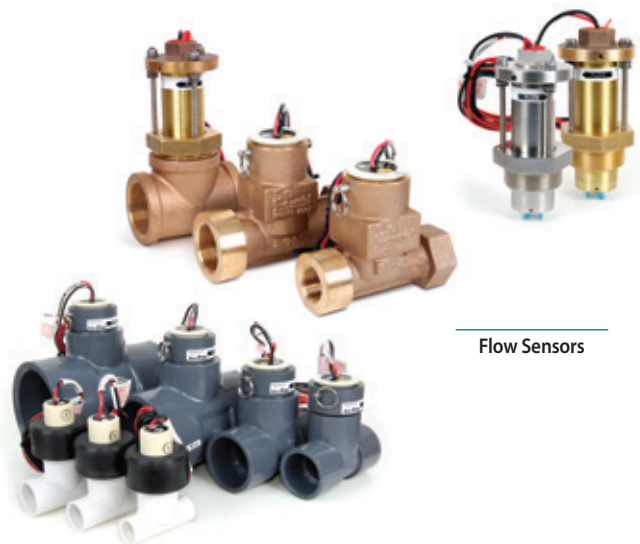
- Input required:
 - 12-30 VDC/VAC on PT322
 - 12-24 VAC/VDC on PT 3002
- Output: Pulse output
- Operating Temp: -4° F-158° F (-20° C to 70° C)
- Units: Domestic and International units available on PT3002

Dimensions

- PT322: 3.65" x 1.75" x 1.0" (93mm x 44mm x 25mm)
- PT3002: 3.78" x 3.78" x 2.21" (96mm x 96mm x 56mm)
- FS100P: 3.50" x 3.94" x 1.315" (89mm x 100mm x 33mm)
- FS150P: 5.0" x 5.16" x 2.38" (127mm x 131mm x 60mm)
- FS200P: 5.63" x 5.64" x 2.88" (143mm x 143mm x 73mm)
- FS300P: 6.50" x 6.83" x 4.23" (165mm x 173mm x 107mm)
- FS400P: 7.38" x 7.83" x 5.38" (187mm x 199mm x 137mm)
- FS100B: 5.45" x 4.94" x 2.21" (138mm x 126mm x 56mm)
- FS150B: 6.5" x 5.19" x 2.5" (165mm x 132mm x 64mm)
- FS200B: 4.25" x 8.35" x 2.94" (108mm x 212mm x 75mm)
- FS350B: 7.13" x 3"(diameter) (181mm x 76mm (diameter))
- FS350SS: 7.13" x 3"(diameter) (181mm x 76mm (diameter))

• Configuration

- **For ESP-LXD Decoder Systems**, the Flow Sensor is installed with a Two-Wire Decoder Sensor Decoder (SD210TURF)
- **For ESP-LXMEF Systems**, the Flow Sensor is attached to the FSM-LXME Flow Smart Module
- **For (Hard Wire) Two-Wire Satellite Systems (Maxicom²® and SiteControl)**, the Flow Sensor is installed with a Pulse Transmitter and a Rain Bird Pulse Decoder (DECPULLR)
- **For Link Radio Satellite Systems (Maxicom² and SiteControl)**, the Flow Sensor is installed with a Pulse Transmitter (no pulse decoder required)
- **For ESP-SITE Satellite Systems (Maxicom²)**, the Flow Sensor is installed with a Pulse Transmitter (no decoder required)
- **For SiteControl Decoder Systems**, the Flow Sensor is installed with a Two-Wire Decoder Sensor Decoder (SD210TURF)
- Surge protection (FSSURGEKIT) is recommended for Maxicom & SiteControl systems – One at the Pulse Transmitter, and if more than 50' of wire run, one at the Flow Sensor. FSSURGEKIT is not compatible with ESP-LXMEF and ESP-LXD Controllers



Flow Sensors



Flow Sensor Transmitters and Accessories

Flow Sensors and Transmitters (cont.)

Models

- **Brass TEE's**
 - FS200B: 2" (50mm) Brass Tee Flow Sensor
 - FS150B: 1 1/2" (40mm) Brass Tee Flow Sensor
 - FS100B: 1" (25mm) Brass Tee Flow Sensor
- **Plastic TEE's**
 - FS400P: 4" (110mm) PVC Tee Flow Sensor
 - FS300P: 3" (75mm) PVC Tee Flow Sensor
 - FS200P: 2" (50mm) PVC Tee Flow Sensor
 - FS150P: 1 1/2" (40mm) PVC Tee Flow Sensor
 - FS100P: 1" (25mm) PVC Tee Flow Sensor
- **Inserts**
 - FS350SS: 3" and higher, Stainless Steel Insert
 - FS350B: 3" and higher, Brass Insert
 - FSTINSERT: Replacement insert for Tee type sensors
- **Pulse Transmitters** (not necessary with ESP-LX Controllers)
 - PT322: Pulse Transmitter, no display
 - PT3002: Pulse Transmitter, LCD display
- **Accessories**
 - PTPWRSUPP: Pulse Transmitter power supply
 - NEMACAB: NEMA Enclosure for PT3002
 - FSSURGEKIT: Flow Sensor surge protection kit
 - DECPULLR: Pulse Decoder for two-wire satellites
 - SD210TURF: Sensor Decoder for decoder systems
 - FSMLXME: Flow Smart Module for ESP-LXME Series Controllers

Rain Bird Flow Sensor Suggested Operating Range

The following tables indicate the suggested flow range for Rain Bird Flow Sensors. Rain Bird Sensors will operate both above and below the indicated flow rates. However, good design practice dictates the use of this range for best performance. Sensors should be sized for flow rather than pipe size.

Model	Suggested Operating Range (Gallons / Minute)	Suggested Operating Range (Liters / Minute)	Suggested Operating Range (Cubic Meters / Hour)
FS100P	5.4 - 54	20 - 200	1.2 - 12
FS150P	5 - 100	19 - 380	1.1 - 23
FS200P	10 - 200	40 - 750	2.3 - 45
FS300P	20 - 300	75 - 1130	4.5 - 70
FS400P	40 - 500	150 - 1900	9 - 110
FS100B	2 - 40	7.6 - 150	0.5 - 9
FS150B	4 - 80	15 - 300	1 - 18
FS200B	10 - 100	38 - 380	2.3 - 23
FS350B	Depends on Pipe Type and Size - please reference Flow Sensors tech spec		
FS350SS	Depends on Pipe Type and Size - please reference Flow Sensors tech spec		

RSD-BEx

Wired Rain Sensor

Features and Benefits

- Automatic rain shutoff prevents overwatering due to natural precipitation
- Robust, reliable design reduces service call backs
- Moisture sensing disks work in a variety of climates
- Different sensor mounts permit speed and flexibility on the job site
- Latching hinge maintains alignment

Mechanical Properties

- Multiple rainfall settings from 1/8" - 3/4" (5 - 20 mm) are quick and easy with just the twist of a dial
- Adjustable vent ring helps control drying time
- High-grade, UV resistant polymer body resists the elements
- Comes with 5" latching aluminum bracket
- Not compatible with ESP-SMT or ESP-SMTe controllers

Electrical Specifications

- Application: Suitable for low voltage 24 VAC control circuits and 24 VAC pump start relay circuits*
- Switch electrical rating: 3A @ 125/250 VAC
- Capacity: Electrical rating suitable for use with up to ten 24 VAC, 7 VA solenoid valves per station, plus one master valve
- Wire: 25' (7.6 m) length of #20, 2 conductor UV resistant extension wire
- Certifications: cULus, CE, RCM, WEEE, RoHS

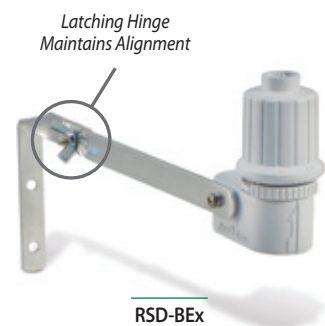
* Not recommended for use with high voltage pump start, pump start relay circuits or devices.

Dimensions

- Overall length: 6.5" (16.5 cm)
- Overall height: 5.4" (13.7 cm)
- Bracket hole pattern: 1.25" (3.2 cm)

Model

- RSD-BEx: Rain sensor w/ latching bracket, extension wire



How to Specify

RSD - BEx

Extension Wire
25' (7.6 m) length

Mounting
BE: Metal Bracket

Model
RSD: Rain Sensing Device

WR2 Series Wireless Rain + Freeze Sensors

Superior responsiveness to rainfall and cold temperatures, save up to 35% on water usage

Features & Benefits

- Enhanced antenna array provides superior signal reliability that overcomes most line-of-sight obstructions
- Sensor signal strength indicator enables one person set up, reducing installation time
- Convenient adjustment and monitoring of rain or freeze settings at the controller interface
- Simple battery replacement without the need to disassemble the sensor
- Highly intuitive icon-driven controller interface simplifies programming
- Easy to install, self-leveling sensor bracket mounts to flat surfaces or rain gutters
- Antennas concealed within the units for greater visual appeal and product robustness
- "Quick Shut Off" interrupts active irrigation cycle during a rain event

Electrical Specifications

- Application: suitable for use with 24 VAC controllers (with or without pump start / master valve)
- Electrical rating suitable for use with up to six 24VAC 7VA solenoids plus an additional master valve or pump start that does not exceed 53VA
- Controller Interface Wire: 30" (76 cm) length of #22 gauge (0.64 mm) UV resistant extension wire
- Certifications: cULus, CE, RCM, FCC, ISED (IC), WEEE, RoHS, ICASA
- FCC approved spread spectrum 2 way radio transceivers with FCC Class B approvals
- Signal transmission distance of 700' (213.4 m) Line of Sight
- Battery life: four or more years under normal operating conditions
- 6 KV surge / lightning protection

Mechanical Properties

- Adjustable rainfall settings from 1/8" – 1/2" (3 – 13 mm)
- Adjustable low temperature settings from 33°F – 41°F (0.5° – 5°C)
- Three irrigation modes to select: Programmed, Suspend Irrigation for 72 hours, Override sensor for 72 hours

Note: The WR2-48 model replaces the Suspend Irrigation for 72 Hours mode with 48-Hour Irrigation Hold Active mode.

- "Quick Shut Off" suspends active irrigation cycle within approximately two minutes
- High-grade, UV resistant polymer units resist harmful environmental effects

Models

- North America (916 MHz)
 - WR2-RFC: Rain + Freeze Combo
 - WR2-48: Rain + Freeze Combo with 48-hour hold
- International (868 MHz)
 - WR2-RFC-868: Rain + Freeze Combo



Step 1



Program in seconds

Step 2



Determine best sensor location

Step 3



Install sensor easily using mounting bracket

SMRT-Y Soil Moisture Sensor Kit

Accurate • Reliable • Smart

Features and Benefits

- Turns any controller into a water saving smart controller
- Healthier plants less prone to nutrient depletion, fungus and shallow root growth
- Typical water savings exceed 40%
- TDT digital sensor enables highly accurate readings that are independent of soil temperature and electrical conductivity (EC)
- Displays soil moisture content, soil temperature and EC
- Corrosion-resistant in-ground sensor made of high-grade 304 stainless steel

Operating Specifications

- 25 Volts AC at 12W
- Operating temperature: -4°F to 158°F (-20°C to 70°C)
- Survival temperature: -40°F to 185°F (-40°C to 85°C)
- Certifications: cULus, RCM

Dimensions

Controller Interface

- W: 3.0" (76mm); H: 3.0" (76mm); D: 0.75" (19mm)

In-Ground Soil Moisture Sensor (without wires)

- W: 2.0" (50mm); L: 8.0" (200mm); D: 0.5" (12mm)
- 18 AWG wire leads @ 42 in. (106.7 cm) length

SMRT-Y Kit

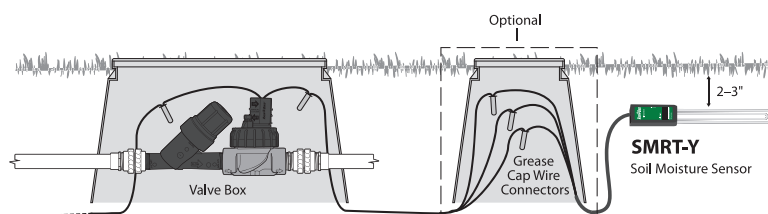
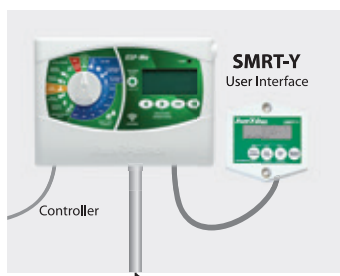
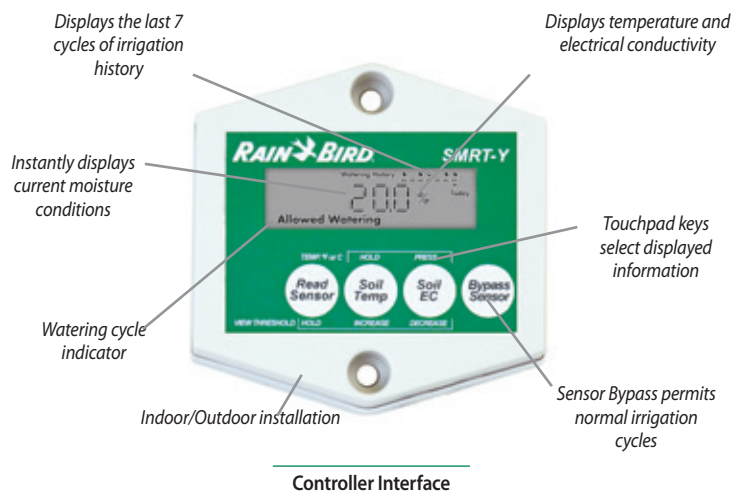
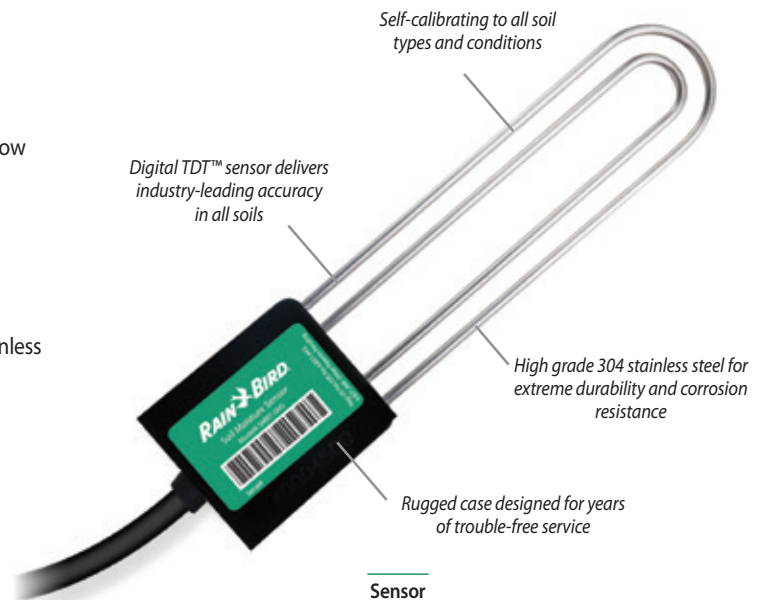
Includes

- Controller Interface
- In-Ground Soil Moisture Sensor
- Anodized, rust-proof screws, 1.5" (two per package)
- Wire nuts – 5 blue, 2 gray, 1 yellow
- Multilingual instruction manual, "Quick Start" Guide and Soil Moisture sticker

Models

- SMRT-Y: Soil Moisture Sensor Kit

NEW FOR 2018: All SMRT-Y models are RoHS compliant





Central Controls



Water Saving Tips

- Maxicom², SiteControl, and IQ™ Systems provide fully-automated ET (evapotranspiration) adjustment of irrigation programs for maximum water savings.
- Maxicom² and IQ™ FloWatch™ utility monitors and records real-time flow and automatically diagnoses and eliminates flow problems caused by broken pipes, vandalism or stuck valves.
- The New Rain Bird® IQ™ Platform. The ultimate tool for remote water management. With no hidden fees, It's the perfect remote water management solution. With the new IQ-Cloud v. 3.0, you can control your irrigation system from any device, anywhere. With set up that takes less than five minutes, multi-user access and no recurring annual fees, you finally have the option you've been waiting for. Visit www.rainbird.com/iq and take control now.

Major Products

System Name	IQ™ v3.0	SiteControl	Maxicom®
System Type	Modular multi-site central control system	Modular single site central control system	Multi-satellite central control system
Traditionally wired or two-wire decoder	Works with both	Works with both	Traditionally wired
Typical applications	Multi-site management with modular features. Ideal solution for water managers, schools, parks, corporate campuses and transportation departments	Single site management with modular features. Ideal for large resorts, cemeteries, shopping centers, theme parks and sports stadiums	Multi-site commercial or industrial irrigation applications. Ideal for municipalities, school districts, homeowner associations and park and recreation departments
Number of sites/system	999	1	200+
Local and/or remote site control	Local and remote	Local	Local and remote
Maximum number of simultaneous stations per site/system	5 per ESP-LXME 8 per ESP-LXD	3,584 per site	112 per CCU
Number of ET (weather) sources	100	4	16
Program adjustments by ET	Yes	Yes	Yes
Program adjustments by percentage	Yes	Yes	Yes
Programming by volume/gallons	No	No	Yes
Number of programs	4 per satellite	100 total per system	999 per CCU
Flow management capabilities	Yes	Yes	Yes
Flow monitoring/recording capabilities	Yes	Yes	Yes
High-flow shutdown	Mainline and laterals	Mainline only	Mainline and laterals
Low- or zero-flow shutdown	Mainline and laterals	No	Mainline and laterals
Alarms/warnings	Yes	Yes	Yes
Sensor input and manual bypass	Yes	Yes	Yes
Number of weather sensor inputs	One per ESP-LXME Four per ESP-LXD	Up to 200 sensor inputs per system	Up to 56 per CCU
Number of flow sensor inputs	One per ESP-LXMEF Five per ESP-LXD	Up to 200 sensor inputs per system	Up to 6 (two wire) or 20 (Link) per CCU
Software/password log-on protection	Yes	N/A	Yes
Remote control capabilities	Yes, IQ Mobile	Yes, Freedom System	Yes, Freedom System
Cycle+Soak™	Yes	Yes	Yes
Water window by program/schedule	Yes	Yes	Yes
Computer included with software	No	Yes	Yes
Computer programming	Yes	Yes	Yes
24/7 system monitoring	Yes, by the controller	Yes, by the computer	Yes, by the CCU
24/7 communication & feedback	No	Yes, computer to satellites and decoders	CCU to satellite
Remote site telephone, cellular, radio, Ethernet, Wi-Fi communication	All	No	All
Automatic remote site communication	Yes	No	Yes
Satellite controllers or decoders	ESP-LXME or ESP-LXD Satellites	ESP-SAT Satellites or FD-Series Decoders	ESP-SAT or ESP-SITE Satellites
Modular station capacity	ESP-LXME: 8-48 ESP-LXD: 50-200	No	No
Number of site/system interfaces	N/A – No interfaces required	8	>200
Number of satellites/system	16,000+	896	>5,600
Number of satellites/site interface	Up to 150 satellites per IQNet	Up to 112 per TWI	Up to 28 per CCU
Number of satellite stations/site	ESP-LXME: Up to 7,200 per IQNet ESP-LXD: Up to 30,000 per IQNet	Up to 21,504 per system	Up to 672 per CCU
Number of decoder addresses per site	Up to 30,000 per IQNet	Up to 4,000	N/A
Interactive map interface	No	Yes	No
GPS, CAD, SHP, BMP Import	N/A	Yes	BMP, PDF, JPEG
Valve control: stations or decoders	Both	Both	Satellite stations only
Estimated/actual water use report	Yes	Yes	Yes
Event recording (station operation)	Yes	Yes	Yes
Projected operation (dry/run) capability	Yes	Yes	Yes
Supported by Global Services Plan	Yes	Yes	Yes
Can also manage lighting and security systems	Yes	Yes	Yes

IQ™ v3.0 Central Control Software

Modular Multi-Site Central Control

The IQ Platform offers state-of-the-art command and control features in an easy to learn and use interface. IQ provides advanced water management features saving money and time. The IQ Platform consists of three options: IQ-Desktop v. 3.0, IQ-Cloud v. 3.0, and IQ-Enterprise v. 3.0.

Applications

All IQ versions provide remote programming, management, and monitoring of ESP-LX Series Controllers from the computer in your office. IQ is the perfect irrigation control solution for parks departments, school districts, property managers, landscape maintenance contractors, and water managers. IQ can manage small single-controller sites as well as large multi-controller sites and supports both ESP-LX Series traditionally-wired and 2-wire decoder controllers.

IQ-Desktop is installed and operated on a single desktop computer. IQ-Desktop is ideal for organizations with one administrator who can control the system from their computer in their office. The IQ-Desktop software package provides 5-satellite controller capacity. IQ software satellite controller capacity can be upgraded in 5-satellite increments with the IQ5SATSWU.

IQ-Cloud is a cloud based service allowing users to login and control their irrigation system from any internet connected device.

IQ-Cloud is ideal for organizations with multiple irrigation system administrators and/or users that require mobility. IQ-Cloud features IQ-Mobile which provides quick access to key features in an interface designed for touchscreen devices found in smartphones or tablets. Users are not restricted to an initial capacity and can add satellites at will. Internet access is required.

IQ-Enterprise is installed on a server and enables organizations with internet access security/restrictions and a robust local area network to install their own private IQ-Cloud. Users can get all the mobility benefits of IQ-Cloud and comply with IT restrictions. IQ-Enterprise software package provides 5-satellite controller capacity. IQ software satellite controller capacity can be upgraded in 5-satellite increments with the IQ5SATSWU.

IQ Platform Software Features

- Software 5-satellite controller capacity upgradable in 5-satellite increments (Desktop & Enterprise)
- Compatible with ESP-LXM & ESP-LXME traditionally-wired and ESP-LXD 2-wire decoder controllers

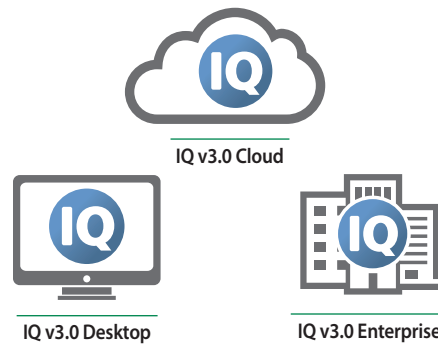
Visit www.rainbird.com/iq to learn more about the features included the IQ Platform.

Additional 5-Satellite Capacity Upgrade

- IQ Software satellite controller capacity can be upgraded in 5-satellite increments
- Additional capacity is added through a purchased software activation keycode

Recommended Computer Requirements for IQ-Desktop

- Operating System: Windows® XP, 7 or 8, 32-bit or 64-bit
- Processor: Intel I5-540M or equivalent
- RAM Memory: 3 GB
- Available Hard Disk Space: 10 GB
- CD-ROM Drive: 8X speed minimum
- Display Resolution: 1024 x 768 minimum
- Network Connection (for Ethernet, WiFi, GPRS)
- Serial Port or USB to Serial Adapter (for Direct Connect and External Modem communication)
- Operating System: Windows® XP, 7 or 8, 32-bit or 64-bit



IQ v3.0 Software

How to Specify

IQ V3.0 SOFTWARE

- IQADVCECD: 5-Satellite Capacity with advanced feature packs included
- IQ5SATSWU: Software 5-Satellite Capacity Upgrade

IQ NCC Network Communication Cartridge

Upgrades any ESP-LX Series Controller to an IQ Central Control Satellite Controller

Features

- IQ is the perfect irrigation control solution for parks departments, school districts, property managers, landscape maintenance contractors and water managers. IQ can manage small single-controller sites as well as large multi-controller sites. IQ NCC cartridges are compatible with the ESP-LXME Controller with 1- to 48-station capacity and ESP-LXD Decoder Controller with 1- to 200-station capacity
- IQ NCC cartridges are initially configured through a setup wizard provided in the ESP-LX Series Controller IQ Settings dial position. Communication setting parameters are configured through the IQ software or the NCC Configurator Software designed for netbook/laptop use on the job site

Direct Satellites

- Single controller sites would use an IQ NCC cartridge configured as a Direct satellite. A Direct satellite has an IQ central computer communication connection but no network connections to other satellites in the system

Server & Client Satellites

- Multi-controller sites would use one IQ NCC cartridge configured as a Server satellite and the other NCC cartridges configured as Client satellites. The Server satellite has an IQ central computer communication connection and shares this communication connection with the Client satellites through high-speed data cable or radios. The communication connection between Server and Client satellites is called the IQNet™
- Satellites on a common IQNet can share weather sensors and master valves
- Server and Client satellites using high-speed data cable for IQNet communication require installation of an IQ CM Communication Module. Server and Client satellites using radio communication for IQNet communication require installation of an IQSSRADIO radio. Each cartridge kit includes cables to connect the NCC cartridge to connection module and/or radio

IQ NCC 3G Cellular Cartridge

- Includes embedded 3g/Cellular Data Modem with antenna connector
- Includes internal antenna for plastic controller enclosures (optional external antenna available for metal case controller enclosures)
- Requires Cellular data service plan with static IP address from Cellular Service Provider
- Available with 1st year of communication service included. Cartridge with included communication service not offered in all areas

IQ NCC-EN Ethernet Cartridge

- Includes embedded Ethernet Network Modem with RJ-45 port
- Includes RJ-45e patch cable (requires LAN network static IP address)

IQ NCC-RS RS232 Cartridge

- Includes RS-232 Port for IQ Direct Cable or External Modem communication connection to the IQ central computer, and external modem cable (IQ Direct Cable provided with IQ Software Package)
- Used for Direct or Server Satellite applications requiring direct cable connection or external modem (radio or other 3rd-party device) communication with the IQ central computer, and for Client Satellite applications requiring IQNet high-speed data cable or radio communication with the Server Satellite

IQ FSCM-LXME Flow Smart Connection Module

- Provides IQNet high-speed data cable connections for ESP-LXME Controller
- Includes Flow Smart Module and Base Module functions
- Replaces standard ESP-LXME Base Module

IQ CM-LXD Connection Module

- Provides IQNet high-speed data cable connections for ESP-LXD Controller
- Installs in ESP-LXD 0 (zero) module slot

IQ SS-Radio Radio Modem

- Provides IQNet wireless radio communication between Server and Client satellite controllers
- Can also be used with the IQ NCC-RS RS232 Cartridge for IQ central computer to Direct or Server satellite radio communication
- Includes power supply and external antenna (programming software and cable provided separately)



IQ NCC Network
Communication Cartridge

SiteControl

A Full-Featured Central Control System for Single Site Applications

Features

- Advanced Graphical Tracking- Maps generated by GPS technology or AutoCAD recreate your site. Interactive mapping and on-screen graphics show your complete site with location of individual valves and sprinklers allows you to measure and calculate areas from your map
- Smart Weather™ is designed to take complete advantage of Rain Bird's most advanced line of weather stations, tracks ET and rainfall via a weather station and reacts to current weather conditions based on user-defined options. Advanced warning system accepts user-defined sensor thresholds. System operator is immediately alerted if thresholds are exceeded
- RainWatch™ uses tipping bucket rain can(s) to detect and suspend irrigation while measuring rainfall. When rain stops, irrigation resumes with run times reduced according to measured rain
- Minimum ET- allows setting minimum ET threshold values for irrigation to take place. Promotes deep watering for optimum turf conditions
- Automatic ET automatically adjust run times in relation to fluctuations in Evapotranspiration (ET) values
- Remote System Control allows you to take control of your system and operate SiteControl from anywhere on your site using the Rain Bird FREEDOM System. Phone (landline or cellular) or radio communication options
- Hybrid System operates Satellite Controllers and/or Two-Wire Decoders
- SiteControl Plus operates four Large Decoder Interfaces (LDI), each capable of operating up to 1,000 solenoids with Hybrid system, can further expand capabilities by combining Two-Wire Decoder and/or Satellite Controller options up to four total interface devices

Superior Monitoring and Scheduling

- Flo-Graph™ allows visibility of real-time graphics with individual station information presented in colorful charts
- Flo-Manager™ balances system demands and maximum capacities with efficiency helping to lower water demand, reduce system wear and tear and save energy
- Cycle + Soak™. Better control the application of water on slopes and in areas with poor drainage
- QuickIRR™ Quick and easy method to build irrigation schedules and programs based on your parameters

Other Features

- Up to 200 points of connection
- Up to 200 pulse sensors
- Water usage logs
- Station run-time logs
- Posted and dry run logs
- ET spreadsheet
- 1 year Global Service Plan included

Models

- SCON: Desktop PC with SiteControl software, includes 1 year Global Support Plan (GSP)

Software Module Options

- Smart Weather
- Rain Bird Messenger (for Smart Weather)
- Automatic ET
- Hybrid Module
- Smart Sensor
- Map Utilities
- Freedom
- 8 Additional Locations
- Additional Wire-Path (2nd)
- Additional Wire-Path (3rd)
- Additional Wire-Path (4th)
- SiteControl Plus
- Smart Pump
- MI (Mobile Interface)

Global Service Plan (GSP)

- Visit rainbird.com/gsp/index.htm for more information.



SiteControl

SiteControl Hardware

TWI Satellite Interface

- Allows real-time, two-way communication between SiteControl Central Controller and field satellites
- Allows use of advanced in-field capabilities of ESP-SAT twowire or LINK versions
- Modular capacity can grow with the site

Two-Wire Decoder Interface

- Allows real-time, two-way communication between SiteControl Central Controller and decoders
- Connects the powerful capabilities of SiteControl with the ease of installation and security of a two-wire decoder system
- System can be set up and expanded according to project needs

ESP-SAT Satellite Controller

- 40 Stations Satellite Controller
- Field Satellite Controller for Maxicom² or SiteControl Central Control systems
- The power of an advanced water-management tool, in an easy-to-use package
- All the features and stand-alone capabilities of the Rain Bird ESP-MC Controller line

Spread Spectrum Radio

- Frequency hopping to avoid interference
- Reduced cost of ownership, no FCC license required
- No FCC restrictions on antenna height (User should check local laws)
- Radios can be set up as repeater to achieve great distances and overcome obstacles

Ethernet Devices

- Use Ethernet networks to:
 - - Communicate from Central Control Computer to CCUs, SiteSats, TWIs and weather stations
 - - Communicate from CCU and TWIs to ESP-Sats

WS-PRO Weather Stations

- Scientific accuracy sensors located three meters above the ground for added vandal-resistance
- Powerful, internal micro-logger for climatic data collection, logging and analysis, constant communication with weather sensors, and storage of 30 days of data
- Rugged yet lightweight metal construction;

Sensor-Pulse Decoders

- Complete feedback system
- Extends central control system versatility
- Color-coded wire leads for ease of installation
- Programmable address codes for individual operation

RAINGAUGE Rain Sensor

- Accurate rain counter switch counts rainfall in 1/100th inch increments
- Heavy-duty metal construction
- Mounting bracket
- Debris screen

ANEMOMETER Wind Sensor

- Accurate wind speed measurement for high-wind shutdown or interrupt of irrigation programs
- Heavy-duty metal mounting bracket
- Requires PT322 or PT3002 Pulse Transmitter for use with Maxicom² System

Maxi Interface Boards

- Upgrades an ESP-MC Controller (wall mount or pedestal) to an ESP-SAT Satellite Controller
- No additional enclosures or external wiring required
- Installs on stand-offs on controller output board

MSP-1 Surge Protection

- Protects central control components from electrical surges on a two-wire communication path
- Can be installed in satellite or CCU pedestal or in valve box in conjunction with MGP-1 (Maxicom²® Grounding Plate)

MGP-1 Surge Grounding Plate

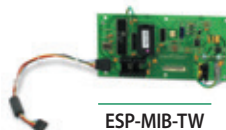
- Provides a mounting location for MSP-1 or other grounding wires directly to a grounding rod or pipe
- Installed on grounding rod or pipe



TWI Interface



ESP-SAT Satellite Controller



ESP-MIB-TW



DEC-SEN-LR DEC-PUL-LR

Maxicom[®] version 4.4 now available

Multi-Site Central Control Ideal for Large Commercial Systems

New for version 4.4

- Windows 8 compatibility
- Seek & Eliminate Low Flow (SELF) – Automatically diagnose a low flow problem
- Station Lockout – Quarantine zones that have had high/low flow alarms until the user takes action
- Station Priorities for Flow Manager – allows the user to alter the sequence of irrigation zones by assigning priorities when flow manager is being used
- Queued irrigation max run time limit increased from 99 minutes to 999 minutes
- Adjustable rain can settings
- Seek & Eliminate Excessive Flow (SEEF) improvement to account for manual adjustments
- Database trim setting is no longer fixed and is user-selectable so users can decide how far back the records go
- Phone number/address field works with URL's and longer IP Addresses
- Field Device Configuration Report now includes satellite names and sensor names

System Features

- Maxicom²[®] Central Controller Package comes with Maxicom² software, pre-configured computer, Global Service Plan (GSP), and training
- Control hundreds of ESP-SITE-SAT Satellites (single controller sites) and Cluster Control Units (CCUs) which can each control up to 28 individual ESP-SAT Satellite Controllers on multi-controller sites
- Monitor dozens of Weather Sources including WSPRO2 Weather Stations, ET Managers, or rain counting sensors (Raingauge)
- Freedom Remote Control allows manual operation of system through a cellular phone or radio
- Multiple log and water usage reports are generated automatically to track system operation and water savings

Water Management Features

- Cross satellite schedule operation; 999 separate schedules per CCU provides precision watering of areas and microclimates
- ET Checkbook™ manages Evapotranspiration (ET) and automatically adjusts Satellite Controller station run-time or day cycle intervals to match the landscapes water requirements
- FloManager™ manages the total flow demand placed on the water source(s), optimizing both the available water and watering window
- FloWatch™ monitors flow sensors at each water source, records flow, and automatically reacts to problem flows by shutting down the effected portion of the system (individual valve or mainline)
- RainWatch™ monitors rain counting sensors, records rainfall, and automatically reacts to rainfall by interrupting irrigation, waiting to see how much rain has fallen, and determines if the irrigation should be resumed or cancelled

Operational Features

- Communication Control Engine automatically sends updated programming to sites before watering begins and retrieves logs after irrigation is completed; manual operation can be performed at any time
- Start day cycles: Custom (day of the week), Odd/Even, Odd31, or Cyclical and include Event Day Off Calendar scheduling
- Station run-times programmable from 1 minute to 16 hours
- Cycle + Soak™ optimizes water application to soil infiltration rate, reducing runoff and puddling
- Control non-irrigation functions such as lighting, fountains, door locks and gates

Maxicom² Communications Options

- Central Controller to CCU: Phone, direct connect, radio, cellular, network (Ethernet, Wi-Fi, fiber-optics)
- CCU to ESP-SAT2: Two-wire path
- CCU to ESP-SATL: Radio, MasterLink, network (Ethernet, Wi-Fi, fiber-optics)

Global Service Plan (GSP)

- Visit rainbird.com/gsp/index.htm for more information.

Models

- MC2GOLD1: New System - Desktop PC with Maxicom software, includes 1 year Global Support Plan (GSP)
- GSPMCPCL3: Current GSP Or Expired GSP Subscribers, Desktop PC with Maxicom software, includes 3 Years Platinum Plus Global Support Plan
- GSPMXPPCIA: Current GSP Subscribers, Desktop PC with Maxicom software, based on 3 Year Platinum Plus Global Support Plan, includes year 1 GSP, requires year 2 and 3 GSP to be purchased separately (M95543A2)
- GSPMXPPCIM: Current GSP Subscribers, Desktop PC with Maxicom software, based on 3 Years Platinum Plus Global Support Plan, includes month 1 GSP, requires month 2 - 36 GSP to be purchased separately (M95544M2)
- GSPMXPPNIA: New GSP or Expired GSP Subscribers, Desktop PC with Maxicom software, based on 3 Years Platinum Plus Global Support Plan, includes year 1 GSP, requires year 2 and 3 GSP to be purchased separately (M95541A2)
- GSPMXPPNIM: New GSP or Expired GSP Subscribers, Desktop PC with Maxicom software, based on 3 Years Platinum Plus Global Support Plan, includes month 1 GSP, requires month 2 - 36 GSP to be purchased separately (M95542M2)
- MC2UPG: Maxicom Upgrade Software - CD Only, upgrade existing Maxicom 1.X, 2.X and 3.X system to latest Maxicom Version



Maxicom

Maxicom²® Hardware

Cluster Control Unit CCU Interface

- Runs real-time operations of a site consisting of up to 28 satellites
- Adapts station sequence to changing conditions for maximum efficiency
- Instantly responds to unexpected conditions and sensor inputs

ESP-SAT Satellite Controller

- 40 Stations Satellite Controller
- Field Satellite Controller for Maxicom² or SiteControl Central Control systems
- The power of an advanced water-management tool, in an easy-to-use package
- All the features and stand-alone capabilities of the Rain Bird ESP-MC Controller line

ESP-SITE-SAT Satellite Controller

- 24, 40 Stations Satellite Controller
- Combines power of a Cluster Control Unit (CCU) with capabilities of a single ESP-Satellite controller for small Maxicom² sites
- Advanced water-management tool, in an easy-to-use package
- All the features and stand-alone capabilities of the Rain Bird ESP-MC Controller line

Spread Spectrum Radio

- Frequency hopping to avoid interference
- Reduced cost of ownership, no FCC license required
- No FCC restrictions on antenna height (User should check local laws)
- Radios can be set up as repeater to achieve great distances and overcome obstacles

Ethernet Devices

- Use Ethernet networks to:
 - - Communicate from Central Control Computer to CCUs, SiteSats, TWIs and weather stations
 - - Communicate from CCU and TWIs to ESP-Sats

WS-PRO Weather Stations

- Scientific accuracy sensors located three meters above the ground for added vandal-resistance
- Powerful, internal micro-logger for climatic data collection, logging and analysis, constant communication with weather sensors, and storage of 30 days of data
- Rugged yet lightweight metal construction

Sensor-Pulse Decoders

- Complete feedback system
- Extends central control system versatility
- Color-coded wire leads for ease of installation
- Programmable address codes for individual operation

RAINGAUGE Rain Sensor

- Accurate rain counter switch counts rainfall in 1/100th inch increments
- Heavy-duty metal construction
- Mounting bracket
- Debris screen

ANEMOMETER Wind Sensor

- Accurate wind speed measurement for high-wind shutdown or interrupt of irrigation programs
- Heavy-duty metal mounting bracket
- Requires PT322 or PT3002 Pulse Transmitter for use with Maxicom² System

Maxi Interface Boards

- Upgrades an ESP-MC Controller (wall mount or pedestal) to an ESP-SAT or ESP-SITE Satellite Controller
- No additional enclosures or external wiring required
- Installs on stand-offs on controller output board

MSP-1 Surge Protection

- Protects central control components from electrical surges on a two-wire communication path
- Can be installed in satellite or CCU pedestal or in valve box in conjunction with MGP-1 (Maxicom²® Grounding Plate)

MGP-1 Surge Grounding Plate

- Provides a mounting location for MSP-1 or other grounding wires directly to a grounding rod or pipe
- Installed on grounding rod or pipe



CCU-28-W



ESP-40SAT-2W Satellite



MSP-1



MGP-1



RAINGAUGE

WS-PRO Weather Stations

Maxicom²® (WS-PRO2 only), SiteControl, IQ™ v3.0 (WS-PRO2 and WSPROLT)

Features

- Scientific accuracy sensors located three meters above the ground for added vandal-resistance
- Powerful, internal micro-logger for climatic data collection, logging and analysis, constant communication with weather sensors, and storage of 30 days of data
- Rugged yet lightweight metal construction
- Self-diagnostic test mechanisms: internal moisture, battery voltage level, test port for local sensor check, and simple-to-service sensors and internal components
- State-of-the-art weather software calculates ET values, stores daily and historic ET values, monitors and displays current weather conditions, and graphically displays weather parameters

SiteControl Features

- WS-PRO2 and WS-PRO-LT Weather Station compatibility is standard for SiteControl v3.0 or later software
- SiteControl can interface with up to 6 weather stations
- Automatic communication between Central Controller and Weather Station requires SiteControl Automatic ET Software Module
- SiteControl Smart Weather Software Module enables automatic, user defined reactions to weather events (rain, freeze, high wind, etc.)



WS-PRO2
Weather Station

IQ™ v3.0 Features

- WS-PRO2 or WS-PRO-LT Weather stations are compatible with IQ™ v3.0 or later software with advanced ET Feature Pack (IQAETFP)
- Automatic communication between the IQ™ v3.0 central and weather station requires the communication feature pack (IQACOMFP)
- Weather data retrieval hourly or custom retrieval times up to 5 per day
- IQ can interface with 100 weather stations

Maxicom²® Features (WS-PRO2 only)

- WS-PRO2 Weather Station compatibility is standard for Maxicom²® v3.6 or later software
- Each site can have its own Weather Station or can share between sites
- Automatic communication standard
- Up to 24 automatic weather data retrievals can be configured per day

Weather Station Sensors

- Air Temperature
- Solar Radiation
- Relative Humidity
- Wind Speed
- Wind Direction
- Rainfall

System Compatibility

- Maxicom² (WS-PRO2 only)
- SiteControl (requires Automatic ET Software Module)
- IQ™ v3.0 with Advanced ET Feature Pack
- ET Manager Weather Reach Server Software

Models

- WS-PRO2-DC Direct Connect model – 2-pair wire connection with Central Controller via short-haul modem
- WS-PRO2-PH Phone Connect model – dial-up phone modem for phone communication with Central Controller
- WS-PRO-LT-SH Short Haul model – 2-pair wire connection with Central Controller via short-haul modem

Spread Spectrum Radio

Maxicom^{2®}, SiteControl or IQ™

Features

- Frequency hopping to avoid interference
- Reduced cost of ownership, no FCC license required
- No FCC restrictions on antenna height (User should check local laws)
- Radios can be set up as repeater to achieve great distances and overcome obstacles

Installation Requirements

- Site Survey required prior to ordering and must be submitted with order
- RADTN9MIB mounts directly onto ESP-SAT MIB; RADTN9TWI connects with ribbon cable
- Antenna and antenna cable required (sold separately by Rain Bird Production and Service Center)

Models

- **Radios – For IQ Primary & Secondary Communication and For Maxicom and Site Control Primary Communication**
 - IQSSRADIO: 900 MHz Spread Spectrum radio – Allows communication between Central Computer and IQ Direct or IQ Server Satellite, and between IQ Server Satellite and IQ Client Satellites. Also can be used for communication between Maxicom Central Computer and CCU or Site Satellite, between Site Control Central Computer and TWI / SDI or LDI, and between a Central Computer and weather station
- **Radios – For Maxicom and Site Control Secondary Communication**
 - RADTN9MIB: license free wireless radio (902-928 MHz) between CCU and satellites
 - RB-SS-TN9B: Plastic Case Radio – License free radio to communicate to IQ Satellites

ANEMOMETER Wind Sensor

Maxicom^{2®}, SiteControl, IQ™, ESP-LXME, ESP-LXD

Features

- Accurate wind speed measurement for high-wind shutdown or interrupt of irrigation programs
- Heavy-duty metal mounting bracket
- Requires PT322 or PT3002 Pulse Transmitter for use with Maxicom² System
- Requires PT3002 Pulse Transmitter for use with SiteControl, IQ Systems, ESP-LXME, ESP-LXD

Model

- ANEMOMETER



ANEMOMETER



Low Volume Irrigation

Major Products					
Primary Applications	Single outlet emitter	Multi-outlet emitter	Bubbler emitter	Spray	Inline emitter (Dripline)
Thick bushes		•	•	•	•
Single bush	•				
Small trees	•	•			•
Large trees	•	•	•		
Ground cover		•		•	•
Annuals			•	•	•
Mixed vegetation	•	•			•
Potted plants	•		•	•	•
Hedges	•				•
Vegetation on slopes	•				•

Water Saving Water Saving Tips

- Drip products deliver water directly to the root zone. Use dripline for dense plantings where it's cost effective to distribute low-volume water evenly. Use a system of precise emitter devices for sparse plantings where it's cost effective to separately irrigate each plant.
- Use drip to eliminate overspray, and you'll eliminate waste. Eliminate unsightly spray stains on buildings and fences. Eliminate soil erosion, water runoff, and potential litigation. Walkways, roads, and vehicles stay dry.
- Ask your tax advisor about capital depreciation when calculating your return-on-investment for a drip retrofit. Save water, and save money at the same time.

- Introduction
- Spray Nozzles
- Impact Sprinklers
- Rotors
- Valves
- Controllers
- Central Controls
- Low Volume Irrigation
- Pumps & Filtration
- Resources

LFX300 Low Flow Sprinkler



The Rain Bird® LFX Low Flow Sprinkler was designed and built with efficiency in mind. The small footprint of the low-volume LFX300 offers unparalleled operational flexibility with both interchangeable brake assemblies and nozzles. Featuring unmatched water distribution at all trajectories, the LFX300 is perfect for a wide variety of applications.

Features

- Simple three part sprinkler design includes body, nozzle, and brake assembly with attached deflector
- Each nozzle and brake assembly was designed to easily be changed with other sizes or outlet trajectories to maximize operational flexibility
- Easy in-field maintenance with simple snap-in-place nozzle and brake assembly including visual indicators to ensure correct positioning
- Engineered to provide superior distribution uniformity for low volume applications in either an under-tree or over-head configuration
- Constructed of engineered thermoplastic materials for durability and weather resistance
- Color coded nozzles and deflectors for easy identification
- Two flow control nozzle options for consistent flow of water

Applications

- For Agriculture, Greenhouse, and Nursery applications which require a small footprint or low-volume sprinkler
- Optimized for a wide variety of applications including orchard and field irrigation, environmental control, crop cooling, and dust control

Accessories

- Stake options include: steel, fiberglass, or preassembled PVC assemblies
- 5mm feedtube configurations include: coil for custom installation, precut pieces in 30" (76.2cm) or 42" (106.7cm) length with barb preinstalled (with or without stake adapter installed)
- Variety of adapters for increased application flexibility

Specifications

Operating Range:

- Pressure: 25 to 50 psi (1.72 to 3.45 bar)
- Flow rate: 0.28 to 0.73 gpm (62 to 161 l/h)
- Radius of throw: 18 to 25 feet (5.5 to 7.6 meters)

Sprinkler Body Options:

- 1/2" (13mm) NPT male pipe thread
- Female ACME thread

Deflector Trajectory Outlets:

- Deflector preassembled in brake assembly
- 9° Red
- 9° White
- 15° Orange

Nozzle Sizes:

- 40 Light Blue (0.040", 1.02mm)
- 45 Light Purple (0.045", 1.14mm)
- 50 Dark Green (0.050", 1.27mm)
- 55 Light Yellow (0.055", 1.40mm)
- 60 Light Red (0.060", 1.52mm)
- F1 0.35 gpm (79.5 l/h) Flow Control
- F2 0.50 gpm (113.6 l/h) Flow Control

Packaging Data

- Sprinkler can be ordered assembled from the factory or a la carte for ultimate field flexibility
- Assembled sprinklers can be ordered in increments of 1; case quantity of 400
- Sprinkler parts vary in order increment and case quantity;
- Nozzles: Order increment of 200; case quantity of 1,600. Brake Assemblies: Order increment of 200; case quantity of 4,000. Bodies: Order increment of 1; case quantity of 400
- Accessories and mounting options vary in order increment; call for details

System Components



Nozzle
 Light Blue 40, 0.040" (1.01mm), Item 18116940B
 Light Purple 45, 0.045" (1.14mm), Item 18116945P
 Dark Green 50, 0.050" (1.27mm), Item 18116950G
 Light Yellow 55, 0.055" (1.40mm), Item 18116955Y
 Light Red 60, 0.060" (1.52mm), Item 18116960R
 F1 0.35gpm (79.5 l/h) Flow Control, Item 18212535
 F2 0.50gpm (113.6 l/h) Flow Control, Item 18212550

Brake Assembly with Deflector
 9° Red, Item 1804999R
 9° White Item 1804999W
 15° Orange, Item 18049915O

Body
 Female ACME, Item 180502
 1/2" (12.7mm) Male NPT, Item 180474

How to Order LFX300 Low Flow Sprinkler

LF03

Core Family
 LF03 - LFX300 Sprinkler

N

Body
 A - Female ACME Thread
 N - 1/2" Male NPT Thread

09R




Deflector
 09R - 9° Red
 09W - 9° White
 15O - 15° Orange

40

Nozzle
 40 - Light Blue
 45 - Light Purple
 50 - Dark Green
 55 - Light Yellow
 60 - Light Red
 F1 - FC 0.35 gpm
 F2 - FC 0.50 gpm

LFX300 Performance Data

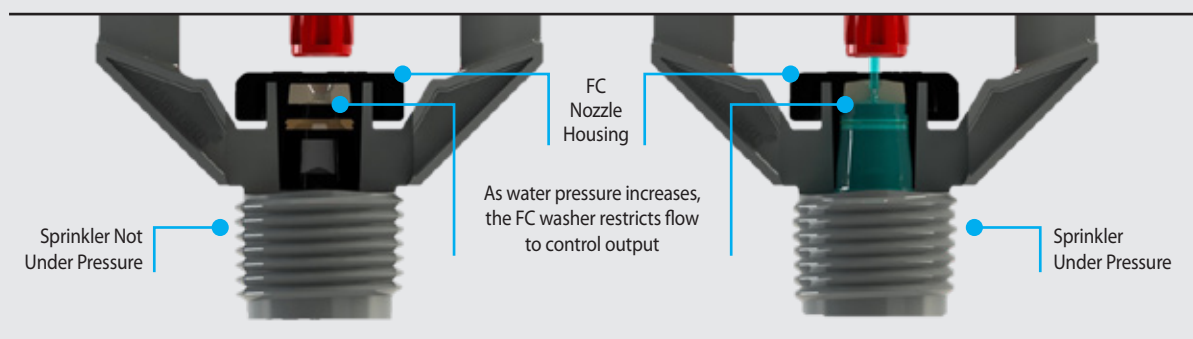
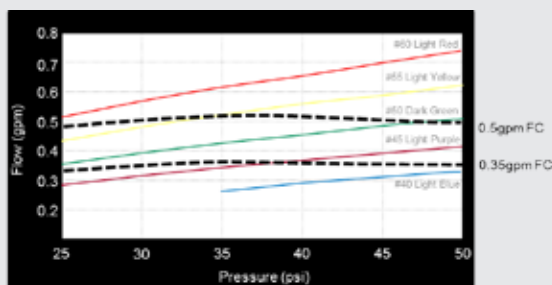
US Measurements

Matrix of Assemblies				Flow Rates at Standard Pressure						Model Number	
Brake Assembly with Deflector	Nozzle	Stream Height	GALLONS PER MINUTE (gpm)						Part Number		
			Throw Radius (feet)						NPT Thread	ACME Thread	
			25 psi	30 psi	35 psi	40 psi	45 psi	50 psi			
	Light Blue #40 0.040" (1.016 mm) Item# 18116940B	20-23 in (50.8-58.4cm)	—	—	0.28	0.30	0.32	0.34	LF03N09R40	LF03A09R40	
	Light Purple #45 0.045" (1.143 mm) Item# 18116945P	19-25 in (48.3-63.5cm)	0.29	0.32	0.35	0.37	0.39	0.41	LF03N09R45	LF03A09R45	
	Dark Green #50 0.050" (1.270 mm) Item# 18116950G	21-29 in (53.3-73.6cm)	0.36	0.40	0.43	0.46	0.48	0.51	LF03N09R50	LF03A09R50	
9 Degree Red 1804999R	FC1 0.35gpm (79.5 l/h) Item# 1821253S	20-25 in (50.8 - 63.5cm)	0.35						LF03N09RF1	LF03A09RF1	
			18						A85301D9RF1	A85303D9RF1	
	Dark Green #50 0.050" (1.270 mm) Item# 18116950G	20-24 in (50.8-61cm)	—	—	0.43	0.46	0.48	0.51	LF03N09W50	LF03A09W50	
	Light Yellow #55 0.055" (1.397 mm) Item# 18116955Y	17-25 in (43.2-63.5cm)	0.44	0.48	0.52	0.55	0.59	0.62	LF03N09W55	LF03A09W55	
	Light Red #60 0.060" (1.524 mm) Item# 18116960R	17-25 in (43.2-63.5cm)	0.51	0.56	0.61	0.65	0.69	0.73	LF03N09W60	LF03A09W60	
9 Degree White 1804999W	FC2 0.50 gpm (113.6 l/h) Item# 18212550	20-25 in (50.8-63.5cm)	0.50						LF03N09WF2	LF03A09WF2	
			18						A85301D9WF2	A85303D9WF2	
	Dark Green #50 0.050" (1.270 mm) Item# 18116950G	34-39 in (86.4-99.1cm)	—	—	0.43	0.46	0.48	0.51	LF03N15O50	LF03A15O50	
	Light Yellow #55 0.055" (1.397 mm) Item# 18116955Y	36-42 in (91.4-106.7cm)	0.44	0.48	0.52	0.55	0.59	0.62	LF03N15O55	LF03A15O55	
	Light Red #60 0.060" (1.524 mm) Item# 18116960R	33-41 in (83.8-104.1cm)	0.51	0.56	0.61	0.65	0.69	0.73	LF03N15O60	LF03A15O60	
15 Degree Orange 18049915O	FC2 0.50 gpm (113.6 l/h) Item# 18212550	30-42 in (76.2-106.7 cm)	0.50						LF03N15OF2	LF03A15OF2	
			20						A85301D15F2	A85303D15F2	

























Upgrade to Flow Control (FC) Nozzles to Regulate Application Across Pressure Range

LFX FC Nozzles control water flow over pressure variation to provide a consistent application rate along laterals or across terrain variation.

- Two flow rates available: 0.35gpm (79.5 l/h) or 0.50 gph (113.6 l/h)
- Operating range from 25 to 50 psi (1.72 to 3.45 bar)
- Flow control mechanism contained in nozzle housing; installs in standard body. No special tools required.



Metric Measurements

Matrix of Assemblies												
Brake Assembly with Deflector	Nozzle	Stream Height	Flow Rates at Standard Pressure								Model Number	
			LITERS PER HOUR (l/h)								Part Number	
			Throw Radius (meter)								NPT Thread	ACME Thread
			1.75 bar	2 bar	2.25 bar	2.5 bar	2.75 bar	3.0 bar	3.25 bar			
 9 Degree Red 1804999R	Light Blue #40 0.040" (1.016 mm) Item# 18116940B		20-23 in (50.8-58.4cm)	–	–	62	65	68	71	74	LF03N09R40	LF03A09R40
	Light Purple #45 0.045" (1.143 mm) Item# 18116945P		19-25 in (48.3-63.5cm)	67	72	76	80	84	88	91	A85301D9R40	A85303D9R40
	Dark Green #50 0.050" (1.270 mm) Item# 18116950G		21-29 in (53.3-73.6cm)	6.1	6.4	6.7	6.7	6.7	6.7	6.4	A85301D9R45	A85303D9R45
 9 Degree White 1804999W	FC1 0.35gpm (79.5 l/h) Item# 1821253S		20-25 in (50.8 - 63.5cm)	79.5						LF03N09RF1	LF03A09RF1	
	Dark Green #50 0.050" (1.270 mm) Item# 18116950G		20-24 in (50.8-61cm)	–	–	94	99	104	108	113	A85301D9RF1	A85303D9RF1
	Light Yellow #55 0.055" (1.397 mm) Item# 18116955Y		17-25 in (43.2-63.5cm)	6.7	6.7	6.7	6.7	6.7	7.0	7.0	LF03N09W50	LF03A09W50
 15 Degree Orange 18049915O	Light Red #60 0.060" (1.524 mm) Item# 18116960R		17-25 in (43.2-63.5cm)	100	107	114	120	126	131	137	A85301D9W55	A85303D9W55
	Light Red #60 0.060" (1.524 mm) Item# 18116960R		17-25 in (43.2-63.5cm)	6.4	6.7	7.3	7.3	7.0	7.6	7.6	LF03N09W60	LF03A09W60
	FC2 0.50 gpm (113.6 l/h) Item# 1821255O		20-25 in (50.8-63.5cm)	118	126	134	141	148	154	161	A85301D9W60	A85303D9W60
 15 Degree Orange 18049915O	Dark Green #50 0.050" (1.270 mm) Item# 18116950G		34-39 in (86.4-99.1cm)	113.6						LF03N09WF2	LF03A09WF2	
	Light Yellow #55 0.055" (1.397 mm) Item# 18116955Y		36-42 in (91.4-106.7cm)	–	–	94	99	104	108	113	A85301D9WF2	A85303D9WF2
	Light Red #60 0.060" (1.524 mm) Item# 18116960R		33-41 in (83.8-104.1cm)	7.3	7.3	7.3	7.3	7.3	7.3	7.3	LF03N15O50	LF03A15O50
 15 Degree Orange 18049915O	Light Red #60 0.060" (1.524 mm) Item# 18116960R		33-41 in (83.8-104.1cm)	100	107	114	120	126	131	137	A85301D1555	A85303D1555
	Light Red #60 0.060" (1.524 mm) Item# 18116960R		33-41 in (83.8-104.1cm)	7.6	7.3	7.3	7.3	7.3	7.3	7.3	LF03N15O60	LF03A15O60
	FC2 0.50 gpm (113.6 l/h) Item# 1821255O		30-42 in (76.2-106.7 cm)	7.3	7.6	7.6	7.6	7.6	7.3	7.3	A85301D1560	A85303D1560
 15 Degree Orange 18049915O	Light Red #60 0.060" (1.524 mm) Item# 18116960R		33-41 in (83.8-104.1cm)	113.6						LF03N15OF2	LF03A15OF2	
	Light Red #60 0.060" (1.524 mm) Item# 18116960R		33-41 in (83.8-104.1cm)	–	–	94	99	104	108	113	A85301D15F2	A85303D15F2
	FC2 0.50 gpm (113.6 l/h) Item# 1821255O		30-42 in (76.2-106.7 cm)	6.2	6.2	6.2	6.2	6.2	6.2	6.2	LF03N15OF2	LF03A15OF2

Mounting Options and Accessories

A variety of mounting options are available to support the LFX300 Low Flow Sprinkler. These interchangeable, inexpensive, and simple to use mounting options are supported with installation tools. To add flexibility to this already flexible sprinkler, mounting accessories also feature Rain Bird® extruded 5mm feedtube in two pre-cut lengths or a full coil for complete customization.



Adapter Options



Universal Stake Adapter

Interchangeable stake adapter for use with small diameter (1/4" or 5/16") or large diameter (1/2" or 3/4") stakes.

Item #181179



ACME to Slip Adapter

Converts female ACME connection to slip fit; allows adapter to be glued to stake. ACME to 1/2" or 3/4". Grey.

Item #181177

ACME to 20mm or 25mm. White.
Item #181178



ACME to 1/2" MNPT Adapter

Converts Female ACME connection to 1/2" MNPT.

Item #181175

1/2" (13mm) PVC Stake Assembly

Factory assembled with, PVC stake, 5mm feedtube, and adapter

30" (76cm) Lead

Item# 18209130

42" (106.7cm) Lead

Item# 18209142



Sprinkler with Female ACME Connection

(sold separately)

Universal Stake Adapter

Item# 181179

5mm Feedtube

Length Options:
30" (76cm)
42" (106.7cm)

PVC Stake

Diameter: 1/2" (13mm)
Length: 21" (53.3cm)
Exit Hole: 9.5" (24cm) from top

5mm/10mm Universal Barb

Item# 181182

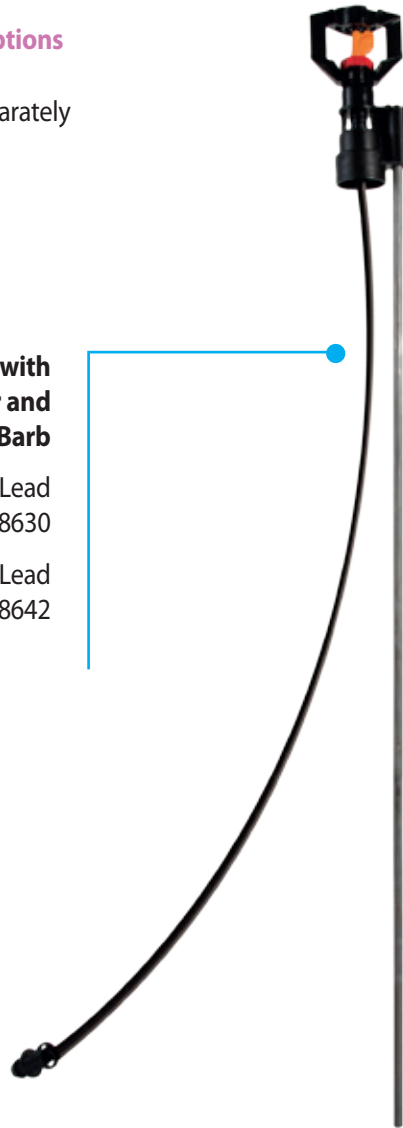
24" (61CM) Long Stake Options

Stake, feedtube assembly, and sprinkler each sold separately

Feedtube Assembly with Universal Stake Adapter and Universal Barb

With 30" (76cm) Lead
Item# 18208630

With 42" (106.7cm) Lead
Item# 18208642



Sprinkler with Female ACME Connection
(sold separately)

24" (61cm) Long Stake Options

Steel Stake
Diameter: 1/4" (6.4mm)
Item# 18208S124

Steel Stake
Diameter: 5/16" (8mm)
Item# 18208S224

Fiberglass Stake
Diameter: 1/4" (6.4mm)
Item# 18208F124

Fiberglass Stake
Diameter:
5/16" (8mm)
Item# 18208F224

Distribution Tubing Options

Precut Tube, Assembled with Universal Stake Adapter & Barb

Precut Tube, Assembled with Universal Stake Adapter & Barb

30" (76cm) Lead
Item# 18208630

42" (106.7cm) Lead
Item# 18208642

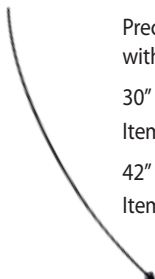


Precut Tube, Assembled with Universal Barb

Precut Tube, Assembled with Universal Barb

30" (76cm) Lead
Item# 18208530

42" (106.7cm) Lead
Item# 18208542



5MM Distribution Tubing

OD: 0.30" (7.62mm)
ID: 0.20" (5.08mm)

Wall Thickness:
0.05" (1.27mm)

Coil Length:
500' (152.4m)

Model# LFXT550
Item# 18208750





The Rain Bird® LF™ Series Sprinkler is built to withstand the harsh conditions of a variety of agricultural applications. Leveraging the advantages of an impact sprinkler, the LF Series Sprinkler offers full circle operation with stream height flexibility to deliver precise, uniform, and unrivaled water distribution.

Features

- Weighted drive unit increases dwell time between stream interruptions to maximize throw distance
- Precision Jet (PJ) spoon directs water toward the field to prevent erosion at the riser base
- Deflector's made of engineered thermoplastic for wear resistance and dimensional stability and designed with break-up features to optimize uniformity
- Consistent performance in wide temperature range: ideal for cooling or frost protection
- Snap-in-place color-coded nozzles and deflectors for simple setup and easy field identification – no tools required
- Sprinkler can be purchased assembled or separately and comprised of four simple parts: drive unit, body (ACME or NPT), deflector, and nozzle. Anti-theft bodies sold separately.

Specifications

Operating pressure:

- 25 to 60 psi (1.7 to 4.2 bar)

Flow range:

- 0.77 to 6.82 gpm (175 to 1,549 l/h)

Throw Radius Range

- 22 to 50 ft. (6.6 to 15.2m)

Stream Height Range:

- 12 to 120 in. (30 to 305cm)

Sprinkler Body Options:

- ½" (13mm) NPT male pipe thread
- 23mm ACME male thread (requires special adapter)
- Anti-theft bodies available

Deflector Trajectory Outlets:

- Deflector trajectories vary by sprinkler model, see performance charts for details
- LF800 available with 6°, 9°, 12°, or 15°
- LF1200 available with 6°, 10°, 12°, 16°, 17°, or 21°
- LF2400 available with 10°, 13°, 15°, or 22°
- LF2400 Long Range available with 27° only

Nozzle Sizes:

- Nozzle sizes vary by sprinkler model, see performance charts for details
- LF800 includes nozzles ranging in size from 0.070 - 0.086" (1.79 - 2.18mm)
- LF1200 includes nozzles ranging in size from 0.078 - 0.117" (1.98 - 2.97mm)
- LF2400 includes nozzles ranging in size from 0.109 - 0.141" (2.76 - 3.57mm)
- LF2400 Long Range includes nozzles ranging in size from 0.141 - 0.172" (3.57 - 4.37mm)





Packaging Data

- Assembled sprinklers can be ordered in increments of 1; case quantity of 100
- Nozzles and deflectors can be ordered in increments of 200 pieces; case quantity of nozzles is 2,000, case quantity of deflectors is 1,600
- Unassembled Body and Drive Units can be ordered in increments of 1; case quantity of 100

Accessories

- Adapters available to convert ACME body to ½" or ¾" Male NPT
- Adapters available to convert ACME to female slip including: ½" and ¾" slip or 20mm and 25mm slip
- Edge guard, splash guard, and stream splitter available

How to Order LF Series Sprinkler

Deflector	Nozzle	Stream Height (in.)	Flow Rate at Standard Pressures (gpm)									Model Number Item Number	
			Throw Radius at Standard Pressure (feet)									NPT	ACME
			25 psi	30 psi	35 psi	40 psi	45 psi	50 psi	55 psi	60 psi			
6 Degree Dark Purple 118285 	Orange (11809844) 44 Drill, 0.086" 	14-20		1.17	1.26	1.35	1.43	1.51	1.59	1.67	LF12N06P44	LF12A06P44	
				23	23	25	25	25	26	26	A85001B0644	A85003B0644	
	Purple (11809806) 3/32", 0.094" 	14-21	1.27	1.39	1.5	1.61	1.71	1.8	1.89	1.98	LF12N06P06	LF12A06P06	
			22	24	24	26	26	28	26	27	A85001B0606	A85003B0606	
	Yellow (11809838) 38 Drill, 0.102" 	16-21	1.49	1.63	1.77	1.89	2.00	2.12			LF12N06P38	LF12A06P38	
			23	25	25	27	27	28			A85001B0638	A85003B0638	

Part number for Deflector Only Part number for Nozzle Only Empty boxes represent application combinations not recommended by Rain Bird. Part number and model number for fully assembled sprinkler with NPT body Part number and model number for fully assembled sprinkler with ACME body



The LF™ Series Sprinkler family can be ordered fully assembled or as individual components. Utilize Rain Bird's FREE Uniformity Pro™ software to make your sprinkler selections, or contact a Rain Bird dealer for assistance.

- To place an order in the United States call (800) HELLO AG (435-5624) or, use the Toll-FREE Fax Ordering number at (800) 843-4162.
- Customers outside the U.S. can contact the International Customer Service Department at (520) 878-2400 to place an order.





System Components



Low Volume Irrigation





Optional: Anti-theft (AT) body features screws to add additional security in the field.

Part Numbers & Descriptions for Ordering Separately

		Description	Recommended Usage	Order Increment	Item Number
DEFLECTOR		6 Degree Dk. Purple	LF1200	200	118285
		6 Degree Yellow	LF800	200	118582
		9 Degree Purple	LF800	200	118601
		10 Degree Lime	LF2400	200	118599
		10 Degree White	LF1200	200	118231
		12 Degree Copper	LF800	200	118575
		12 Degree Cyan Blue	LF1200	200	118262
		12 Degree Pink	LF1200	200	118354
		13 Degree Maroon	LF2400	200	118600
		15 Degree Brown	LF800	200	118586
		15 Degree Tangerine	LF2400	200	118583
		16 Degree Red	LF1200	200	118240
		17 Degree Powder Blue	LF1200	200	118226
		21 Degree Olive Green	LF1200	200	118339
		22 Degree Dark Green	LF2400	200	118585
27 Degree Black	LF2400 LR	200	118602		
NOZZLE		White, 50 Drill, 0.070", 1.79mm	LF800	200	11809850
		Blue, 5/64", 0.078", 1.98mm	LF800/LF1200	200	11809805
		Orange, 44 Drill, 0.086", 2.18mm	LF800/LF1200	200	11809844
		Purple, 3/32", 0.094", 2.39mm	LF1200	200	11809806
		Yellow, 38 Drill, 0.102", 2.59mm	LF1200	200	11809838
		Green, 7/64", 0.109", 2.76mm	LF1200/LF2400	200	11809807
		Tan, 30 Drill, 0.117", 2.97mm	LF1200/LF2400	200	11809830
		Red, 1/8", 0.125", 3.18mm	LF2400	200	11809808
		Black, 29 Drill, 0.133", 3.38mm	LF2400	200	11809829
		Silver, 9/64", 0.141", 3.57mm	LF2400/LF2400 LR	200	11809809
		Brown, 5/32", 0.156", 3.97mm	LF2400 LR	200	11809810
		Dark Grey, 11/64", 0.172", 4.37mm	LF2400 LR	200	11809811
DRIVE UNIT		Drive Only	LF800	1	118347
		Drive Only	LF1200	1	118201
		Drive Only	LF2400/LF2400 LR	1	118572
		Drive with NPT Body	LF800	1	A85100
		Drive with NPT Body	LF1200	1	A85000
		Drive with NPT Body	LF2400/LF2400 LR	1	A85200
		Drive with Anti-Theft ACME Body	LF800	1	A85100AT
		Drive with Anti-Theft ACME Body	LF1200	1	A85000AT
		Drive with Anti-Theft ACME Body	LF2400/LF2400 LR	1	A85200AT
BODIES		NPT Body	Any	1	118134
		ACME Body (adapter required)	Any	1	118311
		ACME Anti-Theft Body (adapter required)	Any	1	118310
		NPT Body with LF800 Drive	LF800	1	A85100
		NPT Body with LF1200 Drive	LF1200	1	A85000
		NPT Body with LF2400 Drive	LF2400/LF2400 LR	1	A85200
		Anti-Theft ACME Body with LF800 Drive	LF800	1	A85100AT
		Anti-Theft ACME Body with LF1200 Drive	LF1200	1	A85000AT
		Anti-Theft ACME Body with LF2400 Drive	LF2400/LF2400 LR	1	A85200AT
		Anti-Theft Screwdriver	Anti-Theft Bodies	1	118317





LF800 Performance Data

US Measurements

Matrix of Assemblies												
Deflector	Nozzle	Stream Height (in.)	Flow Rate at Standard Pressures (gpm)								Model Number	
			Throw Radius at Standard Pressure (feet)								NPT	ACME
			25 psi	30 psi	35 psi	40 psi	45 psi	50 psi	55 psi	60 psi		
	White (11809850) 50 Drill .070"	14-21	0.77	0.83	0.89	0.96	1.01	1.06	1.11	LF08N06Y50	LF08A06Y50	
			23	24	25	25	25	26	26	A85101A0650	A85103A0650	
	Blue (11809805) 5/64" .078"	12-21	0.88	0.97	1.05	1.12	1.19	1.25	1.31	1.37	LF08N06Y05	LF08A06Y05
			23	24	25	26	26	27	27	27	A85101A0605	A85103A0605
Orange (11809844) 44 Drill .086"	14-22	1.07	1.17	1.26	1.35	1.43	1.51	1.59	1.67	LF08N06Y44	LF08A06Y44	
		23	25	26	27	28	28	28	29	A85101A0644	A85103A0644	
	White (11809850) 50 Drill .070"	17-25	0.77	0.83	0.89	0.96	1.01	1.06	1.11	LF08N09P50	LF08A09P50	
			25	25	26	27	27	27	27	A85101A0950	A85103A0950	
	Blue (11809805) 5/64" .078"	15-28	0.88	0.97	1.05	1.12	1.19	1.25	1.31	1.37	LF08N09P05	LF08A09P05
			25	26	27	28	28	28	28	29	A85101A0905	A85103A0905
	White (11809850) 50 Drill .070"	26-35	0.77	0.83	0.89	0.96	1.01	1.06	1.11	LF08N12C50	LF08A12C50	
			27	28	29	29	29	29	29	A85101A1250	A85103A1250	
	Blue (11809805) 5/64" .078"	25-38	0.88	0.97	1.05	1.12	1.19	1.25	1.31	1.37	LF08N12C05	LF08A12C05
			27	28	30	30	31	31	31	31	A85101A1205	A85103A1205
Orange (11809844) 44 Drill .086"	26-41	1.07	1.17	1.26	1.35	1.43	1.51	1.59	1.67	LF08N12C44	LF08A12C44	
		28	30	31	32	32	33	33	34	A85101A1244	A85103A1244	
	White (11809850) 50 Drill .070"	34-45	0.77	0.83	0.89	0.96	1.01	1.06	1.11	LF08N15B50	LF08A15B50	
			28	29	30	30	30	30	31	A85101A1550	A85103A1550	
	Blue (11809805) 5/64" .078"	32-50	0.88	0.97	1.05	1.12	1.19	1.25	1.31	1.37	LF08N15B05	LF08A15B05
			28	30	31	31	33	33	33	33	A85101A1505	A85103A1505
Orange (11809844) 44 Drill .086"	28-55	1.07	1.17	1.26	1.35	1.43	1.51	1.59	1.67	LF08N15B44	LF08A15B44	
		28	31	32	33	33	34	34	34	A85101A1544	A85103A1544	

Sprinkler riser must be stable to achieve stated performance. Performance data based on 12 inch riser. Standard ACME body listed. Call for Item Numbers with Anti-Theft ACME body.

Metric Measurements

Matrix of Assemblies													
Deflector	Nozzle	Stream Height (cm)	Flow Rate at Standard Pressures (l/h)								Model Number		
			Throw Radius at Standard Pressure (meter)								NPT	ACME	
			1.7 bar	2.1 bar	2.4 bar	2.8 bar	3.1 bar	3.5 bar	3.8 bar	4.2 bar			
	White (11809850) 50 Drill .070"	35-53		175	188	202	218	229	241	252	LF08N06Y50	LF08A06Y50	
				6.9	7.2	7.5	7.5	7.5	7.8	7.8	A85101A0650	A85103A0650	
	Blue (11809805) 5/64" .078"	30-53		200	220	238	254	270	284	298	311	LF08N06Y05	LF08A06Y05
				6.9	7.2	7.5	7.8	8.1	8.1	8.1	8.1	A85101A0605	A85103A0605
	Orange (11809844) 44 Drill .086"	35-55		243	266	286	307	325	343	361	379	LF08N06Y44	LF08A06Y44
				6.9	7.5	7.8	8.1	8.4	8.4	8.4	8.7	A85101A0644	A85103A0644
	White (11809850) 50 Drill .070"	43-63		175	188	202	218	229	241	252	LF08N09P50	LF08A09P50	
				7.5	7.5	7.8	8.1	8.1	8.1	8.1	A85101A0950	A85103A0950	
	Blue (11809805) 5/64" .078"	38-71		200	220	238	254	270	284	298	311	LF08N09P05	LF08A09P05
				7.5	7.8	8.1	8.4	8.4	8.4	8.4	8.7	A85101A0905	A85103A0905
	White (11809850) 50 Drill .070"	66-88		175	188	202	218	229	241	252	LF08N12C50	LF08A12C50	
				8.1	8.4	8.7	8.7	8.7	8.7	8.7	A85101A1250	A85103A1250	
	Blue (11809805) 5/64" .078"	63-96		200	220	238	254	270	284	298	311	LF08N12C05	LF08A12C05
				8.1	8.4	9.0	9.0	9.3	9.3	9.3	9.3	A85101A1205	A85103A1205
	Orange (11809844) 44 Drill .086"	66-104		243	266	286	307	325	343	361	379	LF08N12C44	LF08A12C44
				8.4	9.0	9.3	9.6	9.6	9.9	9.9	10.2	A85101A1244	A85103A1244
	White (11809850) 50 Drill .070"	86-114		175	188	202	218	229	241	252	LF08N15B50	LF08A15B50	
				8.4	8.7	9.0	9.0	9.0	9.0	9.3	A85101A1550	A85103A1550	
	Blue (11809805) 5/64" .078"	81-127		200	220	238	254	270	284	298	311	LF08N15B05	LF08A15B05
				8.4	9.0	9.3	9.3	9.9	9.9	9.9	9.9	A85101A1505	A85103A1505
	Orange (11809844) 44 Drill .086"	71-139		243	266	286	307	325	343	361	379	LF08N15B44	LF08A15B44
				8.4	9.3	9.6	9.9	9.9	10.2	10.2	10.2	A85101A1544	A85103A1544

Sprinkler riser must be stable to achieve stated performance. Performance data based on 30cm riser. Standard ACME body listed. Call for Item Numbers with Anti-Theft ACME body.









LF1200 Performance Data

US Measurements

Matrix of Assemblies														
Deflector	Nozzle	Stream Height (in.)	Flow Rate at Standard Pressures (gpm)								Model Number Item Number			
			Throw Radius at Standard Pressure (feet)								NPT	ACME		
			25 psi	30 psi	35 psi	40 psi	45 psi	50 psi	55 psi	60 psi				
6 Degree Dark Purple 118285	Orange (11809844) 44 Drill, 0.086"		14-20		1.17	1.26	1.35	1.43	1.51	1.59	1.67	LF12N06P44	LF12A06P44	
					23	23	25	25	25	26	26	A85001B0644	A85003B0644	
	Purple (11809806) 3/32", 0.094"		14-21	1.27	1.39	1.5	1.61	1.71	1.8	1.89	1.98	LF12N06P06	LF12A06P06	
10 Degree White 118231	Yellow (11809838) 38 Drill, 0.102"		16-21	1.49	1.63	1.77	1.89	2.00	2.12			LF12N06P38	LF12A06P38	
					23	25	25	27	27	28		A85001B0638	A85003B0638	
	Blue (11809805) 5/64", 0.078"		19-29		0.97	1.05	1.12	1.19	1.25	1.31	1.37	LF12N10W06	LF12A10W06	
					25	26	26	27	27	27	27	A85001B1006	A85003B1006	
12 Degree Cyan Blue 118262	Orange (11809844) 44 Drill, 0.086"		24-33		1.17	1.26	1.35	1.43	1.51	1.59	1.67	LF12N10W44	LF12A10W44	
					25	27	27	28	27	30	29	A85001B1044	A85003B1044	
	Purple (11809806) 3/32", 0.094"		22-34	1.27	1.39	1.5	1.61	1.71	1.8	1.89	1.98	LF12N10W06	LF12A10W06	
					26	28	28	28	29	29	29	A85001B1006	A85003B1006	
12 Degree Pink 118354	Yellow (11809838) 38 Drill, 0.102"		24-34	1.49	1.63	1.77	1.89	2.00	2.12			LF12N10W38	LF12A10W38	
					27	29	28	31	30	30		A85001B1038	A85003B1038	
	Orange (11809844) 44 Drill, 0.086"		28-39		1.17	1.26	1.35	1.43	1.51	1.59	1.67	LF12N12B44	LF12A12B44	
					27	28	29	29	29	30	30	A85001B1244	A85003B1244	
16 Degree Red 118240	Purple (11809806) 3/32", 0.094"		28-40	1.27	1.39	1.5	1.61	1.71	1.8	1.89	1.98	LF12N12B12	LF12A12B12	
					27	29	30	31	31	31	32	32	A85001B1206	A85003B1206
	Yellow (11809838) 38 Drill, 0.102"		30-43	1.49	1.63	1.77	1.89	2.00	2.12			LF12N12B38	LF12A12B38	
					28	30	32	32	32	33		A85001B1238	A85003B1238	
17 Degree Powder Blue 118226	Tan (11809830) 30 Drill, 0.117"		34-44	1.97	2.17	2.35	2.53					LF12N12P30	LF12A12P30	
					31	33	34	35				A85001B1230	A85003B1230	
	Blue (11809805) 5/64", 0.078"		46-59				1.12	1.19	1.25	1.31	1.37	LF12N16R06	LF12A16R06	
							30	31	30	31	31	A85001B1606	A85003B1606	
21 Degree Olive Green 118339	Orange (11809844) 44 Drill, 0.086"		42-55		1.17	1.26	1.35	1.43	1.51	1.59	1.67	LF12N16R44	LF12A16R44	
					31	32	32	32	32	32	32	A85001B1644	A85003B1644	
	Purple (11809806) 3/32", 0.094"		40-55	1.27	1.39	1.50	1.61	1.71	1.80	1.89	1.98	LF12N16R06	LF12A16R06	
					30	31	32	33	33	34	34	A85001B1606	A85003B1606	
17 Degree Powder Blue 118226	Yellow (11809838) 38 Drill, 0.102"		40-55	1.49	1.63	1.77	1.89	2.00	2.12			LF12N16R38	LF12A16R38	
					30	31	33	33	33	32		A85001B1638	A85003B1638	
	Blue (11809805) 5/64", 0.078"		41-55		0.97	1.05	1.12	1.19	1.25	1.31	1.37	LF12N17B06	LF12A17B06	
					27	31	30	33	33	33	33	A85001B1706	A85003B1706	
17 Degree Powder Blue 118226	Orange (11809844) 44 Drill, 0.086"		49-60		1.17	1.26	1.35	1.43	1.51	1.59	1.67	LF12N17B44	LF12A17B44	
					31	33	34	34	34	34	33	A85001B1744	A85003B1744	
	Purple (11809806) 3/32", 0.094"		42-61	1.27	1.39	1.50	1.61	1.71	1.80	1.89	1.98	LF12N17B06	LF12A17B06	
					31	33	34	35	36	35	36	A85001B1706	A85003B1706	
21 Degree Olive Green 118339	Yellow (11809838) 38 Drill, 0.102"		43-61	1.49	1.63	1.77	1.89	2.00	2.12			LF12N17B38	LF12A17B38	
					32	34	35	36	36	37		A85001B1738	A85003B1738	
	Orange (11809844) 44 Drill, 0.086"		60-74		1.17	1.26	1.35	1.43	1.51	1.59	1.67	LF12N21G44	LF12A21G44	
					34	34	34	35	35	35	35	A85001B2144	A85003B2144	
21 Degree Olive Green 118339	Purple (11809806) 3/32", 0.094"		50-75	1.27	1.39	1.50	1.61	1.71	1.80	1.89	1.98	LF12N21G06	LF12A21G06	
					33	34	35	35	35	35	36	A85001B2106	A85003B2106	
	Yellow (11809838) 38 Drill, 0.102"		53-72	1.49	1.63	1.77	1.89	2.00	2.12			LF12N21G38	LF12A21G38	
					34	35	36	36	36	36		A85001B2138	A85003B2138	

Sprinkler riser must be stable to achieve stated performance. Performance data based on 12 inch riser. Standard ACME body listed. Call for Item Numbers with Anti-Theft ACME body.

























Metric Measurements

Matrix of Assemblies														
Deflector	Nozzle	Stream Height (cm)	Flow Rate at Standard Pressures (l/h)										Model Number	
			Throw Radius at Standard Pressure (meter)										Item Number	
			1.7 bar	2.1 bar	2.4 bar	2.8 bar	3.1 bar	3.5 bar	3.8 bar	4.2 bar	NPT	ACME		
	Orange (11809844) 44 Drill, 0.086"	35-50		266	286	307	325	343	361	379		LF12N06P44	LF12A06P44	
				6.9	6.9	7.5	7.5	7.8	7.8	7.8	A85001B0644	A85003B0644		
	Purple (11809806) 3/32", 0.094"	35-53	288	316	341	366	388	409	429	450	LF12N06P06	LF12A06P06		
	Blue (11809805) 5/64", 0.078"	48-73		220	238	254	270	284	298	311		LF12N10W06	LF12A10W06	
				7.5	7.8	7.8	8.1	8.1	8.1	8.1	A85001B1006	A85003B1006		
	Orange (11809844) 44 Drill, 0.086"	60-83	266	286	307	325	343	361	379	LF12N10W44	LF12A10W44			
	Purple (11809806) 3/32", 0.094"	55-86		288	316	341	366	388	409	429	450	LF12N10W06	LF12A10W06	
				7.8	8.4	8.4	8.4	8.7	8.7	8.7	A85001B1006	A85003B1006		
	Yellow (11809838) 38 Drill, 0.102"	60-86	338	370	402	429	454	481		LF12N10W38	LF12A10W38			
	Orange (11809844) 44 Drill, 0.086"	71-99		266	286	307	325	343	361	379		LF12N12B44	LF12A12B44	
				8.1	8.4	8.7	8.7	8.7	9.0	9.0	A85001B1244	A85003B1244		
	Purple (11809806) 3/32", 0.094"	71-101	288	316	341	366	388	409	429	450	LF12N12B12	LF12A12B12		
	Green (11809807) 7/64", 0.109"	76-104		384	420	454	488					LF12N12P07	LF12A12P07	
				9.0	9.6	9.9	10.2				A85001B1207	A85003B1207		
	Tan (11809830) 30 Drill, 0.117"	86-111	447	493	534	575				LF12N12P30	LF12A12P30			
	Blue (11809805) 5/64", 0.078"	116-149				254	270	284	298	311		LF12N16R06	LF12A16R06	
						9.0	9.3	9.0	9.3	9.3	A85001B1606	A85003B1606		
	Orange (11809844) 44 Drill, 0.086"	106-139	266	286	307	325	343	361	379	LF12N16R44	LF12A16R44			
	Purple (11809806) 3/32", 0.094"	101-139		288	316	341	366	388	409	429	450	LF12N16R06	LF12A16R06	
				9.0	9.3	9.6	9.9	9.9	10.2	10.2	A85001B1606	A85003B1606		
	Yellow (11809838) 38 Drill, 0.102"	101-139	338	370	402	429	454	481		LF12N16R38	LF12A16R38			
	Blue (11809805) 5/64", 0.078"	104-139		220	238	254	270	284	298	311		LF12N17B06	LF12A17B06	
				8.1	9.3	9.0	9.9	9.9	9.9	9.9	A85001B1706	A85003B1706		
	Orange (11809844) 44 Drill, 0.086"	124-152	266	286	307	325	343	361	379	LF12N17B44	LF12A17B44			
	Purple (11809806) 3/32", 0.094"	106-154		288	316	341	366	388	409	429	450	LF12N17B06	LF12A17B06	
				9.3	9.9	10.2	10.5	10.8	10.5	10.8	A85001B1706	A85003B1706		
	Yellow (11809838) 38 Drill, 0.102"	109-154	338	370	402	429	454	481		LF12N17B38	LF12A17B38			
	Orange (11809844) 44 Drill, 0.086"	152-187		266	286	307	325	343	361	379		LF12N21G44	LF12A21G44	
				10.2	10.2	10.2	10.5	10.5	10.5	10.5	A85001B2144	A85003B2144		
	Purple (11809806) 3/32", 0.094"	127-190	288	316	341	366	388	409	429	450	LF12N21G06	LF12A21G06		
	Yellow (11809838) 38 Drill, 0.102"	134-182		338	370	402	429	454	481		LF12N21G38	LF12A21G38		
				10.2	10.5	10.8	10.8	10.8	10.8		A85003B2138			

Sprinkler riser must be stable to achieve stated performance. Performance data based on 30cm riser. Standard ACME body listed. Call for Item Numbers with Anti-Theft ACME body.





LF2400 Performance Data

US Measurements

Matrix of Assemblies													
Deflector	Nozzle	Stream Height (in.)	Flow Rate at Standard Pressures (gpm)									Model Number	
			Throw Radius at Standard Pressure (feet)									NPT	ACME
			25 psi	30 psi	35 psi	40 psi	45 psi	50 psi	55 psi	60 psi			
10 Degree Lime 118599 	Green (11809807) 7/64", 0.109"		20-38	1.69	1.85	2.00	2.15	2.28	2.45	2.57	2.70	LF24N10L07	LF24A10L07
			27	29	30	32	33	34	34	35	A85201C1007	A85203C1007	
	Tan (11809830) 30 Drill, 0.117"		24-38	1.97	2.17	2.35	2.53	2.67	2.81	2.95	3.09	LF24N10L30	LF24A10L30
			29	30	32	33	34	35	35	36	A85201C1030	A85203C1030	
	Red (11809808) 1/8", 0.125"		42-41	2.24	2.50	2.70	2.89	3.07	3.20	3.36	3.52	LF24N10L08	LF24A10L08
	30		32	33	34	35	36	36	36	A85201C1008	A85203C1008		
Black (11809829) 29 Drill, 0.133"		30-48	2.52	2.81	3.03	3.25	3.45	3.60	3.75	3.88	LF24N10L29	LF24A10L29	
		30	32	33	35	35	36	36	37	A85201C1029	A85203C1029		
Silver (11809809) 9/64", 0.141"		32-44	2.93	3.27	3.53	3.78	4.02				LF24N10L09	LF24A10L09	
		32	34	35	36	37				A85201C1009	A85203C1009		
13 Degree Maroon 118600 	Green (11809807) 7/64", 0.109"		28-50	1.69	1.85	2.00	2.15	2.28	2.45	2.57	2.70	LF24N13M07	LF24A13M07
			30	31	32	33	34	34	35	35	A85201C1307	A85203C1307	
	Tan (11809830) 30 Drill, 0.117"		30-48	1.97	2.17	2.35	2.53	2.67	2.81	2.95	3.09	LF24N13M30	LF24A13M30
			31	32	33	36	35	36	36	36	A85201C1330	A85203C1330	
	Red (11809808) 1/8", 0.125"		32-49	2.24	2.50	2.70	2.89	3.07	3.20	3.36	3.52	LF24N13M08	LF24A13M08
	31		33	34	35	36	37	38	37	A85201C1308	A85203C1308		
Black (11809829) 29 Drill, 0.133"		33-50	2.52	2.81	3.03	3.25	3.45	3.60	3.75	3.88	LF24N13M29	LF24A13M29	
		32	33	34	35	36	36	37	37	A85201C1329	A85203C1329		
Silver (11809809) 9/64", 0.141"		38-54	2.93	3.27	3.53	3.78	4.02				LF24N13M09	LF24A13M09	
		33	36	37	38	39				A85201C1309	A85203C1309		
15 Degree Tangerine 118583 	Green (11809807) 7/64", 0.109"		32-50	1.69	1.85	2.00	2.15	2.28	2.45	2.57	2.70	LF24N15T07	LF24A15T07
			31	32	33	34	35	35	36	37	A85201C1507	A85203C1507	
	Tan (11809830) 30 Drill, 0.117"		28-50	1.97	2.17	2.35	2.53	2.67	2.81	2.95	3.09	LF24N15T30	LF24A15T30
			30	33	34	36	36	36	37	37	A85201C1530	A85203C1530	
	Red (11809808) 1/8", 0.125"		35-54	2.24	2.50	2.70	2.89	3.07	3.20	3.36	3.52	LF24N15T08	LF24A15T08
	32		34	35	37	37	37	37	37	A85201C1508	A85203C1508		
Black (11809829) 29 Drill, 0.133"		40-67	2.52	2.81	3.03	3.25	3.45	3.60	3.75	3.88	LF24N15T29	LF24A15T29	
		32	36	37	38	38	39	39	40	A85201C1529	A85203C1529		
Silver (11809809) 9/64", 0.141"		42-57	2.93	3.27	3.53	3.78	4.02				LF24N15T09	LF24A15T09	
		34	36	37	39	39				A85201C1509	A85203C1509		
22 Degree Dark Green 118585 	Green (11809807) 7/64", 0.109"		63-95	1.69	1.85	2.00	2.15	2.28	2.45	2.57	2.70	LF24N22G07	LF24A22G07
			36	38	38	38	39	39	39	39	A85201C2207	A85203C2207	
	Tan (11809830) 30 Drill, 0.117"		64-97	1.97	2.17	2.35	2.53	2.67	2.81	2.95	3.09	LF24N22G30	LF24A22G30
			36	38	39	40	41	41	41	42	A85201C2230	A85203C2230	
	Red (11809808) 1/8", 0.125"		67-100	2.24	2.50	2.70	2.89	3.07	3.20	3.36	3.52	LF24N22G08	LF24A22G08
	36		39	40	41	41	43	43	44	A85201C2208	A85203C2208		
Black (11809829) 29 Drill, 0.133"		74-120	2.52	2.81	3.03	3.25	3.45	3.60	3.75	3.88	LF24N22G29	LF24A22G29	
		38	41	42	42	43	44	44	44	A85201C2229	A85203C2229		
Silver (11809809) 9/64", 0.141"		72-102	2.93	3.27	3.53	3.78	4.02				LF24N22G09	LF24A22G09	
		39	40	43	44	45				A85201C2209	A85203C2209		

Sprinkler riser must be stable to achieve stated performance. Performance data based on 12 inch riser. Standard ACME body listed. Call for Item Numbers with Anti-Theft ACME body.





Metric Measurements

Matrix of Assemblies													
Deflector	Nozzle	Stream Height (cm)	Flow Rate at Standard Pressures (l/h)								Model Number Item Number		
			Throw Radius at Standard Pressure (meter)								NPT	ACME	
			1.7 bar	2.1 bar	2.4 bar	2.8 bar	3.1 bar	3.5 bar	3.8 bar	4.2 bar			
10 Degree Lime 118599 	Green (11809807) 7/64", 0.109"	50-96	384	420	454	488	518	556	584	613	LF24N10L07	LF24A10L07	
			8.1	8.7	9.0	9.6	9.9	10.2	10.2	10.5	A85201C1007	A85203C1007	
	Tan (11809830) 30 Drill, 0.117"	60-96	447	493	534	575	606	638	670	702	LF24N10L30	LF24A10L30	
			8.7	9.0	9.6	9.9	10.2	10.5	10.5	10.8	A85201C1030	A85203C1030	
	Red (11809808) 1/8", 0.125"	60-104	509	568	613	656	697	727	763	799	LF24N10L08	LF24A10L08	
			9.0	9.6	9.9	10.2	10.5	10.8	10.8	10.8	A85201C1008	A85203C1008	
Black (11809829) 29 Drill, 0.133"	76-121	572	638	688	738	784	818	852	881	LF24N10L29	LF24A10L29		
		9.0	9.6	9.9	10.5	10.5	10.8	10.8	11.1	A85201C1029	A85203C1029		
Silver (11809809) 9/64", 0.141"	81-111	665	743	802	858	913				LF24N10L09	LF24A10L09		
		9.6	10.2	10.5	10.8	11.1				A85201C1009	A85203C1009		
13 Degree Maroon 118600 	Green (11809807) 7/64", 0.109"	71-127	384	420	454	488	518	556	584	613	LF24N13M07	LF24A13M07	
			9.0	9.3	9.6	9.9	10.2	10.2	10.5	10.5	A85201C1307	A85203C1307	
	Tan (11809830) 30 Drill, 0.117"	76-121	447	493	534	575	606	638	670	702	LF24N13M30	LF24A13M30	
			9.3	9.6	9.9	10.8	10.5	10.8	10.8	10.8	A85201C1330	A85203C1330	
	Red (11809808) 1/8", 0.125"	81-127	509	568	613	656	697	727	763	799	LF24N13M08	LF24A13M08	
			9.3	9.9	10.2	10.5	10.8	11.1	11.4	11.1	A85201C1308	A85203C1308	
Black (11809829) 29 Drill, 0.133"	86-127	572	638	688	738	784	818	852	881	LF24N13M29	LF24A13M29		
		9.6	9.9	10.2	10.5	10.8	10.8	11.1	11.1	A85201C1329	A85203C1329		
Silver (11809809) 9/64", 0.141"	96-137	665	743	802	858	913				LF24N13M09	LF24A13M09		
		9.9	10.8	11.1	11.4	11.7				A85201C1309	A85203C1309		
15 Degree Tangerine 118583 	Green (11809807) 7/64", 0.109"	81-127	384	420	454	488	518	556	584	613	LF24N15T07	LF24A15T07	
			9.3	9.6	9.9	10.2	10.5	10.5	10.8	11.1	A85201C1507	A85203C1507	
	Tan (11809830) 30 Drill, 0.117"	71-127	447	493	534	575	606	638	670	702	LF24N15T30	LF24A15T30	
			9.0	9.9	10.2	10.8	10.8	10.8	11.1	11.1	A85201C1530	A85203C1530	
	Red (11809808) 1/8", 0.125"	88-137	509	568	613	656	697	727	763	799	LF24N15T08	LF24A15T08	
			9.6	10.2	10.5	11.1	11.1	11.1	11.1	11.1	A85201C1508	A85203C1508	
Black (11809829) 29 Drill, 0.133"	101-170	572	638	688	738	784	818	852	881	LF24N15T29	LF24A15T29		
		9.6	10.8	11.1	11.4	11.4	11.7	11.7	12.0	A85201C1529	A85203C1529		
Silver (11809809) 9/64", 0.141"	106-144	665	743	802	858	913				LF24N15T09	LF24A15T09		
		10.2	10.8	11.1	11.7	11.7				A85201C1509	A85203C1509		
22 Degree Dark Green 118585 	Green (11809807) 7/64", 0.109"	160-241	384	420	454	488	518	556	584	613	LF24N22G07	LF24A22G07	
			10.8	11.4	11.4	11.4	11.7	11.7	11.7	11.7	A85201C2207	A85203C2207	
	Tan (11809830) 30 Drill, 0.117"	162-246	447	493	534	575	606	638	670	702	LF24N22G30	LF24A22G30	
			10.8	11.4	11.7	12.0	12.3	12.3	12.3	12.6	A85201C2230	A85203C2230	
	Red (11809808) 1/8", 0.125"	170-254	509	568	613	656	697	727	763	799	LF24N22G08	LF24A22G08	
			10.8	11.7	12.0	12.3	12.3	12.9	12.9	13.2	A85201C2208	A85203C2208	
Black (11809829) 29 Drill, 0.133"	287-304	572	636	688	738	784	818	852	881	LF24N22G29	LF24A22G29		
		11.4	12.3	12.6	12.6	12.9	13.2	13.2	13.2	A85201C2229	A85203C2229		
Silver (11809809) 9/64", 0.141"	182-259	665	743	802	858	913				LF24N22G09	LF24A22G09		
		11.7	12.0	12.9	13.2	13.5				A85203C2209			





Sprinkler riser must be stable to achieve stated performance. Performance data based on 12 inch riser. Standard ACME body listed. Call for Item Numbers with Anti-Theft ACME body.

LF2400 Long Range Performance Data

US Measurements

Matrix of Assemblies														
Deflector	Nozzle	Stream Height (inch)	Flow Rate at Standard Pressures (gpm)										Model Number	
			Throw Radius at Standard Pressure (feet)										Item Number	
			25 psi	30 psi	35 psi	40 psi	45 psi	50 psi	55 psi	60 psi	1/2" NPT	ACME	ACME w/3/4" NPT ADAPTER	
	Silver (11809809) 9/64" 0.143" 	76-116	2.93	3.27	3.53	3.78	4.02	4.23	4.43	4.63	LF24N27B09	LF24A27B09	LF24A27B09A	
			38	40	40	42	44	45	46	46	A85201C2709	A85203C2709	A85223C2709	
	Brown (11809810) 5/32" 0.156" 	78-118	3.64	3.99	4.31	4.60	4.88	5.15	5.40	5.64	LF24N27B10	LF24A27B10	LF24A27B10A	
			38	40	42	44	44	45	46	46	A85201C2710	A85203C2710	A85223C2710	
	Dark Grey (11809811) 11/64" 0.172" 	80-120	4.40	4.82	5.21	5.57	5.91	6.23	6.53	6.82	LF24N27B11	LF24A27B11	LF24A27B11A	
			40	42	44	47	48	48	48	50	A85201C2711	A85203C2711	A85223C2711	

Metric Measurements

Matrix of Assemblies														
Deflector	Nozzle	Stream Height (cm)	Flow Rate at Standard Pressures (l/h)										Model Number	
			Throw Radius at Standard Pressure (m)										Item Number	
			1.7 bar	2.1 bar	2.4 bar	2.8 bar	3.1 bar	3.5 bar	3.8 bar	4.2 bar	1/2" NPT	ACME	ACME w/3/4" NPT ADAPTER	
	Silver (11809809) 9/64" 3.63mm 	193-295	665	743	802	858	913	961	1,006	1,052	LF24N27B09	LF24A27B09	LF24A27B09A	
			11.6	12.2	12.2	12.8	13.4	13.7	14.0	14.0	A85201C2709	A85203C2709	A85223C2709	
	Brown (11809810) 5/32" 3.97mm 	198-300	827	906	979	1,045	1,108	1,170	1,226	1,281	LF24N27B10	LF24A27B10	LF24A27B10A	
			11.6	12.2	12.8	13.4	13.4	13.7	14.0	14.0	A85201C2710	A85203C2710	A85223C2710	
	Dark Grey (11809811) 11/64" 4.37mm 	203-305	999	1,095	1,183	1,265	1,265	1,415	1,483	1,549	LF24N27B11	LF24A27B11	LF24A27B11A	
			12.2	12.8	13.4	14.3	14.6	14.6	14.6	15.2	A85201C2711	A85203C2711	A85223C2711	

ACME x 3/4" Male NPT Adapter - Part Number: 118297

ACME x 20mm x 25mm Female Slip Adapter - Part Number: 118294

Standard ACME body listed. Call for Item Numbers with Anti-Theft ACME body.

Adapters



ACME x Male NPT Adapter

- ACME x Male 1/2" NPT, Item 118292
- ACME x Male 3/4" NPT, Item 118297



ACME x Female Slip Adapter

- ACME x Male 1/2" x 3/4" Slip (Gray), Item 118328
- ACME x 20mm x 25mm Slip (White), Item 118294

Accessories



Edge Guard

Item 118366

The Rain Bird Edge Guard for LF Series Sprinklers provides you with the ability to keep water out of unwanted areas. Whether it is a road, a walkway, or just the end of the field, the Edge Guard takes the water from the sprinkler stream and redirects it back into the desired area.



Stream Splitter

Item 118259

Stream Splitters splits the water to avoid direct water streams into tree trunks, equipment, and general areas that do not need watering.

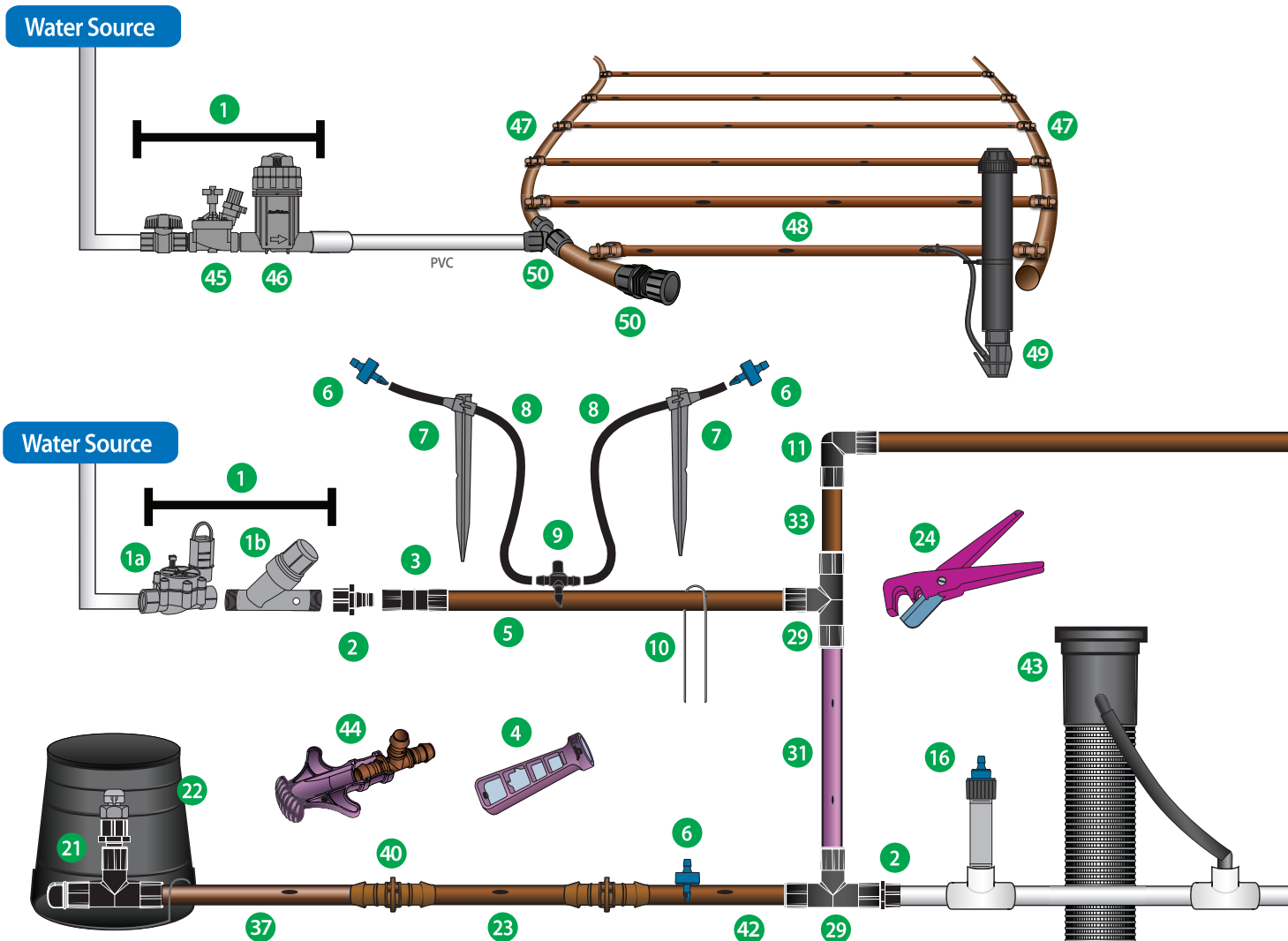


Splash Guard

Item 118337

The Splash Guard is an accessory for Rain Bird LF Series Sprinklers that allows you to change or clean nozzles without getting soaked while the sprinkler is in operation. It fits over the top of the sprinkler and directs water downwards while you remove and replace the sprinkler.

Low Volume Irrigation System Overview



- | | | |
|--------------------------------|-------------------------------|-------------------------------------|
| 1. Control Zone Kit | 8. XQ ¼" Distribution Tubing | 17. ¼" Self-Piercing Barb Connector |
| 1a. Low Flow Valve | 9. ¼" Barb Tee | 18. SQ Series Square Nozzle |
| 1b. Pressure Regulating Filter | 10. Tie-Down Stake | 19. Xeri-Pop |
| 2. Easy Fit Female Adapter | 11. Easy Fit Elbow | 20. Xeri-Bubbler SPYK |
| 3. Easy Fit Coupling | 12. Diffuser Bug Cap | 21. ARV050 Air Relief Valve Kit |
| 4. Xeriman Tool | 13. PC Emitter Diffuser Cap | 22. SEB-7X Emitter Valve Box |
| 5. XF Series Blank Tubing | 14. PC Module-1032 | 23. XFD Dripline |
| 6. Xeri-Bug Emitter | 15. PolyFlex Riser Assembly | 24. Tubing Cutter |
| 7. ¼" Tubing Stake | 16. Xeri-Bug Emitter - ½" FPT | 25. Xeri-Bird 8 |

Low Volume Irrigation

Targeted Watering with Low Volume Irrigation

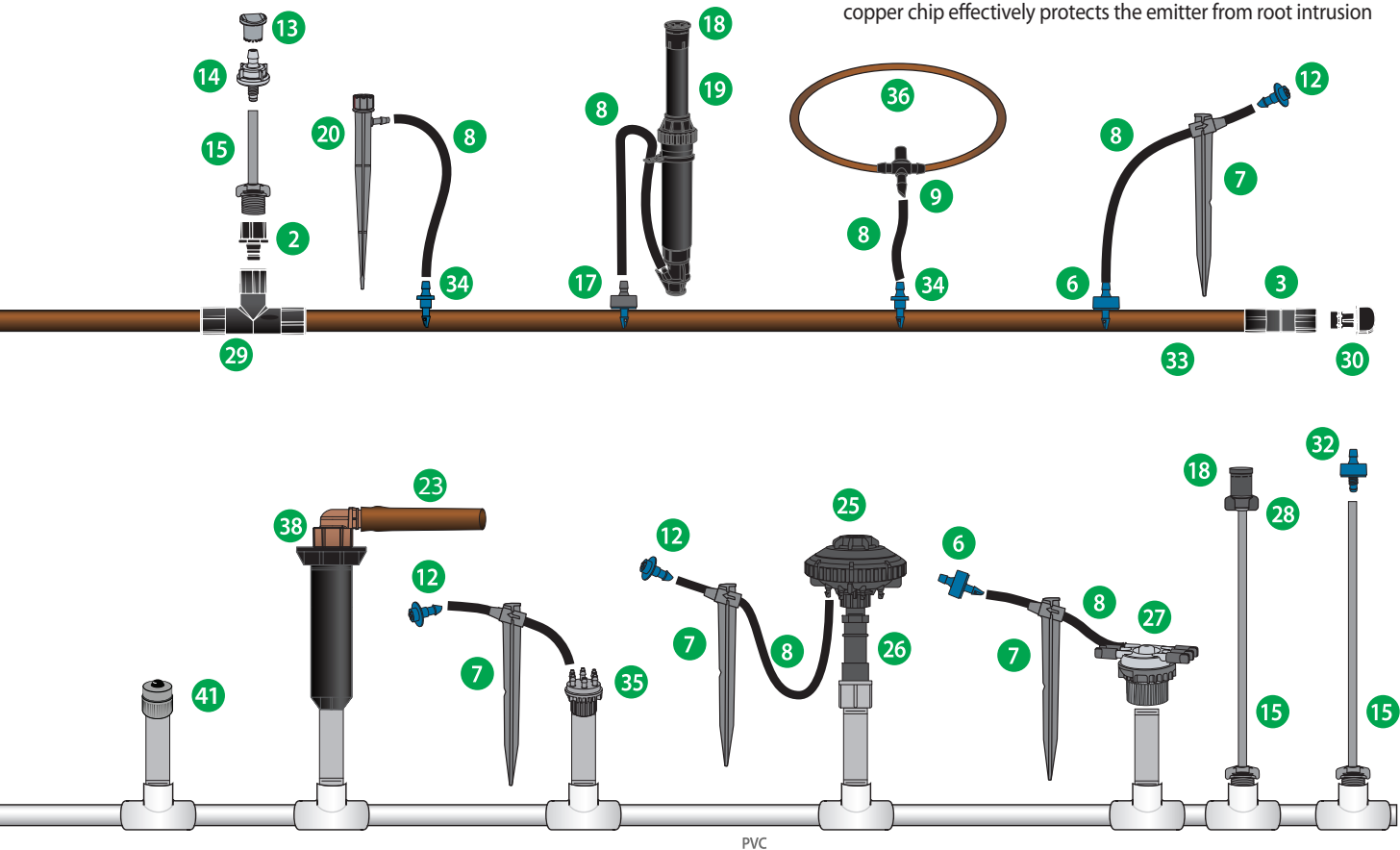
Rain Bird Xerigation®/Landscape Drip products are made especially for low-volume irrigation systems. By delivering water at or near the plants' root zones, Rain Bird Xerigation® products offer targeted watering with the following advantages:

- Water conservation
- Greater efficiency (target each plant)
- Design flexibility; simple construction and easily expandable
- Healthier plants
- Reduced liability (e.g. no overspray, no runoff)
- Minimization of weed growth
- Cost savings

Broadest Product Line in the Industry

With over 150 products, Rain Bird has the products needed for your application. Systems can be designed to meet any site requirements and offer many exclusive Rain Bird advances including:

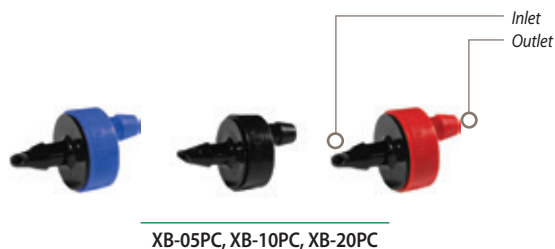
- Flexible XF Series dripline with advanced polymers that provide kink-resistance and reduced coil memory for easier installation
- Compact Control Zones with combined pressure regulator and filter to reduce parts, potential leak problems, and allow for fitting more Control Zones in a valve box
- Precision low volume SQ spray nozzles that offer a square wetting pattern and adjust to either 2.5' or 4' throw distances
- Point-source emitters that provide pressure compensation with a wide selection of flow rates and three inlet options (Barb, 1032 threaded, and ½" FPT)
- XFS and XFS-CV dripline with Copper Shield Technology™ for use in sub-surface applications under turf or shrub and groundcover areas. The copper chip effectively protects the emitter from root intrusion



- 26. Retrofit Pressure Regulator
- 27. 6 Outlet Manifold
- 28. SQ Series Nozzle Adapter
- 29. Easy Fit Tee
- 30. Easy Fit Flush Cap
- 31. Purple XF Dripline
- 32. Xeri- Bug Emitter - 1032
- 33. XF Series Blank Tubing
- 34. ¼" Barb Connector

- 35. Multi-Outlet Xeri-Bug
- 36. ¼" Landscape Dripline
- 37. XFS-CV Sub-Surface Dripline with Copper Shield Technology
- 39. XT-025 ½" FPT x Barb Grey Transfer Fitting
- 40. XFF Coupling
- 41. PCT Bubbler
- 42. XFCV Dripline with Heavy-Duty check valve
- 44. XF Insertion Tool

- 45. PEB Valve
- 46. Quick-Check Pressure Regulating Filter
- 47. QF Dripline Header
- 48. XF Series Dripline (XFD/XFS/XFCV/XFS-CV) (pg. 156-162)
- 49. Operation Indicator
- 50. Twist Lock Fittings

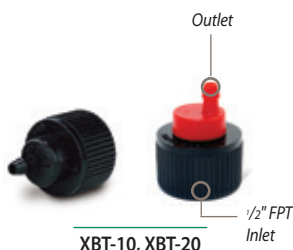


XB-05PC, XB-10PC, XB-20PC



XB-05PC-1032, XB-10PC-1032, XB-20PC-1032

1032-threaded models are specifically designed to be used with PolyFlex Risers, 1032 thread adapters (1032-A), or 1800 Xeri-Bubbler Adapter (XBA-1800)



XBT-10, XBT-20

Xeriman™ Tool

Features

- Provides fast, easy, one-step installation of Xeri-Bug™ emitters and PC Modules directly into 1/2" or 3/4" drip tubing, XF Dripline or Landscape Dripline
- Cuts emitter installation time
- All-in-one tool inserts emitters, removes emitters, inserts 1/4" barbed fittings and installs goof plugs

Model

- XM-TOOL



XM-TOOL



One Step Xeri-Bug™ Insertion



Xeri-Bug™ Removal



Goof Plug Insertion

Xeri-Bug™ Emitters

Point-Source Low-Flow Emitters for Watering the Root Zones of Plants, Trees, and Container Plants

Features

- The only emitters with self-piercing barbs, making them the easiest to install using the Xeriman™ tool
- Widest selection of pressure-compensating emitters, with 3 flow rates and 3 inlet options
- Most compact and unobtrusive emitters
- Flow-rates of 0.5, 1.0 and 2.0 gph (1.89, 3.79 and 7.57 l/h)
- Pressure-compensating design delivers uniform flow throughout a wide pressure range (15 to 50 psi; 1.0 to 3.5 bar)
- Available with 3 different inlets (1.0 and 2.0 models):
 - Self-piercing barb for quick, one-step insertion into 1/2" or 3/4" drip tubing
 - 10-32 threaded inlet that easily threads into a PolyFlex Riser (see page 154), 1032 Thread adapter (page 154) or 1800 Xeri-Bubbler Adapter (page 154)
 - 1/2" FPT inlet that easily threads onto a 1/2" PVC riser (1.0 and 2.0 gph models)
- Outlet barb securely retains 1/4" Distribution Tubing (XQ)
- Design makes installation and maintenance easy
 - Self-flushing action minimizes clogging
 - Robust design made from highly inert materials that are resistant to chemicals
 - Durable plastic construction is UV-resistant
- Color-coded to identify flow rate

Operating Range

- Flow: 0.5 to 2.0 gph (1.89 to 7.57 l/h)
- Pressure: 15 to 50 psi (1.0 to 3.5 bar)
- Required filtration: 150 to 200 mesh (75 to 100 micron)

Models: 10-32 thread inlet x barb outlet

- XB-05PC-1032: Blue, 0.5 gph (1.89 l/h)
- XB-10PC-1032: Black, 1.0 gph (3.79 l/h)
- XB-20PC-1032: Red, 2.0 gph (7.57 l/h)

Models: 1/2" FPT inlet x barb outlet

- XBT-10: Black, 1.0 gph (3.79 l/h)
- XBT-20: Red, 2.0 gph (7.57 l/h)

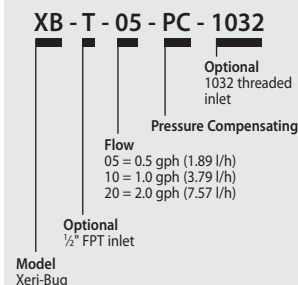
Models: barb inlet x barb outlet

- XB-05PC: Blue, 0.5 gph (1.89 l/h)
- XB-10PC: Black, 1.0 gph (3.79 l/h)
- XB-20PC: Red, 2.0 gph (7.57 l/h)

Xeri-Bug Emitter Bag Quantities and Models

Flow Rate	Color	Bag Qty.	Model Number
0.5 GPH (1.89 l/h)	Blue	25	XB05PC
		100	XB05PCBULK
		8000	XB05MAXPAK
1.0 GPH (3.79 l/h)	Black	25	XB10PC
		100	XB10PCBULK
		8000	XB10MAXPAK
2.0 GPH (7.57 l/h)	Red	25	XB20PC
		100	XB20PCBULK
		8000	XB20MAXPAK

How to Specify



Xeri-Bug Emitter Specifications and Models

Model	Inlet Type/Color	Nominal Flow gph	Filtration Required mesh
XB-05PC	Barb/Blue	0.5	200
XB-10PC	Barb/Black	1.0	150
XB-20PC	Barb/Red	2.0	150
XB-05PC1032	10-32T/Blue	0.5	200
XB-10PC1032	10-32T/Black	1.0	150
XB-20PC1032	10-32T/Red	2.0	150
XBT-10PC	1/2" FPT/Black	1.0	150
XBT-20PC	1/2" FPT/Black	2.0	150

Xeri-Bug Emitter Specifications and Models

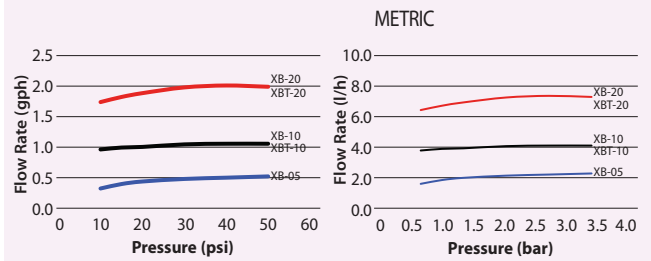
METRIC

Model	Inlet Type/Color	Nominal Flow l/h	Filtration Required micron
XB-05PC	Barb/Blue	1.89	75
XB-10PC	Barb/Black	3.79	100
XB-20PC	Barb/Red	7.57	100
XB-05PC1032	10-32T/Blue	1.89	75
XB-10PC1032	10-32T/Black	3.79	100
XB-20PC1032	10-32T/Red	7.57	100
XBT-10PC	1/2" FPT/Black	3.79	100
XBT-20PC	1/2" FPT/Black	7.57	100



Xeri-Bug™ Emitter, TS025-1/4" stake, and DBC025 Diffuser Bug Cap

Xeri-Bug Emitter Performance



(For reference numbers below, please see the System Overview page 140)

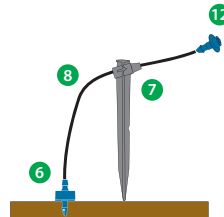
Installation Option 1*

Using a Xeriman Tool, insert an emitter directly into 1/2" or 3/4" drip tubing or between dripline emitters as needed.



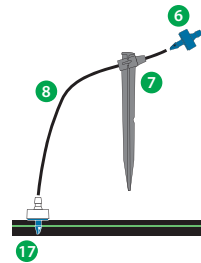
Installation Option 2*

For more precise water placement, use 1/4" distribution tubing, a 1/4" tubing stake, and a bug cap.



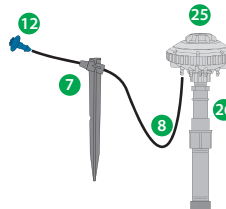
Installation Option 3

For precise water placement, a barbed connector can be punched into distribution tubing. The emitter is then placed at the end of the 1/4" distribution tubing. NOTE: should the emitter become dislodged, unregulated flow will occur.



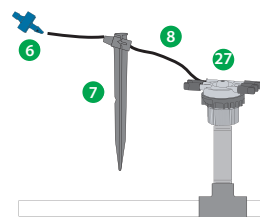
Installation Option 4*

The Xeri-Bird 8 provides a centralized location for up to eight emitters. A mix of Xeri-Bug and/or PC emitters can be used to provide the flow rates needed for different plant materials. Tentacles of 1/4" distribution tubing, 1/4" tubing stakes, and bug caps allow for precise water placement.



Installation Option 5

The 6 Outlet Manifold provides a centralized water distribution connection for up to six emission devices. Connect the 1/4" distribution tubing to one of the outlets. Use a 1/4" tubing stake to ensure precise water placement. The emitter is placed on the end of the 1/4" distribution tubing to regulate the water flow. NOTE: should the emitter become dislodged, unregulated flow will occur.



* Preferred installation options, which provide flow regulation at the source.

Multi-Outlet Xeri-Bug™

Features

- Pressure compensating design delivers uniform flow throughout a wide pressure range (15 to 50 psi; 1.0 to 3.5 bar)
- Six-outlet emitter supplied with one outlet opened. Simply clip the outlet tips open with snips or clippers for additional operational ports
- Barbed outlets retain ¼" Distribution Tubing (XQ)
- Self-flushing action minimizes clogging
- Durable, UV-resistant color-coded plastic housing

Operating Range

- Flow: 0.5, 1.0 or 2.0 gph (1.89, 3.79 or 7.57 l/h)
- Pressure: 15 to 50 psi (1.0 to 3.5 bar)
- Filtration: 150-mesh (100-microns)

Models: barb inlet x barb outlet

- XB-05-6: Blue, 0.5 gph (1.89 l/h)
- XB-10-6: Black, 1.0 gph (3.79 l/h)
- XB-20-6: Red, 2.0 gph (7.57 l/h)

Models: ½" FPT inlet x barb outlet

- XBT-05-6: Blue, 0.5 gph (1.89 l/h)
- XBT-10-6: Black, 1.0 gph (3.79 l/h)
- XBT-20-6: Red, 2.0 gph (7.57 l/h)

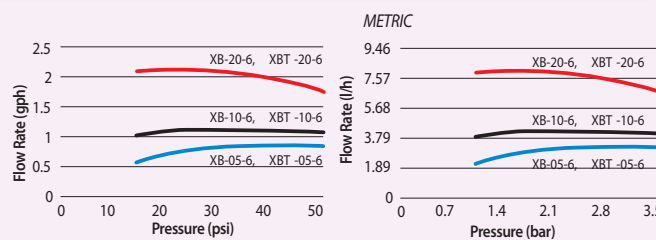


XB-05-6, XB-10-6, XB-20-6



XBT-05-6, XBT-10-6, XBT-20-6

Multi-Outlet Xeri-Bug Emitter Performance



6 Outlet Manifold - EMT-6XERI

Features

- ½" FPT inlet threads onto ½" riser and provides a manifold with six free-flowing ¼" barb outlets
- Each barb outlet is sealed with a durable plastic cap
- Plastic caps remove easily, allowing for a drip area that can be customized with up to six different emission devices
- Attach ¼" Distribution Tubing (XQ) onto each outlet for use with: Xeri-Bugs, PC Modules, Xeri-Pops, Xeri-Sprays, and Xeri-Bubblers

Operating Range

- Pressure: 15 to 50 psi (1.0 to 3.5 bar)
- Required filtration: 150 mesh (100 microns)

Model

- EMT-6XERI



EMT-6XERI

¼" Self-Piercing Barb Connector

Features

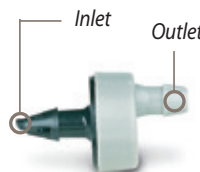
- Used to connect ¼" Distribution Tubing into ½" or ¾" distribution tubing
- Self-piercing barb inlet is easily inserted into ½" or ¾" distribution tubing using a Xeriman™ Tool (XM-Tool)
- Outlet barb accepts ¼" Distribution Tubing (XQ). Gray outlet barb indicates unit has unrestricted flow

Operating Range

- Pressure: 0 to 50 psi (0 to 3.5 bar)

Model

- SPB-025



SPB-025

½" FPT x Barb Grey Transfer Fitting

Features

- Grey outlet to designate open flow
- ½" FPT inlet can be easily attached to a schedule 80 riser or the top of an 1800 Retro
- Barbed outlet so ¼" distribution tubing or ¼" drip tubing can be easily and securely attached

Operating Range

- Pressure: 0 to 50 psi (0 to 3.5 bar)

Model

- XT025



XT025

Xeri-Bird™ 8-Outlet Emission Device

The Most Flexible and Feature-Rich Multi-Outlet Device on the Market, Ideal for New Projects and Retrofit Applications

Features

- The only multi-outlet device on the market with 8 configurable ports and 10 flow options for each port for maximum flexibility
- XBD-80 and XBD-81 models each contain a built-in filter. Makes retrofitting easy when installed with the optional in-stem pressure regulator (PRS-050 page 183)
- Easy to maintain, because body can be easily removed from riser
- Threads onto any 1/2" riser and delivers water to multiple locations for increased system flexibility
- Each port accepts a Xeri-Bug™ Emitter or PC Module for independent flows from 0.5 to 24 gph (1.89 to 90.84 l/h) or use a self-piercing barb connector (SPB-025) for unrestricted flow
- XBD-80 and XBD-81 models each feature an integral 200 mesh (75 micron) filter which is easily serviceable from the top of the unit
- Eight bottom-mounted, sure-grip barbed outlets securely retain 1/4" Distribution Tubing (XQ)
- Unique union base nut allows removal of Xeri-Bird 8 body from riser for easy installation and maintenance
- Emitters must be installed inside the Xeri-Bird to prevent excess back pressure

Operating Range

- Flow: 0.5 to 24 gph (1.89 to 90.84 l/h) per outlet
- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Models

- XBD-80: Xeri-Bird 8 unit (includes 7 removable port plugs and filter)
- XBD-81: Xeri-Bird 8 unit (includes eight 1 gph (3.79 l/h) Xeri-Bug emitters factory installed, and filter)

Replacement Parts:

- XBD8SCRN: replacement screen and two o-rings



Helpful Hint: Always install emitters with the pointed end (inlet barb) or threaded end up, as shown



Each port can be configured on the Xeri-Bird™ by installing flow controlled emitters. Above shows a combination of 0.5, 1.0, and 2.0 gph Xeri-Bug emitters.

* Must be installed second
** Must be installed first



PC-05, PC-07, PC-10



PC-12, PC-18, PC-24



PC-05-1032, PC-07-1032, PC-10-1032

10-32-threaded models are specifically designed to be used with PolyFlex Risers, 10-32 thread adapters (1032-A), or 1800 Xeri-Bubbler Adapter (XBA-1800)



PCT-05, PCT-07, PCT-10

• 1/2" FPT inlet that easily threads onto a 1/2" PVC riser

Pressure-Compensating Modules

Point-Source Medium-Flow Emitters for Watering Larger Shrubs and Trees

Features

- The only emitters with self-piercing barbs, making them the easiest to install using the Xeriman™ tool
- Widest selection of pressure-compensating emitters, with 6 flow rates and 3 inlet options
- Most compact and unobtrusive emitters
- Flow rates from 5 to 24 gph (18.93 to 90.84 l/h)
- Pressure-compensating design delivers uniform flow throughout a wide pressure range (10 to 50 psi; 0.7 to 3.5 bar)
- Available with 3 different inlets:
 - Self-piercing barbs for quick one-step emitter insertion into 1/2" or 3/4" drip tubing
 - 10-32 threaded inlet that easily threads into a PolyFlex Riser (see page 154), 1032 Thread adapter (page 154) or 1800 Xeri-Bubbler Adapter (page 154)
 - 1/2" FPT inlet that easily threads onto a 1/2" PVC riser
- Robust design - durable plastic construction is UV-resistant and color-coded to identify flow rate

Operating Range*

- Flow: 5 to 24 gph (18.93 to 90.84 l/h)
- Pressure: 10 to 50 psi (0.7 to 3.5 bar)
- Required filtration: 100 mesh (150 micron)

* **IMPORTANT NOTE:** Use a PC Diffuser Cap to eliminate squirting water when using a PC Module staked at the end of 1/4" Distribution Tubing (XQ) or on a PolyFlex Riser (PFR/FRA)

Models: barb inlet x barb outlet

- PC-05: Light brown, 5 gph (18.93 l/h)
- PC-07: Violet, 7 gph (26.50 l/h)
- PC-10: Green, 10 gph (37.85 l/h)
- PC-12: Dark brown, 12 gph (45.42 l/h)
- PC-18: White, 18 gph (68.13 l/h)
- PC-24: Orange, 24 gph (90.84 l/h)

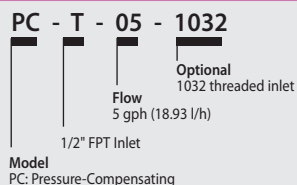
Models: 10-32 thread inlet x barb outlet

- PC-05-1032: Light brown, 5 gph (18.93 l/h)
- PC-07-1032: Violet, 7 gph (26.50 l/h)
- PC-10-1032: Green, 10 gph (37.85 l/h)

Models: 1/2" FPT thread Inlet

- PCT-05: Light Brown, 5 gph (18.93 l/h)
- PCT-07: Violet, 7 gph (26.50 l/h)
- PCT-10: Green, 10 gph (37.85 l/h)

How to Specify

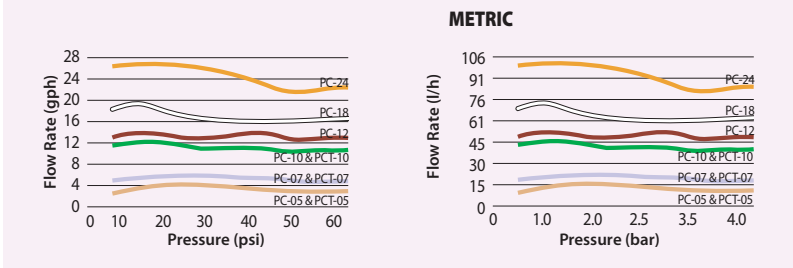


Pressure-Compensating Modules

Pressure-Compensating Module Models			
Model	Inlet Type/ Outlet/Color	Nominal Flow gph	Filtration Required mesh
PC-05	Barb / light brown	5	100
PC-07	Barb / violet	7	100
PC-10	Barb / green	10	100
PC-12	Barb / dark brown	12	100
PC-18	Barb / white	18	100
PC-24	Barb / orange	24	100
PC-05-1032	10-32T / light brown	5	100
PC-07-1032	10-32T / violet	7	100
PC-10-1032	10-32T / green	10	100
PCT-05	NPT / light brown	5	100
PCT-07	NPT / violet	7	100
PCT-10	NPT / green	10	100

Pressure-Compensating Module Models			METRIC
Model	Inlet Type/ Outlet/Color	Nominal Flow l/h	Filtration Required micron
PC-05	Barb / light brown	18.93	150
PC-07	Barb / violet	26.50	150
PC-10	Barb / green	37.85	150
PC-12	Barb / dark brown	45.42	150
PC-18	Barb / white	68.13	150
PC-24	Barb / orange	90.84	150
PC-05-1032	10-32T / light brown	18.93	150
PC-07-1032	10-32T / violet	26.50	150
PC-10-1032	10-32T / green	37.85	150
PCT-05	NPT / light brown	18.93	150
PCT-07	NPT / violet	26.50	150
PCT-10	NPT / green	37.85	150

Pressure-Compensating Modules & Bubblers Performance



PC Diffuser Caps



PC Diffuser Caps are designed to fit onto outlet of pressure-compensating drip modules

Models: (see page 153 for complete information)

- PC-DIFFUSER: Black
- PC-DIFF-PPL: Purple, to designate non-potable water



PC Module (PC-10-1032) with PC Diffuser Cap (PC-DIFFUSER) on PolyFlex Riser (PFR-PFA) (PolyFlex Risers available in 12" and 24" models - p. 154)



SQ Nozzle Installed on PolyFlex Riser with Nozzle Adapter



SQ Nozzles with Screens

One Nozzle...Two Throws

With a simple turn of the nozzle to the next preset stop, the Rain Bird SQ Nozzle adjusts from a 2.5' (0.8 m) throw to a 4' (1.2 m) throw. It's like having two nozzles in one.



Can be used on...

The SQ Nozzle is an ideal solution for a wide range of difficult-to-design areas, thanks to its compatibility with popular irrigation products.



1800° Series Spray Heads

Xeri-Pop Spray Heads

Polyflex Risers

Schedule 80 Risers

SQ Series, Square Pattern Nozzles

The Most Precise and Efficient, Low-Volume Spray Solution for Irrigation of Small Areas with Dense Plantings

Features

- Square spray pattern and pressure compensation offer increased efficiency and control, reducing overspray, property damage and liability
- Simplify design and installation with the flexibility of applications: one nozzle throws 2.5' or 4' (0.8 m or 1.2 m) and can be used on a variety of spray heads and risers
- Meets micro irrigation system requirement for less than 26 gph flow rate at 30 psi
- Square spray pattern with edge-to-edge coverage allows you to easily design and install in small spaces
- Pressure compensation design delivers uniform flow over the pressure range
- Available in 3 models—quarter, half and full patterns with matched precipitation rate
 - Virtually no-mist performance from 20 psi to 50 psi
 - Two throw distances in each nozzle. One simple click adjusts to 2.5' or 4' (0.8 m or 1.2 m)
 - Shipped with blue filter screen (0.02" x 0.02") to maintain precise distance of flow, and to prevent clogging
- Compatible with all 1800 Sprays, Xeri-Pops, New PolyFlex Riser Adapter, UNI-Spray and SCH 80 risers

Operating Range

- Pressure: 20 to 50 psi (1.4 to 3.5 bar)
- Flow rates: 6, 12 and 24 gph (22.7, 45.4 and 90.8 l/h)
- Required filtration: 40 mesh

Models

- SQ-QTR: SQ Nozzle, quarter pattern (Purple)
- SQ-HLF: SQ Nozzle, half pattern (Brown)
- SQ-FUL: SQ Nozzle, full pattern (Red)
- SQ-ADP: SQ PolyFlex Riser Adapter only
- SQ-ADP12: SQ Nozzle Adapter with 12" PolyFlex Riser
- SQ-ADP24: SQ Nozzle Adapter with 24" PolyFlex Riser

* **Note:** A PA-85 Plastic Shrub Adapter (see page 10) is needed when using an SQ Series Nozzle mounted on a SCH 80 riser.



SQ-QTR

SQ-HLF

SQ-FUL

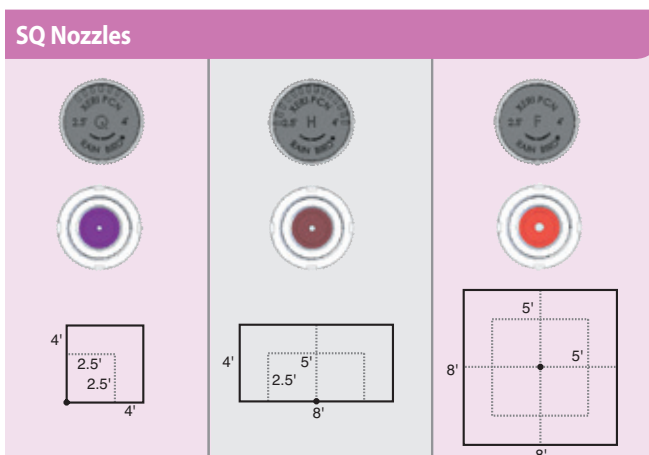
SQ Nozzle Performance					
2.5 feet throw @ 6" height above grade					
Nozzle	Pressure psi	Throw Radius ft.	Flow gph	Flow gpm	Precip.Rate w/no overlap in/h
Q	20	2.5	6.0	0.10	1.64
	30	2.5	7.0	0.12	1.90
	40	3.0	7.2	0.12	1.32
	50	3.0	7.2	0.12	1.32
H	20	2.5	10.2	0.17	1.31
	30	2.5	10.7	0.18	1.57
	40	3.0	10.7	0.18	1.22
	50	3.0	10.7	0.18	1.22
F	20	2.5	20.0	0.33	1.28
	30	2.5	24.2	0.40	1.55
	40	3.0	27.3	0.46	1.22
	50	3.0	27.3	0.46	1.22

SQ Nozzle Performance					METRIC
0.8 m throw @ 0.15 m height above grade					
Nozzle	Pressure bar	Throw Radius m	Flow lph	Flow lpm	Precip.Rate w/no overlap mm/h
Q	1.4	0.8	23	0.38	42
	2.1	0.8	27	0.44	48
	2.8	0.9	27	0.45	34
	3.4	0.9	27	0.45	34
H	1.4	0.8	39	0.65	33
	2.1	0.8	41	0.68	40
	2.8	0.9	41	0.68	31
	3.4	0.9	41	0.68	31
F	1.4	0.8	76	1.27	33
	2.1	0.8	92	1.53	39
	2.8	0.9	103	1.72	31
	3.4	0.9	103	1.72	31

SQ Nozzle Performance					
4 feet throw @ 6" height above grade					
Nozzle	Pressure psi	Throw Radius ft.	Flow gph	Flow gpm	Precip.Rate w/no overlap in/h
Q	20	4.0	6.0	0.10	0.64
	30	4.0	7.2	0.12	0.74
	40	4.5	7.2	0.12	0.59
	50	4.5	7.2	0.12	0.59
H	20	4.0	10.2	0.17	0.51
	30	4.0	10.7	0.18	0.61
	40	4.5	10.7	0.18	0.54
	50	4.5	10.7	0.18	0.54
F	20	4.0	20.0	0.33	0.50
	30	4.0	24.2	0.40	0.61
	40	4.5	27.3	0.46	0.54
	50	4.5	27.3	0.46	0.54

SQ Nozzle Performance					METRIC
1.2 m throw @ 0.15 m height above grade					
Nozzle	Pressure bar	Throw Radius m	Flow lph	Flow lpm	Precip.Rate w/no overlap mm/h
Q	1.4	1.2	23	0.38	16
	2.1	1.2	27	0.44	19
	2.8	1.4	27	0.45	15
	3.4	1.4	27	0.45	15
H	1.4	1.2	39	0.65	13
	2.1	1.2	41	0.68	16
	2.8	1.4	41	0.68	14
	3.4	1.4	41	0.68	14
F	1.4	1.2	76	1.27	13
	2.1	1.2	92	1.53	15
	2.8	1.4	103	1.72	14
	3.4	1.4	103	1.72	14

Performance data taken in zero wind conditions



Xeri-Pop™ Micro-Spray

The Xeri-Pop™ Micro-Spray Makes It Easy to Integrate a Durable Micro-Spray into a Low-Volume Irrigation Design

Features

- The only pop-up spray that works in low-volume low-pressure application, and this is the perfect solution to vandal-prone areas
- Xeri-Pops can be installed and located in nearly any location and are ideal for small, odd-shaped planting beds; the 12" version is perfect for annual flower beds
- Xeri-Pops work with Rain Bird 5' and 8' MPR nozzles and SQ Series Nozzles — nozzles with square spray patterns and adjustable throws of 2.5' and 4'
- The Xeri-Pop can operate with 20 to 50 psi base pressure when water is supplied via 1/4" Distribution Tubing (XQ)
- The flexibility of 1/4" tubing allows the Xeri-Pop to be easily located and relocated as planting conditions dictate
- A durable, plastic snap-collar (on 4" and 6" models) secures the 1/4" tubing to the outside of the Xeri-Pop case
- The Xeri-Pop's 1/4" Distribution Tubing can readily connect to 1/2" or 3/4" polyethylene tubing or to a multi-outlet manifold (EMT-6XERI). Connections to polyethylene tubing are accomplished with either an SPB-025 1/4" Self-piercing barb Connector or an XBF1CONN 1/4" barb Connector
- External parts are UV-resistant and available in 4", 6" and 12" pop up heights

Operating Range

- Pressure: 20 to 50 psi (1.4 to 3.5 bar)
- Filtration: Depends on nozzle used with Xeri-Pop

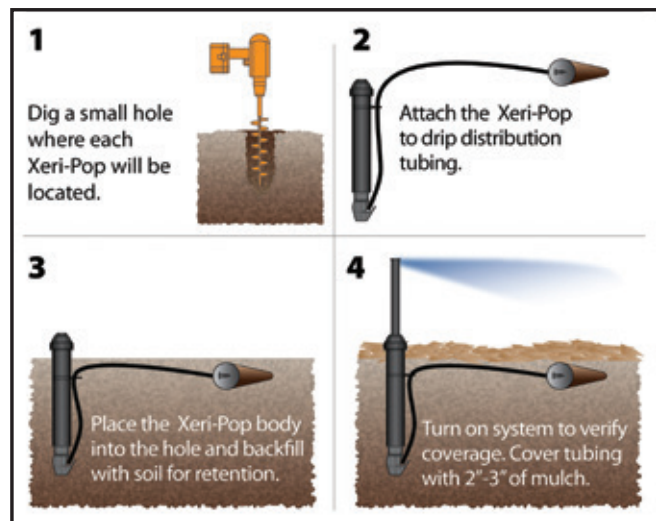
Models

- XP-400X: 4-inch pop-up
- XP-600X: 6-inch pop-up
- XP-1200X: 12-inch pop-up

Nozzle Options

- SQ Series Nozzles (page 148)
- 5 Series MPR Nozzle (all configurations)
- 5 Series Plastic Bubbler
- 8 Series MPR Nozzle (8H, 8T and 8Q)

Installing the Xeri-Pop in 4 Easy Steps



How to Specify

XP - 600X

Model
Xeri-Pop

Pop-Up Height
400X = 4" Pop-up
600X = 6" Pop-up
1200X = 12" Pop-up

Always install a PCS-010, -020, 030, or -040 Pressure-Compensating Screen whenever a 5B Bubbler Nozzle is installed on a Xeri-Pop.

XP-400X



XP-600X

1/4" distribution tube snap collar

1/4" distribution tube inlet



XP-1200X



Xeri-Bubblers™

Ideal for Shrub Plantings, Trees, Containers, and Flower Beds

Features

- Adjust flow and radius by turning outer cap
- Clean by completely unscrewing cap from base unit
- Three convenient installation connections available for design flexibility: 10-32 self-tapping thread, 1/4" barb, and 5" spike

Operating Range

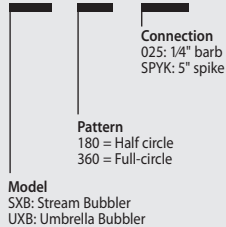
- Pressure: 15 to 30 psi (1.0 to 2.1 bar)
- SXB Series flow:
 - 0 to 13 gph (0 to 49.21 l/h) at 30 psi (2.1 bar)
 - 0 to 8.5 gph (0 to 30 l/h) at 15 psi (1 bar)
- UXB Series flow:
 - 0 to 35 gph (0 to 132.48 l/h) at 30 psi (2.1 bar)
 - 0 to 26 gph (0 to 98 l/h) at 15 psi (1 bar)
- Max flow varies with inlet pressure

Models

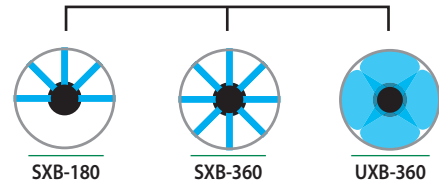
- SXB-180: Half-circle, 5 streams, 10-32 thread
- SXB-180-025: Half-circle, 5 streams, 1/4" barb
- SXB-180-SPYK: Half-circle, 5 streams, 5" spike; includes barb x barb coupler
- SXB-360: Full-circle, 8 streams, 10-32 thread
- SXB-360-025: Full-circle, 8 streams, 1/4" barb
- SXB-360-SPYK: Full-circle, 8 streams, 5" spike includes barb x barb coupler
- UXB-360: Full-circle, umbrella, 10-32 thread
- UXB-360-025: Full-circle, umbrella, 1/4" barb
- UXB-360-SPYK: Full-circle, umbrella, 5" spike includes barb x barb coupler

How to Specify

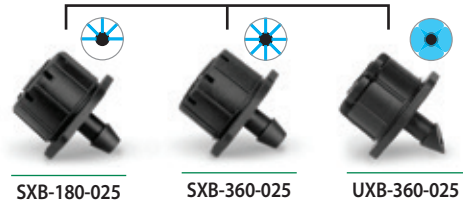
SXB - 180 - 025



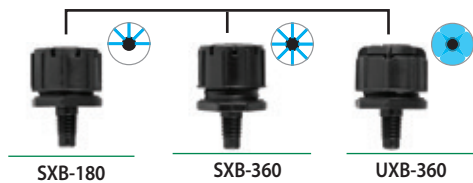
WETTING PATTERNS



BARB



10-32 THREADS



SPIKE



Xeri-Bubbler Performance

Pressure		SXB Flow Rate 360° and 180°		SXB 360° Diameter		SXB 180° Radius		UXB 360° Flow Rate		UXB 360° Diameter	
psi	bar	gph	lph	ft.	m.	ft.	m.	gph	lph	ft.	m.
30	2.1	0 - 13	0 - 49	0 - 3	0 - 0.9	0 - 2.2	0 - 0.67	0 - 35	0 - 132	0 - 2	0 - 0.58
20	1.4	0 - 10.5	0 - 40	0 - 2	0 - 0.6	0 - 1.5	0 - 0.46	0 - 30	0 - 113	0 - 1	0 - 0.30
15	1	0 - 8.5	0 - 32	0 - 1.2	0 - 0.4	0 - 1.2	0 - 0.38	0 - 27	0 - 98	0 - 0.7	0 - 0.21

Xeri-Sprays™ and Misters

Ideal for Ground Cover, Mass Plantings, Annual Flower Beds, and Containers

Features

- Adjust flow/radius by turning integral ball valve
- Uniform emission pattern provides excellent distribution
- 10-32 self-tapping threads fit into ½" x 10-32 adapter (10-32A); 1800 Xeri-Bubbler™ adapter (XBA-1800); and PolyFlex Riser (PFR-12)

Operating Range

- Flow: 0 to 31 gph (0 to 117.34 l/h)
- Pressure: 10 to 30 psi (0.75 to 2.1 bar)
- Radius: 0 to 13.4 feet (0 to 4.1 m) full-circle; 0 to 10.6 feet (0 to 3.2 m) quarter- and half-circle

Models

- XS-090: Quarter-circle, spray
- XS-180: Half-circle, spray
- XS-360: Full-circle, stream spray
- X360 ADJMST: Full-circle, mist

Xeri-Spray™ 360° True Spray

Ideal for Mass Plantings, Ground Cover, Annual Flower Beds and Containers

Features

- True micro-spray with full-circle fan spray pattern
- Adjust flow/radius by turning outer cap
- Three convenient installation connections for design flexibility: 10-32 self-tapping thread, ¼" barb and 5" spike
- Easily cleaned by completely unscrewing cap from base unit

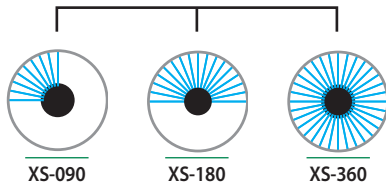
Operating Range

- Flow: 0 to 24.5 gph (0 to 92.7 l/h) at 30 psi (200 kPa)
- Flow: 0 to 17 gph (0 to 64 l/h) at 15 psi (100 kPa)
- Pressure: 15 to 30 psi (1.0 to 2.1 bar)
- Radius: 0 to 6.7 feet (0 to 2.0 m)

Models

- XS-360TS: 10-32 threads
- XS-360TS-025: ¼" barb
- XS-360TS-SPYK: 5" spike; includes barb x barb coupler

WETTING PATTERNS



XS-090

XS-180

XS-360



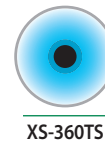
XS-090

XS-180

XS-360

X360 ADJMST

WETTING PATTERN



XS-360TS



XS-360TS-025

XS-360TS

XS-360TS-SPYK

Xeri-Sprays™ and Misters Performance

Pressure		Flow		XS-90 Radius of throw		XS-180 Radius of throw		XS-360 Radius of throw		360 Mister Radius of throw	
psi	bar	gph	l/h	ft.	m.	ft.	m.	ft.	m.	ft.	m.
10	0.7	0 - 16.7	0 - 63.21	0 - 6.4	0 - 2.0	0 - 6.7	0 - 2.0	0 - 9.2	0 - 2.8	0 - 1.5	0 - 0.46
15	1.0	0 - 21.0	0 - 79.49	0 - 8.1	0 - 2.5	0 - 8.1	0 - 2.5	0 - 11.3	0 - 3.4	0 - 1.3	0 - 0.40
20	1.4	0 - 24.5	0 - 92.73	0 - 9.4	0 - 2.9	0 - 9.5	0 - 2.9	0 - 12.9	0 - 3.9	0 - 1.5	0 - 0.44
25	1.7	0 - 28.0	0 - 105.98	0 - 9.8	0 - 3.0	0 - 10.1	0 - 3.1	0 - 13.2	0 - 4.0	0 - 1.4	0 - 0.43
30	2.1	0 - 31.0	0 - 117.34	0 - 10.3	0 - 3.1	0 - 10.6	0 - 3.2	0 - 13.4	0 - 4.1	0 - 1.3	0 - 0.40

Diffuser Bug Cap

Features

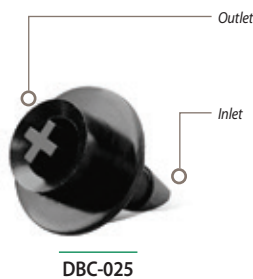
- Prevents bugs and other debris from clogging 1/4" Distribution Tubing
- Barbed inlet fits into 1/4" Distribution Tubing (XQ)
- Flanged shield diffuses water to minimize soil erosion at emission point

Operating Range

- Pressure: 0 to 50 psi (0 to 3.5 bar)

Models

- DBC-025: Black



PC Diffuser Cap

Features

- Cap snaps securely onto the PC Module and XB emitter outlet to create bubbler effect and prevent wash out
- Designed for quick and easy installation
- Made of UV-resistant polyethylene material

Models

- PC-DIFFUSER: Black
- PC-DIFF-PPL: Purple to designate non-potable water



Suggested Applications



A. 1/4" tubing, 1/4" stake, PC Module, Diffuser Bug Cap. Used for runs greater than 5 feet from main line

B. 1/4" tubing, 1/4" stake, Diffuser Bug Cap. Used for runs up to 5 feet from main line

(Drip emitter not shown – installed directly into lateral line)

Universal 1/4" Tubing Stake

Features

- Holds 1/4" Distribution Tubing and emitter or Diffuser Bug Cap firmly in place at the root zone of the plant
- Designed to securely hold Rain Bird and other manufacturers' 1/4" Distribution Tubing — 0.16" to 0.18" I.D. and 0.22" to 0.25" O.D.
- Rigid stake featuring a flat enlarged head designed to withstand hammering into tough soil

Note: If emitter is installed at inlet to distribution tubing, use a Diffuser Bug Cap (DBC-025) at outlet of tubing to prevent bugs from clogging tubing and to help hold tubing in place

Model

- TS-025



1/4" Tubing Stake with Cap

Features

- Locking cap holds tubing in place
- Used for holding 1/4" Distribution Tubing (XQ) in place at the plant root zone
- Accepts 1/4" Distribution Tubing from 0.19 O.D. to 0.256 O.D.
- Bug cap included
- Constructed of UV-resistant plastic material

Model

- TS-025WCAP



12" PolyFlex Riser

Features

- 12" riser that is used with any 10-32 threaded emission device to deliver water directly to a plant. These include Xeri-Bugs, PC Modules, Xeri-Bubblers and Xeri-Sprays
- Extremely rugged and reliable – constructed of thick-walled, high-density polyethylene
- Can be used with a riser-stake (RS-025T)

Operating Range

- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Model

- PFR-12

PFR-12



PolyFlex Riser and Adapter Assemblies

Features

- 12" or 24" riser that is pre-assembled with a 1/2" male threaded base that simplifies installation
- Use with any 10-32 threaded emission device to deliver water directly to a plant. These include Xeri-Bugs, PC Modules, Xeri-Bubblers and Xeri-Sprays
- Newly-designed adapter with larger tabs makes installation quicker and easier; can be used on PVC laterals, or with any 1/2" female threaded adapter
- Adapter made of heavy-duty Marlex®, which requires no Teflon® tape, saving time during installation
- Extremely rugged and reliable PolyFlex Riser constructed of thick-walled, high-density polyethylene

Operating Range

- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Models

- PFR-FRA: 12" (30.5 cm) PolyFlex Riser and adapter
- PFR-FRA24: 24" (61.0 cm) PolyFlex Riser and adapter

PFR-FRA



PolyFlex Riser and Stake Assembly

Features

- 12" riser that is pre-assembled with a 7" (17.8 cm) stake
- Use with any 10-32 threaded emission device to deliver water directly to a plant. These include Xeri-Bugs, PC Modules, Xeri-Bubblers and Xeri-Sprays
- Saves time and money when installing a low-volume irrigation system
- Extremely rugged and reliable PolyFlex Riser constructed of thick-walled, high-density polyethylene

Operating Range

- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Model

- PFR-RS: 12" (30.5 cm) PolyFlex Riser and 7" (17.8 cm) stake

PFR-RS



Riser Stake-Threaded

Features

- Rugged 5" (12.7 cm) stake for use with PolyFlex Risers
- Constructed of UV-resistant plastic material
- Barbed side inlet accepts 1/4" Distribution Tubing (XQ)
- 10-32 threaded outlet permits easy threading of 12" (30.5 cm) PolyFlex Riser (PFR-12)

Operating Range

- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Model

- RS-025T

RS-025T



10-32 Thread Adapter

Features

- Inlet: 1/2" FPT that screws onto any 1/2" MPT riser
- Outlet: 10-32 threads that accept Xeri-Bugs, PC Modules, Xeri-Bubblers and Xeri-Sprays with 10-32 threads
- Constructed of UV-resistant plastic material

Operating Range

- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Model

- 10-32A

10-32A



1800 Xeri-Bubbler Adapter

Features

- Inlet: 1/2" female threads that screw onto a Rain Bird 1800 series or UNI-Spray or shrub adapter
- Outlet: 10-32 threads that accept any emission device with 10-32 threads including Xeri-Bugs, PC Modules, Xeri-Bubblers and Xeri-Sprays
- Sits at grade when installed on a spray head for a robust installation

Operating Range






























- Pressure: 15 to 50 psi (1.0 to 3.5 bar)

Model

- XBA-1800

XBA-1800



Tubing	Application	Compatible Fittings	Flow Rates	Emitter Spacing	Coil Lengths	Tubing Diameter	Tube Colors	Special Notes
DRIPLINE								
1/4" Landscape Dripline 	Pots and Planter Boxes; Container and Vegetable Gardens; Shrubs; Flowers	   XBF1CONN XBF2EL XBF3TEE	0.8 gph	6" 12"	100'	OD: 0.250" ID: 0.170"		Flexible tubing with clog-resistant built-in filtration
XFD On-Surface Dripline 	On-surface; Shrubs; Flowers	  XF Dripline Insert Fittings Easy Fit Compression Fittings	0.6 gph 0.9 gph	12" 18"	100' 250' 500'	OD: 0.634" ID: 0.536"	Reclaimed Water	Extra flexible tubing with clog resistant self-flushing emitter
XFCV; Check Valve; Dripline 	On-Surface; Elevation Changes; Shrubs and Flowers	  XF Dripline Insert Fittings Easy Fit Compression Fittings	0.6 gph 0.9 gph	12" 18"	100' 250' 500'	OD: 0.634" ID: 0.536"		Built-in Emitter Check Valves
XFS Sub-Surface Dripline 	Sub-Surface; Narrow Planting Areas; Turf and Beds	 XF Dripline Insert Fittings	0.4 gph 0.6 gph 0.9 gph	12" 18"	100' 500'	OD: 0.634" ID: 0.536"	Reclaimed Water	Copper Shield™ protects emitters from root intrusion
XFS-CV; Sub-Surface; Check Valve; Dripline 	Sub-Surface; Elevation Changes; Turf and Beds	 XF Dripline Insert Fittings	0.4 gph 0.6 gph 0.9 gph	12" 18"	100' 250' 500'	OD: 0.634" ID: 0.536"	Reclaimed Water Reclaimed Water	Copper Shield™ protects emitters from root intrusion 10' Emitter Check Valves
BLANK TUBING								
XQ 1/4" Distribution Tubing 	Extend emitter outlets to desired location	   XBF1CONN XBF2EL XBF3TEE	—	—	100' 1,000' 1,000' (in bucket)	OD: 0.250" ID: 0.170"		Flexibility of Vinyl with hold of Poly
XBS Black Stripe Tubing 	Five Color Stripe Choices Shrubs Flowers	  1/2": Twist Lock Fittings – 600 Series 3/4": Twist Lock Fittings – 800 Series	—	—	100' 500'	1/2" OD: 0.700" 1/2" ID: 0.600" 1/2" OD: 0.705" 1/2" ID: 0.615" 3/4" OD: 0.940" 3/4" ID: 0.820"	Reclaimed Water Reclaimed Water	Black tube with colored stripes to differentiate zones
XT-700 Distribution Tubing 	Thick-walled but Flexible Shrubs Flowers	 1/2": Twist Lock Fittings – 600 Series	—	—	100' 500'	OD: 0.700" ID: 0.580"		Thick-walled, flexible tubing resists kinks
XF Series Blank Tubing 	Shrubs Flowers	  XF Dripline Insert Fittings Easy Fit Compression Fittings	—	—	100' 250' 500'	OD: 0.634" ID: 0.536"	Reclaimed Water Reclaimed Water	Extra Flexible
QF Dripline Header 	Pre-fabricated header for dripline installations	  Twist Lock Fittings - 800 Series (For QF Header - 3/4") Twist Lock Fittings - 1000 Series (For QF Header - 1")	—	Elbow Spacing: 12" 18"	100'	3/4" OD: 0.940" 3/4" ID: 0.820" 1" OD: 1.200" 1" ID: 1.060"	Reclaimed Water	Elbows rotate 360° and incorporate a protective ring

XFD On-Surface Dripline

The Most Flexible, Pressure-Compensating In-line Emitter Tubing Available to Irrigate Ground Cover, Dense Plantings, Hedge Rows and More

Features

- Extra flexible tubing for fast, easy installation
- Dual-layered tubing (brown over black or purple over black) provides unmatched resistance to chemicals, UV damage and algae growth
- Patent pending emitter design provides for increased reliability
- Longer lateral runs than competition
- Unique material offers significantly greater flexibility, allowing tighter turns with fewer elbows for easier installation
- Choice of flow rates, spacing and coil lengths provides design flexibility for a variety of non-turfgrass applications
- Use an Air/Vacuum Relief Valve Kit when installation is below soil (pg 168)

Operating Range

- Pressure: 8.5 to 60 psi (0.58 to 4.1 bar)
- Flow rates: 0.6 gph and 0.9 gph (2.3 l/h and 3.5 l/h)
- Temperature: Water up to 100° F (37.8C); Ambient up to 125° F (51.7C)
- Required filtration: 120 mesh

Specifications

- Outside diameter: 0.634" (16.1 mm)
- Inside diameter: 0.536" (13.6 mm)
- Wall thickness: 0.049" (1.2 mm)
- Spacing: 12" or 18"
- Lengths: 100', 250', and 500' coils
- Use with XF Dripline Insert Fittings or Rain Bird Easy Fit Compression Fittings



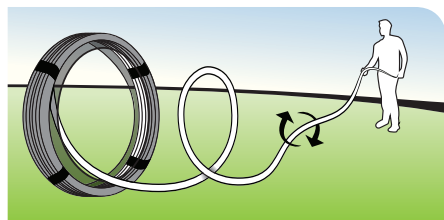
XFD Dripline



Available in Purple for Non-Potable water



XFD Dripline Offers Improved Flexibility for Kink Resistance and Easy Installation. The Dripline Can Bend Down to a 3" Radius Without Kinking.



Self-Dispensing Coil Reduces Layout Time and Improves Ease of Installation



XFD Dripline

How to Specify

XFD - P - 09 - 12 - 100	
Model XFD Dripline	Length of Tubing 100 = 100' (30.5 m) 250 = 250' (76.2 m) 500 = 500' (152.4 m)
Optional Purple	Emitter Spacing 12 = 12" (30.5 cm) 18 = 18" (45.7 cm)
Flow Rate 06 = .61 gph (2.3 l/h) 09 = .92 gph (3.5 l/h)	

Compatible Fittings



XF Dripline Insert Fittings (pg. 166)



Easy Fit Compression Fittings (pg. 167)

XFD On-Surface Dripline Models

Model	Flow gph	Spacing in.	Coil Length ft.
XFD-06-12-100	0.60	12	100
XFD-06-12-250	0.60	12	250
XFD-06-12-500	0.60	12	500
XFD-06-18-100	0.60	18	100
XFD-06-18-250	0.60	18	250
XFD-06-18-500	0.60	18	500
XFD-09-12-100	0.90	12	100
XFD-09-12-250	0.90	12	250
XFD-09-12-500	0.90	12	500
XFD-09-18-100	0.90	18	100
XFD-09-18-250	0.90	18	250
XFD-09-18-500	0.90	18	500
XFDP-06-12-500 (Purple)	0.60	12	500
XFDP-06-18-500 (Purple)	0.60	18	500
XFDP-09-12-500 (Purple)	0.90	12	500
XFDP-09-18-500 (Purple)	0.90	18	500

XFD On-Surface Dripline Models

METRIC

Model	Flow l/h	Spacing cm	Coil Length m
XFD-06-12-100	2.30	30.5	30.5
XFD-06-12-250	2.30	30.5	76.5
XFD-06-12-500	2.30	30.5	152.4
XFD-06-18-100	2.30	45.7	30.5
XFD-06-18-250	2.30	45.7	76.5
XFD-06-18-500	2.30	45.7	152.4
XFD-09-12-100	3.40	30.5	30.5
XFD-09-12-250	3.40	30.5	76.5
XFD-09-12-500	3.40	30.5	152.4
XFD-09-18-100	3.40	45.7	30.5
XFD-09-18-250	3.40	45.7	76.5
XFD-09-18-500	3.40	45.7	152.4
XFDP-06-12-500 (Purple)	2.30	30.5	152.4
XFDP-06-18-500 (Purple)	2.30	45.7	152.4
XFDP-09-12-500 (Purple)	3.40	30.5	152.4
XFDP-09-18-500 (Purple)	3.40	45.7	152.4

For dripline applications requiring 0.4 gpm flow rate, use XF Series Dripline, page 160.

XFD On-Surface Dripline Maximum Lateral Lengths (Feet)

Inlet Pressure psi	Maximum Lateral Length (feet)			
	12" Spacing		18" Spacing	
	Nominal Flow (gph):		Nominal Flow (gph):	
	0.6	0.9	0.6	0.9
15	273	155	314	250
20	318	169	353	294
30	360	230	413	350
40	395	255	465	402
50	417	285	528	420
60	460	290	596	455

XFD On-Surface Dripline Maximum Lateral Lengths (meters)

Inlet Pressure bar	Maximum Lateral Length (meters)			
	30.5 cm		45.7 cm	
	Nominal Flow (l/h):		Nominal Flow (l/h):	
	2.3	3.4	2.3	3.4
1.0	83.2	47.2	95.7	76.2
1.4	96.9	51.5	107.6	89.6
2.1	109.7	70.1	125.9	106.7
2.8	120.4	77.7	141.7	122.5
3.5	127.1	86.9	160.9	128.0
4.1	140.2	88.4	181.7	138.7

XFD On-Surface Dripline Flow(per 100 Feet of Tubing)

Emitter Spacing	0.6 gph Emitter		0.9 gph Emitter	
	Flow	Flow	Flow	Flow
12"	61.0 gph	1.02 gpm	92.0 gph	1.53 gpm
18"	41.0 gph	0.68 gpm	61.0 gph	1.02 gpm
24"	31.0 gph	0.51 gpm	46.0 gph	0.77 gpm

XFD On-Surface Dripline Flow(per 100 meters of Tubing)

Emitter Spacing	2.3 l/h Emitter		3.4 l/h Emitter	
	Flow	Flow	Flow	Flow
0.30 meter	757.9 l/h	12.6 l/m	1136.7 l/h	18.9 l/m
0.46 meter	502.2 l/h	8.4 l/m	741.3 l/h	12.4 l/m
0.61 meter	378.7 l/h	6.3 l/m	559.0 l/h	9.3 l/m

XFCV Dripline with Check Valve

Rain Bird® XFCV Dripline with a heavy-duty 3.5 psi check valve for on-surface applications adds a valuable member to the Rain Bird XF Series of Dripline. The XFCV is the most effective dripline in the industry and is ideal for areas where no other dripline will work. When used in applications where elevation changes exist, the patent-pending check valve keeps the dripline charged, holding 8 feet of hold back. Rain Bird's XFCV offers better uniformity and helps to prevent over-watering at the low-point in the zone, avoiding puddling and water draining from the dripline.

It accepts Rain Bird Easy Fit Compression Fittings, XF Dripline Barbed Insert Fittings and other 17 mm barbed insert fittings.

Features

Simple

- Rain Bird's patent-pending 3.5 psi check valve technology keeps the dripline charged with water at all times, increasing uniformity of watering, and conserves water by eliminating the need to recharge the line at the beginning of each watering cycle
- Through the use of a proprietary tubing material, the XFCV Dripline with heavy-duty check valve is the most flexible dripline tubing in the industry, making it the easiest dripline to design with and install
- Rain Bird's low-profile emitter design reduces in-line pressure loss, allowing longer lateral runs, simplifying design and reducing installation time
- Variety of emitter flow rates, emitter spacing and coil lengths provide design flexibility for on-surface areas with or without elevation changes

Made with Recycled Content

- All Rain Bird XF Dripline (XFD, XFS, XFCV, XFS-CV) qualify for LEED credit 4.2 because they contain at least 20% Polyethylene post consumer recycled material by cost. These come in an assortment of coil sizes, flow rates and emitter spacing

Reliable

- The pressure-compensating emitter design provides a consistent flow over the entire lateral length ensuring higher uniformity for increased reliability in the pressure range of 20 to 60 psi

Durable

- Dual-layered tubing (brown over black) provides unmatched resistance to chemicals, algae growth and UV damage

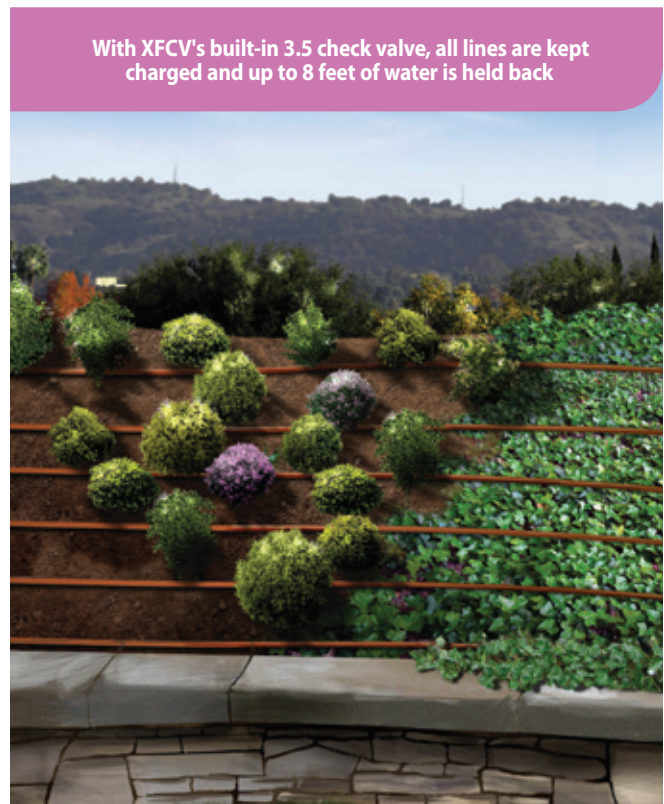
Grit Tolerant

- Rain Bird's proprietary emitter design resists clogging by use of an extra wide flow path combined with a self-flushing action



XFCV Dripline for Elevated Applications

With XFCV's built-in 3.5 check valve, all lines are kept charged and up to 8 feet of water is held back



How to Specify

XFCV - 06 - 12 - 100

Model XFCV Dripline with Heavy-Duty Check Valve	Length of Tubing 100 = 100' (30.5 m) 500 = 500' (152.4 m)
	Emitter Spacing 12 = 12" (30.5 cm) 18 = 18" (45.7 cm)
Flow Rate 06 = .61 gph (2.3 l/h) 09 = .92 gph (3.5 l/h)	

Operating Range

- Opening Pressure: 14.5 psi
- Pressure: 20 to 60 psi (1.38 to 4.14 bar)
- Flow rates: 0.6 and 0.9 gph (2.3 l/hr and 3.5 l/hr)
- Temperature:
 - Water: Up to 100°F (37.8° C)
 - Ambient: Up to 125°F (51.7° C)
- Required Filtration: 120 mesh

Specifications

- Dimensions:
 - OD: 0.634" (16mm)
 - ID: 0.536" (13.6mm);
- Thickness: 0.049" (1.2mm)
- 12" & 18" (30.5 cm, 45.7 cm) spacing
- Available in 100' and 500' (30.5 m and 152.4 m) coils
- Coil Color: Brown
- Use with XF Dripline Insert Fittings or Rain Bird Easy Fit Compression Fittings

Compatible Fittings



XF Dripline Insert Fittings (pg. 166)



Easy Fit Compression Fittings (pg. 167)

XFCV Dripline Models			
Model	Flow gph	Spacing in.	Coil Length ft.
XFCV-06-12-100	0.60	12	100
XFCV-06-12-500	0.60	12	500
XFCV-06-18-100	0.60	18	100
XFCV-06-18-500	0.60	18	500
XFCV-09-12-100	0.90	12	100
XFCV-09-12-500	0.90	12	500
XFCV-09-18-100	0.90	18	100
XFCV-09-18-500	0.90	18	500

XFCV Dripline Models			METRIC
Model	Flow l/h	Spacing cm	Coil Length m
XFCV-06-12-100	2.30	30.5	30.5
XFCV-06-12-500	2.30	30.5	152.4
XFCV-06-18-100	2.30	45.7	30.5
XFCV-06-18-500	2.30	45.7	152.4
XFCV-09-12-100	3.40	30.5	30.5
XFCV-09-12-500	3.40	30.5	152.4
XFCV-09-18-100	3.40	45.7	30.5
XFCV-09-18-500	3.40	45.7	152.4

XFCV Dripline Maximum Lateral Lengths (Feet)				
Inlet Pressure psi	Maximum Lateral Length (feet)			
	12" Spacing		18" Spacing	
	Nominal Flow (gph):		Nominal Flow (gph):	
	0.6	0.9	0.6	0.9
20	192	136	254	215
30	289	205	402	337
40	350	248	498	416
50	397	281	573	477
60	436	309	637	529

XFCV Dripline Maximum Lateral Lengths (Meters) METRIC				
Inlet Pressure bar	Maximum Lateral Length (meters)			
	30.5 cm		45.7 cm	
	Nominal Flow (l/h):		Nominal Flow (l/h):	
	2.3	3.4	2.3	3.4
1.4	59	41	77	66
2.1	88	63	123	103
2.8	107	76	152	127
3.5	121	86	175	145
4.1	133	94	194	161

Low Volume Irrigation

XFS Sub-Surface Dripline with Copper Shield™ Technology

Sub-Surface Drip Irrigation (SDI) perfect for small, narrow and tight planting areas, switchbacks, as well as all turf landscapes

Rain Bird® XFS Sub-Surface Copper-Colored Dripline with Copper Shield™ Technology is the latest innovation in the Rain Bird Landscape Drip Family. Rain Bird's patent-pending Copper Shield Technology protects the emitter from root intrusion, creating a long-lasting, low maintenance sub-surface drip irrigation system for use under turf grass or shrub and groundcover areas.

A proprietary tubing material makes the XFS Sub-Surface Dripline with Copper Shield the most flexible tubing in the industry, and the easiest sub-surface dripline to design with and install.

Features

Simple

- Rain Bird's low-profile emitter design reduces in-line pressure loss, allowing longer lateral runs, simplifying design and reducing installation time
- Variety of emitter flow rates, emitter spacing and coil lengths provide design flexibility for either sub-surface turf or sub-surface shrub and groundcover applications

Reliable

- XFS Sub-Surface Dripline emitters are protected from root intrusion by Rain Bird's patent-pending Copper Shield™ Technology resulting in a system that does not require maintenance or replacement of chemicals to prevent root intrusion
- The pressure-compensating emitter design provides a consistent flow over the entire lateral length ensuring higher uniformity for increased reliability in the pressure range of 8.5 to 60 psi

Durable

- Dual-layered tubing (copper over black) provides unmatched resistance to chemicals, algae growth and UV damage
- Grit Tolerant: Rain Bird's proprietary emitter design resists clogging by use of an extra-wide flow path combined with a self-flushing action

Operating Range

- Pressure: 8.5 to 60 psi (0.58 to 4.14 bar)
- Flow rates: 0.4 gph, 0.6, and 0.9 gph (1.6 l/h, 2.3 l/hr and 3.5 l/hr)
- Temperature:
 - Water: Up to 100°F (37.8° C)
 - Ambient: Up to 125°F (51.7° C)
- Required Filtration: 120 mesh

Specifications

- Dimensions: OD: 0.634" (16mm); ID: 0.536" (13.6mm); Thickness: 0.049" (1.2mm)
- 12" and 18" (30.5 cm and 45.7 cm) spacing
- Available in 100' and 500' (30.5 m and 152.4 m) coils
- Coil Color: Copper
- Use with XF Dripline Insert Fittings

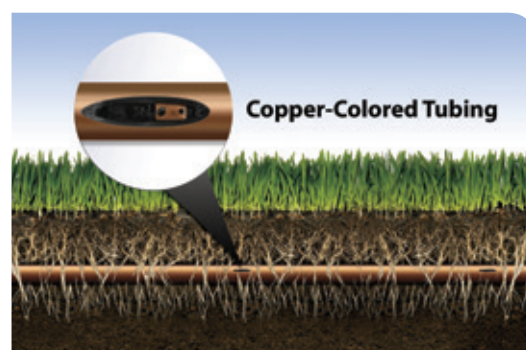
LOOK FOR THE COPPER-COLORED TUBING



XFS Sub-Surface Dripline



Irrigation Association Show Winner



XFS Sub-Surface Dripline with Copper Shield™ Technology



XFS Dripline offers increased flexibility for easy installation

How to Specify

XFS - P - 09 - 12 - 100

Optional P = Purple over black	Length of Tubing 100 = 100' (30.5 m) 500 = 500' (152.4 m)
Model XFS Sub-Surface Dripline	Emitter Spacing 12 = 12" (30.5 cm) 18 = 18" (45.7 cm) 24 = 24" (61.0 cm)
Flow Rate	04 = .42 gph (1.6 l/h) 06 = .61 gph (2.3 l/h) 09 = .92 gph (3.5 l/h)

XF Dripline Insert Fittings

XF Dripline Insert Fittings offer a unique barb design to reduce insertion force and still retain a secure fit (p. 166)



XF Dripline Insert Fittings (pg. 166)

We recommend using the XF Insertion Tool (FITINS-TOOL) which lowers the effort required to insert each fitting by 50% (p. 168)



FITINS-TOOL

XFS Sub-Surface Dripline Models

Model	Flow gph	Spacing in.	Coil Length ft.
XFS-04-12-100	0.42	12	100
XFS-04-12-500	0.42	12	500
XFS-04-18-100	0.42	18	100
XFS-04-18-500	0.42	18	500
XFS-06-12-100	0.60	12	100
XFS-06-12-500	0.60	12	500
XFS-06-18-100	0.60	18	100
XFS-06-18-500	0.60	18	500
XFS-09-12-100	0.90	12	100
XFS-09-12-500	0.90	12	500
XFS-09-18-100	0.90	18	100
XFS-09-18-500	0.90	18	500
XFSP-04-12-500 (Purple)	0.42	12	500
XFSP-04-18-500 (Purple)	0.42	18	500
XFSP-06-12-500 (Purple)	0.60	12	500
XFSP-06-18-500 (Purple)	0.60	18	500
XFSP-09-12-500 (Purple)	0.90	12	500
XFSP-09-18-500 (Purple)	0.90	18	500

XFS Sub-Surface Dripline Models

METRIC

Model	Flow l/h	Spacing cm	Coil Length m
XFS-04-12-100	1.60	30.5	30.5
XFS-04-12-500	1.60	30.5	152.4
XFS-04-18-100	1.60	45.7	30.5
XFS-04-18-500	1.60	45.7	152.4
XFS-06-12-100	2.30	30.5	30.5
XFS-06-12-500	2.30	30.5	152.4
XFS-06-18-100	2.30	45.7	30.5
XFS-06-18-500	2.30	45.7	152.4
XFS-09-12-100	3.50	30.5	30.5
XFS-09-12-500	3.50	30.5	152.4
XFS-09-18-100	3.50	45.7	30.5
XFS-09-18-500	3.50	45.7	152.4
XFSP-04-12-500 (Purple)	1.60	30.5	152.4
XFSP-04-18-500 (Purple)	1.60	45.7	152.4
XFSP-06-12-500 (Purple)	2.30	30.5	152.4
XFSP-06-18-500 (Purple)	2.30	45.7	152.4
XFSP-09-12-500 (Purple)	3.50	30.5	152.4
XFSP-09-18-500 (Purple)	3.50	45.7	152.4

XFS Sub-Surface Dripline Maximum Lateral Lengths (Feet)

Inlet Pressure psi	Maximum Lateral Length (feet)					
	12" Spacing			18" Spacing		
	Nominal Flow (gph): 0.42		0.6	Nominal Flow (gph): 0.42		0.6
15	352	273	155	374	314	250
20	399	318	169	417	353	294
30	447	360	230	481	413	350
40	488	395	255	530	465	402
50	505	417	285	610	528	420
60	573	460	290	734	596	455

XFS Sub-Surface Dripline Maximum Lateral Lengths (meters)

Inlet Pressure bar	Maximum Lateral Length (meters)					
	30.5 cm			45.7 cm		
	Nominal Flow (l/h): 1.6		2.3	Nominal Flow (l/h): 1.6		2.3
1.0	107.2	83.2	47.2	114	95.7	76.2
1.4	121.6	96.9	51.5	127.1	107.6	89.6
2.1	136.2	109.7	70.1	146.6	125.9	106.7
2.8	148.7	120.4	77.7	161.5	141.7	122.5
3.5	153.9	127.1	86.9	185.9	160.9	128.0
4.1	174.6	140.2	88.4	223.7	181.7	138.7

XFS Sub-Surface Dripline Flow(per 100 Feet of Tubing)

Emitter Spacing	0.42 gph Emitter		0.6 gph Emitter		0.9 Emitter	
	gph	gpm	gph	gpm	gph	gpm
12"	42.0 gph	0.70 gpm	61.0 gph	1.02 gpm	92.0 gph	1.53 gpm
18"	28.0 gph	0.47 gpm	41.0 gph	0.68 gpm	61.0 gph	1.02 gpm

XFS Sub-Surface Dripline Flow(per 100 Meters of Tubing)

Emitter Spacing	1.6 l/h Emitter		2.3 l/h Emitter		3.4 l/h Emitter	
	l/h	l/m	l/h	l/m	l/h	l/m
0.30 meter	531.1 l/h	8.85 l/m	757.9 l/h	12.6 l/m	1136.7 l/h	18.9 l/m
0.46 meter	351.8 l/h	5.86 l/m	502.2 l/h	8.4 l/m	741.3 l/h	12.4 l/m

XFS-CV Dripline with Heavy-Duty Check Valve

NEW

Rain Bird® XFS-CV Dripline with an improved 4.3 psi check valve delivers 10 feet of hold-back – the highest in the industry.

With pure copper chips in every emitter to protect against emitter root intrusion, XFS-CV dripline is an all-in-one dripline suitable for any application – on-surface, sub-surface, sloped or level-grade.

When used in applications where elevation changes exist, the patent-pending check valve keeps the dripline charged with water, delivering better irrigation uniformity while preventing over-watering and puddling at the low-point in the zone.

It accepts Rain Bird XF Dripline Barbed Insert Fittings, RB 600 Series Twist Lock Fittings, and other 17 mm barbed insert fittings.

A proprietary tubing material makes the XFS Sub-Surface Dripline with Copper Shield the most flexible tubing in the industry, and the easiest sub-surface dripline to design with and install.

Features

Simple

- Rain Bird's patent-pending 4.3 psi check valve technology keeps the dripline charged with water at all times, increasing uniformity of watering, and conserves water by eliminating the need to recharge the line at the beginning of each watering cycle
- XFS-CV Sub-Surface Dripline emitters are protected from root intrusion by Rain Bird's patent-pending Copper Shield™ Technology resulting in a system that does not require maintenance or replacement of chemicals to prevent root intrusion. Through the use of a proprietary tubing material, the XFS-CV Dripline with heavy-duty check valve is the most flexible dripline tubing in the industry, making it the easiest dripline to design with and install
- Rain Bird's low-profile emitter design reduces in-line pressure loss, allowing longer lateral runs, simplifying design and reducing installation time
- Variety of standard emitter flow rates, emitter spacing and coil lengths provide design flexibility for sub-surface and on-surface areas with or without elevation changes

Made with Recycled Content

- All Rain Bird XF Dripline (XFD, XFS, XFCV, XFS-CV) qualify for LEED credit 4.2 because they contain at least 20% Polyethylene post consumer recycled material by cost. These come in an assortment of coil sizes, flow rates and emitter spacing

Reliable

- The pressure-compensating emitter design provides a consistent flow over the entire lateral length ensuring higher uniformity for increased reliability in the pressure range of 20 to 60 psi

Durable

- Dual-layered tubing (copper over black) provides unmatched resistance to chemicals, algae growth and UV damage

Grit Tolerant

- Rain Bird's proprietary emitter design resists clogging by use of an extra wide flow path combined with a self-flushing action

LOOK FOR
THE
COPPER-COLORED
TUBING



XFS-CV Dripline for Elevated Applications

With XFS-CV's built-in 4.3 check valve, all lines are kept charged and up to 10 feet of water is held back



How to Specify

XFS-CV - 06 - 12 - 100

Model XFS-CV Dripline with Heavy-Duty Check Valve	Length of Tubing
	100 = 100' (30.5 m)
	250 = 250' (76.2 m)
	500 = 500' (152.4 m)
Flow Rate	Emitter Spacing
	12 = 12" (30.5 cm)
	18 = 18" (45.7 cm)
	04 = .42 gph (1.6 l/h)
	06 = .61 gph (2.3 l/h)
	09 = .92 gph (3.5 l/h)

XFS-CV Dripline with Heavy-Duty Check Valve (cont.)

Operating Range

- Opening Pressure: 14.5 psi
- Pressure: 20 to 60 psi (1.38 to 4.14 bar)
- Flow rates: 0.6 and 0.9 gph (2.3 l/hr and 3.5 l/hr)
- Temperature:
 - Water: Up to 100°F (37.8° C)
 - Ambient: Up to 125°F (51.7° C)
- Required Filtration: 120 mesh

Specifications

- Dimensions:
 - OD: 0.634" (16mm)
 - ID: 0.536" (13.6mm);
- Thickness: 0.049" (1.2mm)
- 12" & 18" (30.5 cm, 45.7 cm) spacing
- Available in 100', 250' and 500' (30.5 m, 76.2 m and 152.4 m) coils
- Coil Colors: Copper, purple, purple stripe
- Use with XF Dripline Insert Fittings

XF Dripline Insert Fittings

XF Dripline Insert Fittings offer a unique barb design to reduce insertion force and still retain a secure fit (p. 166)



XF Dripline Insert Fittings (pg. 166)

We recommend using the XF Insertion Tool (FITINS-TOOL) which lowers the effort required to insert each fitting by 50% (p. 168)



FITINS-TOOL

XFS-CV Dripline Maximum Lateral Lengths (Feet)

Inlet Pressure psi	Maximum Lateral Length (feet)			
	12" Spacing		18" Spacing	
	Nominal Flow (gph): 0.6	Nominal Flow (gph): 0.9	Nominal Flow (gph): 0.6	Nominal Flow (gph): 0.9
20	192	136	254	215
30	289	205	402	337
40	350	248	498	416
50	397	281	573	477
60	436	309	637	529

XFS-CV Dripline Maximum Lateral Lengths (Meters)

Inlet Pressure bar	Maximum Lateral Length (meters)			
	30.5 cm		45.7 cm	
	Nominal Flow (l/h): 2.3	Nominal Flow (l/h): 3.4	Nominal Flow (l/h): 2.3	Nominal Flow (l/h): 3.4
1.4	59	41	77	66
2.1	88	63	123	103
2.8	107	76	152	127
3.5	121	86	175	145
4.1	133	94	194	161



QF Dripline Header

A Quick and Flexible Solution to Dripline Headers

NEW

The QF Dripline Header is a patent pending product that is the first pre-fabricated header for dripline installations. A Quick and Flexible replacement for a site-built header, the QF Dripline Header saves time and labor expense. Using a proprietary blend of polyethylene, similar to Rain Bird's XF Series Dripline, the QF Dripline header allows installers to simply roll out the header and attach the dripline at guaranteed 12" or 18" spacing. Eliminating the need for measuring, cutting, gluing and taping, the QF Dripline Header saves time and money, making projects more profitable.

Features

- The QF Dripline Header elbows rotate 360° and incorporate a protective ring — preventing damage and ensuring a proper seal.
- The ring also provides leverage to make attaching the dripline easier.
- The rotating barb manages trenching misalignment. Move left or right to accommodate the dripline – no need to re-trench.
- Elbows utilize the same design as Rain Bird's popular XFF Fitting requiring 50% less insertion force, and are compatible with the XFF Fittings Tool.

Specifications

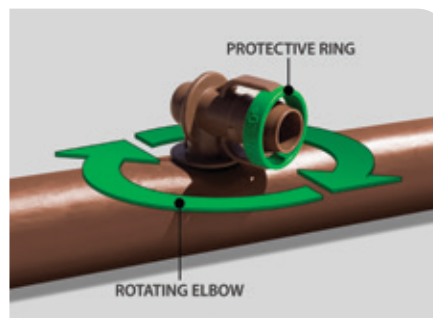
	QF Header - 3/4"	QF Header - 1"
• Outside Diameter:	0.940" (23.9mm)	1.200" (30.5mm)
• Inside Diameter:	0.820" (20.8mm)	1.060" (26.9mm)
• Wall Thickness:	0.060" (1.5mm)	0.070" (1.8mm)

Models

- XQF7512100: XQF 3/4" Dripline Header (12" Spacing 100' Coil)
- XQF7518100: XQF 3/4" Dripline Header (18" Spacing 100' Coil)
- XQF1012100: XQF 1" Dripline Header (12" Spacing 100' Coil)
- XQF1018100: XQF 1" Dripline Header (18" Spacing 100' Coil)
- XQF101210P: XQF 1" Dripline Header (12" Spacing 100' Coil) Purple
- XQF101810P: XQF 1" Dripline Header (18" Spacing 100' Coil) Purple



QF Dripline Header



Compatible Fittings



Twist Lock Fittings
800 Series (pg. 165)
(For QF Header - 3/4")



Twist Lock Fittings
1000 Series (pg. 165)
(For QF Header - 1")



How to Specify

XQF - 75 - 12 - 100

Coil Length
100 = 100' (30.5 m)
10P = 100' Purple

Emitter Spacing
12 = 12" (30.5 cm)
18 = 18" (45.7 cm)

Dripline Diameter:
75 = 3/4"
10 = 1"

Model
XQF: Xerigation®
Quick Flexible

Twist Lock Fittings

NEW

Durable and Reliable. Rain Bird's NEW Twist Lock Fittings

- Complete line of Twist Lock Fittings to simplify installation of QF Header and Blank Distribution Tubing
- Fittings provide an even tighter seal on tubing by using high quality barbs and twist locking nuts
- Unique barb design reduces insertion force while maintaining a secure fit

Operating Range

- Pressure: 0 to 60 psi (0 to 4.1 bar)

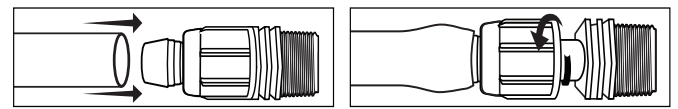
Models

600 SERIES (1/2"):

- TLF-CUPL-0600: Twist Lock Fitting 1/2" Coupler
- TLF-TEE-0600: Twist Lock Fitting 1/2" Tee
- TLF-ELBW-0600: Twist Lock Fitting 1/2" Elbow
- TLF-MPT6-0600: Twist Lock Fitting 1/2" NPT to 1/2" Adaptor
- TLF-MPT8-0600: Twist Lock Fitting 3/4" NPT to 1/2" Adaptor

800 SERIES (3/4"):

- TLF-CUPL-0800: Twist Lock Fitting 3/4" Coupler
- TLF-TEE-0800: Twist Lock Fitting 3/4" Tee
- TLF-ELBW-0800: Twist Lock Fitting 3/4" Elbow
- TLF-MPT8-0800: Twist Lock Fitting 3/4" NPT Adaptor
- TLF-CAP-0800: Twist Lock Fitting 3/4" Cap



2 Step Installation

1000 SERIES (1"):

- TLF-CUPL-1000: Twist Lock Fitting 1" Coupler
- TLF-TEE-1000: Twist Lock Fitting 1" Tee
- TLF-ELBW-1000: Twist Lock Fitting 1" Elbow
- TLF-MPT8-1000: Twist Lock Fitting 1" NPT Adaptor

	600 Series		800 Series		1000 Series	
	Inches	mm	Inches	mm	Inches	mm
Acceptable Internal Diameter	0.590 to 0.630	15 to 16	0.790 to 0.845	20.0 to 21.5	1.025 to 1.085	26.0 to 27.6
Acceptable Wall Thickness	0.025 to 0.050	0.64 to 1.27	0.045 to 0.065	1.14 to 1.65	0.045 to 0.065	1.14 to 1.65
Compatible Tubing	XFD, XT700, 1/2" XBS		3/4" XBS, 3/4" QF Header		1" QF Header	



XF Dripline Insert Fittings

Features

- Complete line of 17mm insert fittings to simplify installation of XF Series Dripline
- High quality barbs grab tubing for a secure fit
- Unique barb design to reduce insertion force and still retain a secure fit
- Non-obtrusive colored fittings to compliment natural earth tones

Operating Range

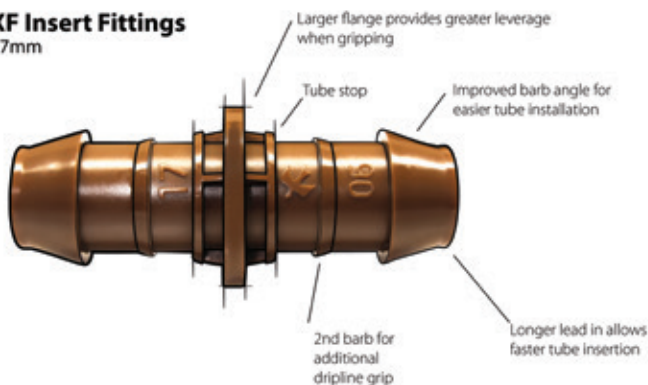
- Pressure: 0 to 50 psi (1.0 to 3.5 bar) if using 60 psi (4.1 bar) clamps will be required

Models

- XFF-COUP: 17mm Barb x Barb Coupling
- XFF-ELBOW: 17mm Barb x Barb Elbow
- XFF-MA-050: 17mm Barb x 1/2" MPT Male Adapter
- XFF-TEE: 17mm Barb x Barb x Barb Tee
- XFF-TMA-050: 17mm Barb x 1/2" MPT x 17mm Barb Tee Male Adapter
- XFF-MA-075: 17mm Barb x 3/4" MPT Male Adapter
- XFF-FA-050: Low profile barb elbow female adapter 17mm x 1/2" FPT
- XFF-TFA-050: Low profile barb tee female adapter 17mm x 1/2" FPT x 17mm
- XFD-CROSS: Barb cross 17mm x 17mm x 17mm x 17mm
- XFD-TFA-075: Barb tee female adapter 17mm x 3/4" FPT x 17mm
- LD16STK: 7 3/4" barbed tubing plastic stake
- FITINS-TOOL: XF Fitting Insertion Tool. Compatible with XFF-COUP, XFF-ELBOW, XFF-TEE, and QF Dripline Header



XF Insert Fittings 17mm



We recommend using the XF Insertion Tool (FITINS-TOOL) which lowers the effort required to insert each fitting by 50% (p. 168)



Easy Fit Compression Fitting System

Complete system of compression fittings and adapters for all tubing connection needs in a low-volume system

Features

- Reduces inventory costs: Multi-diameter compression fittings work with a wide range of 16mm - 17mm tubing or dripline
- Saves time and effort: 50% less force is required to connect tubing and fittings versus competitive compression fittings. Adapters swivel for easy installation
- Provides increased flexibility: Just three Easy Fit Fittings and five Easy Fit Adapters are needed to make over 160 combinations of connections, accommodating countless installation and maintenance situations
- Works with all 16-17mm dripline and blank tubing
- Patented fittings and adapters are molded from UV-resistant and durable ABS materials
- Removable flush caps can be used to flush end of line and temporarily cap off lines for later expansion
 - Not recommended with subsurface irrigation

Operating Range

- Pressure: 0 to 60 psi (0 to 4.1 bar)
- Accepts tubing with an O.D. of 0.630" to 0.669" (16-17mm)
- Recommended for use above surface only

Models

• Easy Fit Fittings

- MDCF-COUP: Coupling
- MDCF-EL: Elbow
- MDCF-TEE: Tee

• Easy Fit Adapters

- MDCF-50MPT: 1/2" Male Pipe Thread Adapter
- MDCF-75MPT: 3/4" Male Pipe Thread Adapter
- MDCF-50FPT: 1/2" Female Pipe Thread Adapter
- MDCF-75FPT: 3/4" Female Pipe Thread Adapter
- MDCF-75FHT: 3/4" Female Hose Thread Adapter
- MDCF-CAP: Removable Flush Cap For Easy Fit Fittings (Black)
- MDCF-PCAP: Removable Flush Cap For Easy Fit Fittings (Purple, to designate non-potable water)

Note: Easy Fit Adapters are not barbed fittings. They are to be used only with Easy Fit Compression Fittings.

Friction Loss per Fitting

Flow gpm	Loss psi	METRIC	
		Flow l/h	Loss bar
0.00	0.00	0.00	0.00
1.00	0.3	227.1	0.03
2.00	0.64	454.3	0.04
3.00	0.82	681.4	0.06
4.00	1.45	908.5	0.10
5.00	1.90	1135.6	0.13
6.00	2.57	1362.8	0.18



XF Insertion Tool

The XF Insertion Tool reduces the effort required to insert the fittings into the tube by 50%.

Features

- 50% Less effort required to install fittings than without a tool
- Firmly locks fittings into place while inserting Dripline
- Tool helps widen the dripline opening to make the fitting insertion easier
- Solid grip and comfortable fit in hand

Model

- FITINS-TOOL



FITINS-TOOL

The XF Insertion Tool works with the following XF Fittings:



XFF-COUP



XFF-ELBOW



XFF-TEE



The XF Insertion Tool securely locks fittings into place to make inserting dripline easier.



The tool also has a sloped valley to allow room for the dripline when inserting a fitting onto the second side.

Air/Vacuum Relief Valve Kit

Features

- Use with Rain Bird XF-Series or Landscape Dripline inline emitter tubing when installation is below soil*
- Made of quality rust-proof materials
- Fits inside an SEB 7XB emitter box

*Rain Bird recommends XFS dripline with Copper Shield™ for subsurface installations, including installations under turf grass.

Model

- ARV050: 1/2" Air Relief Valve



ARV050

Maximum Length of Dripline Useable with the ARV

1/2" ARV		
Emitter Spacing	0.6 GPH	0.9 GPH
12"	639'	424'
18"	958'	636'
24"	1278'	848'
ARV Capacity		
Total Flow (GPM)	6.5	
Total Flow (GPH)	390	

Maximum Length of Dripline Useable with the ARV METRIC

1/2" ARV		
Emitter Spacing	2.3 l/h	3.4 l/h
0.30 m	195	129
0.46 m	292	194
0.61 m	390	258
ARV Capacity		
Total Flow (l/m)	24.6	
Total Flow (l/h)	1476	

Install Air/Vacuum Relief Valves correctly by:

Locate at the highest point(s) of the dripline zone. Install the valve in an exhaust header or a line that runs perpendicular to the lateral rows to ensure all rows of the dripline can take advantage of the air/vacuum relief valve

Drip System Operation Indicator

Features

- Stem rises 6" for clear visibility
- When stem is extended, drip system is charged to a minimum of 20 psi
- VAN Nozzle is tightened to no flow but can be opened to observe wetting pattern
- Includes 16" of 1/4" distribution tubing with connection fitting pre-installed

Model

- OPERIND



OPERIND

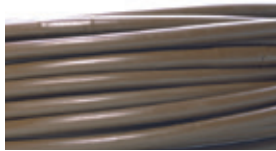
XF Series Blank Tubing

Features:

- Greater flexibility is easier to install and saves time
- Brown color matches landscape and blends with mulch. Matches XF Series Dripline inline emitter tubing
- Compatible with XF Series Dripline (0.536" I.D. x 0.634" O.D.)
- Accepts Rain Bird Easy Fit Compression Fittings, XF Dripline Insert Fittings, and 17mm insert fittings
- Not compatible with 16 mm fittings

Specifications

- Outside Diameter: 0.634" (16.1mm)
- Inside Diameter: 0.536" (13.6mm)
- Wall Thickness: 0.049" (1.2mm)



XFD100

Models:

- XFD100: 100 ft. coil (30m)
- XFD250: 250 ft. coil (76m)
- XFD500: 500 ft. coil (152m)

XF Blank Tubing Friction Loss Characteristics

O.D. .634" I.D. .536"			O.D. 16.1mm I.D. 13.6mm METRIC		
Flow gpm	Velocity fps	Loss psi	Flow l/h	Velocity m/s	Loss bar
0.50	0.70	0.27	113.56	0.21	0.06
1.00	1.40	0.97	227.12	0.43	0.22
1.50	2.10	2.06	340.69	0.64	0.46
2.00	2.80	3.50	454.25	0.85	0.79
2.50	3.50	5.29	567.81	1.07	1.20
3.00	4.20	7.42	681.37	1.28	1.68
3.50	4.90	9.87	794.94	1.49	2.23
4.00	5.60	12.64	908.50	1.71	2.86
4.50	6.30	15.72	1022.06	1.92	3.56
5.00	7.00	19.11	1135.62	2.13	4.32
5.50	7.70	22.80	1249.19	2.35	5.16
6.00	8.40	26.78	1362.75	2.56	6.06

Psi Loss Per 100 Feet of Pipe (psi/100ft.)

bar Loss per 100 Meters of Pipe (bar/100m)

Note: Use of tubing at flows shown in dark shaded area is not recommended, as velocities exceed 5 ft/sec (1.5 m/s)

XT-700 Distribution Tubing

Durable, thick-walled distribution tubing stands up to harsh conditions and performs well in all climates

Features

- Thick-walled, flexible tubing resists kinks and damage caused by routine landscape maintenance activities
- Extruded from UV-resistant polyethylene resin materials

Operating Range

- Pressure: 0 to 60 psi (0 to 4.1 bar)

Specifications

- Outside diameter: 0.700" (18 mm)
- Inside diameter: 0.580" (15 mm)
- Wall thickness: 0.06" (1.5 mm)



XT-700-100

Models

- XT-700-100: 100-foot coil (30 m)
- XT-700-500: 500-foot coil (152 m)

Note: For both water conservation and appearance, it is recommended that a 2" to 3" (5 to 8 cm) mulch cover be placed on top of the tubing

XT-700 Tubing Friction Loss Characteristics

O.D. .700" I.D. .580"			O.D. 18 mm I.D. 15 mm METRIC			
Flow gpm	Velocity fps	Loss psi	Flow m ³ /h	Flow l/h	Velocity m/s	Loss bar
0.50	0.61	0.19	0.11	0.03	0.19	0.01
1.00	1.21	0.69	0.23	0.06	0.37	0.05
1.50	1.82	1.45	0.34	0.09	0.56	0.10
2.00	2.43	2.47	0.45	0.13	0.74	0.17
2.50	3.03	3.74	0.57	0.16	0.92	0.26
3.00	3.64	5.24	0.68	0.19	1.11	0.36
3.50	4.24	6.97	0.79	0.22	1.29	0.48
4.00	4.85	8.93	0.91	0.25	1.48	0.62
4.50	5.46	11.10	1.02	0.28	1.67	0.77
5.00	6.06	13.50	1.14	0.32	1.85	0.93
5.50	6.67	16.10	1.25	0.35	2.03	1.11
6.00	7.28	18.92	1.36	0.38	2.22	1.31

Psi Loss per 100 Feet of Pipe (psi/100ft.) bar Loss per 100 Meters of Pipe (bar/100m)

Note: Use of tubing at flows shown in dark shaded area is not recommended, as velocities exceed 5 ft/sec (1.5 m/s)

Compatible Fittings



Twist Lock Fittings
600 Series (pg. 165)
XT-700 & 1/2" XBS



Twist Lock Fittings
800 Series (pg. 165)
3/4" XBS

XBS - Black Stripe Tubing

High quality, flexible tubing for use in any low-volume irrigation system

Features

- 1/2" & 3/4" blank tubing extruded from polyethylene resin materials for consistent durability
- 1/2" tubing is now available in two different sizes: 0.600" I.D. X 0.700" O.D. and 0.615" I.D. X 0.705" O.D.
- Available in five color stripes to differentiate zones
- UV-resistant for installations at or below grade
- Compact coils for easy storage and shipping

Operating Range

- Pressure: 0 to 60 psi (0 to 4.1 bar)

Models

XBS 700 - 1/2" Tubing Models - 600-700

NEW

- Outside diameter: 0.700" (17.8 mm)
- Inside diameter: 0.600" (15.2 mm)
- Wall thickness: 0.050" (1.3 mm)
- XBS700G100: 1/2" tubing, 100 foot (30 m) coil with green striping
- XBS700G500: 1/2" tubing, 500 foot (152 m) coil with green striping
- XBS700P100: 1/2" tubing, 100 foot (30 m) coil with purple striping
- XBS700P500: 1/2" tubing, 500 foot (152 m) coil with purple striping

XBS - 1/2" Tubing Models

- Outside diameter: 0.705" (18 mm)
- Inside diameter: 0.615" (15.6 mm)
- Wall thickness: 0.045" (1.2 mm)
- XBS100: 1/2" tubing, 100 foot (30 m) coil with green striping
- XBS500: 1/2" tubing, 500 foot (152 m) coil with green striping
- XBS500B: 1/2" tubing, 500 foot (152 m) coil with black striping
- XBS500R: 1/2" tubing, 500 foot (152 m) coil with red striping
- XBS500Y: 1/2" tubing, 500 foot (152 m) coil with yellow striping
- XBS500P: 1/2" tubing, 500 foot (152 m) coil with purple striping

XBS 940 - 3/4" Tubing Models

- Outside diameter: 0.940" (24 mm)
- Inside diameter: 0.820" (21 mm)
- Wall thickness: 0.060" (1.5 mm)
- XBS940G500: 3/4" tubing, 500 foot (152 m) coil with green striping
- XBS940P500: 3/4" tubing, 500 foot (152 m) coil with purple striping

Note: XBS 940 is also available in 100' coils



Black Stripe Tubing

XBS 700 - 1/2" Tubing Friction Loss Characteristics

NEW

O.D. .700" I.D. .600"			O.D. 17.8mm I.D. 15.2mm			METRIC
Flow gpm	Velocity fps	Loss psi	Flow l/h	Velocity m/s	Loss bar	
0.50	0.57	0.16	1.89	0.17	0.04	
1.00	1.14	0.58	3.79	0.35	0.13	
1.50	1.70	1.22	5.68	0.52	0.27	
2.00	2.27	2.08	7.57	0.69	0.46	
2.50	2.84	3.15	9.46	0.87	0.70	
3.00	3.41	4.41	11.36	1.04	0.98	
3.50	3.97	5.87	13.25	1.21	1.30	
4.00	4.54	7.52	15.14	1.38	1.67	
4.50	5.11	9.35	17.03	1.56	2.07	
5.00	5.68	11.36	18.93	1.73	2.16	
5.50	6.24	13.55	20.82	1.90	3.01	
6.00	6.81	15.92	22.71	2.08	3.53	

XBS - Tubing Friction Loss Characteristics

O.D. .705" I.D. .615"			O.D. 18 mm I.D. 15.6 mm			METRIC
Flow gpm	Velocity fps	Loss psi	Flow l/h	Velocity m/s	Loss bar	
0.50	0.54	0.14	1.89	0.16	0.03	
1.00	1.08	0.51	3.79	0.33	0.11	
1.50	1.62	1.08	5.68	0.49	0.24	
2.00	2.16	1.85	7.57	0.66	0.41	
2.50	2.70	2.79	9.46	0.82	0.62	
3.00	3.24	3.91	11.36	0.99	0.87	
3.50	3.78	5.20	13.25	1.15	1.15	
4.00	4.32	6.66	15.14	1.32	1.48	
4.50	4.86	8.29	17.03	1.48	1.84	
5.00	5.40	10.08	18.93	1.65	2.23	
5.50	5.94	12.02	20.82	1.81	2.67	
6.00	6.48	14.12	22.71	1.98	3.13	

XBS 940 - 3/4" Tubing Friction Loss Characteristics

OD .940" I.D. .820"			OD 23.9mm ID 20.8mm			METRIC
Flow gpm	Velocity fps	Loss psi	Flow l/h	Velocity m/s	Loss bar	
0.50	0.30	0.03	1.89	0.09	0.01	
1.00	0.61	0.13	3.79	0.19	0.03	
1.50	0.91	0.27	5.68	0.28	0.06	
2.00	1.22	0.46	7.57	0.37	0.10	
2.50	1.52	0.69	9.46	0.46	0.15	
3.00	1.82	0.96	11.36	0.55	0.21	
3.50	2.13	1.28	13.25	0.65	0.28	
4.00	2.43	1.64	15.14	0.74	0.36	
4.50	2.74	2.04	17.03	0.84	0.45	
5.00	3.04	2.49	18.93	0.93	0.55	
5.50	3.34	2.96	20.82	1.02	0.66	
6.00	3.65	3.48	22.71	1.11	0.77	
6.50	3.95	4.04	24.61	1.20	0.90	
7.00	4.25	4.63	26.50	1.30	1.03	
7.50	4.56	5.27	28.39	1.39	1.17	
8.00	4.86	5.93	30.28	1.48	1.32	
8.50	5.17	6.64	32.18	1.58	1.47	
9.00	5.47	7.38	34.07	1.67	1.64	
9.50	5.77	8.16	35.96	1.76	1.81	
10.00	6.08	8.97	37.85	1.85	1.99	

Psi Loss Per 100 Feet of Pipe (psi/100ft.)

Bar Loss per 100 Meters of Pipe (bar/100m)

Note: Use of tubing at flows shown in dark shaded area is not recommended, as velocities exceed 5 ft/sec (1.5 m/s)

XQ 1/4" Distribution Tubing

The strongest and most flexible 1/4" Distribution Tubing available to extend emitter outlets to desirable discharge locations

Features

- Unique blend of polymers that give it the flexibility of vinyl with hold of poly
- New textured finish improves handling
- Self extracting coiling feature makes it easy to use, store and eliminates waste
- Fits over barbed outlet ports and all Xerigation® emission devices and 1/4" transfer fittings
- Extruded from UV-resistant polyethylene resin materials

Specifications

- Outside Diameter: 0.25" (6.3 mm) • Wall Thickness: .04" (1.0 mm)
- Inside Diameter: 0.17" (4.3 mm) • Lengths: 100' and 1000' coils

Operating Range

- Pressure: 0 to 60 psi (0 to 4.1 bar)

Models

- XQ-100: 100-foot (30m) coil 1/4" distribution tubing
- XQ-1000: 1000-foot (305m) coil 1/4" distribution tubing
- XQ-1000-B: 1000-foot (305m) coil 1/4" distribution tubing in a bucket

XQ 1/4" Distribution Tubing Friction Loss Characteristics

O.D. .25" I.D. .17"			O.D. 6.3mm I.D. 4.3mm			METRIC
Flow gpm	Velocity fps	Loss psi	Flow m ³ /h	Flow l/h	Velocity m/s	Loss bar
1	0.27	0.16	0.00	3.79	0.08	0.01
3	0.80	1.24	0.01	11.6	0.24	0.09
5	1.33	3.20	0.02	18.92	0.41	0.22
7	1.86	5.97	0.03	26.50	0.57	0.41
9	2.39	9.50	0.03	34.07	0.73	0.66
11	2.92	13.79	0.04	41.64	0.89	0.95
13	3.45	18.75	0.05	49.21	1.05	1.29
15	3.98	24.43	0.06	56.78	1.21	1.69
17	4.52	30.80	0.06	64.35	1.38	2.13
18	4.78	34.23	0.07	68.13	1.46	2.36
19	5.05	37.83	0.07	71.92	1.54	2.61
20	5.31	41.60	0.08	75.70	1.62	2.87
25	6.64	62.86	0.09	94.63	2.03	4.34
30	7.97	88.08	0.11	113.55	2.43	6.08

Psi Loss Per 100 Feet of tubing; C=150 Bar Loss per 100 Meters of tubing

Note: Use of tubing at flows shown in dark shaded area is not recommended, as velocities exceed 5 ft/sec (1.5 m/s)



XQ-100 and XQ-1000 1/4" Tubing



XQ-1000-B 1/4" Tubing

1/4" Landscape Dripline

Rain Bird 1/4" Dripline is a perfect choice for small-sized areas such as planter boxes, container gardens, loops around trees, vegetable gardens and shrubs

Features

- Simple to use, as the flexible tubing makes watering pots and container gardens easy
 - Clog resistance through built-in filtration and two outlet holes, 180 degrees apart
- Brown tubing complements Rain Bird XF Dripline
- Works with Rain Bird 1/4" barbed Fittings

Operating Range

- 10 to 40 psi (0.7 to 2.7 bar)
- Flow rate at 30 psi (2.0 bar): 0.8gph (3.0 l/h)
- Required filtration: 200 mesh (75 micron)

Specifications

- Outside diameter: 0.250" (6 mm)
- Inside diameter: 0.170" (4 mm)
- Wall thickness: 0.040" (1 mm)
- Spacing: 6" or 12" (15.25 cm and 30.5 cm)
- Length: 100' (30.5 m) coils

Models

- LDQ0806100 • LDQ0812100

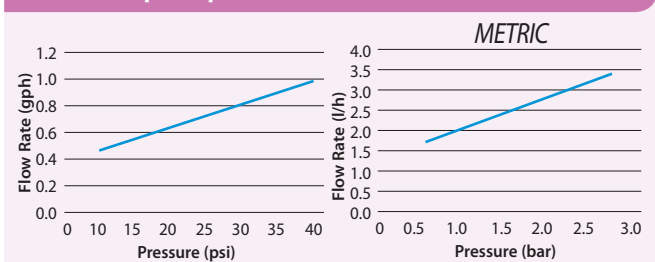


LDQ-08-06-100

Flow Characteristics

Model	Flow at 30 psi		Spacing		Coil Length	
	gph	l/h	in.	cm	ft.	m
LDQ0806100	0.8	3.0	6	15.25	100	30.50
LDQ0812100	0.8	3.0	12	30.5	100	30.5

1/4" Landscape Dripline Performance



Maximum Length of Run (Feet)

Emitter Spacing	Maximum Length of Run	Flow per Ft. @ 15 psi
6"	19 feet	1 gph/ft.
12"	33 feet	0.5 gph/ft.

1/4" Barb Transfer Fittings

Features

- Used to connect 1/4" Distribution Tubing (XQ) in different configurations or attach 1/4" tubing to 1/2" or 3/4" tubing
- Newly designed connectors have self-piercing barbs that easily puncture 1/2" or 3/4" tubing
- Stem on fittings allows simple, quick installation using Xeriman™ Tool (XM-TOOL)
- Rugged plastic construction

Operating Range*

- Pressure: 0 to 50 psi (0 to 3.5 bar)
- *with polyethylene tubing*

Models

- XBF1CONN: 1/4" barb connector
- XBF2EL: 1/4" barb x barb elbow
- XBF3TEE: 1/4" barb x barb x barb tee



XBF1CONN



XBF2EL



XBF3TEE

Subterranean Emitter Box

Features

- Provides convenient access to subsurface emitter while protecting against vandalism. Ideal for multi-outlet devices (such as Xeri-Bird 8) and Air Vacuum Relief Valve Kit
- New larger body allows more room for components and distribution tubing
- Rugged, UV-resistant thermoplastic construction
- Available with black top

Dimensions

- Height: 9.0" (22.9 cm)
- Top Diameter: 6.4" (16.3 cm)
- Base Diameter: 9.8" (24.9 cm)

Model

- SEB 7XB



SEB 7XB

Galvanized Tie-Down Stake

9-gauge galvanized steel stake to secure distribution tubing, XF Dripline or XBS Tubing to finished grade.

Features

- **Durability:** Sturdy 9 gauge galvanized steel provides long-lasting and corrosion resistant hold strength for distribution tubing.
- **Easy installation:** Sharp tips provide easy insertion into all soil types
- **Convenience:** robust packaging options provide ease of transportation and storage

Specifications:

- Size: 6 inches
- Material: galvanized steel
- Thickness: 9 gauge

Models

- TDS-6050: 6 in. galvanized tie down stake (50 piece)
- TDS-6500: 6 in. galvanized tie down stake (500 pieces, pail)



TDS-6050



TDS-6500

Tubing Goof Plug

Features

- Used to plug unwanted holes in tubing
- New design works with Xeriman™ Tool (XM-TOOL) for a quick, easy installation

Model

- EMA-GPX



EMA-GPX

Tubing Cutter

Features

- Re-designed Xerigation® Tubing Cutter allows for easier and cleaner cuts of all low-volume tubing
- Unique design provides two different-sized wells (one for 1/2" - 3/4" tubing and one for 1/4" tubing; giving more leverage so less force is needed to cut any tubing)
- Tubing Cutter is lightweight with stainless steel blades. Replacement blades available (PPC-200XBLD)

Models

- PPC-200X: Tubing cutter
- PPC-200XBLD: Replacement blades



PPC-200X

Improved Dual-well Design Allows for Clean Cuts

Control Zone Kit Selection Guide



2-Wire Compatible

XCZ-150-LCS
FLOW: 15 - 62 gpm **NEW**



2-Wire Compatible

XCZ-150-LCDR
FLOW: 15 - 62 gpm **NEW**



2-Wire Compatible

XCZ-150-PRB-COM
FLOW: 15 - 40 gpm

Commercial High Flow: 15 - 62 gpm

Pages
179 - 180



2-Wire Compatible

XCZ-100-PRB-COM
FLOW: 0.3 - 20 gpm



2-Wire Compatible

XCZ-100-PRBR
FLOW: 0.3 - 20 gpm



2-Wire Compatible

XCZ-100-PRB-LC
FLOW: 0.3 - 20 gpm

Commercial Wide Flow: 0.3 - 20 gpm

Pages
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2-Wire Compatible

XCZPGA-100-PRF
FLOW: 3 - 15 gpm **NEW**



XCZ-100-PRF
FLOW: 3 - 15 gpm

Residential Medium Flow: 3 - 15 gpm

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XCZLF-100-PRF
FLOW: 0.2 - 10 gpm **NEW**

**Residential Low Flow:
Flow: 0.2 - 10 gpm**



XCZ-075-PRF
FLOW: 0.2 - 5 gpm

**Residential Low Flow:
Flow: 0.2 - 5 gpm**

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Online Control Zone Kit Selection Guide

Rain Bird Control Zone Kits provide all of the components necessary for on/off control, filtration and pressure regulation of a low-volume irrigation zone, making the kits simple to order and easy to install.

This quick selection tool will help you find the appropriate control zone kit for your application. By answering a few simple questions, the selection guide will provide recommended control zone kits best suited for your application. Simply click on the kit image for detailed information and specifications.

Features

- Includes detailed drawings and specifications for each kit
- Available at www.rainbird.com/CZK



Control Zone Kits

Rain Bird Control Zone Kits provide all of the components necessary for on/off control, filtration, and pressure regulation in a single package, making them simple to order and easy to install.

- Most reliable kits, and contain revolutionary products such as the Low Flow Valve and Quick Check Basket Filter
- All kits in every category use the innovative PR Filter which combines the filter and pressure regulator into one unit.

- Rain Bird offers the most complete line of Control Zone Kits, giving contractors and specifiers the flexibility to meet every need from 0.2 to 40 gpm. Choose from:
- ¾", 1" or 1½" inlet opening
- Low Flow Valve, Anti-Siphon Valve, DV Valve, or PESB Valve
- Pressure Regulating RBY Filter, Pressure Regulating Quick Check Basket Filter, or Quick Check Basket Filter

Use the chart below to identify the most appropriate kit or see pages 175 - 179 for specific detailed information on these kits and their individual components. Also available is the interactive Control Zone Kit Pyramid Selection Guide for selection and detailed specification information; found at www.rainbird.com/professionals/products/drip-control

Control Zone Selection Chart

Model	Flow Rate	Flow rate capability (.9 gph dripline with 12" emitter spacing)	Valve Type	2-Wire Compatible	Filtration Type	Pressure Regulator	Inlet/Outlet Size	Size	Minimal Valve Box Size
Commercial Control Zone Kits									
XCZ-150-LCS	15-62 GPM	1000 to 4000 feet of dripline	150-PEB	Yes	120 Mesh Disc Filter (130 Micron)	40 psi	1.5" x 1.5"	20.5" Length	Jumbo Rectangular
XCZ-150-PRB-COM	15-40 GPM	1000 to 2500 feet of dripline	150-PESB	Yes	200 Mesh Stainless Steel (75 Micron)		1.5" x 1"	17.5" or 11" Length	
XCZ-100-PRB-COM	0.3-20 GPM	20 to 1300 feet of dripline	100-PESB	Yes			1" x 1"	14" Length	Mini- Standard Rectangular
XCZ-100-PRB-LC			100-PEB	Yes			1" x 1"	12" Length	
Commercial Control Zone Kits for Reclaimed Water									
XCZ-150-LCDB	15-62 GPM	1000 to 4000 feet of dripline	150-PESBR	Yes	120 Mesh Disc Filter (130 Micron)	40 psi	1.5" x 1.5"	23.5" Length	Jumbo Rectangular
XCZ-100-PRBR	0.3-20 GPM	20 to 1300 feet of dripline	100-PESBR	Yes	200 Mesh Stainless Steel (75 Micron)		1" x 1"	10.5" Length	Mini- Standard Rectangular
Residential Control Zone Kits									
XCZPGA-100-PRF	3-15 GPM	200 to 1000 feet of dripline	100-PGA	Yes	200 Mesh Stainless Steel (75 Micron)	40 psi	1" x 1"	11" Length	Mini- Standard or 10" Round
XCZ-100-PRF			100-DV	No				10" Length	
XCZLF-100-PRF	0.2-10 GPM	13 to 650 feet of dripline	LFV-100			30 psi	¾" x ¾"		
XCZ-075-PRF	0.2-5 GPM	13 to 300 feet of dripline	LFV-075						
Residential Control Zone Kits with Anti-Siphon									
XACZ-100-PRF	3-15 GPM	200 to 1000 feet of dripline	100-ASV	No	200 Mesh Stainless Steel (75 Micron)	40 psi	1" x 1"	14" Height	—
XACZ-075-PRF	0.2-5 GPM	13 to 300 feet of dripline	ASV-LFV-075			30 psi	¾" x ¾"		



Combine a Xerigation® Control Zone Kit with a Rain Bird controller product to precisely regulate zone watering times.

Low Flow Control Zone Kits with PR Filter

- Reliable Control Zone Kits that include the Low Flow Valve, the only valve on the market that can handle low flows (below 3 gpm) without weeping
- Shorter kits with only two components (valve plus pressure-regulating filter) mean that you can fit more Control Zone Kits in a valve box, saving time and money
- These PR Filter kits provide on/off control, filtration, and pressure regulation with fewer components; so there is less chance of leakage at the connections, both at installation and over the life of the system

Operating Range

- Flow: 0.20 to 10 gpm (0.8 to 37.85 l/m)
- Inlet pressure: 20 to 150 psi (1.4 to 10.3 bar)
- Regulated pressure: 30 psi (2.1 bar)
- Filtration: 200 mesh stainless steel screen (75 micron)

Models

- X CZ-075-PRF: ¾" Low Flow Valve with ¾" PR RBY Filter (Assembled)
- Flow: 0.2 to 5.0 gpm (0.8 to 18.91 l/m)
- X CZLF-100-PRF: 1" Low Flow Valve with 1" PR RBY Filter (Assembled)
- Flow: 0.2 to 10.0 gpm (0.8 to 37.85 l/m)

Replacement Screen

- RBY-200SSMX (200 mesh stainless steel screen)

Minimum Inlet Pressure for 30psi (2.1 bar) outlet pressure

Flow (gpm)	Flow (l/m)	X CZ-075-PRF	
		Pressure (psi)	Pressure (bar)
0.2	0.8	34.4	2.4
1.0	3.8	36.1	2.5
3.0	11.4	38.1	2.6
5.0	18.9	43.4	3.0

Minimum Inlet Pressure for 40psi (2.8 bar) outlet pressure

Flow (gpm)	Flow (l/m)	X CZLF-100-PRF	
		Pressure (psi)	Pressure (bar)
0.2	0.8	44.4	3.1
1.0	3.8	44.4	3.1
3.0	11.4	45.0	3.1
5.0	18.9	46.2	3.2
10.0	37.9	52.2	3.6



Four Control Zone Kits in a Standard Valve Box



Medium Flow Control Zone Kits with PR Filter

- Reliable Control Zone Kit that includes an extra durable PGA valve
- These PR Filter kits provide on/off control, filtration, and pressure regulation with only two parts; so there is less chance of leakage at the connections, both at installation and over the life of the system
- 2-wire compatible residential Control Zone Kit

Operating Range

- Flow: 3 to 15 gpm (11.4 to 56.8 l/m)
- Inlet pressure: 20 to 150 psi (1.4 to 10.3 bar)
- Filtration: 200 mesh stainless steel screen (75 micron)
- Regulated pressure: 40 psi (2.8 bar)

Models

- XCZPGA-100-PRF: 1" PGA Valve with 1" PR Filter

Replacement Screen

- RBY-200SSMX (200 mesh stainless steel screen)



XCZPGA-100-PRF

Medium Flow Control Zone Kits with PR Filter

- Shorter kits with only two components (valve plus pressure-regulating filter) mean that you can fit more Control Zone Kits in a valve box, saving time and money
- These PR Filter kits provide on/off control, filtration, and pressure regulation with only two parts; so there is less chance of leakage at the connections, both at installation and over the life of the system

Operating Range

- Flow: 3 to 15 gpm (11.4 to 56.8 l/m)
- Inlet pressure: 20 to 150 psi (1.4 to 10.3 bar)
- Filtration: 200 mesh stainless steel screen (75 micron)
- Regulated pressure: 40 psi (2.8 bar)

Models

- XCZ-100-PRF: 1" DV Valve with 1" PR Filter (Assembled)*

* Available with BSP threads

Replacement Screen

- RBY-200SSMX (200 mesh stainless steel screen)



XCZ-100-PRF

Minimum Inlet Pressure for 40 psi outlet pressure

Flow gpm	Inlet Pressure (psi) XCZPGA-100-PRF	Inlet Pressure (psi) XCZ-100-PRF
3.0	45.8	42.9
5.0	47.0	44.1
10.0	50.7	48.5
15.0	57.6	55.5

Minimum Inlet Pressure for 2.8 bar outlet pressure

Flow l/m	Inlet Pressure (bar) XCZPGA-100-PRF	Inlet Pressure (bar) XCZ-100-PRF
11.4	3.2	3.0
18.9	3.2	3.0
37.9	3.5	3.3
56.8	4.0	3.8

Wide Flow Commercial Control Zone Kit with Pressure Regulating, Basket Filter

UPDATED

- Industry wide flow range between 0.3 and 20 gpm (1.13 to 75.71 l/m) leading enables single SKU purchase for large projects
- Updated with the reliable, flexible and proven PEB valve with the rugged pressure regulating basket filter
- This PR Filter kit provides on/off control, filtration, and pressure regulation with only two parts; so there is less chance of leakage at the connections, both at installation and over the life of the system
- The “No Spill” feature of the basket filter ensures dirt does not fall back into the filter during cleanup operation. The threaded filter top with O-ring makes it easy to remove and clean that stainless steel filter screen

Operating Range

- Flow: 0.3 to 20 gpm (1.13 to 75.71 l/m)*
- Inlet Pressure: 15 to 150 psi (1,0 to 10,3 bar)
- Regulating Pressure: 40 psi (2,7 bar)
- Filtration: 200 mesh (75 micron) stainless steel
- Temperature: Up to 150 degree F (66 degree C)

Model

- X CZ-100-PRB-LC: 1" PEB Valve with 1" Pressure Regulating (40 psi), Basket Filter
- X CZ-100-PRB-MC: 1" PESB Valve with 1" Pressure Regulating (40 psi), Basket Filter

Replacement Filter Screens

- QKCHK-100M: 100 mesh stainless steel screen, red
- QKCHK-200M: 200 mesh stainless steel screen, white

Replacement Cap

- BFCAP (Complete cap with body o-ring)

**For flows below 5gpm Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm*

Minimum Inlet Pressure for 40 psi (2.8 bar) Outlet Pressure

Flow Rate gpm	l/m	Inlet Pressure	
		psi	bar
0.3	1.14	41.0	2.82
1.0	3.78	41.5	2.86
5.0	18.9	43.0	2.9
10.0	37.9	48.0	3.3
15.0	56.8	56.0	3.8
20.0	75.7	65.0	4.5



X CZ-100-PRB-LC

Wide Flow Commercial Control Zone Kit with Scrubber Valve & Pressure Regulating, Basket Filter

- Complete kit is the simplest, smallest and most reliable Control Zone Kit for commercial applications between 0.3 and 20 gpm (1.13 and 76 l/m)
- Includes the reliable, proven PESB Valve which provides patented scrubbing action, making this kit ideal for commercial dirty water applications
- Includes the Pressure Regulating, Quick-Check Basket Filter that has a clear indicator which goes from green to red, telling you when to clean the filter. This reduces maintenance and takes the guesswork out of cleaning the filter. In addition, the threaded top makes it easy to remove and clean the stainless steel screen
- Basket Filter and Pressure Regulator have been combined for one smaller Pressure Regulating, Quick-Check Basket filter that is 24% smaller than the previous unit

Operating Range

- Flow: 0.3 to 20.0 gpm (1.13 to 75.7 l/m)*
- Inlet Pressure: 15 to 150 psi (1,0 to 10,3 bar)
- Regulating Pressure: 40 psi (2,7 bar)
- Filtration: 200 mesh (75 micron) stainless steel
- Temperature: Up to 150° F (66° C)

Model

- XCZ-100-PRB-COM: 1" Ball Valve with 1" PESB Valve and 1" Pressure Regulating (40 psi), Quick-Check Basket Filter
- XCZ-100-PRBR: 1" PESBR Valve and 1" Pressure Regulating (40psi) Basket Filter

Replacement Screen

- QKCHK100M (100 mesh stainless steel screen)
- QKCHK200M (200 mesh stainless steel screen)

Replacement Cap

- QKCHKCAP (Complete cap with body o-ring)

* For flows below 5gpm Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm

Minimum Inlet Pressure for 40 psi outlet pressure		
Flow gpm	Inlet Pressure (psi) XCZ-100-PRB-COM	Inlet Pressure (psi) XCZ-100-PRBR
0.3	41.0	41.0
1.0	41.5	41.5
3.0	42.0	42.0
5.0	44.0	45.0
10.0	47.3	49.0
15.0	53.0	57.0
20.0	62.5	62.5

Minimum Inlet Pressure for 2.8 bar Outlet Pressure		
Flow l/m	Inlet Pressure (bar) XCZ-100-PRB-COM	Inlet Pressure (bar) XCZ-100-PRBR
1.136	2.82	2.82
3.78	2.86	2.86
11.4	2.9	2.9
18.9	3.0	3.1
37.9	3.3	3.4
56.8	3.6	3.9
75.7	4.3	4.3



High Flow Commercial Control Zone Kit with 2 Pressure Regulating, Basket Filters

- Highest flow Control Zone Kit on the market for large, commercial drip zones 15.0 to 40.0 gpm (56,8 to 151,4 l/m)
- Includes the reliable, proven 1 ½" PESB Valve which provides patented scrubbing action, making this kit ideal for commercial dirty water applications
- Includes 2 Pressure Regulating, Quick-Check Basket Filter that have a clear indicator which goes from green to red, telling you when to clean the filter. This reduces maintenance and takes the guesswork out of cleaning the filter. In addition, the threaded top makes it easy to remove and clean the stainless steel screen
- Basket Filter and Pressure Regulator have been combined for one smaller Pressure Regulating, Quick-Check Basket filter that is 22% smaller than the previous unit
- Comes partially assembled for convenience and ease of installation

Operating Range

- Flow: 15.0 to 40.0 gpm (56,8 to 151,4 l/m)
- Inlet Pressure: 20 to 150 psi (1,4 to 10,3 bar)
- Regulating Pressure: 40 psi (2,7 bar)
- Filtration: 200 mesh (75 micron) stainless steel
- Temperature: Up to 150° F (66° C)

Models

- XCZ-150-PRB-COM: 1 1/2" PESB Valve with two 1" Pressure Regulating (40 psi), Quick-Check Basket Filters

Replacement Screen

- QKCHK100M (100 mesh stainless steel screen)
- QKCHK200M (200 mesh stainless steel screen)

Replacement Cap

- QKCHKCAP (Complete cap with body o-ring)

Minimum Inlet Pressure for 40 psi outlet pressure

Flow gpm	Inlet Pressure (psi) XCZ-150-PRB-COM
15.0	40.0
20.0	49.0
25.0	50.2
30.0	53.5
35.0	56.1
40.0	60.7

Minimum Inlet Pressure for 2.8 bar Outlet Pressure

Flow l/m	Inlet Pressure (bar) XCZ-150-PRB-COM
56.8	2.8
75.7	3.4
94.7	3.5
113.6	3.7
132.5	3.9
151.4	4.2



1.5" Inline Commercial Control Zone Kit NEW

Run Up to 62 gpm for Large Zones

- High Flow Range: Allows for larger drip zone coverage with one control zone kit, saving labor cost, material cost and installation hassle.
- Low Friction Loss: Allows usage in zones with lower head pressure.
- Fully Assembled: Saves installation labor cost by ensuring all key components are included and that the direction of flow in individual components is assembled properly.
- Inline Configuration: Fewer connection points, which fits two kits instead of just one in a jumbo valve box. Also provides more access for maintenance and components.

Operating Range

- Flow Range: 15 to 62 gpm (56.8 l/min to 234.69 l/min)
- Inlet Pressure: 15 to 115 psi (1.03 to 7.9 bar)
- Regulated Pressure: 40 psi (2.8 bar)
- Filtration: 120 mesh (130 micron)
- Water Temperature: 33° F up to 110° F (0.5° C to 43° C)
- Ambient Temperature: 33° F up to 125° F (0.5° C to 52° C)

Specifications

Dimensions

- XCZ-150-LCS: 20 3/4" L x 5 3/4" W x 9 1/2" H
- XCZ-150-LCDR: 23 1/2" L x 5 3/4" W x 9 1/2" H

Filtration

- XCZ-150-LCS: 1 1/2" (3.81 cm) Stainless Steel Screen Filter, 120 Mesh (130 Micron); Surface Area: 42 in² (270 cm²)
- XCZ-150-LCDR: 1 1/2" (3.81 cm) Disc Filter, 120 Mesh (130 Micron); Surface Area: 48 in² (310 cm²)

Valve Type

- XCZ-150-LCS: 1.5" PEB
- XCZ-150-LCDR: 1.5" PESB-R
- Power: 24 VAC 50/60 Hz (cycles/sec) solenoid
- Inrush Current: 0.41A (9.84 VA) at 60Hz
- Holding Current: 0.14A (3.43VA) at 60Hz
- Coil Resistance: 30-39 Ohms
- Two-wire compatible with ESP-LXD Decoders

Models

- XCZ-150-LCS
- XCZ-150-LCDR

Replacement Filters

Disc

- LGFC120MD

Screen

- LGFC120MS

Pressure Loss Characteristics		
Flow Rate (gpm)	XCZ-150-LCS	XCZ-150-LCDR
15	3	2
20	3	2
25	3	3
30	5	3
40	6	6
50	11	8
60	15	8
70	16	8

Pressure Loss Characteristics		METRIC
Flow Rate (l/m)	XCZ-150-LCS	XCZ-150-LCDR
56.9	0.21	0.14
75.7	0.21	0.14
94.6	0.21	0.21
113.5	0.34	0.21
151.4	0.41	0.41
189.3	0.76	0.55
227.1	1.03	0.55
264.9	1.10	0.55



XCZ-150-LCS



XCZ-150-LCDR

Low Flow Valves

Valves designed exclusively for the low flow rates of a drip irrigation system (0.2 - 10.0 gpm; 0.6 to 37.8 l/m)

Features

- The only valves in the industry made specifically for drip irrigation systems, making these the only valves that can effectively handle particles at low flow rates – patented design
- These valves contain all of the features of reliable Rain Bird DV valves, coupled with a unique diaphragm design that allows particles to pass through at extremely low flow rates, thereby preventing weeping of the valve
- Allows the filter to be safely placed downstream of the valve since these valves handle all sizes of particles
- Unique “double-knife” diaphragm coupled with 1/2" diameter seat for flawless operation at low flow rates
- Low Flow Valve is available in 3/4" In-line model
- Double-filtered pilot flow design for maximum reliability
- External bleed to manually flush the system of dirt and debris during installation and system start-up
- Internal bleed for spray-free manual operation.

Operating Range

- Flow: 0.20 to 10.0 gpm (0.6 to 37.8 l/m)
- Pressure: 15 to 150 psi (1.0 to 10.3 bar)

Electrical Specifications

- 24 VAC 50/60 Hz (cycles/sec) solenoid
- Inrush current: 0.30 (7.2 VA) at 60 Hz
- Holding current: 0.19 A (4.56 VA)

Models

- LFV-075: 3/4" Low Flow DV Valve
- LFV-100*: 1" Low Flow DV Valve

*Available with BSP threads

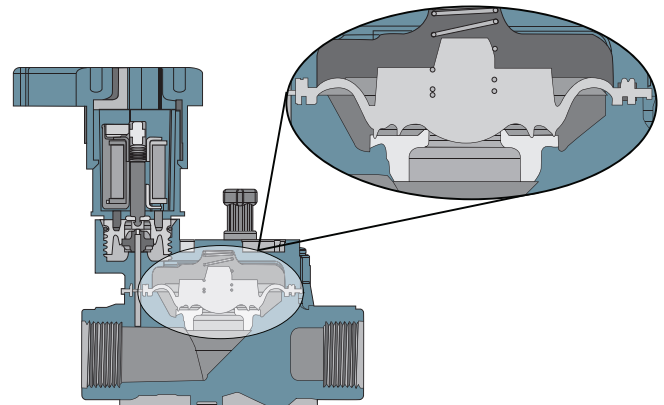
Pressure Loss Characteristics

Flow gpm	LFV-075 psi	LFV-100 psi
0.2	3.0	3.0
1.0	3.2	3.4
2.0	3.3	3.8
4.0	3.6	5.0
6.0	4.2	6.4
8.0	5.1	7.5

Pressure Loss Characteristics

METRIC

Flow l/m	LFV-075 bar	LFV-100 bar
0.6	0.21	0.21
3.6	0.22	0.23
7.8	0.23	0.26
15.0	0.25	0.34
22.8	0.28	0.44
30.0	0.35	0.52



Unique Diaphragm Design



LFV-075

Note: Also available as part of XCZLF-100-PRF (p. 175)

Inline RBY Filter

Static filter helps prevent plugging in a drip irrigation system

Features

- A simple and reliable filter for low-volume irrigation systems
- Simple to clean, as cap has a sealing O-ring and unthreads to provide access to the stainless steel filter element
- Strong and reliable due to its robust design and glass-filled polypropylene construction
- Male x Male threaded connections for direct connection to valves and pressure regulators
- Replacement stainless steel elements are available in 200 mesh (75 micron)

Operating Range

- Flow:
 - 3/4" units: 0.20 to 12.0 gpm (0.8 to 45.4 l/m)
 - 1" units: 0.20 to 18.0 gpm (0.8 to 68.1 l/m)
- Pressure: 20 to 150 psi (1.4 to 10.3 bar)
- Filtration: 200 mesh (75 micron)

Models

- RBY075MPTX: 3/4" Inline RBY Filter with 200 Mesh Screen
- RBY100MPTX: 1" Inline RBY Filter with 200 Mesh Screen*

Replacement screen:

- RBY-200SSMX (200 mesh stainless steel screen)



RBY075MPTX

Pressure-Regulating Filter (RBY)

Unique, compact unit that works with all valves to create a simple, efficient control zone. Combines filtration and pressure regulation in one piece for protection of downstream components in a low-volume irrigation system

Features

- Reduces the number of components in a control zone, making it smaller and easier to install. More control zones can fit in one valve box!
- Combination unit comes with 200 mesh (75 micron) stainless steel reduces the number of connections, making installation easier and faster
- Static RBY filter regulates pressure to a nominal 30 or 40 psi (2.0 or 2.8 bar) - PR RBY Filter Cap has sealing O-ring and unthreads to provide access to the filter element for easy cleaning
- 30 or 40 psi pressure regulator is integrated into the filter body
- Robust body and cap are made of glass-filled polypropylene and provide 150 psi (10.3 bar) pressure rating

Operating Range

- Flow - 3/4" units: 0.20 to 5.0 gpm (0.8 to 18.9 l/m)
 - 1" units: 3.0 to 15.0 gpm (11.4 to 56.8 l/m)
- Inlet pressure: 20 to 150 psi (1.4 to 10.3 bar)
- Regulated pressure: - 3/4" units: 30 psi (2.1 bar)
 - 1" units: 40 psi (2.8 bar)

Components of Control Zone Kits Found on pg. 175-186

Models

- PRF-075-RBY: 3/4" PR RBY Filter
- PRF-100-RBY: 1" PR RBY Filter

Replacement Screen

- RBY-200SSMX (200 mesh stainless steel screen)

Stainless Steel Screen



PRF-075-RBY and PRF-100-RBY

Pressure Loss Characteristics

Flow Rate gpm	l/m	RBY075MPTX		RBY100MPTX	
		psi	bar	psi	bar
1.00	0.8	0.1	0.00	0.1	0.00
3.00	3.8	0.4	0.01	0.3	0.01
5.0	11.4	1.1	0.03	0.5	0.02
7.0	18.9	1.6	0.08	0.8	0.03
9.0	26.5	2.7	0.11	1.4	0.06
12.0	34.1	4.5	0.19	2.2	0.10
14.0	45.4	—	0.31	3.0	0.15
16.0	53.0	—	—	3.8	0.21
18.0	60.6	—	—	4.7	0.26
	68.1	—	—	—	0.32

Note: Pressure loss for 200 mesh filter screen

Pressure Loss Characteristics

Flow Rate gpm	l/m	PRF-075-RBY		PRF-100-RBY	
		psi	bar	psi	bar
0.2	0.8	3.0	0.21	N/A	N/A
1.0	3.8	4.0	0.28	N/A	N/A
3.0	11.4	6.1	0.42	0.8	0.06
5.0	18.9	10.0	0.69	2.0	0.14
8.0	30.3	N/A	N/A	3.8	0.26
10.0	37.9	N/A	N/A	5.2	0.36
15.0	56.8	N/A	N/A	12.0	0.83

Note: Pressure loss for 200 mesh filter screen

Quick-Check Basket Filter

The only commercial-grade filter with a clean/dirty indicator for low-volume irrigation zones

Features

- Reduces maintenance and labor costs — the indicator tells you when to clean the filter, taking the guesswork out of cleaning the filter
- Provides increased reliability – “No-spill” feature ensures dirt does not fall back into the filter during cleanup operation
- Simplifies installation and maintenance - threaded top with O-ring makes it easy to remove and clean the screen
- Available in 1" model
- Comes pre-assembled with 200 mesh (75 micron) stainless steel screen (other screen sizes available)

Operating Range

- Flow: 3.0 to 20.0 gpm (11.4 to 75.7 l/m)
- Pressure: 0-150 psi (0 to 10.3 bar)

Models

- QKCHK-100*: 1" Basket Filter with 200 mesh stainless steel screen
* Available with BSP threads

Pressure Loss Characteristics - QKCHK-100

Flow Rate		100 mesh screen		200 mesh screen	
gpm	l/m	psi	bar	psi	bar
3	11.4	0.1	0.0	0.0	0.0
5	18.9	0.2	0.0	0.0	0.0
7	26.5	0.4	0.0	0.4	0.0
9	34.1	0.7	0.0	0.7	0.0
11	41.6	0.9	0.1	1.1	0.1
14	53.0	1.3	0.1	1.6	0.1
20	75.7	2.9	0.2	3.2	0.2

Note: Pressure loss for 200 mesh filter screen

Replacement Filter Screens

- QKCHK-100M: 100 mesh screen, red
- QKCHK-200M: 200 mesh stainless steel screen, white

Replacement Cap

- QKCHKCAP (Complete cap with body o-ring)

QKCHK-100



Inline Pressure Regulators

Features

- Can be installed above or below grade
- Preset outlet pressure: 30 psi (2.0 bar) and 40 psi (2.8 bar)
- ¾" NPT female-threaded inlet and outlet

Operating Range

- Flow
 - PSI-L30X-075: 0.20 to 5.0 gpm; 12 to 300 gph (0.8 to 18.9 l/m)
 - PSI-M30X-075, PSI-M40X-075: 2.0 to 10.0 gpm; 120 to 600 gph (7.8 to 37.9 l/m)
- Inlet Pressure: 10-150 psi (0.7 to 10.3 bar)

Models

- PSI-L30X-075: ¾" 30 psi (2.1 bar) regulator for low flow (red label)
- PSI-M30X-075: ¾" 30 psi (2.1 bar) regulator for medium flow (yellow label)
- PSI-M40X-075: ¾" 40 psi (2.8 bar) regulator for medium flow (yellow label)



PSI-L30X-075,
PSI-M30X-075
PSI-M40X-075

Retrofit Pressure Regulators

Features

- Provides convenient 30 psi (2.1 bar) pressure regulation at the riser for any ½" FPT emission device or compression adapter
- Can be installed above or below grade
- Can be used with Xeri-bird™ 8 Multi-Outlet Emission Device (see page 145)

Operating Range

- Flow: 0.50 to 4.00 gpm; 30 to 240 gph (1.9 to 15.1 l/m)
- Inlet Pressure: 15 to 70 psi (1.0 to 4.8 bar)

Dimensions

- ½" female-threaded inlet
- Height: 4" (10 cm)

Model

- PRS-050-30

PRS-050-30



1" & 1½" High Flow Inline Pressure Regulators NEW

High flow Pressure Regulator family that delivers pre-set regulation for a wide flow range (0.5 -70 gpm) providing a solution for most irrigation applications.

Features

Flexibility

- Its high flow range (0.5 gpm to 70 gpm) capacity allows usage in a wide range of applications, making it ideal for drip or spray applications. It can be installed above or below grade.
 - 1" Pressure Regulators flow range: 0.5-35 gpm (1.9 to 132.5 l/min)
 - 1½" Pressure Regulator flow range: 15-70 gpm (56.8 to 265.0 l/min)

Reliable Performance:

- Pre-set outlet pressure regulation at either 40 psi (2.8 bar) or 50 psi (3.4 bar) provides worry-free protection for your irrigation installations.

Durability:

- Tested to meet Rain Bird's high-quality standards. High Strength ABS construction and stainless steel springs provide the durability to withstand any job.

Operating Range

- Pressure Regulation:
 - PSI-H40X-100: 40 psi (2.8 bar)
 - PSI-H50X-100 : 50 psi (3.4 bar)
 - PSI-H40X-150: 40 psi (2.8 bar)
- Flow Range:
 - PSI-H40X-100 & PSI-H50X-100: 0.5 gpm (1.9 l/min) to 35 gpm (132.5 l/min)
 - PSI-H40X-150: 15 gpm (56.8 l/min) to 70 gpm (265.0 l/min)
- Inlet pressure: 15 psi (1.0 bar) to 150 psi (10.3 bar)

Specifications

- PSI-H40X-100 & PSI-H50X-100 : 1" Female NPT X 1" Female NPT
- PSI-H40X-150: 1½" Female NPT X 1½" Female NPT

Dimensions:

- PSI-H40X-100 & PSI-H50X-100: 5.8" (14.7 cm) in Length x 2.7" (6.8 cm) in Width
- PSI-H40X-150: 6.3" (16.0 cm) in Length x 3.3" (8.4 cm) in Width

Models

- PSI-H40X-100: 1" 40 psi inline Pressure Regulator
- PSI-H50X-100: 1" 50 psi inline Pressure Regulator
- PSI- H40X-150: 1½" 40 psi inline Pressure Regulator



1" & 1½" High Flow Inline Pressure Regulators

How to Specify

PSI - H XX X - 100

Model Pressure Regulator	Inlet/Outlet Size 100 = 1 in (2.5 cm) 150 = 1½ in (3.8 cm)
	Pre-Set Pressure Regulation 40 = 40 psi (2.8 bar) 50 = 50 psi (3.5 bar)
	Flow Range Capacity H = High Flow (up to 70 gpm; 265 l/m)

Pressure Regulating, and Quick-Check Pressure Regulating Basket Filters

The only commercial-grade filter with built in pressure regulator for low-volume irrigation zones. Also available with a clean/dirty indicator.

Features

- Reduces maintenance and labor costs - 40% larger filter surface than standard filters means less frequent cleaning
- Provides increased reliability – “No Spill” feature ensures dirt does not fall back into the filter during cleanup operation
- Simplifies installation and maintenance – threaded top with 0-ring makes it easy to remove and clean that stainless steel filter screen
- Efficient design – combines filtration and pressure regulation in one compact unit with fewer connections
- Available in 1" model
- Comes pre-assembled with 200 mesh (75 micron) stainless steel screen (other screen sizes available)
- Built-in 40 psi (2,7 bar) pressure regulator
- Also available in Light Commercial Control Zone Kits:
 - XCZ-100-PRBR (without Quick-Check feature)
 - XCZ-100-PRB-LC (without Quick-Check feature)
 - XCZ-PRB-100-COM (with Quick-Check)
 - XCZ-PRB-150-COM (with Quick-Check)

Operating Range

- Flow: 5.0 to 20 gpm (18.9 to 75.7 l/m)
- Inlet Pressure: 15 to 150 psi (1,0 to 10,3 bar)
- Regulating Pressure: 40 psi (2,7 bar)
- Filtration: 200 mesh (75 micron) stainless steel
- Temperature: Up to 150 degree F (66 degree C)

Components
of Control Zone
Kits Found on
pg. 175-186

Models

- PRB-100: 1" Basket Filter with built-in Pressure Regulator (40 psi) and 200 mesh (75 micron) stainless steel screen
- PRB-QKCHK-100: 1" Basket Filter with built-in Pressure Regulator (40 psi) and 200 mesh (75 micron) stainless steel screen

Replacement Filter Screens

- QKCHK-100M: 100 mesh stainless steel screen, red
- QKCHK-200M: 200 mesh stainless steel screen, white

Replacement Cap

- QKCHKCAP (Complete cap with body o-ring)

Minimum Inlet Pressure for 40 psi (2.8 bar) Outlet Pressure

Flow Rate gpm	l/m	Inlet Pressure PRB-100 / PRB-QKCHK-100		Inlet Pressure PRB-QKCHK-200	
		psi	bar	psi	bar
3	11.4	41	2.8	43	2.9
5	18.9	42	2.9	48	3.3
10	37.9	48	3.3	52	3.6
15	56.8	52	3.6	54	3.7
20	75.7	64	4.4	66	4.5



PRB-100

Stainless
Steel
Screen



PRB-QKCHK-100



QKCHK-100M



QKCHK-200M

Large-Capacity Filters

Large-Capacity high flow and low maintenance with a solid build

Features

- Provides extra large filtration capacity for residential, commercial, and municipal applications
- Durable filters can be easily removed for cleaning, significantly reducing cleaning time
- Disc filters can decompress for easy cleaning
- Auxiliary connection with a threaded cap can be drilled to allow draining or depressurization

Operating Range

- 1" Model: Maximum flow: Up to 26 gpm (6 m³/hr)
 - Filtering surface (disc): 28 in² (180cm²)
- 1.5" Models: Maximum flow: Up to 62 gpm (14 m³/hr)
 - Filtering surface (disc): 48 in² (310 cm²)
 - Filtering surface (screen): 42 in² (270 cm²)
- 2" Models: Maximum flow: Up to 110 gpm (25 m³/hr)
 - Filtering surface (disc): 81 in² (525 cm²)
 - Filtering surface (screen): 75 in² (485 cm²)
- Maximum Pressure: 116 psi (8 bar)
- Maximum Temperature: Up to 140° F (60° C)

Models

- LCRBY100D - 1" Large-Capacity Disc Filter
- LCRBY150S - 1.5" Large-Capacity Screen Filter
- LCRBY150D - 1.5" Large-Capacity Disc Filter
- LCRBY200S - 2" Large-Capacity Screen Filter
- LCRBY200D - 2" Large-Capacity Disc Filter

Specifications

- Inlet / Outlet Size:
 - 1" Models: 1" NPT
 - 1.5" Models: 1.5" NPT
 - 2" Models: 2" NPT

Filtration

- Stainless Steel Screen Filter: 120 Mesh (130 Micron)*
- Plastic Filter Discs: 120 Mesh (130 Micron)

*Screen not available in 1" model

Replacement Filters

Disc

- LGFC120MD

Screen

- LGFC120MS



Disc & Screen Filters

Pressure Loss Characteristics - Disc Filter

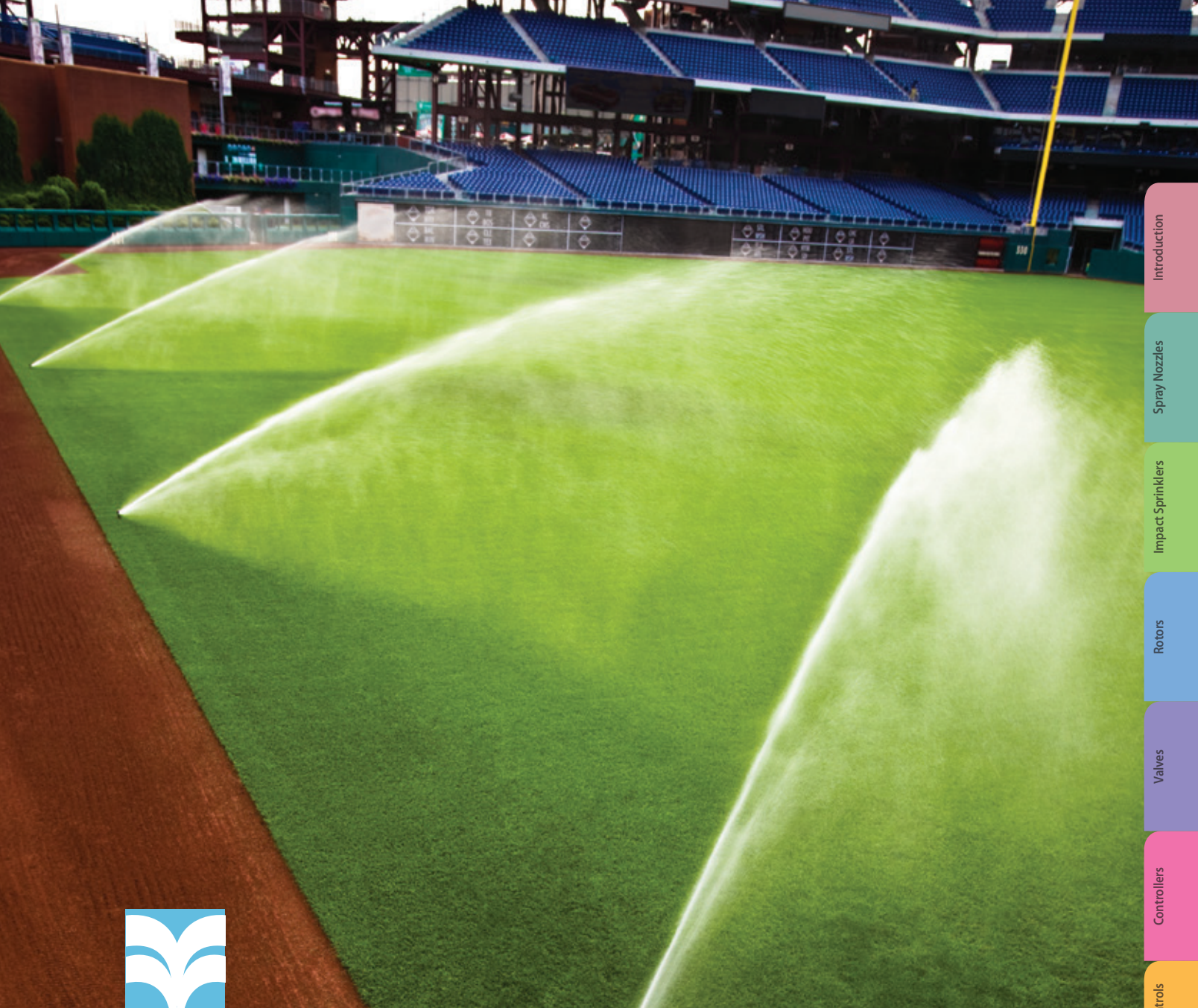
Flow Rate gpm	l/m	1" Filter		1.5" Filter		2" Filter	
		psi	bar	psi	bar	psi	bar
5	18.93	0.60	0.04	0.08	0.01	0.10	0.01
11	41.67	1.16	0.08	0.18	0.01	0.10	0.01
22	83.33	2.61	0.18	0.40	0.03	0.10	0.01
33	125.0	4.35	0.30	0.73	0.05	0.24	0.02
44	166.67	—	—	1.05	0.07	0.40	0.03
55	208.33	—	—	1.50	0.10	0.60	0.04
66	250.00	—	—	2.18	0.15	0.82	0.06
77	291.67	—	—	3.10	0.21	1.10	0.08
88	333.33	—	—	3.95	0.27	1.60	0.11
99	375.00	—	—	—	—	2.03	0.14
110	416.67	—	—	—	—	2.47	0.17

Pressure Loss Characteristics - Screen Filter

Flow Rate gpm	l/m	1" Filter		1.5" Filter		2" Filter	
		psi	bar	psi	bar	psi	bar
5	18.93	0.80	0.06	0.00	0.00	0.00	0.00
11	41.67	1.74	0.12	0.00	0.00	0.00	0.00
22	83.33	2.90	0.20	0.50	0.03	0.20	0.01
33	125.0	4.06	0.28	0.95	0.07	0.25	0.02
44	166.67	—	—	1.45	0.10	0.44	0.03
55	208.33	—	—	1.89	0.13	0.60	0.04
66	250.00	—	—	2.32	0.16	0.87	0.06
77	291.67	—	—	2.76	0.19	1.16	0.08
88	333.33	—	—	3.19	0.22	1.45	0.10
99	375.00	—	—	—	—	1.89	0.13
110	416.67	—	—	—	—	2.32	0.16

Note: Body dimensions are available on the Rain Bird website.

Note: Filter should be installed downstream of the valve, to prevent the filter from being under constant pressure.



Pumps & Filtration



Water Saving Tips

- Newer high-efficiency motors are able to convert a higher percentage of their electric input to useful mechanical work resulting in energy and cost savings.
- Rain Bird Variable Frequency Drive (VFD) pump stations save energy while delivering the water pressure necessary to ensure maximum water use efficiency.
- Rain Bird designs pump stations specifically for the application, ensuring the pump runs at maximum efficiency. Delivering the right pressure as demanded by the system ensures your irrigation system is efficient and effective. For assistance call 520-806-5620 or email pumps@rainbird.com.

Introduction

Spray Nozzles

Impact Sprinklers

Rotors

Valves

Controllers

Central Controls

Low Volume Irrigation

Pumps & Filtration

Resources

CLP Series

NEW Expanded Models

Compact Low Profile 5HP VFD Pump Station

Rain Bird's CLP Series pump station is designed for boost and flooded suction-lift applications. The CLP Series is a complete pump package that is simple to install and operate. It includes a professional-grade pump, a marine-grade aluminum enclosure, highest quality pump protection, and optional mounting for a Rain Bird controller. Home owner associations, small sports fields, schools, parks, and small agricultural projects are ideal applications. With this complete solution there is no need to deal with the hassle of stick building a pump station with non-compatible parts and a makeshift enclosure. Only Rain Bird provides a totally integrated irrigation solution with UL-listed components and a one-year warranty that dependably deliver healthy, beautiful landscapes, saving time and minimizing maintenance.

Features

- Plumbing Configurations
 - Inlet and discharge piping on opposite sides of the enclosure (as shown)
 - ¾" and 2" Priming Ports Included
- Mechanical Features
 - Isolation valve
 - Liquid filled pressure gauge
 - Rugged centrifugal pump (Suction Lift model is self-priming)

Enclosures / External Connections

- Marine grade aluminum enclosure and deck
- Stainless Steel piping
- Fused main power disconnect
- Pump Control Runs based on signal from irrigation controller, or from optional Flow Start Switch (Boost model only)
- 24VAC Pump start relay included. Other voltages available as an accessory
- 130 °F Temperature cutout switch

At-A-Glance Description

- Variable Frequency Drive (VFD)
- Pump Start Relay included
- Aluminum Deck and Enclosure
- Stainless Steel Piping
- Isolation Valve for maintenance and priming
- Manual Switch provides user full control and override capabilities
- 2" – Discharge, 2" Intake NPT (Boost), 2 ½" Suction Port NPT (Suction Lift)
- Mounting options for Rain Bird Controllers



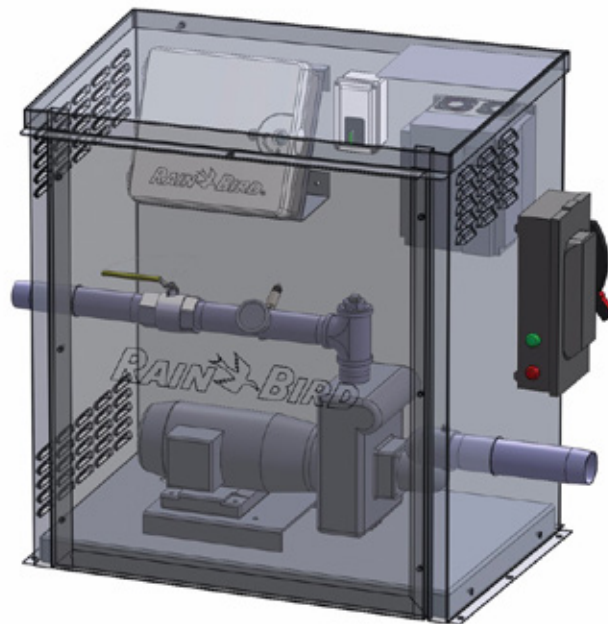
CLP Series
(Suction Lift shown)

Accessories

- Surge Suppression Kit
 - Single Phase (208-230 VAC) p/n CLPSES1P
 - Three Phase (208-230 VAC) p/n CLPSES3P
- Pump Start Relay
 - 6VDC p/n CLPPSR06DC
 - 12VDC p/n CLPPSR12DC
- Boost Accessories (Boost Model Only)
 - Flow Start Kit p/n CLPBSTSW
- Suction Lift Accessories (Suction Lift Model only)
 - Foot valve – 4" Vertical Flanged p/n CLPFTVLV4VF

CLP Series Performance Data

HP	Model	Description	GPM	Maximum Flow		PSI	Voltage	Phase
				PSI	GPM			
3	CLP03VNASA1	Compact Low Profile 3HP VFD Pump Station 200V,1P 3P	40	50	95	20	200VAC	Single or Three
3	CLP03VNASB3	Compact Low Profile 3HP VFD Pump Station 480V,3P	40	50	95	20	480VAC	Three Phase
5	CLP05VAASC1	Compact Low Profile 5HP VFD Pump Station 200V,1P 3P	30	72	85	44	200VAC	Single or Three
5	CLP05VAASD3	Compact Low Profile 5HP VFD Pump Station 480V,3P	30	72	85	44	480VAC	Three Phase
5	CLP05VBASC1	Compact Low Profile 5HP VFD Pump Station 200V,1P 3P	50	53	160	31	200VAC	Single or Three
5	CLP05VBASD3	Compact Low Profile 5HP VFD Pump Station 480V,3P	50	53	160	31	480VAC	Three Phase
5	CLP05VCASC1	Compact Low Profile 5HP VFD Pump Station 200V,1P 3P	80	36	220	21	200VAC	Single or Three
5	CLP05VCASD3	Compact Low Profile 5HP VFD Pump Station 480V,3P	80	36	220	21	480VAC	Three Phase
5	CLP05VHASC1	Compact Low Profile 5HP VFD Pump Station 200V,1P 3P	50	60	140	30	200VAC	Single or Three
7.5	CLP07VDASE1	Compact Low Profile 7.5HP VFD Pump Station 200V,1P 3P	40	99	95	68	200VAC	Single or Three
7.5	CLP07VDASG3	Compact Low Profile 7.5HP VFD Pump Station 480V,3P	40	99	95	68	480VAC	Three Phase
7.5	CLP07VEASE1	Compact Low Profile 7.5HP VFD Pump Station 200V,1P 3P	60	66	180	42	200VAC	Single or Three
7.5	CLP07VEASG3	Compact Low Profile 7.5HP VFD Pump Station 480V,3P	60	66	180	42	480VAC	Three Phase
7.5	CLP07VFASE1	Compact Low Profile 7.5HP VFD Pump Station 200V,1P 3P	100	46	240	29	200VAC	Single or Three
7.5	CLP07VFASG3	Compact Low Profile 7.5HP VFD Pump Station 480V,3P	100	46	240	29	480VAC	Three Phase
10	CLP10VGASH1	Compact Low Profile 10HP VFD Pump Station 200V,1P 3P	80	82	200	55	200VAC	Single or Three
10	CLP10VGAS13	Compact Low Profile 10HP VFD Pump Station 480V,3P	80	82	200	55	480VAC	Three Phase
10	CLP10VIASH1	Compact Low Profile 10HP VFD Pump Station 200V,1P 3P	110	61	260	46	200VAC	Single or Three
10	CLP10VIAS13	Compact Low Profile 10HP VFD Pump Station 480V,3P	110	61	260	46	480VAC	Three Phase



CLP Series

Low Profile Pump Stations – LP Series

Rain Bird's LP Series Horizontal End Suction and Vertical multistage pump stations are designed for small to midsize boost, flooded suction and suction lift applications such as city parks and buildings, sports fields, commercial buildings, small home owner's associations and large residential sites. Its low profile design, durable centrifugal or vertical multistage pump configuration, and choice of options make it an ideal choice for Turf irrigation applications.

Standard Features

- Cost effective – Standardized VFD driven pump system in enclosure delivers high performance with minimum investment
- Low Profile – Compact aluminum enclosure with powder coated skid and piping
- Energy efficient – Variable Frequency Drive (VFD) maintains constant pressure at varying flow demand
- Reliability – Simple, standard design, easy installation and maintenance
- Mechanical Features
 - Inlet Butterfly Isolation Valve
 - Discharge Butterfly Isolation Valve
 - Silent Check Valve
- Enclosures / External Connections
 - Marine Grade Aluminum Enclosure
 - Polyester Powder-Coated Steel Deck and Piping
 - Thermostat and Fan on Mechanical Enclosure
- Pump Control
 - Pump Start Relay
 - VFD - Variable Frequency Drive for Control of Pressure
- Display
 - Monochrome Touch Screen Display

Optional Features and Accessories

Visit: www.rainbird.com/professionals/products/pumps-pump-stations

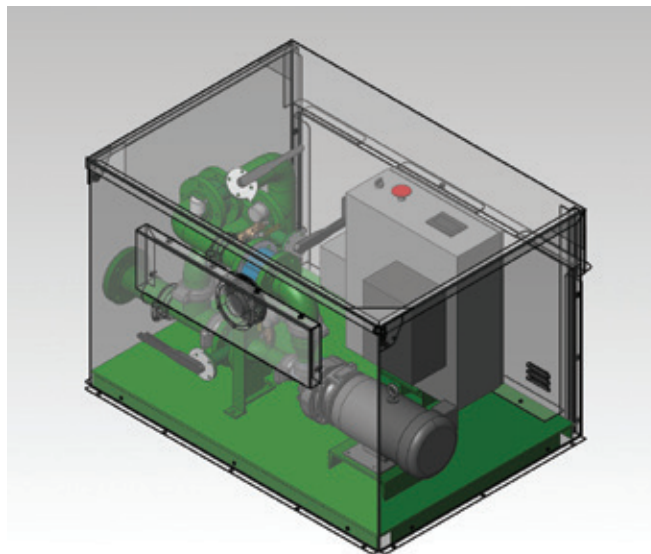
Models

• Horizontal End Suction - LP Series

- 5 to 10 HP; Up to 100 psi (6.9 bar); Up to 200 gpm (12.6 lps, 45.4 m³/h)

• Vertical Multistage - LP Series

- 1 to 7.5 HP; Up to 120 psi (8.3 bar); Up to 90 gpm (5.7 lps, 20.4 m³/h)



Horizontal End Suction - LP Series Shown
5 to 10 HP; Up to 100 psi (6.9 bar);
Up to 200 gpm (12.6 lps, 45.4 m³/h)

LP Series – Horizontal End Suction - 1 Pump – Aluminum Enclosure

Motor Size	5 HP	7.5 HP	10 HP
Pump Type	Horizontal End Suction		
Power Requirement	480/60/3 V/HZ/PH		
	208-230/60/3 V/HZ/PH		
	208-230/60/1 V/HZ/PH		
Inlet Pressure Requirement	Suction Lift or Boost Applications		
Outlet Pressure	Up to 100 psi (6.9 bar) ⁽¹⁾		
Outlet Flow	Up to 200 gpm (12.6 lps, 45.4 m ³ /h) ⁽¹⁾		
Concrete Slab Dimensions (min)	65" x 49" (165 cm x 125 cm)		
Platform Skid Dimensions (min)	53" x 39.75" (135 cm x 101 cm)		
Inlet / Discharge Size	2" Flange Fitting (adapter)	3" Flange Fitting	4" Flange Fitting (adapter)
Cabinet Height (from slab)	35" (89 cm)		

LP Series – Vertical Multistage – 1 Pump – Aluminum Enclosure

Motor Size	1 HP	1.5 HP	2 HP	5 HP	7.5 HP
Pump Type	Vertical Multistage				
Power Requirement	480/60/3 V/HZ/PH				
	208-230/60/3 V/HZ/PH				
	208-230/60/1 V/HZ/PH				
Inlet Pressure Requirement	Suction Lift or Boost Applications				
Outlet Pressure	Up to 120 psi (8.3 bar) ⁽¹⁾				
Outlet Flow	Up to 90 gpm (5.7 lps, 20.4 m ³ /h) ⁽¹⁾				
Concrete Slab Dimensions (min)	65" x 49" (165 cm x 125 cm)				
Platform Skid Dimensions (min)	53" x 39 3/4" (135 cm x 101 cm)				
Inlet / Discharge Size	2" flange fitting standard - 3" and 4" adapters available				
Cabinet Height (from slab)	35" (89 cm) or 47" (107 cm)				

⁽¹⁾ Refer to pump performance curves, provided upon request from pumps@rainbird.com

Low to Medium Flow Pump Stations – D-Series

Rain Bird’s single pump, Vertical Multi-Stage and Horizontal End Suction stations in powder-coated green enclosures are designed for small to midsize boost, flooded suction and suction lift applications such as city parks and buildings, sports fields, commercial buildings, small home owner’s associations and large residential sites. Its small footprint, durable centrifugal or multistage pump configuration, and choice of options make it an ideal choice for Turf irrigation applications.

Standard Features

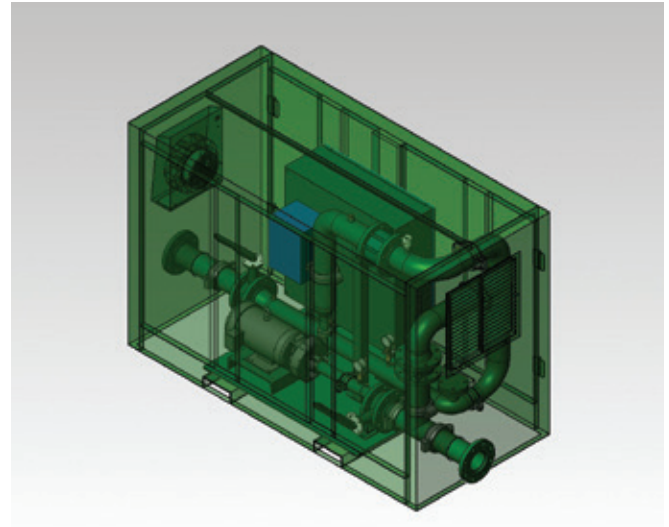
- Reliability – Integrated Plug-n-Pump provide single source responsibility for the entire pumping system insuring trouble-free installation and operation
- Energy efficient – Variable Frequency Drive (VFD) maintains constant pressure at varying flow demand
- Inlet and discharge isolation valves for easier mechanical serviceability
- Easy Start-up – All stations are water-tested at the factory prior to shipment.
- Mechanical Features
 - Inlet Butterfly Isolation Valve
 - Discharge Butterfly Isolation Valve
 - Silent Check Valve
- Pressure / Flow
 - Stainless Steel Pressure Transducer
 - Flow Switch
- Enclosures / External Connections
 - Polyester Powder Coated Steel Enclosure
 - Polyester Powder-Coated Steel Deck and Piping
 - Re-Prime Piping (Suction Lift only)
 - Thermostat and Fan on Mechanical Enclosure
- Pump Control
 - Pump Start Relay
 - VFD - Variable Frequency Drive for Control of Pressure
- Display
 - Monochrome Touch Screen Display
 - Optional Color Touch Screen Display with Remote Communication Capability

Optional Features and Accessories

Visit: www.rainbird.com/professionals/products/pumps-pump-stations

Models

- **Horizontal End Suction - 1 Pump - D Series**
 - 5 to 20 HP; Up to 130 psi (9.0 bar); Up to 180 gpm (11.4 lps, 40.9 m³/h)
- **Vertical Multistage – 1 Pump – D Series**
 - 3 to 15 HP; Up to 120 psi (8.3 bar); Up to 200 gpm (12.6 lps, 45.4 m³/h)



Horizontal End Suction - 1 Pump - D Series shown
5 to 20 HP; Up to 130 psi (9.0 bar);
Up to 350 gpm (22.1 lps, 79.5 m³/h)

D-Series – Horizontal End Suction – 1 Pump – Green Enclosure

Motor Size	5 HP	7 ½ HP	10 HP	15 HP	20 HP
Pump Type	Horizontal End Suction				
Power Requirement	480/60/3 V/HZ/PH				
	208-230/60/3 V/HZ/PH				
Inlet Pressure Requirement	230/60/1 V/HZ/PH		208/60/1 V/HZ/PH		
	Suction Lift (up to 3 ft. lift), or Boost Applications				
Outlet Pressure	Up to 130 psi (9.0 bar) ⁽¹⁾				
Outlet Flow	Up to 350 gpm (22.1 lps, 79.5 m ³ /h) ⁽¹⁾				
Concrete Slab Dimensions (min)	90" x 48" (229 cm x 122 cm)				
Platform Skid Dimensions (min)	78" x 36" (198 cm x 91 cm)				
Inlet / Discharge Size	4" standard - 2", 3" and 6" adapters are external accessories				
Cabinet Height (from slab)	52" (132 cm) or 64" (163 cm)				

D-Series – Vertical Multistage – 1 Pump – Green Enclosure

Motor Size	3 HP	5 HP	7 ½ HP	10 HP	15 HP
Pump Type	Vertical Multi-Stage				
Power Requirement	480/60/3 V/HZ/PH				
	208-230/60/3 V/HZ/PH				
Inlet Pressure Requirement	208-230/60/1 V/HZ/PH				
	Suction Lift or Boost Applications				
Outlet Pressure	Up to 120 psi (8.3 bar) ⁽¹⁾				
Outlet Flow	Up to 180 gpm (11.4 lps, 40.9 m ³ /h) ⁽¹⁾				
Concrete Slab Dimensions (min)	90" x 48" (229 cm x 122 cm)				
Platform Skid Dimensions (min)	78" x 36" (198 cm x 91 cm)				
Inlet / Discharge Size	4" Standard - 2", 3", and 6" adapters available				
Cabinet Height (from slab)	52" (132 cm) or 64" (163 cm)				

(1) Refer to pump performance curves, provided upon request from pumps@rainbird.com

Medium Flow Pump Station

Rain Bird's single pump, Vertical Multi-Stage Enhanced station in a compact enclosure is designed for medium-flow boost, flooded suction and suction lift applications, such as; parks, sports complexes, golf courses, turf farms and other agricultural projects. Its compact design, durable centrifugal pump configuration, choice of options and enclosures make it an ideal choice for Turf irrigation applications with flows up to 500 gpm (31.5 lps, 114 m³/h).

Standard Features

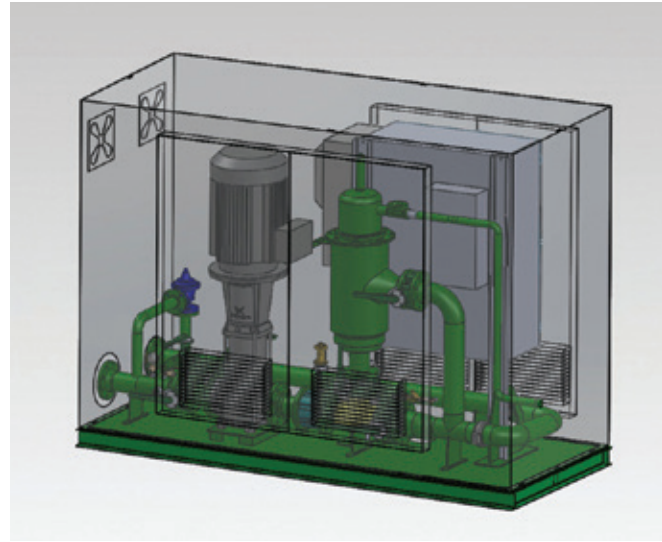
- Entry Level through High Performance
- Control Package – With either a cost-effective monochrome touch-panel display or high resolution color touch-panel display for improved user interfaced and remote monitoring via VNC (Virtual Network Computing)
- Energy efficient – Variable Frequency Drive (VFD) maintains constant pressure at varying flow demand
- Enhanced Serviceability – Modern electrical design utilizing industrial breaker motor protection instead of fuses. Industrial circuit breakers are quickly reset and designed for an extended service life
- Inlet and discharge isolation valves for easier mechanical serviceability
- Plumbing Configurations
 - Inlet and Discharge Piping on same side of the enclosure (as shown)
- Mechanical Features
 - Inlet Butterfly Isolation Valve
 - Discharge Butterfly Isolation Valve
 - Pump Isolation Valve
 - Silent Check Valve
- Pressure / Flow
 - Stainless Steel Pressure Transducer
 - Flow Switch
- Enclosures / External Connections
 - Marine Grade Aluminum Enclosure
 - Polyester Powder-Coated Steel Deck and Piping
 - Thermostat and Fan on Mechanical Enclosure

Optional Features

Visit: www.rainbird.com/professionals/products/pumps-pump-stations

Models

- **Vertical Multi-Stage – 1 Pump Enhanced – Aluminum Enclosure**
 - 5 to 50 HP; Up to 150 psi (10.3 bar); Up to 500 gpm (31.5 lps, 114 m³/h)



Vertical Multi-Stage – 1 Pump Enhanced – Aluminum Enclosure shown
5 to 50 HP; Up to 150 psi (10.3 bar);
Up to 500 gpm (31.5 lps, 114 m³/h)

Vertical Multi-Stage – 1 Pump Enhanced – Aluminum Enclosure										
Motor Size	5 HP	7.5 HP	10 HP	15 HP	20 HP	20 HP	25 HP	30 HP	40 HP	50 HP
Pump Type	Vertical Multi-Stage									
	208-230/1/60 V/PH/HZ									
Power Requirement (Other power configurations available upon request)	208-230/3/60 V/PH/HZ									
	480/3/60 V/PH/HZ									
	575/3/60 V/PH/HZ									
Inlet Pressure Requirement	Suction Lift or Boost Applications									
Outlet Pressure	Up to 150 psi (10.3 bar) ⁽¹⁾									
Outlet Flow	Up to 500 gpm (31.5 lps, 114 m ³ /h) ⁽¹⁾									
Concrete Slab Dimensions (min)	10' 3" x 4' 9" (312.4 cm x 145 cm)									
Platform Skid Dimensions (min)	9' 3" x 3' 9" (281 cm x 114.3 cm)									
Inlet / Discharge Size	4" Flanges Standard, 6" Inlet Flange (Suction Lift), 3", 4", 6", 8" Adapters Available									

(1) Refer to pump performance curves, provided upon request from pumps@rainbird.com

Main Irrigation Pump Stations

Flows Up to 5000 GPM

Reliable Variable Frequency Drive Pump Stations designed to serve as the main irrigation pump station for golf courses and large commercial sites. Rain Bird's Pump Station Platforms are designed for both new construction projects and renovation projects

Available in the following configurations:

- Vertical Turbine Pump Stations for Wet-well Applications
- Horizontal End Suction for Flooded Suction and Pressure Boosting Applications
- Vertical Multistage Pumps for Flooded Suction, Suction Lift, and Pressure Boosting Applications

Benefits:

- Enhanced Serviceability: Modern electrical design utilizing industrial breaker motor protection instead of time-wasting fuses. Industrial circuit breakers are quickly reset and designed for an extended service life
- Reduced Downtime: Industrial circuit breakers are good for thousands of trips
- Easy Operator Training: Multi-language color touch-screen that is easy to learn
- Superior Corrosion Resistance; Choice of Polyester Powder Coated or Marine Grade Aluminum deck for the highest level of corrosion resistance. Less corrosion equals longer pipe, skid, and manifold life, reducing cost
- No-Hassle Buying: Get everything you need for your irrigation system construction or renovation from the only manufacturer dedicated to irrigation for over seven decades
- Real-Time Communication: The pump station communications in real-time with the central, allowing the central to make immediate decisions to maximize the efficiency of the entire irrigations systems

Electrical Power Specifications:

- 60 Hz, 3-Phase Power: 208V - 230V (up to 60HP per pump), 460V, 575V
- 50 Hz, 3-Phase Power: 380V, 415V
- Other power configurations available upon request

Many options to choose from include:

- Air Conditioned Electrical Panel Cooling System
- Enclosures: Aluminum, Painted Steel (Government Specified Colors)
- Fertigation Systems
- Filtration: Backwashing Screen Filters and Suction Scan Filters (Hydraulic or Electric)
- Heater, Skid Mounted 5KW
- Intake Box Screen with 3 Stainless Steel Screens
- Intermediate Pump, 10-25HP
- Lake Level Control: Float Switches and Level Transducer
- Magnetic Flow Meter
- Modem, Radio, Hard-wired or Cellular Gateway connection
- Power Zones: 3, 5, or 10KVA
- Premium Efficient Motors
- VFD per pump
- Wye Strainer with Auto Back-flush
- Z Discharge Pipe



Pump Manager with SmartPump™

- Combine a Rain Bird Pump Station and central control software to fully integrate pump station operation with your central control. This combination allows the pump station and central control to respond to changes in the system and irrigation immediately, providing the highest level of efficiency
- Smart Pump™ matches the irrigation system operation with the real capacity of the pump station, shortening the water window by an average of 20 percent and decreasing energy consumption. In addition, Smart Pump alerts the superintendent in real time of irrigation and pump station problems via cell phone text messaging. When an issue occurs such as an irrigation pipe break, the system verifies the break, shuts down the system and notifies the superintendent. Other systems cannot respond in a timely manner and can lose an hour of irrigation time trying to recover from a system fault

Need Help Specifying a Pump?

- Email pumps@rainbird.com or call 520-806-5620 for assistance with quotes and specifications



Pump Start Relays

For Optimum Pump Performance and Protection

Rain Bird Pump Start Relays (PSRs) provide worry free performance for your irrigation system and are compatible with Rain Bird and other reliable irrigation controllers.

Dual Voltage Pump Start Relay Features

- Works with a lawn controller's start/stop command to facilitate the electrical path from the breaker box to the pump motor
- Provides "pilot duty" operation for all types of electrically driven pump equipment with available coil voltages of 24, 110 and 220 VAC
- 40 AMP certified relay
- Quick connect terminals with wire nuts
- Grounding provision
- Compatible with 24 VAC timed lawn controllers
- Compatible with 110 or 220 VAC 3/4 HP thru 5 HP* single phase pumps
- Grey "baked-on" powder coating, for long life in difficult environments
- UL Listed as "Enclosed Industrial Control Panels" and backed by a one-year warranty
- Housed in compact NEMA3R weather-tight enclosures
- Not recommended for use with 2-wire controller/decoder systems

Model

- PSR110220

2-Wire Pump Start Relay Features

- Works with a lawn controller's start/stop command to facilitate the electrical path from the breaker box to the pump motor
- Provides "pilot duty" operation for all types of electrically driven pump equipment with available coil voltages of 24, 110 or 220 VAC
- 40 AMP certified relay
- Quick connect terminals with wire nuts
- Grounding provision
- Compatible with 24 VAC timed lawn controllers
- Compatible with 110 or 220 VAC 3/4 HP thru 5 HP* single phase pumps
- Grey "baked-on" powder coating, for long life in difficult environments
- UL Listed as "Enclosed Industrial Control Panels" and backed by a one-year warranty
- Housed in compact NEMA3R weather-tight enclosures
- Includes an additional ice cube relay for 2-wire controller/decoder systems

Models

- PSR110IC or PSR220IC

*when thermal protection is present

Pump Start Relays Specifications

Model	Line Voltage	Coil Voltage	hp
PSR110IC	110	24	3/4 through 2*
PSR220IC	220	24	3/4 through 5*
PSR110220	110 or 220	24	3/4 through 5*

* National electrical code (nec) states all motors will be thermally protected from excessive "amperage draw." Most motors under 2 hp are supplied with thermal protection from the motor manufacturer. For motors over 2 hp, code-compliant PSRB pump protection is recommended.

NOTE: Circuit breakers are never classified as motor protection

NOTE: Check with your local health department for regulations and requirements for backflow prevention.



PSR110220



PSR110IC
or
PSR220IC

G-Series Hydraulic Suction Scanning Screen Filter

Economy and Value with Lower Backwash Volumes

Irrigation Uses

Self-cleaning line powered hydraulic water filters for turf, landscape, agriculture, greenhouse and nursery applications.

Features

- Flow rates: 25 – 1750 gpm
- Max Temperature: 210° F
- Single electric ball valve for flushing operations standard
 - Hydraulic diaphragm valve available upon request
- 316 L stainless steel sintered screens standard
 - PVC/Mesh and wedgewire screens available upon request
- PVC/Mesh screen standard
 - Sintered and wedgewire screens available upon request
- Standard screen opening: 120µ
 - Optional: 15µ – 5000µ
- Working pressure: 35-150 psi
 - Higher pressures optional
- Material of Construction: Powder coated Carbon Steel.
 - Stainless steel optional
- Backwashing initiated automatically by time or pressure differential via integrated Rain Bird controller
- Flanged inlet and outlet standard except on HS-G-02 model filter only configurations which are threaded.
 - Grooved inlet and outlet configuration optional
- Available as filter only or as filter including bypass manifold and valves.



G-Series
(Shown with integrated
bypass assembly)

G-Series Suction Scanning Screen Filter Performance Data

Line Size (in)	Carbon Steel Model Number	Sintered Screen				PVC/Mesh Screen Area (in ²)	PVC/Mesh				Sintered Screen Area (in ²)	Rinse Duration (Seconds)	Flush Volume (Gallons)	Rinse Valve Size (in)	Minimum Inlet Pressure During Rinse Cycle (PSI)	Access Type
		Std. Flow Rate (GPM)	300	200	120		100	Std. Flow Rate (GPM)	300	200						
2	HS-G-02-LE	110	110	110	95	64	110	110	85	65	96	8-10	4-5	1	30	Bolted
3	HS-G-03-LE	175	175	175	175	120	175	175	155	120	180	12-16	6-8	1	30	Bolted
4	HS-G-04-LS	350	325	235	175	120	280	215	155	120	180	12-16	6-8	1	30	Bolted
4	HS-G-04-LE	350	350	350	350	466	350	350	350	350	700	12-16	14-18	1.5	30	Bolted

Typical G-Series Filters are shown in the performance data table. More models are available upon request.

Flow rates shown above are based on water quality of 25 PPM or better (good water quality).

For water with particulate load greater than 25 PPM please consult Rain Bird for appropriate flow de-rating.

Drawings of standard filter models listed above are available on www.rainbird.com

I-Series Hydraulic Suction Scanning Screen Filter

NEW

Irrigation Uses

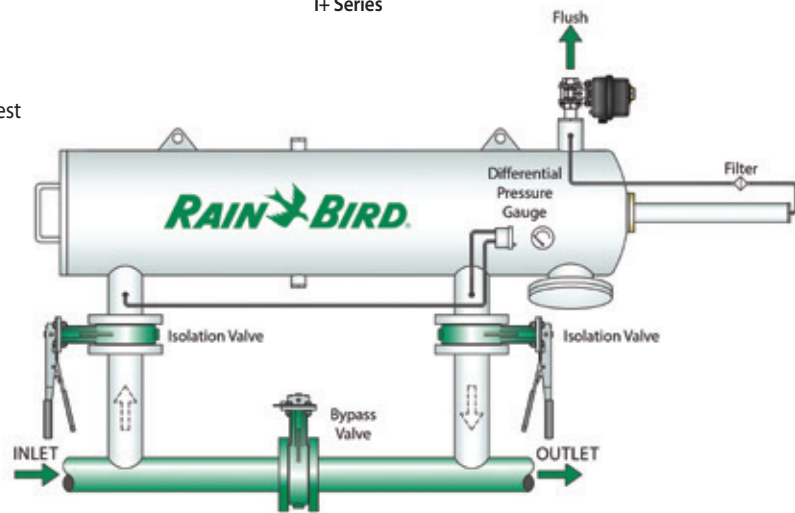
Self-cleaning line powered hydraulic water filters for turf, landscape, agriculture, greenhouse, golf course and nursery applications.

Features

- Flow Rate: 15 – 8,100 gpm
- Max Temperature: 150° F
- Single electric ball valve for flushing operations standard
 - Hydraulic diaphragm valve available upon request
- 316 L stainless steel sintered screens standard
 - PVC/Mesh and wedgewire screens available upon request
- Standard screen opening: 120µ
 - Optional: 15µ – 5000µ
- Working pressure: 35-150 psi
 - Higher pressures optional
- Material of Construction: Powder coated carbon steel
 - Stainless steel optional
- Backwashing initiated automatically by time or pressure differential via integrated Rain Bird controller
- Available as filter only or as filter including bypass manifold and valves.



I+ Series



"I-Series" Suction Scanning Screen Filter Performance Data

Powder Coated Carbon Steel Model Number	Stainless Steel Model Number	Maximum Flow US GPM	m ³ /Hour	Max Pressure (psi)	Inlet / Outlet Flange Size (in)	Flush Line Size (in)	Minimum Inlet Pressure During Rinse Cycle (psi)
Filter Only							
HS-I-04-PE-M	HS-I-04-PE-S-M	400	90.9	150	4	4	30
HS-I-06-PE-G	HS-I-06-PE-S-G	650	147.6	150	6	4	30
HS-I-08-PS-G	HS-I-08-PS-S-G	1200	272.6	150	8	4	30
HS-I-08-PE-G	HS-I-08-PE-S-G	1500	340.7	150	8	4	30
HS-I-10-PS-G	HS-I-10-PS-S-G	1750	397.5	150	10	4	30
HS-I-10-PE-G	HS-I-10-PE-S-G	2000	454.3	150	10	4	30
HS-I-12-PS-G	HS-I-12-PS-S-G	2500	567.9	150	12	4	30
Filter Assembly with Bypass Manifold							
HS-I-04-PE-B-M	HS-I-04-PE-S-B-M	400	90.9	150	4	4	30
HS-I-06-PE-B-G	HS-I-06-PE-S-B-G	650	147.6	150	6	4	30
HS-I-08-PS-B-G	HS-I-08-PS-S-B-G	1200	272.6	150	8	4	30
HS-I-08-PE-B-G	HS-I-08-PE-S-B-G	1500	340.7	150	8	4	30
HS-I-10-PS-B-G	HS-I-10-PS-S-B-G	1750	397.5	150	10	4	30
HS-I-10-PE-B-G	HS-I-10-PE-S-B-G	2000	454.3	150	10	4	30
HS-I-12-PS-B-G	HS-I-12-PS-S-B-G	2500	567.9	150	12	4	30
DS-I-08-PE-B-G	DS-I-08-PE-S-B-G	3000	681.5	150	12	4	30
DS-I-10-PS-B-G	DS-I-10-PS-S-B-G	3500	795.0	150	12	4	30
DS-I-10-PE-B-G	DS-I-10-PE-S-B-G	4000	908.6	150	14	4	30
DS-I-12-PS-B-G	DS-I-12-PS-S-B-G	5000	1135.8	150	14	4	30

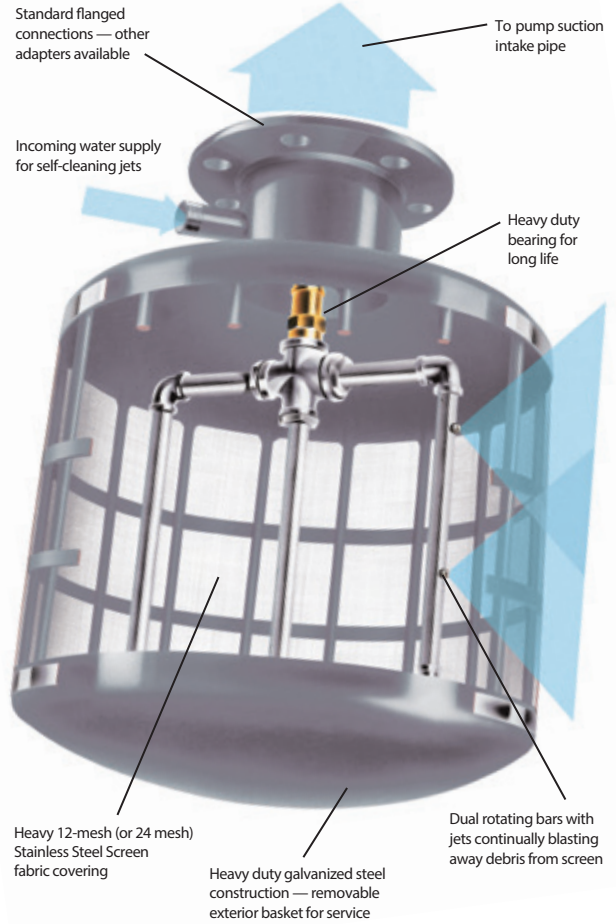
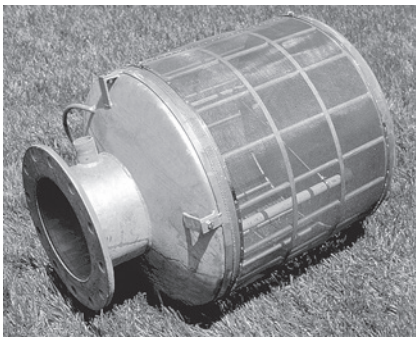
Typical I-Series Filters are shown in the performance data table. More models are available upon request.
Flow rates shown above are based on water quality of 25 PPM or better (good water quality).
For water with particulate load greater than 25 PPM please consult Rain Bird for appropriate flow de-rating.
Drawings of standard filter models listed above are available on www.rainbird.com

PSS Series Self-Cleaning Pump Suction Screen

Keep Debris Out of Your Pump and Irrigation System

Features

- Galvanized, Self-Cleaning Pump Suction Screen removes large trash and debris from water sources, saving time and money in energy, pumping efficiency and maintenance costs
- All water must pass through the pump suction screen attached to the end of the pump suction line before entering the pump intake pipe. A small, side-stream from the pump discharge plumbing drives two spray bars that continually rotate, jetting water at the screen and blasting debris away
- Heavy 12 mesh stainless steel screen increases your pump efficiency for many years to come



12 Mesh Self-Cleaning Pump Suction Screen Performance Data

Model Number	Flow US GPM	Flow m ³ /Hour	Screen Length (in)	Total Length (in)	Screen Diameter (in)	Flange Size (in)	Return Inlet Pipe Size (in)	Operating Pressure (min - max psi)	Weight Lbs.	Cleaning Spray (GPM)
12 Mesh Filter										
PSS200	325	73.8	11	25	16	4	1.5	35-100	38	20
PSS400	550	124.9	15	28.8	16	6	1.5	40-100	57	20
PSS600	750	170.3	16	32.5	24	8	1.5	40-100	101	20
PSS800	950	215.7	18	34.5	24	10	1.5	45-100	108	20
PSS1000	1350	306.5	23	39.5	24	10	1.5	50-100	116	24
PSS1400	1650	374.6	26	42.5	24	12	1.5	55-100	128	24
PSS1700	1950	442.7	28	44.5	26	12	1.5	55-100	148	24
PSS2000	2350	533.5	32	48.5	26	14	1.5	60-100	160	24
PSS2400	2600	590.2	35	52.5	30	16	1.5	65-100	223	28
PSS3000	3000	681.0	40	57.5	30	16	1.5	40-65	236	44
PSS3500	3500	794.5	40	59.5	36	18	1.5	40-65	283	44
PSS4000	4000	908.0	40	63.5	42	18	1.5	40-65	358	44

Contact Rain Bird for drawings or visit www.rainbird.com to download.

CS Series Centrifugal Sand Separator

Remove contaminants to minimize required maintenance and increase efficiency

Features

- Capacities of 4 to 8300 gpm
- Simple installation (no electrical power required)
- Efficient pre-filter to reduce sand load on downstream components
- Rain Bird Centrifugal Sand Separators are designed to separate abrasive particles before they can enter the irrigation system, keeping equipment clean and clear of debris, which minimizes the amount of maintenance required and increases operational efficiency
- The separator removes sand and particles that are heavier than water (materials with a specific gravity of 2 or greater)
- Liquids and solids enter the unit and begin traveling in a circular flow. This centrifugal action throws heavier particulates towards the filter walls and eventually downward in a spiral motion to the separation chamber. The particulates collect in the separation chamber and are purged manually from the system. The filtered water is then drawn to the separator's vortex and through the outlet
- An optional automatic purge controller and valve can be used on all applications to automate the purge process, which eliminates the need for manual flushing. Small vertical design separators may be wall mounted or supported by the system piping



Centrifugal Sand Separator

Centrifugal Sand Separators Performance Data

Model Number	Flow* US GPM	Flow m ³ /Hour	Inlet / Outlet Line Size (in)	Length (in)	Length (cm)	Weight Lbs.	Max. Particle Size (in)	Flush Valve Size (in)
Vertical Separators								
VCS-R5V	4 - 10	0.9 - 2.3	0.5	20	50.8	13	0.625	1
VCS-R7V	10 - 20	2.3 - 4.6	0.75	20	50.8	15	0.375	1
VCS-R10V	18 - 38	4 - 8.7	1	30.5	77.5	26	0.5	1
VCS-R12V	26 - 52	6 - 12	1.25	30.5	77.5	26	0.5	1
VCS-R15V	38 - 79	8.7 - 18	1.5	30.5	77.5	26	0.5	1
VCS-R20V	63 - 120	14.5 - 27.6	2	36	91.4	44	0.5	2
VCS-R25V	100 - 180	23 - 41.4	2.5	44	111.8	55	0.5	2
VCS-R30V	125 - 260	28.8 - 59.8	3	48	121.9	75	0.5	2
VCS-R40V	190 - 345	43.7 - 79.4	4	52	132.1	120	0.5	2
Angled Separators								
ACS-R40LA	200 - 525	46 - 120	4	80	221	280	1.5	2
ACS-R60LA	365 - 960	84 - 220	6	106.25	293.4	493	1.5	2
ACS-R80LA	800 - 1600	184 - 369	8	114	316.9	722	1.5	2
ACS-R100LA	1300 - 2300	299 - 529	10	123.5	342.9	840	1.5	2
ACS-R120LA	2025 - 3400	465 - 782	12	139	396.2	1400	1.5	2
ACS-R140LA	2975 - 5000	684 - 1150	14	148	424.2	1550	2	2
ACS-R160LA	4000 - 6200	920 - 1426	16	160	462.3	1850	2	2
ACS-R180LA	5100 - 8300	1173 - 1909	18	177	462.3	2400	2	3

HDF Series Disc Filters

Automatic self-cleaning disc filtration equipment

Features

- Automatic self-cleaning disc filtration equipment with 2" valves and high density polyethylene manifolds
- Ideal for surface and well water containing both organic (algae) and inorganic materials: rivers, reservoirs, canals, waste water, and well water containing light sand (<3PPM) and other contaminants
- The patented system's helical action provides efficient cleaning
- Manufactured from engineered plastics to resist rust and corrosion from chemicals and water
- All units are factory tested prior to shipment
- Disc elements provide depth filtration -not just surface filtration
- Unit is pre-assembled with HDPE (High -density polyethylene) manifold for easy installation
- DP, time or manual backflush cycle can be imitated from the controller
- Plastic backflush valves are lightweight and corrosion resistant.
- Low maintenance and performs reliable backflush
- Filtration disc versatility (filtration grades can be easily changed)
- Available with 100, 130, 200 or 400 micron discs (specify when ordering)

Rain Bird HDF Series 1X2 filter backwash.

- **FILTRATION STAGE:** As water goes through the discs, particles are projected away due to the cyclone effect, reducing the backflushing frequency
- **BACKFLUSHING STAGE:** Water is projected through the discs, expelling the retained particles and evacuating them through the drainage manifold while the rest of the equipment is still in the filtration stage, supplying the remaining installation

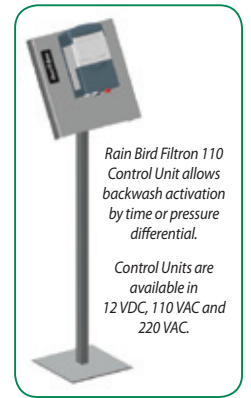
Rain Bird HDF Series-2 systems backwashes one station at a time while the remaining elements continue filtering.

- **FILTRATION STAGE:** As water goes through the discs, particles are projected away and kept in suspension due to the cyclone effect, reducing the backflushing frequency.
- **BACKFLUSHING STAGE:** Water is projected through the discs, expelling the retained particles and evacuating them through the drainage manifold. The rest of the filters battery continue filtering.

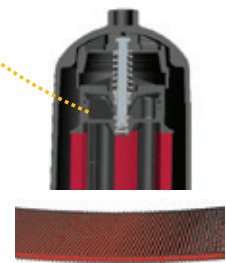
The filtration process restarts when the discs recompress. The backflush process is controlled by the Rain Bird Control Unit.



HDF Series 1x2 Disc Filters



Rain Bird Filtron 110 Control Unit allows backwash activation by time or pressure differential.
Control Units are available in 12 VDC, 110 VAC and 220 VAC.



HDF Series-2 Disc Filters



HDF Series 4 Disc Filters

HDF Series Disc Filters (cont.)

Specifications

HDF Series 1x2 Disc Filters

- Suited for areas with or without electricity.
- Ideal where manual cleaning is troublesome.
- Compact design fits in tight spaces.
- Control Unit functions on pressure differential or time.
- Automatic self-cleaning 2" filter for low flow ranges.
- Maximum Flow: 106 gpm (24 m³/h)
- Maximum filtering surface (231 in²/1492 cm²).
- Maximum pressure: 145 psi (10 bar)
- Maximum temperature: 140° F (60° C)
- Standard 100 micron : Optional 130, 200 or 400 micron.

HDF Series 2 Disc Filters

- Suitable for surface and well waters containing both organic (algae) and inorganic materials.
 - Rivers, reservoirs, canals and waste water
- Well water containing light sand (<3 PPM) and other contaminants.
- Maximum flow: 845 gpm (192 m³/h)
- Maximum filtering surface: (231 in²/1492 cm²)
- Maximum pressure: 145 psi (10 bar)
- Maximum temperature: 140° F (60° C)
- Standard: 100 micron. Optional: 20, 50, 130, 200 or 400 micron.

Control Units

- Rain Bird Filtron 110 allows backwash activation by time or pressure differential. Controllers are available in 12 VDC, 110 VAC and 220 VAC.

HDF Series 1x2 Disc Filters Specifications

Model Number	Number of Filters	Manifold	Filtering Surface	
			(in)	(cm)
1X2/2G	1-2"	Inlet: 2" PVC Outlet: 2" NPT Drainage: 2: NPT	231	1492

HDF Series 2 Disc Filters Specifications

Model Number	Number of Filters	Manifold	Filtering Surface	
			(in)	(cm)
2X2/3G	2	3"- GROOVED	463	2,984
3X2/4G	3	4"- GROOVED	694	4,476
4X2/6G	4	6"- GROOVED	925	5,968
5X2/6G	5	6"- GROOVED	1,156	7,460
6X2/6G	6	6"- GROOVED	1,388	8,952
7X2/6G	7	6"- GROOVED	1,619	10,444
8X2/8G	8	8"- GROOVED	1,850	11,936

Drainage manifolds included.

Dimensions of the models with flange connection. 2", 3", 4", 6" and 8" Dyrson grooved flanges are available. Consult factory for other configurations.

Rain Bird reserves the right to change the characteristics of these products without prior notice.

HDF Series 4 Disc Filtration systems for flows of 850 GPM and higher quoted upon request.

Rain Bird Filtration Controller



F2 AC/DC-P Specifications

INPUT
115 - 230VAC
12 - 15VDC
230VAC (optional)
OUTPUT
24VAC, 12VDC
FEATURES
Up to Two (2) stations plus master valve
Input voltage 115, 230 VAC (optional) 12VDC
Output selectable to operate 24VAC, 12VDC solenoids
Pressure differential (PD) gauge included
Fixed PD delay
Resettable backwash count
Resettable alarm
Plastic outdoor box
Periodic, manual, or pressure differential (PD) actuation
Accurate timing
Simple programming



Resources

Rain Bird Online Resources and Contacts List

Programs and Marketing Resources	Contacts/Information
Design and Specification Resources	www.rainbird.com/documents/professionals
Distributor Portal Website	ww2.rainbird.com/turfdistributor
Public and Non-Profit Agencies Portal	www.rainbird.com/agency
Facebook	www.facebook.com/RainBirdCorp
Intelligent Use of Water™	www.rainbird.com/corporate/intelligent-use-water
LEED Library	www.rainbird.com/LEED
Rain Bird Logo	www.rainbird.com/corporate/rain-bird-logo
Product Catalog	www.rainbird.com/catalog
Product Literature and Tech Specs	www.rainbird.com/documents/professionals
Rain Bird Agency Rewards (non-profits and government agencies)	www.rainbird.com/agency • E-mail: rewards@rainbird.com
Rain Bird Rewards	www.rainbird.com/Rewards • E-mail: rewards@rainbird.com
Rain Bird Training Services	www.rainbirdsolutions.com
Rain Bird Replacement Parts	www.rainbird.com/parts
Twitter	www.twitter.com/rainbirdcorp
Water Efficiency Calculators	www.rainbird.com/professionals/calculators
Site Reports	www.rainbird.com/sitereports
YouTube	www.youtube.com/rainbirdcorp

How to Use This Catalog

Precipitation Rates

Rain Bird has calculated for you the precipitation rates for our comprehensive lines of impacts, sprays, and rotors. These rates are an indication of the approximate rate at which water is being applied. The equations used to calculate the precipitation rates are as follows:

Square Spacing

U.S.: $PR = 96.3 \times \frac{gpm}{S \times S}$
Metric: $PR = 1000 \times \frac{m^3/h}{S \times S}$

Triangular Spacing

U.S.: $PR = 96.3 \times \frac{gpm}{S \times L}$
Metric: $PR = 1000 \times \frac{m^3/h}{S \times L}$

96.3 = Constant (inches/square foot/hour)

1000 = Constant (millimeter/square meter/hour)

gpm = Gallons per minute (applied to area by sprinklers)

m³/h = Cubic meters per hour (applied to area by sprinklers)

S = Spacing between sprinklers

L = Spacing between rows (S x 0.866)

Specification Information

The information in this catalog was accurate at the time of printing and may be used for proper specification of each product. For the most up-to-date information, go to the Rain Bird web site at www.rainbird.com.

ASABE Test Certification Statement

Rain Bird Corporation certifies that pressure, flow rate, and radius data for its products were determined and listed in accordance with ASABE/ICC 802-2014 or ASAE S398.1, Procedure for Sprinkler Testing and Performance Reporting, and are representative of performance of production sprinklers at the time of publication. Actual product performance may differ from the published specifications due to normal manufacturing variations and sample selection. All other specifications are solely the recommendations of Rain Bird Corporation.

Reference Charts

Information contained in this catalog is based upon generally accepted formulas, computations, and trade practices. Rain Bird Corporation, and its subsidiaries and affiliates, shall not be responsible or liable therefore if any problems, difficulties, or injuries should arise from or in connection with the use or application of this information, or if there is any error herein, typographical or otherwise.

Technical Support

Rain Bird Technical Support has the answers to your specific product and water-management questions. Call our toll-free Technical Service number, or for maximum convenience, access the Rain Bird web site. You'll get expert advice and the right solutions.

Technical Service

1-800-RAINBIRD
(1-800-724-6247)

Internet Address

www.rainbird.com

Pressure Loss Through Water Meters

Pressure Loss: psi
Nominal Size

Flow gpm	5/8"	3/4"	1"	1 1/2"	2"	3"	4"
1	0.2	0.1					
2	0.3	0.2					
3	0.4	0.3					
4	0.6	0.5	0.1				
5	0.9	0.6	0.2				
6	1.3	0.7	0.3				
7	1.8	0.8	0.4				
8	2.3	1.0	0.5				
9	3.0	1.3	0.6				
10	3.7	1.6	0.7				
11	4.4	1.9	0.8				
12	5.1	2.2	0.9				
13	6.1	2.6	1.0				
14	7.2	3.1	1.1				
15	8.3	3.6	1.2				
16	9.4	4.1	1.4	0.4			
17	10.7	4.6	1.6	0.5			
18	12.0	5.2	1.8	0.6			
19	13.4	5.8	2.0	0.7			
20	15.0	6.5	2.2	0.8			
22		7.9	2.8	1.0			
24		9.5	3.4	1.2			
26		11.2	4.0	1.4			
28		13.0	4.6	1.6			
30		15.0	5.3	1.8			
32			6.0	2.1	0.8		
34			6.9	2.4	0.9		
36			7.8	2.7	1.0		
38			8.7	3.0	1.2		
40			9.6	3.3	1.3		
42			10.6	3.6	1.4		
44			11.7	3.9	1.5		
46			12.8	4.2	1.6		
48			13.9	4.5	1.7		
50			15.0	4.9	1.9	0.7	
52				5.3	2.1		
54				5.7	2.2		
56				6.2	2.3		
58				6.7	2.5		
60				7.2	2.7		
65				8.3	3.2	1.1	
70				9.8	3.7	1.3	
75				11.2	4.3	1.5	
80				12.8	4.9	1.6	0.7
90				16.1	6.2	2.0	0.8
100				20.0	7.8	2.5	0.9
110					9.5	2.9	1.0
120					11.3	3.4	1.2
130					13.0	3.9	1.4
140					15.1	4.5	1.6
150					17.3	5.1	1.8
160					20.0	5.8	2.1
170						6.5	2.4
180						7.2	2.7
190						8.0	3.0
200						9.0	3.2
220						11.0	3.9
240						13.0	4.7
260						15.0	5.5
280						17.3	6.3
300						20.0	7.2
350							10.0
400							13.0
450							16.2
500							20.0

PVC Class 160 IPS Plastic Pipe

(1120, 1220) SDR 26 C=150

psi Loss per 100 Feet of Pipe (psi/100 ft.)

Sizes 1" through 6" Flow 1 through 600 gpm

Nominal Size	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"								
Pipe OD	1.315	1.660	1.900	2.375	2.875	3.500	4.500	6.625								
Avg. ID	1.175	1.512	1.734	2.173	2.635	3.21	4.134	6.084								
Avg. Wall	0.070	0.074	0.083	0.101	0.120	0.145	0.183	0.271								
Tolerance	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.031								
Min. Wall	0.060	0.064	0.073	0.091	0.110	0.135	0.173	0.255								
Flow (gpm)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)
1	0.30	0.02	0.18	0.01	0.14	0.00	0.09	0.00	0.06	0.00	0.04	0.00	0.02	0.00	0.01	0.00
2	0.59	0.07	0.36	0.02	0.27	0.01	0.17	0.00	0.12	0.00	0.08	0.00	0.05	0.00	0.02	0.00
3	0.89	0.15	0.54	0.04	0.41	0.02	0.26	0.01	0.18	0.00	0.12	0.00	0.07	0.00	0.03	0.00
4	1.18	0.25	0.71	0.07	0.54	0.04	0.35	0.01	0.24	0.00	0.16	0.00	0.10	0.00	0.04	0.00
5	1.48	0.38	0.89	0.11	0.68	0.06	0.43	0.02	0.29	0.01	0.20	0.00	0.12	0.00	0.06	0.00
6	1.77	0.54	1.07	0.16	0.81	0.08	0.52	0.03	0.35	0.01	0.24	0.00	0.14	0.00	0.07	0.00
7	2.07	0.71	1.25	0.21	0.95	0.11	0.60	0.04	0.41	0.01	0.28	0.01	0.17	0.00	0.08	0.00
8	2.36	0.91	1.43	0.27	1.09	0.14	0.69	0.05	0.47	0.02	0.32	0.01	0.19	0.00	0.09	0.00
9	2.66	1.14	1.61	0.33	1.22	0.17	0.78	0.06	0.53	0.02	0.36	0.01	0.21	0.00	0.10	0.00
10	2.96	1.38	1.78	0.40	1.36	0.21	0.86	0.07	0.59	0.03	0.40	0.01	0.24	0.00	0.11	0.00
11	3.25	1.65	1.96	0.48	1.49	0.25	0.95	0.08	0.65	0.03	0.44	0.01	0.26	0.00	0.12	0.00
12	3.55	1.94	2.14	0.57	1.63	0.29	1.04	0.10	0.71	0.04	0.48	0.01	0.29	0.00	0.13	0.00
14	4.14	2.58	2.50	0.76	1.90	0.39	1.21	0.13	0.82	0.05	0.55	0.02	0.33	0.01	0.15	0.00
16	4.73	3.30	2.86	0.97	2.17	0.50	1.38	0.17	0.94	0.06	0.63	0.02	0.38	0.01	0.18	0.00
18	5.32	4.10	3.21	1.20	2.44	0.62	1.56	0.21	1.06	0.08	0.71	0.03	0.43	0.01	0.20	0.00
20	5.91	4.99	3.57	1.46	2.71	0.75	1.73	0.25	1.18	0.10	0.79	0.04	0.48	0.01	0.22	0.00
22	6.50	5.95	3.93	1.74	2.99	0.90	1.90	0.30	1.29	0.12	0.87	0.04	0.53	0.01	0.24	0.00
24	7.09	6.99	4.28	2.05	3.26	1.05	2.07	0.35	1.41	0.14	0.95	0.05	0.57	0.02	0.26	0.00
26	7.68	8.11	4.64	2.38	3.53	1.22	2.25	0.41	1.53	0.16	1.03	0.06	0.62	0.02	0.29	0.00
28	8.27	9.30	5.00	2.73	3.80	1.40	2.42	0.47	1.65	0.18	1.11	0.07	0.67	0.02	0.31	0.00
30	8.87	10.57	5.35	3.10	4.07	1.59	2.59	0.53	1.76	0.21	1.19	0.08	0.72	0.02	0.33	0.00
35	10.34	14.06	6.25	4.12	4.75	2.12	3.02	0.71	2.06	0.28	1.39	0.11	0.84	0.03	0.39	0.00
40	11.82	18.00	7.14	5.28	5.43	2.71	3.46	0.90	2.35	0.35	1.58	0.14	0.95	0.04	0.44	0.01
45	13.30	22.39	8.03	6.56	6.11	3.37	3.89	1.12	2.64	0.44	1.78	0.17	1.07	0.05	0.50	0.01
50	14.78	27.21	8.92	7.98	6.78	4.10	4.32	1.37	2.94	0.53	1.98	0.20	1.19	0.06	0.55	0.01
55			9.82	9.52	7.46	4.89	4.75	1.63	3.23	0.64	2.18	0.24	1.31	0.07	0.61	0.01
60			10.71	11.18	8.14	5.74	5.18	1.91	3.53	0.75	2.38	0.29	1.43	0.08	0.66	0.01
65			11.60	12.97	8.82	6.66	5.62	2.22	3.82	0.87	2.57	0.33	1.55	0.10	0.72	0.01
70			12.49	14.88	9.50	7.64	6.05	2.55	4.11	1.00	2.77	0.38	1.67	0.11	0.77	0.02
75			13.38	16.90	10.18	8.68	6.48	2.89	4.41	1.13	2.97	0.43	1.79	0.13	0.83	0.02
80			14.28	19.05	10.86	9.78	6.91	3.26	4.70	1.28	3.17	0.49	1.91	0.14	0.88	0.02
85					11.53	10.94	7.34	3.65	4.99	1.43	3.37	0.55	2.03	0.16	0.94	0.02
90					12.21	12.16	7.78	4.06	5.29	1.59	3.56	0.61	2.15	0.18	0.99	0.03
95					12.89	13.45	8.21	4.48	5.58	1.76	3.76	0.67	2.27	0.20	1.05	0.03
100					13.57	14.79	8.64	4.93	5.88	1.93	3.96	0.74	2.39	0.22	1.10	0.03
110					14.93	17.64	9.50	5.88	6.46	2.30	4.36	0.88	2.63	0.26	1.21	0.04
120							10.37	6.91	7.05	2.71	4.75	1.04	2.86	0.30	1.32	0.05
130							11.23	8.02	7.64	3.14	5.15	1.20	3.10	0.35	1.43	0.05
140							12.10	9.20	8.23	3.60	5.54	1.38	3.34	0.40	1.54	0.06
150							12.96	10.45	8.81	4.09	5.94	1.57	3.58	0.46	1.65	0.07
160							13.82	11.77	9.40	4.61	6.34	1.76	3.82	0.52	1.76	0.08
170							14.69	13.17	9.99	5.16	6.73	1.97	4.06	0.58	1.87	0.09
180									10.58	5.73	7.13	2.19	4.30	0.64	1.98	0.10
190									11.16	6.34	7.52	2.42	4.54	0.71	2.09	0.11
200									11.75	6.97	7.92	2.67	4.77	0.78	2.20	0.12
225									13.22	8.67	8.91	3.32	5.37	0.97	2.48	0.15
250									14.69	10.53	9.90	4.03	5.97	1.18	2.76	0.18
275											10.89	4.81	6.57	1.40	3.03	0.21
300											11.88	5.65	7.16	1.65	3.31	0.25
325											12.87	6.55	7.76	1.91	3.58	0.29
350											13.86	7.52	8.36	2.19	3.86	0.33
375											14.85	8.54	8.95	2.49	4.13	0.38
400													9.55	2.81	4.41	0.43
425													10.15	3.14	4.68	0.48
450													10.74	3.50	4.96	0.53
475													11.34	3.86	5.24	0.59
500													11.94	4.25	5.51	0.65
550													13.13	5.07	6.06	0.77
600													14.32	5.96	6.61	0.91

Note: Dark shaded area of chart indicates velocities over 5' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.408 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

PVC Class 200 IPS Plastic Pipe

(1120, 1220) SDR 21 C=150

psi Loss per 100 Feet of Pipe (psi/100 ft.)

Sizes 3/4" through 6" Flow 1 through 600 gpm

Nominal Size Pipe OD	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	
Avg. ID	0.91	1.169	1.482	1.7	2.129	2.581	3.146	4.046	5.955	
Avg. Wall	0.070	0.073	0.089	0.100	0.123	0.147	0.177	0.227	0.335	
Tolerance	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.026	0.038	
Min. Wall	0.060	0.063	0.079	0.090	0.113	0.137	0.167	0.214	0.316	
Flow (gpm)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)
1	0.49	0.07	0.30	0.02	0.19	0.01	0.14	0.00	0.09	0.00
2	0.99	0.24	0.60	0.07	0.37	0.02	0.28	0.01	0.18	0.00
3	1.48	0.52	0.90	0.15	0.56	0.05	0.42	0.02	0.27	0.01
4	1.97	0.88	1.19	0.26	0.74	0.08	0.56	0.04	0.36	0.01
5	2.46	1.33	1.49	0.39	0.93	0.12	0.71	0.06	0.45	0.02
6	2.96	1.86	1.79	0.55	1.11	0.17	0.85	0.09	0.54	0.03
7	3.45	2.47	2.09	0.73	1.30	0.23	0.99	0.12	0.63	0.04
8	3.94	3.17	2.39	0.94	1.49	0.30	1.13	0.15	0.72	0.05
9	4.43	3.94	2.69	1.17	1.67	0.37	1.27	0.19	0.81	0.06
10	4.93	4.79	2.99	1.42	1.86	0.45	1.41	0.23	0.90	0.08
11	5.42	5.72	3.28	1.69	2.04	0.53	1.55	0.27	0.99	0.09
12	5.91	6.71	3.58	1.98	2.23	0.63	1.69	0.32	1.08	0.11
14	6.90	8.93	4.18	2.64	2.60	0.83	1.98	0.43	1.26	0.14
16	7.88	11.44	4.78	3.38	2.97	1.07	2.26	0.55	1.44	0.18
18	8.87	14.23	5.37	4.21	3.34	1.33	2.54	0.68	1.62	0.23
20	9.85	17.29	5.97	5.11	3.72	1.61	2.82	0.83	1.80	0.28
22	10.84	20.63	6.57	6.10	4.09	1.92	3.11	0.99	1.98	0.33
24	11.82	24.24	7.17	7.17	4.46	2.26	3.39	1.16	2.16	0.39
26	12.81	28.11	7.76	8.31	4.83	2.62	3.67	1.34	2.34	0.45
28	13.80	32.25	8.36	9.53	5.20	3.01	3.95	1.54	2.52	0.52
30	14.78	36.64	8.96	10.83	5.57	3.41	4.24	1.75	2.70	0.59
35			10.45	14.41	6.50	4.54	4.94	2.33	3.15	0.78
40			11.94	18.45	7.43	5.82	5.65	2.98	3.60	1.00
45			13.44	22.95	8.36	7.24	6.35	3.71	4.05	1.24
50			14.93	27.90	9.29	8.79	7.06	4.51	4.50	1.51
55					10.22	10.49	7.76	5.38	4.95	1.80
60					11.15	12.33	8.47	6.32	5.40	2.11
65					12.07	14.30	9.18	7.33	5.85	2.45
70					13.00	16.40	9.88	8.41	6.30	2.81
75					13.93	18.63	10.59	9.56	6.75	3.20
80					14.86	21.00	11.29	10.77	7.20	3.60
85							12.00	12.05	7.65	4.03
90							12.71	13.40	8.10	4.48
95							13.41	14.81	8.55	4.95
100							14.12	16.28	9.00	5.45
110									9.90	6.50
120									10.80	7.63
130									11.70	8.85
140									12.60	10.16
150									13.50	11.54
160									14.40	13.01
170									10.41	5.70
180									11.02	6.34
190									11.64	7.01
200									12.25	7.71
225									13.78	9.58
250									15.31	11.65
275									10.31	4.45
300									11.34	5.30
325									12.37	6.23
350									13.40	7.23
375									14.43	8.29
400									9.35	2.77
425									9.97	3.12
450									10.59	3.49
475									11.22	3.88
500									11.84	4.29
550									12.46	4.72
600									13.71	5.63

Note: Dark shaded area of chart indicates velocities over 5' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.408 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

PVC Class 315 IPS Plastic Pipe

(1120, 1220) SDR 13.5 C=150

psi Loss per 100 Feet of Pipe (psi/100 ft.)

Sizes 1/2" through 6" Flow 1 through 600 gpm

Nominal Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"		
Pipe OD	0.840	1.050	1.315	1.660	1.900	2.375	2.875	3.500	4.500	6.625		
Avg. ID	0.6960	0.8740	1.1010	1.3940	1.5980	2.0030	2.4230	2.9510	3.7940	5.5840		
Avg. Wall	0.072	0.088	0.107	0.133	0.151	0.186	0.226	0.275	0.353	0.521		
Tolerance	0.020	0.020	0.020	0.020	0.020	0.020	0.026	0.031	0.040	0.059		
Min. Wall	0.062	0.078	0.097	0.123	0.141	0.176	0.213	0.259	0.333	0.491		
Flow (gpm)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)
1	0.84	0.25	0.53	0.08	0.34	0.03	0.21	0.01	0.16	0.00	0.10	0.00
2	1.68	0.90	1.07	0.30	0.67	0.10	0.42	0.03	0.32	0.02	0.20	0.01
3	2.53	1.90	1.60	0.63	1.01	0.20	0.63	0.06	0.48	0.03	0.31	0.01
4	3.37	3.24	2.14	1.07	1.35	0.35	0.84	0.11	0.64	0.06	0.41	0.02
5	4.21	4.89	2.67	1.61	1.68	0.53	1.05	0.17	0.80	0.09	0.51	0.03
6	5.05	6.86	3.20	2.26	2.02	0.74	1.26	0.23	0.96	0.12	0.61	0.04
7	5.90	9.12	3.74	3.01	2.36	0.98	1.47	0.31	1.12	0.16	0.71	0.05
8	6.74	11.68	4.27	3.86	2.69	1.25	1.68	0.40	1.28	0.20	0.81	0.07
9	7.58	14.53	4.81	4.80	3.03	1.56	1.89	0.49	1.44	0.25	0.92	0.08
10	8.42	17.66	5.34	5.83	3.37	1.90	2.10	0.60	1.60	0.31	1.02	0.10
11	9.26	21.07	5.88	6.96	3.70	2.26	2.31	0.72	1.76	0.37	1.12	0.12
12	10.11	24.75	6.41	8.17	4.04	2.66	2.52	0.84	1.92	0.43	1.22	0.14
14	11.79	32.93	7.48	10.87	4.71	3.53	2.94	1.12	2.24	0.58	1.42	0.19
16	13.48	42.16	8.55	13.92	5.39	4.53	3.36	1.44	2.56	0.74	1.63	0.25
18	15.16	52.44	9.61	17.32	6.06	5.63	3.78	1.79	2.88	0.92	1.83	0.31
20			10.68	21.05	6.73	6.84	4.20	2.17	3.20	1.12	2.03	0.37
22			11.75	25.11	7.40	8.16	4.62	2.59	3.52	1.33	2.24	0.44
24			12.82	29.50	8.08	9.59	5.04	3.04	3.83	1.57	2.44	0.52
26			13.89	34.21	8.75	11.12	5.46	3.53	4.15	1.82	2.64	0.60
28			14.96	39.25	9.42	12.76	5.88	4.05	4.47	2.08	2.85	0.69
30			16.02	44.60	10.10	14.50	6.30	4.60	4.79	2.37	3.05	0.79
35					11.78	19.29	7.35	6.12	5.59	3.15	3.56	1.05
40					13.46	24.70	8.40	7.84	6.39	4.03	4.07	1.34
45					15.15	30.72	9.45	9.75	7.19	5.01	4.58	1.67
50					16.83	37.34	10.50	11.85	7.99	6.09	5.08	2.03
55							11.55	14.13	8.79	7.27	5.59	2.42
60							12.60	16.60	9.59	8.54	6.10	2.85
65							13.65	19.26	10.39	9.91	6.61	3.30
70							14.70	22.09	11.18	11.37	7.12	3.79
75							15.75	25.10	11.98	12.91	7.63	4.30
80							16.80	28.29	12.78	14.55	8.14	4.85
85									13.58	16.28	8.64	5.42
90									14.38	18.10	9.15	6.03
95									15.18	20.01	9.66	6.67
100									15.98	22.00	10.17	7.33
110											11.19	8.74
120											12.20	10.27
130											13.22	11.92
140											14.24	13.67
150											15.25	15.53
160											16.27	17.50
170											11.81	7.76
180											12.51	8.62
190											13.20	9.53
200											13.90	10.48
225											15.64	13.03
250											17.37	15.84
275											12.88	7.24
300											14.06	8.51
325											15.23	9.87
350											16.40	11.32
375											17.57	12.86
400											11.34	4.27
425											12.05	4.77
450											12.75	5.31
475											13.46	5.87
500											14.17	6.45
550											15.59	7.70
600											17.01	9.04

Note: Dark shaded area of chart indicates velocities over 5' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.408 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

PVC Schedule 40 IPS Plastic Pipe

(1120, 1220) C=150

psi Loss per 100 Feet of Pipe (psi/100 ft.)

Sizes 1/2" through 6" Flow 1 through 600 gpm

Nominal Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"		
Pipe OD	0.840	1.050	1.315	1.660	1.900	2.375	2.875	3.500	4.500	6.625		
Avg. ID	0.602	0.804	1.029	1.36	1.59	2.047	2.445	3.042	3.998	6.031		
Avg. Wall	0.119	0.123	0.143	0.150	0.155	0.164	0.215	0.229	0.251	0.297		
Tolerance	0.020	0.020	0.020	0.020	0.020	0.020	0.024	0.026	0.028	0.034		
Min. Wall	0.109	0.113	0.133	0.140	0.145	0.154	0.203	0.216	0.237	0.280		
Flow (gpm)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)
1	1.13	0.50	0.63	0.12	0.39	0.04	0.22	0.01	0.16	0.00	0.10	0.00
2	2.25	1.82	1.26	0.44	0.77	0.13	0.44	0.03	0.32	0.02	0.19	0.00
3	3.38	3.85	1.89	0.94	1.16	0.28	0.66	0.07	0.48	0.03	0.29	0.01
4	4.50	6.55	2.52	1.60	1.54	0.48	0.88	0.12	0.65	0.06	0.39	0.02
5	5.63	9.91	3.16	2.42	1.93	0.73	1.10	0.19	0.81	0.09	0.49	0.03
6	6.75	13.89	3.79	3.40	2.31	1.02	1.32	0.26	0.97	0.12	0.58	0.04
7	7.88	18.48	4.42	4.52	2.70	1.36	1.54	0.35	1.13	0.16	0.68	0.05
8	9.01	23.66	5.05	5.79	3.08	1.74	1.76	0.45	1.29	0.21	0.78	0.06
9	10.13	29.43	5.68	7.20	3.47	2.17	1.99	0.56	1.45	0.26	0.88	0.08
10	11.26	35.77	6.31	8.75	3.85	2.63	2.21	0.68	1.61	0.32	0.97	0.09
11	12.38	42.68	6.94	10.44	4.24	3.14	2.43	0.81	1.78	0.38	1.07	0.11
12	13.51	50.14	7.57	12.27	4.62	3.69	2.65	0.95	1.94	0.44	1.17	0.13
14	15.76	66.71	8.84	16.32	5.39	4.91	3.09	1.26	2.26	0.59	1.36	0.17
16	18.01	85.42	10.10	20.90	6.17	6.29	3.53	1.62	2.58	0.76	1.56	0.22
18	20.26	106.24	11.36	25.99	6.94	7.82	3.97	2.01	2.90	0.94	1.75	0.28
20			12.62	31.59	7.71	9.51	4.41	2.45	3.23	1.14	1.95	0.33
22			13.89	37.69	8.48	11.35	4.85	2.92	3.55	1.37	2.14	0.40
24			15.15	44.28	9.25	13.33	5.29	3.43	3.87	1.60	2.34	0.47
26			16.41	51.36	10.02	15.46	5.74	3.98	4.20	1.86	2.53	0.54
28			17.67	58.91	10.79	17.73	6.18	4.56	4.52	2.13	2.73	0.62
30			18.94	66.94	11.56	20.15	6.62	5.19	4.84	2.42	2.92	0.71
35					13.49	26.81	7.72	6.90	5.65	3.23	3.41	0.94
40					15.41	34.33	8.82	8.84	6.46	4.13	3.89	1.21
45					17.34	42.70	9.93	10.99	7.26	5.14	4.38	1.50
50					19.27	51.90	11.03	13.36	8.07	6.25	4.87	1.83
55							12.13	15.94	8.88	7.45	5.36	2.18
60							13.24	18.72	9.68	8.75	5.84	2.56
65							14.34	21.72	10.49	10.15	6.33	2.97
70							15.44	24.91	11.30	11.65	6.82	3.41
75							16.54	28.31	12.10	13.23	7.30	3.87
80							17.65	31.90	12.91	14.91	7.79	4.36
85							18.75	35.69	13.72	16.69	8.28	4.88
90							19.85	39.67	14.52	18.55	8.76	5.43
95									15.33	20.50	9.25	6.00
100									16.14	22.55	9.74	6.59
110									17.75	26.90	10.71	7.87
120									19.37	31.60	11.68	9.24
130									12.66	10.72	8.87	4.52
140									13.63	12.30	9.55	5.18
150									14.61	13.97	10.24	5.89
160									15.58	15.75	10.92	6.63
170									16.55	17.62	11.60	7.42
180									17.53	19.58	12.28	8.25
190									18.50	21.65	12.97	9.12
200									19.47	23.80	13.65	10.03
225									15.36	12.47	9.92	4.31
250									17.06	15.16	11.02	5.24
275									18.77	18.09	12.12	6.25
300									13.23	7.34	7.66	1.94
325									14.33	8.51	8.30	2.25
350									15.43	9.76	8.93	2.58
375									16.53	11.09	9.57	2.93
400									17.64	12.50	10.21	3.31
425									18.74	13.99	10.85	3.70
450									19.84	15.55	11.49	4.11
475											12.12	4.55
500											12.76	5.00
550											14.04	5.97
600											15.32	7.01

Note: Dark shaded area of chart indicates velocities over 5' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.408 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

PVC Schedule 80 IPS Plastic Pipe

(1120, 1220) C=150

psi Loss per 100 Feet of Pipe (psi/100 ft.)

Sizes 1/2" through 6" Flow 1 through 600 gpm

Nominal Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"		
Pipe OD	0.840	1.050	1.315	1.660	1.900	2.375	2.875	3.500	4.500	6.625		
Avg. ID	0.526	0.722	0.935	1.254	1.476	1.913	2.289	2.864	3.786	5.709		
Avg. Wall	0.157	0.164	0.190	0.203	0.212	0.231	0.293	0.318	0.357	0.458		
Tolerance	0.020	0.020	0.022	0.024	0.024	0.026	0.034	0.036	0.040	0.052		
Min. Wall	0.147	0.154	0.179	0.191	0.200	0.218	0.276	0.300	0.337	0.432		
Flow (gpm)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)
1	1.47	0.97	0.78	0.21	0.47	0.06	0.26	0.01	0.19	0.01	0.11	0.00
2	2.95	3.50	1.57	0.75	0.93	0.21	0.52	0.05	0.37	0.02	0.22	0.01
3	4.42	7.42	2.35	1.59	1.40	0.45	0.78	0.11	0.56	0.05	0.33	0.01
4	5.90	12.64	3.13	2.71	1.87	0.77	1.04	0.18	0.75	0.08	0.45	0.02
5	7.37	19.11	3.91	4.09	2.33	1.16	1.30	0.28	0.94	0.13	0.56	0.04
6	8.85	26.78	4.70	5.74	2.80	1.63	1.56	0.39	1.12	0.18	0.67	0.05
7	10.32	35.63	5.48	7.63	3.27	2.17	1.82	0.52	1.31	0.24	0.78	0.07
8	11.80	45.63	6.26	9.77	3.73	2.78	2.08	0.67	1.50	0.30	0.89	0.09
9	13.27	56.75	7.04	12.15	4.20	3.45	2.34	0.83	1.69	0.37	1.00	0.11
10	14.75	68.98	7.83	14.77	4.67	4.20	2.59	1.01	1.87	0.46	1.11	0.13
11			8.61	17.62	5.13	5.01	2.85	1.20	2.06	0.54	1.23	0.15
12			9.39	20.70	5.60	5.88	3.11	1.41	2.25	0.64	1.34	0.18
14			10.96	27.55	6.53	7.83	3.63	1.88	2.62	0.85	1.56	0.24
16			12.52	35.27	7.47	10.03	4.15	2.40	3.00	1.09	1.78	0.31
18			14.09	43.87	8.40	12.47	4.67	2.99	3.37	1.35	2.01	0.38
20			15.65	53.32	9.33	15.16	5.19	3.63	3.75	1.64	2.23	0.47
22					10.27	18.08	5.71	4.33	4.12	1.96	2.45	0.56
24					11.20	21.24	6.23	5.09	4.49	2.30	2.68	0.65
26					12.13	24.64	6.75	5.91	4.87	2.67	2.90	0.76
28					13.07	28.26	7.26	6.77	5.24	3.06	3.12	0.87
30					14.00	32.12	7.78	7.70	5.62	3.48	3.34	0.99
35					16.33	42.73	9.08	10.24	6.55	4.63	3.90	1.31
40							10.38	13.11	7.49	5.93	4.46	1.68
45							11.68	16.31	8.43	7.38	5.02	2.09
50							12.97	19.83	9.36	8.97	5.57	2.54
55							14.27	23.65	10.30	10.70	6.13	3.03
60							15.57	27.79	11.24	12.57	6.69	3.56
65									12.17	14.58	7.25	4.13
70									13.11	16.73	7.80	4.74
75									14.05	19.01	8.36	5.38
80									14.98	21.42	8.92	6.06
85									15.92	23.96	9.48	6.78
90									10.03	7.54	7.01	3.15
95									10.59	8.34	7.40	3.48
100									11.15	9.17	7.79	3.83
110									12.26	10.94	8.57	4.57
120									13.38	12.85	9.34	5.37
130									14.49	14.90	10.12	6.22
140									15.61	17.09	10.90	7.14
150									11.68	8.11	7.46	2.73
160									12.46	9.14	7.96	3.07
170									13.24	10.23	8.46	3.44
180									14.02	11.37	8.95	3.82
190									14.80	12.57	9.45	4.22
200									15.57	13.82	9.95	4.64
225									11.19	5.78	6.40	1.49
250									12.44	7.02	7.12	1.81
275									13.68	8.38	7.83	2.15
300									14.92	9.84	8.54	2.53
325									16.17	11.41	9.25	2.94
350											9.96	3.37
375											10.67	3.83
400											11.39	4.31
425											12.10	4.82
450											12.81	5.36
475											13.52	5.93
500											14.23	6.52
550											6.88	1.05
600											7.51	1.24

Note: Dark shaded area of chart indicates velocities over 5' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.408 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

Polyethylene (PE) SDR Pressure Rated Tube

(2306, 3206, 3306) SDR 7, 9, 11.5, 15 C=140

psi Loss per 100 Feet of Pipe (psi/100 ft.)

Sizes 1/2" through 4" Flow 1 through 600 gpm

Nominal Size Avg. I.D.	1/2" 0.622		3/4" 0.824		1" 1.049		1 1/4" 1.380		1 1/2" 1.610		2" 2.067		2 1/2" 2.469		3" 3.068		4" 4.026	
Flow (gpm)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)
1	1.05	0.49	0.60	0.12	0.37	0.04	0.21	0.01	0.16	0.00	0.10	0.00	0.07	0.00	0.04	0.00	0.03	0.00
2	2.11	1.76	1.20	0.45	0.74	0.14	0.43	0.04	0.31	0.02	0.19	0.01	0.13	0.00	0.09	0.00	0.05	0.00
3	3.16	3.73	1.80	0.95	1.11	0.29	0.64	0.08	0.47	0.04	0.29	0.01	0.20	0.00	0.13	0.00	0.08	0.00
4	4.22	6.35	2.40	1.62	1.48	0.50	0.86	0.13	0.63	0.06	0.38	0.02	0.27	0.01	0.17	0.00	0.10	0.00
5	5.27	9.60	3.00	2.44	1.85	0.76	1.07	0.20	0.79	0.09	0.48	0.03	0.33	0.01	0.22	0.00	0.13	0.00
6	6.33	13.46	3.61	3.43	2.22	1.06	1.29	0.28	0.94	0.13	0.57	0.04	0.40	0.02	0.26	0.01	0.15	0.00
7	7.38	17.91	4.21	4.56	2.60	1.41	1.50	0.37	1.10	0.18	0.67	0.05	0.47	0.02	0.30	0.01	0.18	0.00
8	8.44	22.93	4.81	5.84	2.97	1.80	1.71	0.47	1.26	0.22	0.76	0.07	0.54	0.03	0.35	0.01	0.20	0.00
9	9.49	28.52	5.41	7.26	3.34	2.24	1.93	0.59	1.42	0.28	0.86	0.08	0.60	0.03	0.39	0.01	0.23	0.00
10	10.55	34.67	6.01	8.82	3.71	2.73	2.14	0.72	1.57	0.34	0.95	0.10	0.67	0.04	0.43	0.01	0.25	0.00
11			6.61	10.53	4.08	3.25	2.36	0.86	1.73	0.40	1.05	0.12	0.74	0.05	0.48	0.02	0.28	0.00
12			7.21	12.37	4.45	3.82	2.57	1.01	1.89	0.48	1.15	0.14	0.80	0.06	0.52	0.02	0.30	0.01
14			8.41	16.45	5.19	5.08	3.00	1.34	2.20	0.63	1.34	0.19	0.94	0.08	0.61	0.03	0.35	0.01
16			9.61	21.07	5.93	6.51	3.43	1.71	2.52	0.81	1.53	0.24	1.07	0.10	0.69	0.04	0.40	0.01
18			10.82	26.21	6.67	8.10	3.86	2.13	2.83	1.01	1.72	0.30	1.20	0.13	0.78	0.04	0.45	0.01
20			12.02	31.85	7.42	9.84	4.28	2.59	3.15	1.22	1.91	0.36	1.34	0.15	0.87	0.05	0.50	0.01
22					8.16	11.74	4.71	3.09	3.46	1.46	2.10	0.43	1.47	0.18	0.95	0.06	0.55	0.02
24					8.90	13.79	5.14	3.63	3.78	1.72	2.29	0.51	1.61	0.21	1.04	0.07	0.60	0.02
26					9.64	16.00	5.57	4.21	4.09	1.99	2.48	0.59	1.74	0.25	1.13	0.09	0.65	0.02
28					10.38	18.35	6.00	4.83	4.41	2.28	2.67	0.68	1.87	0.28	1.21	0.10	0.70	0.03
30					11.12	20.85	6.43	5.49	4.72	2.59	2.86	0.77	2.01	0.32	1.30	0.11	0.76	0.03
35					12.98	27.74	7.50	7.30	5.51	3.45	3.34	1.02	2.34	0.43	1.52	0.15	0.88	0.04
40							8.57	9.35	6.30	4.42	3.82	1.31	2.68	0.55	1.73	0.19	1.01	0.05
45							9.64	11.63	7.08	5.49	4.30	1.63	3.01	0.69	1.95	0.24	1.13	0.06
50							10.71	14.14	7.87	6.68	4.77	1.98	3.35	0.83	2.17	0.29	1.26	0.08
55							11.78	16.87	8.66	7.97	5.25	2.36	3.68	0.99	2.38	0.35	1.38	0.09
60							12.85	19.82	9.44	9.36	5.73	2.77	4.02	1.17	2.60	0.41	1.51	0.11
65									10.23	10.86	6.21	3.22	4.35	1.36	2.82	0.47	1.64	0.13
70									11.02	12.45	6.68	3.69	4.69	1.55	3.03	0.54	1.76	0.14
75									11.81	14.15	7.16	4.19	5.02	1.77	3.25	0.61	1.89	0.16
80									12.59	15.95	7.64	4.73	5.35	1.99	3.47	0.69	2.01	0.18
85									13.38	17.84	8.12	5.29	5.69	2.23	3.68	0.77	2.14	0.21
90											8.59	5.88	6.02	2.48	3.90	0.86	2.27	0.23
95											9.07	6.50	6.36	2.74	4.12	0.95	2.39	0.25
100											9.55	7.15	6.69	3.01	4.33	1.05	2.52	0.28
110											10.50	8.53	7.36	3.59	4.77	1.25	2.77	0.33
120											11.46	10.02	8.03	4.22	5.20	1.47	3.02	0.39
130											12.41	11.62	8.70	4.89	5.63	1.70	3.27	0.45
140											13.37	13.33	9.37	5.61	6.07	1.95	3.52	0.52
150													10.04	6.38	6.50	2.22	3.78	0.59
160													10.71	7.19	6.94	2.50	4.03	0.67
170													11.38	8.04	7.37	2.79	4.28	0.74
180													12.05	8.94	7.80	3.11	4.53	0.83
190													12.72	9.88	8.24	3.43	4.78	0.92
200													13.39	10.87	8.67	3.78	5.03	1.01
225															9.75	4.70	5.66	1.25
250															10.84	5.71	6.29	1.52
275															11.92	6.81	6.92	1.81
300															13.00	8.00	7.55	2.13
325															14.09	9.28	8.18	2.47
350																	8.81	2.84
375																	9.44	3.22
400																	10.07	3.63
425																	10.70	4.06
450																	11.33	4.52
475																	11.96	4.99
500																	12.59	5.49
550																	13.84	6.55
600																	15.10	7.70

Note: Dark shaded area of chart indicates velocities over 5' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.408 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

Schedule 40 Standard Steel Pipe

C=100

psi Loss per 100 Feet of Pipe (psi/100 ft.)

Sizes 1/2" through 6" Flow 1 through 600 gpm

Nominal Size	1/2"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"		4"		6"	
Pipe OD	0.840		1.050		1.315		1.660		1.900		2.375		2.875		3.500		4.500		6.625	
Avg. ID	0.622		0.824		1.049		1.380		1.610		2.067		2.469		3.068		4.026		6.065	
Avg. Wall	0.109		0.113		0.133		0.140		0.145		0.154		0.203		0.216		0.237		0.280	
Flow (gpm)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)
1	1.05	0.91	0.60	0.23	0.37	0.07	0.21	0.02	0.16	0.01	0.10	0.00	0.07	0.00	0.04	0.00	0.03	0.00	0.01	0.00
2	2.11	3.28	1.20	0.84	0.74	0.26	0.43	0.07	0.31	0.03	0.19	0.01	0.13	0.00	0.09	0.00	0.05	0.00	0.02	0.00
3	3.16	6.95	1.80	1.77	1.11	0.55	0.64	0.14	0.47	0.07	0.29	0.02	0.20	0.01	0.13	0.00	0.08	0.00	0.03	0.00
4	4.22	11.85	2.40	3.02	1.48	0.93	0.86	0.25	0.63	0.12	0.38	0.03	0.27	0.01	0.17	0.01	0.10	0.00	0.04	0.00
5	5.27	17.91	3.00	4.56	1.85	1.41	1.07	0.37	0.79	0.18	0.48	0.05	0.33	0.02	0.22	0.01	0.13	0.00	0.06	0.00
6	6.33	25.10	3.61	6.39	2.22	1.97	1.29	0.52	0.94	0.25	0.57	0.07	0.40	0.03	0.26	0.01	0.15	0.00	0.07	0.00
7	7.38	33.40	4.21	8.50	2.60	2.63	1.50	0.69	1.10	0.33	0.67	0.10	0.47	0.04	0.30	0.01	0.18	0.00	0.08	0.00
8	8.44	42.77	4.81	10.88	2.97	3.36	1.71	0.89	1.26	0.42	0.76	0.12	0.54	0.05	0.35	0.02	0.20	0.00	0.09	0.00
9	9.49	53.19	5.41	13.54	3.34	4.18	1.93	1.10	1.42	0.52	0.86	0.15	0.60	0.06	0.39	0.02	0.23	0.01	0.10	0.00
10	10.55	64.65	6.01	16.45	3.71	5.08	2.14	1.34	1.57	0.63	0.95	0.19	0.67	0.08	0.43	0.03	0.25	0.01	0.11	0.00
11	11.60	77.14	6.61	19.63	4.08	6.06	2.36	1.60	1.73	0.75	1.05	0.22	0.74	0.09	0.48	0.03	0.28	0.01	0.12	0.00
12	12.65	90.62	7.21	23.06	4.45	7.12	2.57	1.88	1.89	0.89	1.15	0.26	0.80	0.11	0.52	0.04	0.30	0.01	0.13	0.00
14			8.41	30.68	5.19	9.48	3.00	2.50	2.20	1.18	1.34	0.35	0.94	0.15	0.61	0.05	0.35	0.01	0.16	0.00
16			9.61	39.29	5.93	12.14	3.43	3.20	2.52	1.51	1.53	0.45	1.07	0.19	0.69	0.07	0.40	0.02	0.18	0.00
18			10.82	48.87	6.67	15.10	3.86	3.97	2.83	1.88	1.72	0.56	1.20	0.23	0.78	0.08	0.45	0.02	0.20	0.00
20			12.02	59.40	7.42	18.35	4.28	4.83	3.15	2.28	1.91	0.68	1.34	0.28	0.87	0.10	0.50	0.03	0.22	0.00
22			13.22	70.87	8.16	21.89	4.71	5.76	3.46	2.72	2.10	0.81	1.47	0.34	0.95	0.12	0.55	0.03	0.24	0.00
24					8.90	25.72	5.14	6.77	3.78	3.20	2.29	0.95	1.61	0.40	1.04	0.14	0.60	0.04	0.27	0.01
26					9.64	29.83	5.57	7.85	4.09	3.71	2.48	1.10	1.74	0.46	1.13	0.16	0.65	0.04	0.29	0.01
28					10.38	34.22	6.00	9.01	4.41	4.25	2.67	1.26	1.87	0.53	1.21	0.18	0.70	0.05	0.31	0.01
30					11.12	38.88	6.43	10.24	4.72	4.83	2.86	1.43	2.01	0.60	1.30	0.21	0.76	0.06	0.33	0.01
35					12.98	51.72	7.50	13.62	5.51	6.43	3.34	1.91	2.34	0.80	1.52	0.28	0.88	0.07	0.39	0.01
40					8.57	17.44	6.30	8.24	3.82	2.44	2.68	1.03	2.68	1.03	1.73	0.36	1.01	0.10	0.44	0.01
45					9.64	21.69	7.08	10.25	4.30	3.04	3.01	1.28	1.95	0.44	1.13	0.12	1.13	0.12	0.50	0.02
50					10.71	26.36	7.87	12.45	4.77	3.69	3.35	1.55	2.17	0.54	1.26	0.14	1.26	0.14	0.55	0.02
55					11.78	31.45	8.66	14.86	5.25	4.40	3.68	1.85	2.38	0.64	1.38	0.17	1.38	0.17	0.61	0.02
60					12.85	36.95	9.44	17.45	5.73	5.17	4.02	2.18	2.60	0.76	1.51	0.20	1.51	0.20	0.67	0.03
65					13.93	42.86	10.23	20.24	6.21	6.00	4.35	2.53	2.82	0.88	1.64	0.23	1.64	0.23	0.72	0.03
70					11.02	23.22	6.68	8.88	4.69	2.90	3.03	1.01	1.76	0.27	1.76	0.27	0.78	0.04	0.78	0.04
75					11.81	26.39	7.16	7.82	5.02	3.29	3.25	1.14	1.89	0.31	1.89	0.31	0.83	0.04	0.83	0.04
80					12.59	29.74	7.64	8.82	5.35	3.71	3.47	1.29	2.01	0.34	2.01	0.34	0.89	0.05	0.89	0.05
85									13.38	33.27	8.12	9.86	5.69	4.15	3.68	1.44	2.14	0.38	0.94	0.05
90									8.59	10.96	6.02	4.62	3.90	1.60	2.27	0.43	1.00	0.06	1.00	0.06
95									9.07	12.12	6.36	5.10	4.12	1.77	2.39	0.47	1.05	0.06	1.05	0.06
100									9.55	13.33	6.69	5.61	4.33	1.95	2.52	0.52	1.11	0.07	1.11	0.07
110									10.50	15.90	7.36	6.70	4.77	2.33	2.77	0.62	1.22	0.08	1.22	0.08
120									11.46	18.68	8.03	7.87	5.20	2.73	3.02	0.73	1.33	0.10	1.33	0.10
130									12.41	21.66	8.70	9.12	5.63	3.17	3.27	0.85	1.44	0.12	1.44	0.12
140									13.37	24.85	9.37	10.47	6.07	3.64	3.52	0.97	1.55	0.13	1.55	0.13
150											10.04	11.89	6.50	4.13	3.78	1.10	1.66	0.15	1.66	0.15
160											10.71	13.40	6.94	4.66	4.03	1.24	1.77	0.17	1.77	0.17
170											11.38	15.00	7.37	5.21	4.28	1.39	1.89	0.19	1.89	0.19
180											12.05	16.67	7.80	5.79	4.53	1.54	2.00	0.21	2.00	0.21
190											12.72	18.43	8.24	6.40	4.78	1.71	2.11	0.23	2.11	0.23
200											13.39	20.26	8.67	7.04	5.03	1.88	2.22	0.26	2.22	0.26
225											9.75	8.76	5.66	2.33	2.50	0.32	2.50	0.32	2.50	0.32
250											10.84	10.64	6.29	2.84	2.77	0.39	2.77	0.39	2.77	0.39
275											11.92	12.70	6.92	3.38	3.05	0.46	3.05	0.46	3.05	0.46
300											13.00	14.92	7.55	3.98	3.33	0.54	3.33	0.54	3.33	0.54
325													8.18	4.61	3.60	0.63	3.60	0.63	3.60	0.63
350													8.81	5.29	3.88	0.72	3.88	0.72	3.88	0.72
375													9.44	6.01	4.16	0.82	4.16	0.82	4.16	0.82
400													10.07	6.77	4.44	0.92	4.44	0.92	4.44	0.92
425													10.70	7.58	4.71	1.03	4.71	1.03	4.71	1.03
450													11.33	8.43	4.99	1.15	4.99	1.15	4.99	1.15
475													11.96	9.31	5.27	1.27	5.27	1.27	5.27	1.27
500													12.59	10.24	5.55	1.39	5.55	1.39	5.55	1.39
550															6.10	1.66	6.10	1.66	6.10	1.66
600															6.66	1.95	6.66	1.95	6.66	1.95

Note: Dark shaded area of chart indicates velocities over 7' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.408 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

Type K Copper Water Tube

C=140

psi Loss per 100 Feet of Tube (psi/100 ft.)

Sizes 1/2" through 3" Flow 1 through 600 gpm

Nominal Size	1/2"		5/8"		3/4"		1"		1 1/4"		1 1/2"		2"		2 1/2"		3"	
Pipe OD	0.625		0.750		0.875		1.125		1.375		1.625		2.125		2.625		3.125	
Avg. ID	0.5270		0.652		0.745		0.995		1.245		1.481		1.959		2.435		2.907	
Avg. Wall	0.049		0.049		0.065		0.065		0.065		0.072		0.083		0.095		0.109	
Flow (gpm)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)	Velocity (ft/s)	Loss (psi)
1	1.47	1.09	0.96	0.39	0.74	0.20	0.41	0.05	0.26	0.02	0.19	0.01	0.11	0.00	0.07	0.00	0.05	0.00
2	2.94	3.94	1.92	1.40	1.47	0.73	0.82	0.18	0.53	0.06	0.37	0.03	0.21	0.01	0.14	0.00	0.10	0.00
3	4.41	8.35	2.88	2.97	2.21	1.55	1.24	0.38	0.79	0.13	0.56	0.05	0.32	0.01	0.21	0.00	0.14	0.00
4	5.88	14.23	3.84	5.05	2.94	2.64	1.65	0.65	1.05	0.22	0.74	0.09	0.43	0.02	0.28	0.01	0.19	0.00
5	7.35	21.51	4.80	7.64	3.68	3.99	2.06	0.98	1.32	0.33	0.93	0.14	0.53	0.04	0.34	0.01	0.24	0.01
6	8.81	30.15	5.76	10.70	4.41	5.59	2.47	1.37	1.58	0.46	1.12	0.20	0.64	0.05	0.41	0.02	0.29	0.01
7	10.28	40.12	6.72	14.24	5.15	7.44	2.88	1.82	1.84	0.61	1.30	0.26	0.74	0.07	0.48	0.02	0.34	0.01
8	11.75	51.37	7.68	18.24	5.88	9.53	3.30	2.33	2.11	0.78	1.49	0.34	0.85	0.09	0.55	0.03	0.39	0.01
9	13.22	63.90	8.64	22.68	6.62	11.85	3.71	2.90	2.37	0.97	1.67	0.42	0.96	0.11	0.62	0.04	0.43	0.02
10	14.69	77.66	9.60	27.57	7.35	14.41	4.12	3.52	2.63	1.18	1.86	0.51	1.06	0.13	0.69	0.05	0.48	0.02
11			10.56	32.89	8.09	17.19	4.53	4.21	2.90	1.41	2.05	0.61	1.17	0.16	0.76	0.05	0.53	0.02
12			11.52	38.64	8.82	20.20	4.95	4.94	3.16	1.66	2.23	0.71	1.28	0.18	0.83	0.06	0.58	0.03
14			13.44	51.41	10.29	26.87	5.77	6.57	3.69	2.21	2.60	0.95	1.49	0.24	0.96	0.08	0.68	0.04
16			15.36	65.83	11.76	34.41	6.59	8.42	4.21	2.83	2.98	1.22	1.70	0.31	1.10	0.11	0.77	0.05
18			17.28	81.88	13.23	42.80	7.42	10.47	4.74	3.52	3.35	1.51	1.91	0.39	1.24	0.13	0.87	0.06
20					14.70	52.02	8.24	12.72	5.26	4.28	3.72	1.84	2.13	0.47	1.38	0.16	0.97	0.07
22					16.17	62.06	9.07	15.18	5.79	5.10	4.09	2.19	2.34	0.56	1.51	0.19	1.06	0.08
24					17.64	72.91	9.89	17.84	6.32	5.99	4.46	2.58	2.55	0.66	1.65	0.23	1.16	0.10
26							10.71	20.69	6.84	6.95	4.84	2.99	2.76	0.77	1.79	0.27	1.26	0.11
28							11.54	23.73	7.37	7.97	5.21	3.43	2.98	0.88	1.93	0.30	1.35	0.13
30							12.36	26.96	7.90	9.06	5.58	3.89	3.19	1.00	2.06	0.35	1.45	0.15
35							14.42	35.87	9.21	12.05	6.51	5.18	3.72	1.33	2.41	0.46	1.69	0.19
40							16.48	45.94	10.53	15.43	7.44	6.63	4.25	1.70	2.75	0.59	1.93	0.25
45									11.84	19.20	8.37	8.25	4.78	2.11	3.10	0.73	2.17	0.31
50									13.16	23.33	9.30	10.03	5.32	2.57	3.44	0.89	2.41	0.38
55									14.48	27.84	10.23	11.96	5.85	3.07	3.78	1.06	2.66	0.45
60									15.79	32.70	11.16	14.05	6.38	3.60	4.13	1.25	2.90	0.53
65									17.11	37.93	12.09	16.30	6.91	4.18	4.47	1.45	3.14	0.61
70									18.43	43.51	13.02	18.70	7.44	4.79	4.82	1.66	3.38	0.70
75											13.95	21.24	7.97	5.45	5.16	1.89	3.62	0.80
80											14.88	23.94	8.51	6.14	5.50	2.13	3.86	0.90
85											15.81	26.79	9.04	6.87	5.85	2.38	4.10	1.01
90											16.74	29.78	9.57	7.63	6.19	2.65	4.35	1.12
95											17.67	32.91	10.10	8.44	6.54	2.93	4.59	1.24
100											18.60	36.19	10.63	9.28	6.88	3.22	4.83	1.36
110													11.69	11.07	7.57	3.84	5.31	1.62
120													12.76	13.01	8.26	4.51	5.79	1.91
130													13.82	15.08	8.95	5.23	6.28	2.21
140													14.88	17.30	9.63	6.00	6.76	2.54
150													15.95	19.66	10.32	6.82	7.24	2.88
160													17.01	22.16	11.01	7.69	7.72	3.25
170													18.07	24.79	11.70	8.60	8.21	3.63
180															12.39	9.56	8.69	4.04
190															13.07	10.57	9.17	4.46
200															13.76	11.62	9.66	4.91
225															15.48	14.46	10.86	6.10
250															17.20	17.57	12.07	7.42
275															18.92	20.96	13.28	8.85
300																	14.48	10.40
325																	15.69	12.06
350																	16.90	13.84
375																	18.11	15.72
400																	19.31	17.72
425																		
450																		
475																		
500																		
550																		

Note: Dark shaded area of chart indicates velocities over 7' per second. Use with caution

The velocity values were derived using the following equation $V = \frac{0.408 \times Q_{gpm}}{d^2}$

Table are based upon the following Hazen-Williams equation: $H_f = 0.2083 \times \left(\frac{100}{C}\right)^{1.852} \times \frac{Q^{1.852}}{D^{4.8655}}$ for change in psi per foot of elevation. Pressure loss for uphill elevation and pressure gain for downhill elevation changes.

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