

# WORKING SMARTER

BY KYLE BROWN

Find the right sprinkler for the job to handle increasing efficiency regulations.

2020 SPRINKLER COMPARISON CHARTS

IRRIGATION &  
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**S**prinklers come in many different shapes and sizes, ready to fit for many different irrigation applications from residential to commercial. While the variety of available sprinklers continues to increase, some types have seen more of a focus than others, based on trends in the last few years.

"In general, more attention is being paid to proper operating pressure either through pressure-regulated sprinklers, pressure regulation at the valve or even both for increased system efficiency," says Kelsey Jacquard, senior product manager, Hunter Industries, San Marcos, California.

Some of that interest in high-efficiency options comes from widespread regulations, regional droughts or a perception that irrigation systems are using too much water, says Jessica Case, product manager, Rain Bird, Azusa, California. Both Vermont and California saw laws go into effect this year mandating that new spray sprinkler bodies have integrated pressure regulation, says Case. Colorado, Hawaii and Washington will have similar laws starting with the new year.

"It's quite possible we'll see this trend continue in other states in the future," she says.

More than 13 states, mostly in the West, have adopted some form of requirements for pressure regulation, says Brodie Bruner, executive vice president, Weathermatic, Garland, Texas.

One design trend to be noted is toward taller sprinklers to clear taller turf heights, says Jacquard.

"While 4-inch sprinklers are still popular, there is a trend toward 6-inch rotors and spray sprinklers for improved coverage in taller turf applications," she says.

Bruner is seeing a long-term and gradual change to reduced turf areas with an emphasis on xeriscaping and low water-use plantings, which has an impact on the type of sprinklers being used to fit those areas. That trend has resulted in lower volume sprinkler output and fewer rotors per project, he says.

"The trick is to achieve lower volume output for efficiency without extending water windows outside of mandated time of day watering re-

***In general, more attention is being paid to proper operating pressure.***

- Kelsey Jacquard, Hunter Industries Inc.

**Homeowners continue to watch water costs rise, which means a heavier focus on water use efficiency throughout the irrigation system.**

strictions," he says. "In some cases, an efficient, but higher-volume application is required to compress watering into a defined water window." That leads to more of a reliance on run-and-soak cycles to reduce runoff compared to lower sprinkler application rates.

Facing these kinds of regulations, irrigation contractors have had to strike a balance between efficiency, compliance and cost when choosing sprinklers, Bruner says. Factors like performance efficiency, product application and pricing are the major drivers in play on new projects.

Rain Bird has seen a record number of contractors purchasing rotors because of an increase in landscape projects nationally, says Jeffrey Johnson, senior product manager, Rain Bird. "It's clear this trend goes back to the fact that people aren't traveling as much and are instead finding ways to enhance their homes and landscapes," he says.

Some contractors are also positioning rotary nozzles as an affordable premium compared to standard spray nozzles, as the unique rotating spray gives an appearance that homeowners appreciate.

As homeowners continue to see water costs increase, they're also more apt to push irrigation professionals for more water-efficient designs, says Bruner. While most of the emphasis there has been on weather-based and online controllers, conversions to drip and microsprays are becoming more popular as well.

As a result of the pandemic, more home and lawn improvement projects have gotten started, meaning sprinkler purchases have remained steady, says Jacquard.

"The long-term effects of COVID-19 on the industry are still unknown, but we have seen an increased appreciation for usable outdoor spaces," she says. 

The author is editor-in-chief of *Irrigation & Green Industry*, and can be reached at kylebrown@igin.com.

# Sprinkler Specification Charts

**Editor's note:** Information presented in these charts was provided by manufacturers. Please contact the manufacturer directly for more details.

## Legend

B.....brass	NP.....nonpotable
CT.....continuous	ON.....opposing nozzle
CV.....check valve	P.....part
F.....full	Pl.....plastic
FC.....full circle	sh.....spray head
FSO.....flow shut-off	SS.....stainless steel
HS.....high speed	STD.....standard
LA.....low angle	ZDC .....zinc die cast



To download a copy of these specification charts, go to [www.igin.com/sprinkler-specification-charts](http://www.igin.com/sprinkler-specification-charts).

## ROTATING NOZZLES

Manufacturer	Model	Series	Nozzle	M or F thread	Pattern (degrees)	Operating pressure (psi)	Radius (ft.)	Discharge rate (gpm)	Precipitation rate (in./hr.)
Hunter	MP 1000 - options available	MP1000	adj. arc/radius	M or F	90-360	30-55	8-15	0.17-1.01	0.41-0.5
Hunter	MP 2000 - options available	MP2000	adj. arc/radius	M or F	90-360	25-55	13-21	0.34-1.74	0.4-0.5
Hunter	MP 3000 - options available	MP3000	adj. arc/radius	M or F	90-360	25-55	22-30	0.71-4.27	0.39-0.53
Hunter	MP 3500 90-210	MP3500	adj. arc/radius	F	90-210	25-55	31-35	1.04-3.94	0.39-0.53
Hunter	MP Corner	MP Specialty	adj. arc/radius	M or F	45-105	30-55	8-15	0.17-0.53	-
Hunter	MP Left Strip	MP Specialty	adj. radius	M or F	strip	30-55	5x15	0.19-0.26	-
Hunter	MP Side Strip	MP Specialty	adj. radius	M or F	strip	30-55	5x30	0.38-0.51	-
Hunter	MP Right Strip	MP Specialty	adj. radius	M or F	strip	30-55	5x15	0.19-0.26	-
Hunter	MP800SR - options available	MP800SR	adj. arc/radius	F	90-360	30-55	6-12	0.16-0.98	0.72-1.03
Hunter	MP815 - options available	MP815	adj. arc/radius	F	90-360	30-55	8-16	0.42-2.26	0.79-1.0
K-Rain	RN100 - options available	Rotary Nozzle	adj. arc/radius, fixed 360	F	90-270, fixed 360	30-50	13-15	0.22-1.2	0.46-0.51
K-Rain	RN200 - options available	Rotary Nozzle	adj. arc/radius, fixed 360	F	90-270, fixed 360	30-50	16-19	0.34-1.88	0.45-0.51
K-Rain	RN300 - options available	Rotary Nozzle	adj. arc/radius, fixed 360	F	90-270, fixed 360	30-50	26-30	0.8-3.7	0.39-0.44
K-Rain	RNS-RES-515	Rotary Nozzle	fixed	F	fixed-right end strip	30-50	5x15	0.3-0.4	-
K-Rain	RNS-LES-515	Rotary Nozzle	fixed	F	fixed-left end strip	30-50	5x15	0.3-0.4	-
K-Rain	RNS-SS-530	Rotary Nozzle	fixed	F	fixed-side strip	30-50	5x30	0.5-0.7	-
K-Rain	RN-100ADJ	Rotary Nozzle	adj. arc/radius	F	90-360	30-50	13-15	0.22-1.2	0.49-0.51
K-Rain	RN-200ADJ	Rotary Nozzle	adj. arc/radius	F	90-360	30-50	16-19	0.34-1.9	0.49-0.51
K-Rain	RN-200ADJ	Rotary Nozzle	adj. arc/radius	F	90-360	30-50	26-29	0.8-3.8	0.41-0.48
Rain Bird	R-VAN14 - options available	R-VAN	8 to 14 ft. full circle R-VAN	F	45-360	30-55	8-14	0.28-1.45	0.6-0.67
Rain Bird	R-VAN18 - options available	R-VAN	13 to 18 ft. full circle R-VAN	F	45-360	30-55	13-18	0.42-2.11	0.6-0.68
Rain Bird	R-VAN24 - options available	R-VAN	17 to 24 ft. full circle R-VAN	F	45-360	30-55	17-24	0.6-3.74	0.6-0.63
Rain Bird	R-VAN-LCS	R-VAN	left corner strip R-VAN	F	left strip	30-55	5x15	0.18-0.28	0.56-0.64
Rain Bird	R-VAN-RCS	R-VAN	right corner strip R-VAN	F	right strip	30-55	5x15	0.18-0.28	0.56-0.64
Rain Bird	R-VAN-SST	R-VAN	side strip R-VAN	F	side strip	30-55	5x30	0.36-0.56	0.56-0.64
Toro	PRN-TA	Precision	gear-driven rotary	M	45-270	20-75	14-26	0.17-2.6	0.6
Toro	PRN-A	Precision	gear-driven rotary	F	45-270	20-75	14-26	0.17-2.6	0.6
Toro	PRN-TF	Precision	gear-driven rotary	M	360	20-75	14-26	1.81-3.68	0.6
Toro	PRN-F	Precision	gear-driven rotary	F	360	20-75	14-26	1.81-3.68	0.6

## VARIABLE ARC NOZZLES

Inlet Size (inches)	M or F Thread	Manufacturer	Model	Series	Nozzle	Pattern (degrees)	Operation Pressure (PSI)	Radius	Discharge Rate (GPM)	Precipitation Rate (in./hr.)
n/a	F	Hunter	4A	Pro-adjustable	4-ft. adj.	0-360	20-40	3-4	0.11-0.9	~ 4.0
n/a	F	Hunter	6A	Pro-adjustable	6-ft. adj.	0-360	20-40	4-6	0.15-1.4	~ 3.5
n/a	F	Hunter	8A	Pro-adjustable	8-ft. adj.	0-360	20-40	7-9	0.18-2	~ 2.65
n/a	F	Hunter	10A	Pro-adjustable	10-ft. adj.	0-360	20-40	9-11	0.2-2.36	~ 1.9
n/a	F	Hunter	12A	Pro-adjustable	12-ft. adj.	0-360	20-40	11-13	0.25-3.36	~ 1.7
n/a	F	Hunter	15A	Pro-adjustable	15-ft. adj.	0-360	20-40	14-17	0.39-4.52	~ 1.6
n/a	F	Hunter	17A	Pro-adjustable	17-ft. adj.	0-360	20-40	16-19	0.49-5.52	~ 1.6
n/a	F	K-Rain	KVF8	High Efficiency KVF Nozzles	8' adj	0-360	20-40	9-10	0.39-2.3	1.62-2.59
n/a	F	K-Rain	KVF10	High Efficiency KVF Nozzles	10' adj	0-360	20-40	10-12	0.45-2.8	1.65-2.16
n/a	F	K-Rain	KVF12	High Efficiency KVF Nozzles	12' adj	0-360	20-40	12-14	0.65-3.5	1.47-2.04
n/a	F	K-Rain	KVF15	High Efficiency KVF Nozzles	15' adj	0-360	20-40	14-17	0.75-4.6	1.45-1.88
n/a	F	K-Rain	KVF17	High Efficiency KVF Nozzles	17' adj	0-360	20-40	17-18	0.85-4.8	1.13-1.65
n/a	M	K-Rain	KV8	KV Nozzles	8' adj	0-360	20-50	7-9	0.3-2.3	1.9-3.82
n/a	M	K-Rain	KV10	KV Nozzles	10' adj	0-360	20-50	10-13	0.7-3.5	1.87-3.68
n/a	M	K-Rain	KV12	KV Nozzles	12' adj	0-360	20-50	11-15	1.1-3.9	2.02-3.42
n/a	M	K-Rain	KV15	KV Nozzles	15' adj	0-360	20-50	14-19	1.3-5.3	1.66-2.57
n/a	M	K-Rain	KV17	KV Nozzles	17' adj	0-360	20-50	15-20	1.7-5.4	1.39-2.47
1/2	F	Rain Bird	HE-VAN-08	HE-VAN Series	8-ft. HE-VAN	0-360	15-30	5-8	0.21-1.17	1.76-3.19
1/2	F	Rain Bird	HE-VAN-10	HE-VAN Series	10-ft. HE-VAN	0-360	15-30	7-10	0.32-1.78	1.72-2.48
1/2	F	Rain Bird	HE-VAN-12	HE-VAN Series	12-ft. HE-VAN	0-360	15-30	9-12	0.42-2.37	1.58-1.99
1/2	F	Rain Bird	HE-VAN-15	HE-VAN Series	15-ft. HE-VAN	0-360	15-30	11-15	0.65-3.7	1.58-2.08
1/2	F	Rain Bird	4VAN	VAN	4-ft. VAN	0-330	15-30	3-4	0.21-0.88	4.93-10.27
1/2	F	Rain Bird	6VAN	VAN	6-ft. VAN	0-330	15-30	4-6	0.26-1.2	3.21-6.34
1/2	F	Rain Bird	8VAN	VAN	8-ft. VAN	0-330	15-30	6-8	0.51-1.7	2.79-5.46
1/2	F	Rain Bird	10VAN	VAN	10-ft. VAN	0-360	15-30	7-10	0.48-2.6	2.5-3.8
1/2	F	Rain Bird	12VAN	VAN	12-ft. VAN	0-360	15-30	9-12	0.39-2.36	1.58-1.86
1/2	F	Rain Bird	15VAN	VAN	15-ft. VAN	0-360	15-30	11-15	0.65-3.7	1.58-2.07
1/2	F	Rain Bird	18VAN	VAN	18-ft. VAN	0-360	15-30	14-18	1.05-5.32	1.59-2.07
1/2	F	Weathermatic	6700	6700	6-12, 7LA, 10LA	20-360	25-60	23-43	1.5-6.3	0.24-1.3



Photo Hunter Industries

## ROTORS

Inlet size (in.)	Manufacturer	Model	Series	Nozzle	Pattern (degrees)	Operation pressure (psi)	Radius (ft.)	Discharge rate (gpm)	Precipitation rate (in./hr.)	Gear drive
1/2	Hunter	SRM	4" Plastic	8 PI	adj. 40-360	30-50	15-34	0.42-4.3	~ 0.45	yes
1/2	Hunter	PGJ	Shrub, 4", 6", 12" Plastic	8 PI	adj. 40-360	30-50	15-37	0.64-5.3	~ 0.6	yes
3/4	Hunter	PGP-ADJ	4" Plastic	27 PI	adj. 40-360	30-70	22-52	0.5-14.1	~ 0.4	yes
3/4	Hunter	PGP Ultra	Shrub, 4", 6", 12" Plastic	34 PI	adj. 50-360	30-70	22-52	0.36-14.8	~ 0.4	yes
3/4	Hunter	I-20 - options available	Shrub, 4", 6", 12" Plastic or stainless	30 PI	adj. 50-360	30-70	17-47	0.36-14.8	~ 0.4	yes
1	Hunter	I-25 - options available	4", 6" Plastic or stainless	12 PI	adj. 50-360	40-100	40-71	3.8-31.5	~ 0.4	yes
1	Hunter	I-40 - options available	4", 6" Stainless	6 PI	adj. 50-360	40-100	45-76	7.0-33.7	~ 0.4	yes
1	Hunter	I-50 - options available	4", 6" Stainless	6 PI	adj. 50-360	40-100	45-76	7.0-33.7	~ 0.4	yes
1	Hunter	I-80 - options available	3-3/4" Plastic	7 PI	adj. 60-360	40-100	63-97	20.2-59.6	~ 0.6	yes
1.5	Hunter	I-90 - options available	3" Plastic	8 PI	adj. 40-360	60-100	66-103	29.5-83.3	~ 0.6	yes
3/4	Hydro Rain	HRX-075-ADJ	HRX	reg./LA	40-360	25-70	16-52	0.5-8	0.4	yes
1/2	Irritrol	430R	430R	PI	partial/FC	30-50	20-35	0.8-3.4	0.28-.65	yes
3/4	Irritrol	550R	550R	PI	partial/FC	25-65	25-50	0.74-9.7	0.2-0.99	yes
1/2	K-Rain	13003	MiniPro 4-in.	5 STD	adj. 40-360	30-50	18-33	0.8-3.8	0.26-0.52	yes
1/2	K-Rain	13006	MiniPro 6-in.	5 STD	adj. 40-360	30-50	18-33	0.8-3.8	0.26-0.52	yes
1/2	K-Rain	13012	MiniPro 12-in.	5 STD	adj. 40-360	30-50	18-33	0.8-3.8	0.26-0.52	yes
1/2	K-Rain	RPS50	RPS50	5 STD	adj. 40-360	30-50	18-33	0.8-3.8	0.26-0.52	yes
3/4	K-Rain	RPS75 - options available	RPS75	8 STD, 4 LA	adj. 40-360, 360 continuous	30-70	22-51	0.7-8.3	0.16-0.86	yes
3/4	K-Rain	60003	RPS Select	4 built-in	adj. 40-360	30-70	33-46	1.3-6.8	0.23-0.71	yes
3/4	K-Rain	RPS75i - options available	RPS 75i	9 STD, 4 LA	adj. 40-360, 360 continuous	30-70	13-48	0.44-9.7	0.22-10.19	yes
3/4	K-Rain	11003	ProPlus	9 STD, 4 LA	adj. 40-360 CT	20-70	28-50	0.5-10	0.12-0.87	yes
3/4	K-Rain	10003 - options available	SuperPro	9 STD, 4 LA	adj. 40-360 CT	30-60	26-49	1.2-11.1	0.21-1.01	yes
1	K-Rain	14053 - options available	ProSport High Speed	6 STD	adj. 40-360 CT	40-90	45-77	5.1-32.5	0.48-1.56	yes
1	K-Rain	14003 - options available	ProSport	6 STD	adj. 40-360 CT	40-90	45-77	5.1-32.5	0.48-1.56	yes
1/2	Rain Bird	3500-S-PC-SAM	3500 shrub PC w/CV	0.75-4	40-360	25-55	15-35	0.54-4.6	0.37-0.83	yes
1/2	Rain Bird	3504 - options available	3500 4-in. PC	0.75-4	40-360	25-55	15-35	0.54-4.6	0.37-0.83	yes
3/4	Rain Bird	5000SPCSAM - options available	5000 shrub PC w/CV	1-8	40-360	25-65	25-50	0.76-9.63	0.2-1.5	yes
3/4	Rain Bird	5004(PC or FC) - options available	5000 (PC or FC) 4-in.	1-8	40-360	25-65	25-50	0.76-9.63	0.2-1.5	yes
3/4	Rain Bird	5006PC - options available	5000 6-in.	1-8	40-360	25-65	25-50	0.73-9.63	0.2-1.5	yes
3/4	Rain Bird	5012+PCSAMR - options available	5000+12-in. w/PR, FSO	1-8	40-360	25-65	25-50	0.73-9.63	0.2-1.5	yes
1	Rain Bird	6504 (PC or FC) - options available	Falcon 6504 (PC or FC) w/CV	4-18	40-360	30-90	39-65	2.9-21.7	0.37-1.31	yes
1	Rain Bird	8005 - options available	8005 P/FC w/CV	4-26	50-360	50-100	39-81	3.8-36.3	0.48-1.28	yes
1/2	Toro	Mini8-4P	Mini 8	PI	partial/FC	30-60	20-35	0.8-3.4	0.24-0.54	yes
3/4	Toro	Stream Rotor	300	PI	9 arcs	35-50	15-33	0.57-7.5	0.33-1.35	yes
3/4	Toro	T5P-RS	T5 RapidSet	PI	partial/FC	25-65	25-50	0.76-9.63	0.2-0.99	yes
1	Toro	T7P	T7	PI	partial/FC	40-100	40-75	1.7-30.6	0.62-1.42	yes
1	Toro	640	640	PI	partial/FC	40-90	47-67	6-25	0.26-4.91	yes
1	Toro	TS90	TS90	PI	partial/FC	40-100	53-95	14-61.5	0.46-0.63	yes
2	Toro	TS170V	TS170	PI	partial/FC	60-115	111-177	113-303	n/a	piston
2.5	Toro	P2S	P2	PI	partial/FC	60-115	105-180	70-267	n/a	piston
3	Toro	P2M	P2	PI	partial/FC	70-115	138-226	131-535	n/a	piston
3/4	Weathermatic	T3	T	1, 1.5, 2, 3, 3.5, 4, 6, 8, 9, 13	40-360	30-70	28-61	0.7-14.9	0.17-0.89	yes
3/4	Weathermatic	T3	T	2.0LA, 2.5LA, 3.5LA, 4.5LA	40-360	30-50	29-37	1.6-4.1	0.34-0.67	yes
3/4	Weathermatic	T3-36	T	1, 1.5, 2, 3, 3.5, 4, 6, 8, 9, 13	360	30-70	28-61	0.7-14.9	0.17-0.89	yes
3/4	Weathermatic	T3-36	T	2.0LA, 2.5LA, 3.5LA, 4.5LA	360	30-50	29-37	1.6-4.1	0.34-0.67	yes
3/4	Weathermatic	T3SS	T- SS	1, 1.5, 2, 3, 3.5, 4, 6, 8, 9, 13	40-360	30-70	28-61	0.7-14.9	0.17-0.89	yes

## ROTORS

Inlet size (in.)	Manufacturer	Model	Series	Nozzle	Pattern (degrees)	Operation pressure (psi)	Radius (ft.)	Discharge rate (gpm)	Precipitation rate (in./hr.)	Gear drive
3/4	Weathermatic	T3SS	T- SS	2.0LA, 2.5LA, 3.5LA, 4.5LA	40-360	30-50	29-37	1.6-4.1	0.34-0.67	yes
3/4	Weathermatic	T3-36SS	T- SS	1, 1.5, 2, 3, 3.5, 4, 6, 8	360	30-70	28-61	0.7-14.9	0.17-0.89	yes
3/4	Weathermatic	T3-36SS	T- SS	2.0LA, 2.5LA, 3.5LA, 4.5LA	360	30-50	29-37	1.6-4.1	0.34-0.67	yes
3/4	Weathermatic	T3S	T- shrub	1, 1.5, 2, 3, 3.5, 4, 6, 8, 9, 13	40-360	30-70	28-61	0.7-14.9	0.17-0.89	yes
3/4	Weathermatic	T3S	T- shrub	2.0LA, 2.5LA, 3.5LA, 4.5LA	40-360	30-50	29-37	1.6-4.1	0.34-0.67	yes
3/4	Weathermatic	T35	T	1, 1.5, 2, 3, 3.5, 4, 6, 8, 9, 13	40-360	30-70	28-61	0.7-14.9	0.17-0.89	yes
3/4	Weathermatic	T35	T	2.0LA, 2.5LA, 3.5LA, 4.5LA	40-360	30-50	29-37	1.6-4.1	0.34-0.67	yes
1	Weathermatic	CT70	CT	71-73	40-360	40-80	49-61	8.1-17.8	0.65-1.06	yes
3/4	Weathermatic	6000	6000	4, 5, 6, 7, 8, 9, 10, 11	40-360	20-65	30-51	1.0-9.5	0.21-0.88	yes
3/4	Weathermatic	6000	6000	4LA, 5LA, 6LA, 7LA, 8LA, 9LA, 10LA	40-360	20-65	26-42	0.9-7.5	0.26-1.02	yes
1	Weathermatic	6500	6500	61, 62, 63, 64	40-360	45-75	44-60	2.8-13.2	0.23-0.84	yes
1	Weathermatic	6513	6500	61, 62, 63, 64	40-360	45-75	43-51	2.8-13.2	0.29-1.13	yes
1	Weathermatic	7500	7500	3, 4, 5, 6, 7, 8	40-360	45-90	53-74	9.4-27.5	0.64-1.21	yes
1	Weathermatic	7513	7500	3, 4, 5, 6, 7, 8	40-360	45-90	48-64	9.4-27.5	0.79-1.61	yes
1	Weathermatic	CT70	CT	74, 75	40-360	60-90	59-74	16.6-28	0.92-1.15	yes
1	Weathermatic	CT70-36	CT	71, 72, 73, 74, 75	360	40-90	49-74	8.1-28	0.65-1.15	yes
1	Weathermatic	CT70SS	CT SS	71, 72, 73, 74, 75	40-360	40-90	49-74	8.1-28	0.65-1.15	yes
1	Weathermatic	CT70-36SS	CT SS	71, 72, 73, 74, 75	360	40-90	49-74	8.1-28	0.65-1.15	yes



Photo Rain Bird

## SPRAY HEADS

Inlet size (in.)	Manufacturer	Model	Series	Nozzle	M or F Thread	Pattern (degrees)	Operation Pressure (PSI)	Radius (in feet)	Discharge Rate (GPM)	Precipitation Rate (in./hr.)	Gear Drive
1/2	Hit Products	907T	900 Telescopic	fixed/adj.	M	20-360	20-70	5-17	0.02-4.2	2.01-02.7	sh
1/2	Hit Products	913T	900 Telescopic	fixed/adj.	M	20-360	25-70	5-17	0.02-4.2	2.01-02.7	sh
1/2	Hit Products	902-906	900	fixed/adj.	M/F	20-360	15-70	5-17	0.02-4.2	2.01-2.7	sh
1/2	Hit Products	904 CKV	900	fixed/adj.	M/F	20-360	25-70	5-17	0.02-4.2	2.01-2.7	sh
1/2	Hit Products	912	900	fixed/adj.	M/F	20-360	15-70	5-17	0.02-4.2	2.01-2.7	sh
1/2	Hit Products	702-706	700	fixed/adj.	M/F	20-360	15-70	5-17	0.02-4.2	2.01-2.7	sh
1/2	Hit Products	712	700	fixed/adj.	M/F	20-360	15-70	5-17	0.02-4.2	2.01-2.7	sh
1/2	Hit Products	HP02	HP	fixed/adj.	M	20-360	25-70	5-17	0.02-4.2	2.01-2.7	sh
1/2	Hit Products	HP04	HP	fixed/adj.	M	20-360	25-70	5-17	0.02-4.2	2.01-2.7	sh
1/2	Hunter	PS Ultra	NA	female	F	adj.	20-70	8-17	varies	1.5	n/a
1/2	Hunter	Pro-Spray	NA	female	F	fixed and adj.	15-100	2-17	varies	1.5	n/a
1/2	Hunter	Pro-Spray PRS30	NA	female	F	fixed and adj.	15-100	2-17	varies	1.5	n/a
1/2	Hunter	Pro-Spray PRS40	NA	female	F	fixed and adj.	15-100	2-17	varies	1.5	n/a
1/2	Hydro Rain	HRS-100-04-FC	Slim Line 4 in.	HRN: 100 F, 200 adj., 100 S	F	0-360	15-70	4-18	0.4-3.7	1.5-2.7	n/a
1/2	Hydro Rain	HRS-100-06-FC	Slim Line 6 in.	HRN: 100 F, 200 adj., 100 S	F	0-360	15-70	4-18	0.4-3.7	1.5-2.7	n/a
1/2	Hydro Rain	HRS-200-04-FC	Pro 4 in.	HRN: 100 F, 200 adj., 100 S	F	0-360	15-70	4-18	0.4-3.7	1.5-2.7	n/a
1/2	Hydro Rain	HRS-200-06-FC	Pro 6 in.	HRN: 100 F, 200 adj., 100 S	F	0-360	15-70	4-18	0.4-3.7	1.5-2.7	n/a
1/2	Hydro Rain	HRS-200-12-FC	Pro 12 in.	HRN: 100 F, 200 adj., 100 S	F	0-360	15-70	4-18	0.4-3.7	1.5-2.7	n/a
1/2	Hydro Rain	HRS-200-04-PC	Pro 4 in. Press. Reg., Check Valve	HRN: 100 F, 200 adj., 100 S	F	0-360	15-70	4-18	0.4-3.7	1.5-2.7	n/a
1/2	Irritrol	I-PRO400-I-PRO1200	I-PRO	female thread	M	fixed	20-50	5-17	0.6-4.75	0.97-5.42	no
1/2	K-Rain	73001	3 in. K-Spray	male thread	F	fixed and adj.	20-50	5-17	0.5-5.4	1.5-3	n/a
1/2	K-Rain	74001	4 in. K-Spray	male thread	F	fixed and adj.	20-50	5-17	0.5-5.4	1.5-3	n/a
1/2	K-Rain	76001	6 in. K-Spray	male thread	F	fixed and adj.	20-50	5-17	0.5-5.4	1.5-3	n/a
1/2	K-Rain	71201	12 in. K-Spray	male thread	F	fixed and adj.	20-50	5-17	0.5-5.4	1.5-3	n/a
1/2	K-Rain	NP2	2 in. NP	All female threaded nozzles	F	fixed and adj.	20-50	8-17	0.5-5.4	1.5-3	n/a
1/2	K-Rain	NP4	4 in. NP	All female threaded nozzles	F	fixed and adj.	20-50	8-17	0.5-5.4	1.5-3	n/a
1/2	K-Rain	78002 - options available	2 in. Pro-S	All female threaded nozzles	F	fixed and adj.	20-70	8-17	0.5-5.4	1.5-3	n/a
1/2	K-Rain	78003 - options available	3 in. Pro-S	All female threaded nozzles	F	fixed and adj.	20-70	8-17	0.5-5.4	1.5-3	n/a
1/2	K-Rain	78004 - options available	4 in. Pro-S	All female threaded nozzles	F	fixed and adj.	20-70	8-17	0.5-5.4	1.5-3	n/a
1/2	K-Rain	78006 - options available	6 in. Pro-S	All female threaded nozzles	F	fixed and adj.	20-70	8-17	0.5-5.4	1.5-3	n/a
1/2	K-Rain	78012 - options available	12 in. Pro-S	All female threaded nozzles	F	fixed and adj.	20-70	8-17	0.5-5.4	1.5-3	n/a
1/2	Rain Bird	1804 - options available	4 in. 1800	all spray/rotary nozzles	F	fixed and adj.	15-70	2.5-24	varies	varies	n/a
1/2	Rain Bird	1806 - options available	6 in. 1800	all spray/rotary nozzles	F	fixed and adj.	15-70	2.5-24	varies	varies	n/a
1/2	Rain Bird	1812 - options available	12 in. 1800	all spray/rotary nozzles	F	fixed and adj.	15-70	2.5-24	varies	varies	n/a
1/2	Rain Bird	RD04 - options available	4 in. RD1800	all spray/rotary nozzles	F	fixed and adj.	15-100	2.5-24	varies	varies	n/a
1/2	Rain Bird	RD06NPNSI - options available	6 in. RD1800 NP No Side Inlet	all spray/rotary nozzles	F	fixed and adj.	15-100	2.5-24	varies	varies	n/a
1/2	Rain Bird	RD12SAMPRS30NP - options available	12 in. RD1800 NP w/CV, 30 PSI PR	all spray/rotary nozzles	F	fixed and adj.	15-100	2.5-24	varies	varies	n/a
1/2	Rain Bird	US400	UNI-Spray (Body Only)	all spray/rotary nozzles	F	fixed and adj.	15-70	2.5-24	varies	varies	n/a
1/2	Rain Bird	US410	4 in. UNI-Spray w/Pre-Installed 10VAN	10 ft. VAN	F	0-360	15-70	7-10	0.48-2.6	2.5-3.8	n/a
1/2	Rain Bird	US412	4 in. UNI-Spray w/Pre-Installed 12VAN	12 ft. VAN	F	0-360	15-70	9-12	0.39-2.36	1.58-1.86	n/a
1/2	Rain Bird	US415	4 in. UNI-Spray w/Pre-Installed 15VAN	15 ft. VAN	F	0-360	15-70	11-15	0.65-3.7	1.58-2.07	n/a
1/2	Rain Bird	US418	4 in. UNI-Spray w/Pre-Installed 18VAN	18 ft. VAN	F	0-360	15-70	14-18	1.05-5.32	1.59-2.07	n/a

## SPRAY HEADS

Inlet size (in.)	Manufacturer	Model	Series	Nozzle	M or F Thread	Pattern (degrees)	Operation Pressure (PSI)	Radius (in feet)	Discharge Rate (GPM)	Precipitation Rate (in./hr.)	Gear Drive
1/2	Toro	570Z - options available	570Z Standard	Precision/MPR/TVAN	F	0-360	15-75	0-26	0.04-4.58	0.6-1.73	no
1/2	Toro	LPS 2XX	LPS 200 with TVAN nozzle	TVAN	F	0-360	20-50	0-26	0.04-4.58	0.6-1.73	no
1/2	Toro	LPS 4XX	LPS 400 with TVAN nozzle	TVAN	F	0-360	20-50	0-26	0.04-4.58	0.6-1.73	no
n/a	Toro	O-T-X-X	Precision	fixed spray	M	60-360	20-75	5-15	0.04-2.4	1	n/a
n/a	Toro	O-X-X	Precision	fixed spray	F	60-360	20-75	5-15	0.04-2.4	1	n/a
n/a	Toro	O-T-X-XP	Precision	pressure-comp. fixed spray	M	60-360	20-75	5-15	0.06-2.68	1	n/a
n/a	Toro	O-X-XP	Precision	pressure-comp. fixed spray	F	60-360	20-75	5-15	0.06-2.68	1	n/a
n/a	Toro	XX-XXX-PC	MPR PLUS	pressure-comp. fixed spray	M	90-360	20-75	5-15	0.05-4.58	1.5	n/a
n/a	Toro	TVANXX	TVAN	variable arc	M	0-360	20-50	8-17	0.58-4.71	2.2	n/a
1/2	Weathermatic	MAX4 - options available	Pop-up	various	F	fixed 90-360/adj. 0-360	15-100	5-18	0.3-7.5	1.18-5.74	n/a
1/2	Weathermatic	MAX6 - options available	Pop-up	various	F	fixed 90-360/adj. 0-360	15-100	5-18	0.3-7.5	1.18-5.74	n/a
1/2	Weathermatic	MAX12 - options available	Pop-up	various	F	fixed 90-360/adj. 0-360	15-100	5-18	0.3-7.5	1.18-5.74	n/a
1/2	Weathermatic	MAXS	Shrub Adapter	various	F or M	fixed 90-360/adj. 0-360	15-70	5-18	0.3-7.5	1.18-5.74	n/a

## IMPACT SPRINKLERS

Inlet Size (inches)	Manufacturer	Model	Series	Nozzle	Pattern	Operation Pressure (PSI)	Radius (in feet)	Discharge Rate (GPM)	Precipitation Rate (in./hr.)	Gear Drive
1/2	Buckner	17023W	n/a	B	F	25-60	33-44	1.28-5.48	n/a	no
1/2	Buckner	17023R	n/a	B	F	25-60	33-44	1.28-5.48	n/a	no
1/2	Buckner	170W-23W	n/a	B	F	25-60	31-41	0.33-3.51	0.03-0.16	no
1/2	Buckner	170W-23R	n/a	B	F	25-60	29-38	0.56-2.67	0.05-0.17	no
1/2	Buckner	170W-15RP	n/a	B	F	25-50	25-35	0.56-2.45	0.04-0.27	no
1/2	Buckner	90SD	n/a	B	F/P	25-55	35-48	3.54-5.44	0.28-0.35	no
1/2	Buckner	65P	n/a	PI	F/P	25-60	33-47	3.54-5.64	0.34-0.29	no
1/2	Buckner	90DZ	n/a	ZDC	F/P	25-55	34-47	2.11-5.64	0.2-0.28	no
3/4	Buckner	2000SX	n/a	B	F	35-80	40-60	2.53-15.71	0.32-0.56	no
3/4	Buckner	261SDX	n/a	B	F/P	30-60	41-50	3.94-13.73	0.26-0.61	no
1	Buckner	300SAX	n/a	B	F	40-80	47-80	14.61-46.59	0.47-0.89	no
1	Buckner	350SAX	n/a	B	F	40-80	47-80	6.32-46.59	0.29-0.73	no
1	Buckner	360SA	n/a	B	F/P	35-100	49-82	7.75-44.01	0.36-0.73	no
1.25	Buckner	AII20	n/a	B	F	55-95	75-113	24.9-121	0.52-1.05	no
1.25	Buckner	400S	n/a	B	F	65-100	85-117	34.62-132.18	0.35-0.7	no
1.25	Buckner	AII23	n/a	B	F/P	55-95	73-113	24.9-121	0.52-1.05	no
1.25	Buckner	AII20	n/a	B	F	55-95	73-113	24.9-121	0.52-1.05	no
1.25	Buckner	400S	n/a	B	F	65-100	85-117	34.62-132.18	0.35-0.7	no
1.25	Buckner	AII23	n/a	B	F/P	55-95	73-113	24.9-121	0.52-1.05	no
1/2 or 3/4	Irritrol	Titan	Titan	PI	partial/FC	30-50	32-45	1.5-7.5	0.14-0.42	no
1/2 or 3/4	Rain Bird	2045A	Maxi-Paw P/FC	6-12	20-360	25-60	22-45	1.5-8.4	0.28-1.21	no
1/2 or 3/4	Rain Bird	2045A-SAM	Maxi-Paw P/FC w/CV	6-12	20-360	25-60	22-45	1.5-8.4	0.28-1.21	no
1/2 or 3/4	Rain Bird	2045A-SAM-NP	Maxi-Paw NP P/FC w/CV	6-12	20-360	25-60	22-45	1.5-8.4	0.28-1.21	no
1/2	Rain Bird	2045PJ	Maxi-Bird	6-12	20-360	25-60	22-45	1.5-8.4	0.28-1.21	no
2	Rain Bird	XLR	XLR P/FC	12-28	20-360	30-120	80-202	35-379	n/a	no
1.5	Toro	TSI20V	TSI20	PI	partial/FC	45-120	62-125	21-121	n/a	no



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