PRECISION™ SERIES SPRAY NOZZLES

Toro® Precision™ Series Spray Nozzles are the most efficient spray nozzles available and feature proprietary H^2O Chip Technology. With a precipitation rate of 1" per hour, Precision™ Series Spray Nozzles help irrigation professionals better manage water usage, eliminate runoff, and reduce their customers' water bills. These nozzles are available in a wide variety of arcs and radii, as well as Toro (male) and female-threaded bodies, making them ideal for large scale installations and retrofits. In addition, the best-in-class Precision™ Series Spray nozzles are available with factory-installed Pressure Compensating Discs (PCD).

FEATURES & BENEFITS

Patented H^2O Chip Technology

Each nozzle contains one or more H^2O chips that create a high frequency oscillating stream and deliver a precipitation rate of 1" per hour – an industry first – while using up to 35% less water than a standard MPR nozzle.

Pressure-Compensating Versions Available

At a fraction of the cost of a pressure-regulating spray head, pressure-compensating Precision™ Series Spray Nozzles maintain a 1" per hour precipitation rate and minimize misting and water waste that results from higher pressure systems.

Design and Retrofit Effectiveness

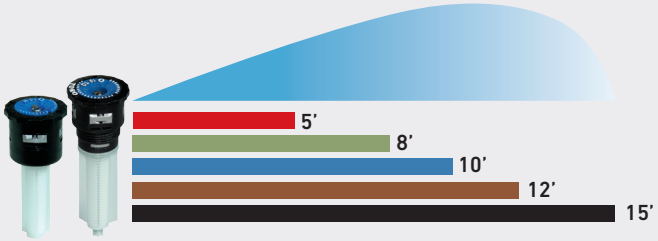
The lower flow rate of Precision™ Series Spray Nozzles maximizes design efficiency and helps reduce overall material costs based on the need for fewer valves and controller stations.

Precision™ Series Spray Nozzles with Pressure Compensation maintain a 1" per hour precipitation rate and minimizes misting and atomizing when system pressure exceeds 40 psi. Integrated pressure compensation can minimize the need for a regulating head at a fraction of the cost.

PRECISION™ SERIES SPRAY NOZZLES

Time Savings

All Precision™ Series Spray Nozzles can be combined on the same zone for greater design and installation flexibility, which equates to time savings on the job site. Whether a new installation or retrofit project, the comprehensive range of Precision™ nozzles meets the needs of any project and all models are available in Toro (Male) and Female threads.



Nine Arcs, Plus Side and Center Strips Available

Side and Corner Strips Available

PRECISION™ SERIES SPRAY NOZZLES

5′ Radius

Model (0-XX-XX)	PSI	GPM	Radius (ft)
5-60	20	0.04	4.7
	30	**0.04**	**5.0**
	40	0.04	5.0
	50	0.05	5.3
5-Q	20	0.06	4.6
	30	**0.06**	**5.0**
	40	0.06	5.0
	50	0.07	5.0
5-T	20	0.07	4.4
	30	**0.09**	**5.0**
	40	0.09	5.2
	50	0.09	5.4
5-150	20	0.07	4.0
	30	**0.11**	**5.0**
	40	0.12	5.2
	50	0.13	5.4
5-H	20	0.10	4.4
	30	**0.13**	**5.0**
	40	0.14	5.1
	50	0.14	5.2
5-210	20	0.10	4.4
	30	**0.15**	**5.2**
	40	0.16	5.3
	50	0.17	5.5
5-TT	20	0.14	4.3
	30	**0.17**	**5.0**
	40	0.19	5.0
	50	0.19	5.0
5-TQ	20	0.15	4.3
	30	**0.20**	**5.0**
	40	0.21	5.0
	50	0.22	5.0
5-F	20	0.17	4.0
	30	**0.26**	**5.0**
	40	0.26	5.0
	50	0.26	5.0

8′ Radius

Model (0-XX-XX)	PSI	GPM	Radius (ft)
8-60	20	0.10	7.6
	30	**0.11**	**8.0**
	40	0.12	8.1
	50	0.13	8.3
8-Q	20	0.14	7.0
	30	**0.17**	**8.0**
	40	0.18	8.2
	50	0.18	8.4
8-T	20	0.20	7.6
	30	**0.22**	**8.0**
	40	0.23	8.2
	50	0.24	8.3
8-150	20	0.25	7.5
	30	**0.27**	**8.0**
	40	0.28	8.1
	50	0.29	8.2
8-H	20	0.26	7.0
	30	**0.33**	**8.0**
	40	0.34	8.0
	50	0.34	8.0
8-210	20	0.33	7.6
	30	**0.36**	**8.0**
	40	0.37	8.1
	50	0.38	8.2
8-TT	20	0.34	7.0
	30	**0.44**	**8.0**
	40	0.46	8.0
	50	0.46	8.0
8-TQ	20	0.41	7.2
	30	**0.49**	**8.0**
	40	0.54	8.0
	50	0.55	8.0
8-F	20	0.55	7.0
	30	**0.66**	**8.0**
	40	0.68	8.0
	50	0.71	8.0

10′ Radius

Model (0-XX-XX)	PSI	GPM	Radius (ft)
10-60	20	0.16	9.5
	30	**0.17**	**10.0**
	40	0.18	10.0
	50	0.19	10.0
10-Q	20	0.26	9.5
	30	**0.23**	**10.0**
	40	0.28	10.2
	50	0.28	10.3
10-T	20	0.31	9.5
	30	**0.34**	**10.0**
	40	0.36	10.0
	50	0.37	10.0
10-150	20	0.41	9.8
	30	**0.43**	**10.0**
	40	0.44	10.2
	50	0.46	10.4
10-H	20	0.48	9.7
	30	**0.51**	**10.0**
	40	0.55	10.3
	50	0.56	10.4
10-210	20	0.56	9.8
	30	**0.58**	**10.0**
	40	0.60	10.4
	50	0.62	10.5
10-TT	20	0.63	9.6
	30	**0.69**	**10.0**
	40	0.73	10.3
	50	0.74	10.4
10-TQ	20	0.71	9.5
	30	**0.79**	**10.0**
	40	0.84	10.3
	50	0.86	10.4
10-F	20	0.95	9.6
	30	**1.03**	**10.0**
	40	1.08	10.3
	50	1.12	10.4

12′ Radius

Model (0-XX-XX)	PSI	GPM	Radius (ft)
12-60	20	0.24	11.5
	30	**0.25**	**12.0**
	40	0.26	12.1
	50	0.28	12.2
12-Q	20	0.34	12.0
	30	**0.37**	**12.1**
	40	0.39	11.4
	50	0.39	12.0
12-T	20	0.46	11.5
	30	**0.49**	**12.0**
	40	0.51	12.2
	50	0.52	12.3
12-150	20	0.60	11.6
	30	**0.62**	**12.0**
	40	0.63	12.2
	50	0.64	12.3
12-H	20	0.70	11.5
	30	**0.74**	**12.0**
	40	0.79	12.3
	50	0.80	12.4
12-210	20	0.76	11.6
	30	**0.82**	**12.0**
	40	0.84	12.3
	50	0.85	12.4
12-TT	20	0.90	11.4
	30	**0.99**	**12.0**
	40	1.04	12.3
	50	1.05	12.4
12-TQ	20	1.05	11.4
	30	**1.15**	**12.0**
	40	1.19	12.2
	50	1.22	12.3
12-F	20	1.35	11.5
	30	**1.48**	**12.0**
	40	1.59	12.4
	50	1.60	12.5

15′ Radius

Model (0-XX-XX)	PSI	GPM	Radius (ft)
15-60	20	0.35	14.0
	30	**0.39**	**15.0**
	40	0.40	15.1
	50	0.42	15.3
15-Q	20	0.53	14.2
	30	**0.58**	**15.0**
	40	0.60	15.1
	50	0.61	15.3
15-T	20	0.72	14.3
	30	**0.77**	**15.0**
	40	0.81	15.3
	50	0.82	15.4
15-150	20	0.92	14.7
	30	**0.96**	**15.0**
	40	1.00	15.2
	50	1.10	15.3
15-H	20	1.10	14.5
	30	**1.16**	**15.0**
	40	1.25	15.4
	50	1.28	15.5
15-210	20	1.15	14.5
	30	**1.20**	**15.0**
	40	1.30	15.5
	50	1.40	15.6
15-TT	20	1.45	14.5
	30	**1.54**	**15.0**
	40	1.58	15.2
	50	1.61	15.3
15-TQ	20	1.72	14.5
	30	**1.78**	**15.0**
	40	1.82	15.0
	50	1.90	15.3
15-F	20	2.20	14.5
	30	**2.31**	**15.0**
	40	2.35	15.2
	50	2.40	15.3

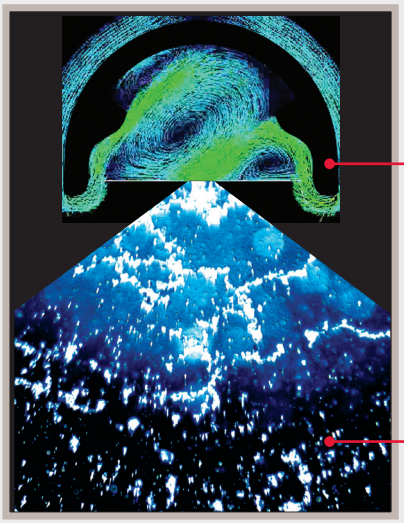
Side and Corner Strips

Model (0-XX-XX)	PSI	GPM	Radius (ft)
4X30 SST	20	0.62	4x28
	30	**0.66**	**4x30**
	40	0.67	4x30
	50	0.68	4x30
4X15 LCS	20	0.32	4x15
	30	**0.33**	**4x15**
	40	0.34	4x15
	50	0.34	4x15
4X15 RCS	20	0.32	4x15
	30	**0.33**	**4x15**
	40	0.34	4x15
	50	0.34	4x15
4X18 SST	20	0.36	4X18
	30	**0.37**	**4X18**
	40	0.38	4X18
	50	0.38	4X18
4X9 LCS	20	0.18	4X9
	30	**0.19**	**4X9**
	40	0.20	4X9
	50	0.20	4X9
4X9 RCS	20	0.18	4X9
	30	**0.19**	**4X9**
	40	0.20	4X9
	50	0.20	4X9

Precipitation rate (50% square spacing): 1″ per hour even after radius reduction of 20%.

Patented H^2O Chip Technology

On the outside, Precision™ Series Spray Nozzles look like standard spray nozzles, but the performance of the patented H^2O Chip Technology on the inside is unmatched. The H^2O Chips create high-frequency streams of water that oscillate at a rate of 200 cycles per second. The result is a matched precipitation rate of 1" per hour – an industry first – while using up to 35% less water than a standard spray nozzle.



Water enters a specially designed chamber within the H^2O Chip where the water expands and collapses, which creates an oscillating effect.

Consistent-sized water droplets exit the Chip in the designed arc pattern and radius, with precise edge definition, class-leading distribution uniformity and reduced water usage.

PRECISION™ SERIES SPRAY NOZZLES WITH PRESSURE COMPENSATION

*5′ Radius**

Model (0-XX-XX)	PSI	GPM	Radius (ft)
5-60P	40	0.07	6.0
	50	**0.07**	**5.5**
	60	0.07	6.0
	70	0.08	6.5
5-QP	40	0.06	4.6
	50	**0.08**	**5.1**
	60	0.09	5.6
	70	0.11	6.2
5-TP	40	0.07	4.4
	50	**0.11**	**4.9**
	60	0.15	5.5
	70	0.19	6.0
5-150P	40	0.14	6.0
	50	**0.14**	**6.0**
	60	0.14	6.0
	70	0.14	6.0
5-HP	40	0.10	4.4
	50	**0.13**	**4.9**
	60	0.16	5.4
	70	0.19	6.0
5-210P	40	0.16	5.0
	50	**0.18**	**5.5**
	60	0.20	6.0
	70	0.21	6.0
5-TTP	40	0.14	4.3
	50	**0.20**	**4.9**
	60	0.25	5.4
	70	0.31	6.0
5-TQP	40	0.15	4.3
	50	**0.21**	**4.9**
	60	0.26	5.6
	70	0.32	6.2
5-FP	40	0.17	4.0
	50	**0.24**	**4.8**
	60	0.31	5.5
	70	0.38	6.3

8′ Radius

Model (0-XX-XX)	PSI	GPM	Radius (ft)
8-60P	40	0.11	7.5
	50	**0.11**	**7.5**
	60	0.12	7.5
	70	0.14	8.0
8-QP	40	0.14	7.0
	50	**0.17**	**7.7**
	60	0.20	8.4
	70	0.23	9.1
8-TP	40	0.20	7.6
	50	**0.24**	**8.0**
	60	0.27	8.5
	70	0.31	8.9
8-150P	40	0.32	8.0
	50	**0.32**	**8.5**
	60	0.32	8.0
	70	0.32	8.0
8-HP	40	0.26	7.0
	50	**0.33**	**7.6**
	60	0.39	8.1
	70	0.46	8.7
8-210P	40	0.34	8.0
	50	**0.38**	**8.0**
	60	0.42	8.0
	70	0.45	8.0
8-TTP	40	0.34	7.0
	50	**0.43**	**7.8**
	60	0.52	8.5
	70	0.61	9.3
8-TQP	40	0.41	7.2
	50	**0.48**	**7.9**
	60	0.55	8.6
	70	0.62	9.3
8-FP	40	0.55	7.0
	50	**0.65**	**7.5**
	60	0.74	8.0
	70	0.84	8.5

10′ Radius

Model (0-XX-XX)	PSI	GPM	Radius (ft)
10-60P	40	0.16	9.5
	50	**0.18**	**10.5**
	60	0.20	11.0
	70	0.22	11.0
10-QP	40	0.26	9.5
	50	**0.28**	**10.0**
	60	0.29	10.5
	70	0.31	11.1
10-TP	40	0.31	9.5
	50	**0.36**	**10.0**
	60	0.41	10.5
	70	0.46	11.0
10-150P	40	0.47	9.5
	50	**0.49**	**10.0**
	60	0.51	10.0
	70	0.53	10.5
10-HP	40	0.48	9.7
	50	**0.53**	**10.1**
	60	0.57	10.4
	70	0.62	10.8
10-210P	40	0.57	9.5
	50	**0.64**	**10.0**
	60	0.70	10.0
	70	0.75	10.0
10-TTP	40	0.63	9.6
	50	**0.70**	**9.9**
	60	0.77	10.3
	70	0.84	10.6
10-TQP	40	0.71	9.5
	50	**0.77**	**9.9**
	60	0.82	10.3
	70	0.88	10.7
10-FP	40	0.95	9.6
	50	**1.06**	**10.0**
	60	1.16	10.5
	70	1.27	10.9

12′ Radius

Model (0-XX-XX)	PSI	GPM	Radius (ft)
12-60P	40	0.30	13.0
	50	**0.30**	**13.0**
	60	0.30	13.0
	70	0.30	13.0
12-QP	40	0.34	12.0
	50	**0.39**	**12.2**
	60	0.43	12.5
	70	0.48	12.7
12-TP	40	0.46	11.5
	50	**0.50**	**11.8**
	60	0.54	12.0
	70	0.58	12.3
12-150P	40	0.59	12.0
	50	**0.66**	**11.5**
	60	0.72	12.0
	70	0.78	12.0
12-HP	40	0.70	11.5
	50	**0.75**	**11.8**
	60	0.80	12.2
	70	0.85	12.5
12-210P	40	0.86	11.0
	50	**0.96**	**11.5**
	60	1.05	12.0
	70	1.13	12.0
12-TTP	40	0.90	11.4
	50	**1.03**	**11.5**
	60	1.16	11.5
	70	1.29	11.6
12-TQP	40	1.05	11.4
	50	**1.14**	**11.7**
	60	1.23	12.0
	70	1.32	12.3
12-FP	40	1.35	11.5
	50	**1.49**	**11.8**
	60	1.63	12.2
	70	1.77	12.5

15′ Radius

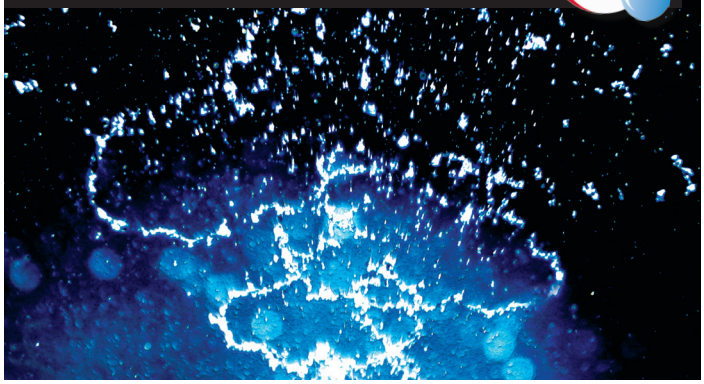
Model (0-XX-XX)	PSI	GPM	Radius (ft)
15-60P	40	0.36	14.0
	50	**0.41**	**15.0**
	60	0.45	15.0
	70	0.48	15.0
15-QP	40	0.53	14.2
	50	**0.59**	**14.5**
	60	0.64	14.8
	70	0.70	15.1
15-TP	40	0.72	14.3
	50	**0.77**	**14.8**
	60	0.82	15.2
	70	0.87	15.7
15-150P	40	0.93	14.0
	50	**1.04**	**14.5**
	60	1.14	14.5
	70	1.23	14.5
15-HP	40	1.10	14.5
	50	**1.20**	**14.3**
	60	1.29	14.0
	70	1.39	13.8
15-210P	40	1.23	14.0
	50	**1.44**	**14.0**
	60	1.56	14.0
	70	1.70	15.0
15-TTP	40	1.45	14.5
	50	**1.57**	**14.8**
	60	1.68	15.0
	70	1.80	15.3
15-TQP	40	1.60	14.0
	50	**1.70**	**14.4**
	60	1.80	14.8
	70	1.90	15.1
15-FP	40	2.20	14.5
	50	**2.36**	**14.8**
	60	2.52	15.1
	70	2.68	15.4

Side and Corner Strips

Model (0-XX-XX)	PSI	GPM	Radius (ft)
4X30-SSTP	40	0.62	4x30
	50	**0.65**	**4x30**
	60	0.67	4x30
	70	0.70	4x30
4X15-LCSP	40	0.32	4x15
	50	**0.33**	**4x15**
	60	0.34	4x15
	70	0.35	4x15
4X15-RCSP	40	0.32	4x15
	50	**0.33**	**4x15**
	60	0.34	4x15
	70	0.35	4x15
4X18-SSTP	40	0.36	4x18
	50	**0.37**	**4x18**
	60	0.38	4x18
	70	0.39	4x18
4X9-LCSP	40	0.18	4x9
	50	**0.19**	**4x9**
	60	0.20	4x9
	70	0.21	4x9
4X9-RCSP	40	0.18	4x9
	50	**0.19**	**4x9**
	60	0.20	4x9
	70	0.21	4x9

Precipitation rate (50% square spacing): 1" per hour even after radius reduction of 20%.

WATER MANAGEMENT HIGHLIGHT



Patented H²O Chip Technology
Water expands and collapses inside the H²O chip, creating a high frequency oscillating stream that meets the desired distance of throw using 35% less water.

SPECIFICATIONS

Operational

- Radius: 5'-15'
- Operating pressure range: 20-75 psi
- Recommended operating pressure: non-Pressure Compensating—30 psi, Pressure Compensating—50 psi
- Flow Rate: 0.04-2.4 gpm
- Nozzle trajectory:
  - 5': 5°
  - 8': 10°
  - 10': 15°
  - 12': 20°
  - 15': 27°
  - Corner and Side Strips: 20°

Warranty

- Two years

Water Savings

Precision™ Series Spray Nozzles are more efficient than standard spray nozzles because they apply water more slowly and evenly. For example, with 32% percent lower flow than a standard 12H spray nozzle, a 12H Precision™ Series nozzle still achieves the same distance of throw. At 30 psi the comparative water usage is:

12-H Spray Nozzle	1.09 gallons per minute
Precision O-T-12-H	0.74 gallons per minute
WATER SAVINGS	**0.35 gallons per minute or 32%**

When consideration for water saved is taken for an entire system and multiplied across a full irrigation season, the water savings presented by using Precision™ Series Spray Nozzles could equate to thousands of gallons of water saved per year.

Cost Savings

More nozzles can be designed into a zone due to the lower flow rates of Precision™ Series Spray Nozzles, which could present lower system costs given the need for fewer valves, and in some cases, a less expensive controller. The following table illustrates the system cost efficacy of using 12H Precision™ Series Spray Nozzles versus standard 12H spray nozzles (assumes a 30 psi operating pressure):

AWWA Meter Size	Flow (gpm)	Friction loss (psi)	# of functional Standard 12H Sprays	#of functional Precision™ 12H Sprays
5/8"	12	5.1	9	16
¾"	18	5.2	13	24
1"	30	5.3	23	40

Specifying Information-Precision™ Series Spray Nozzle

O-X-XXXX-XXXX-P

Nozzle	*Thread*	*Radius*	*Arc*	*PCD*
O	**X**	**XXXX**	**XXXX**	**P**
O—1" Per Hour	T—Toro Male-Threaded Nozzle Blank—Female-Threaded Nozzle	5—5' 8—8' 10—10' 12— 12' 15—15' 4X15—4'X15' 4X30—4'X30' 4X9—4'X9' 4X18—4'X18'	60—60° Q—90° T—120° 150—150° H—180° 210—210° TT—240° TQ—270° F-360°—Full-circle LCS—Left Corner RCS—Right Corner SST—Side Strip	P—Pressure Compensating

Example: A female-threaded Precision™ Series Spray with a spray radius of 12' and a 90° arc would be specified as: O-12-Q
Example 2: A male-threaded Pressure-Compensating Precision™ Series Spray with a spray radius of 10' and a 180° arc would be spcified as O-T-10-HP

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