

Residential & Commercial Irrigation

Product Specification Catalog 2022



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SPRAYS



Poro







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570Z SERIES SPRAY BODIES



RUGGED – FLEXIBLE – VERSATILE – RELIABLE: Toro[®] 570Z Series spray heads provide a durable solution for residential and commercial contractors to satisfy all installation and retrofit requirements. In combination with Toro spray and rotating nozzles, 570Z Series spray heads can be configured in hundreds of combinations and present an unparalleled range of flexibility.

FEATURES & BENEFITS

Zero Flush Wiper Seal

The elimination of flushing on pop-up allows for more sprinklers to be installed per zone.

X-Flow[®] Technology

The X-Flow in-stem flow shut-off device is built into the riser and restricts water loss by 99% should the nozzle be removed or damaged. The exclusive X-Flow device greatly reduces water waste, landscape erosion, and wet hardscape safety concerns. Furthermore, X-Flow allows for 'dry' nozzle and filter replacement or system maintenance while the system is running.

One-Piece Check Valve (570CV)

Pre-installed from the factory or easily installed in the field, Toro's one-piece check valve prevents low-head drainage on elevation changes of up to 10 feet.

Pressure Regulator

In-stem, WaterSense[®] certified, built-in pressure regulator eliminates misting and fogging and provides steady 30 PSI outlet pressure for consistent spray nozzle performance across the zone.

Ratcheting Riser

Quick and precise arc adjustment on all pop-up models.

Effluent Options Available



Check Valve Options Available





SPECIFICATIONS

Operational

- Radius: 2 feet to 26 feet
- Operating pressure range: 20-75 psi (15-75 psi for Low Pressure models)
- Recommended operating pressure for spray nozzles: 30 psi
- Recommended operating pressure for rotating nozzles: 45 psi
- Flow rate: 0.5 4.5 gpm

Dimensions

- Body diameters:
- 1 5/8" on 12'

- Side inlet location: 4³/4" (measured from the top of spray head to center of



570Z & 570ZLP

570S Shrub Adapter

570Z-2P 2" Spray Head 570Z-2LP 2" Spray Head, Low Pressure

570Z-3P 3" Spray Head 570Z-3LP 3" Spray Head, Low Pressure

570Z-4P 4" Spray Head 570Z-4LP 4" Spray Head, Low Pressure

570Z-6P 6" Spray Head 570Z-6LP 6" Spray Head, Low Pressure

570Z-6SI 6" Spray Head, Side Inlet body 570Z-6LPSI 6" Sprav Head. Low Pressure, Side Inlet body

570Z-12P 12" Spray Head 570Z-12LP 12" Spray Head, Low Pressure

570Z-12SI 12" Spray Head, Side Inlet body 570Z-12LPSI 12" Spray Head, Low Pressure, Side Inlet body

570Z-4P-COM 4" Spray Head with Check Valve

570Z-6P-COM 6" Spray Head with Check Valve

570Z-12P-COM 12" Spray Head with Check Valve

- 1 ³/8" on 2", 3", 4", 6" and 6" Side Inlet
- 1 ³/4" on 12" Side Inlet
- Cap diameter: 2"
- Inlet thread: 1/2" Female
- the side inlet port)



5707XF

570S-XF Shrub Riser with X-Flow

570Z-4P-XF 4" XF Spray Head

570Z-6P-XF 6" XF Spray Head

570Z-6SI-XF 6" XF Spray Head, Side Inlet Body

570Z-12P-XF 12" XF Spray Head

570Z-12SI-XF 12" XF Spray Head, Side Inlet Body

570Z-4P-XFCOM 4" XF Spray Head with Check Valve

570Z-6P-XFCOM 6" XF Spray Head with Check Valve

570Z-12P-XFCOM 12" XF Spray Head with Check Valve



Warranty

· Five years on all models

5707PR

570S-PR PR Shrub Riser

5707-4P-PR 4" PR Spray Head

570Z-6P-PR

6" PR Spray Head 570Z-12P-PR 12" PR Spray Head

570Z-4P-PRCOM 4" PR Spray Head with Check Valve

570Z-6P-PRCOM 6" PR Spray Head with Check Valve

570Z-12P-PRCOM 12" PR Sprav Head with Check Valve





570ZPRX

570S-PRX PRX Shrub Riser

570Z-4P-PRX 4" PRX Spray Head

570Z-6P-PRX 6" PRX Spray Head

570Z-6SI-PRX 6" PRX Spray Head, Side Inlet Body

570Z-12P-PRX 12" PRX Spray Head

570Z-12SI-PRX 12" PRX Spray Head, Side Inlet Body

570Z-4P-PRXCOM 4" PRX Sprav Head with Check Valve

570Z-6P-PRXCOM 6" PRX Spray Head with Check Valve

570Z-12P-PRXCOM 12" PRX Spray Head with Check Valve



Specifying Information—570Z Series

570X-XXXXXXXXXXXX					
Base Model	Pop-Up Height	Spring and Inlet	Optional	Optional	Optional
570X	XX	XXX-	XXX	XXX	X
S — Shrub Z — Lawn Pop-up	$ \begin{array}{c} 2 - 2" \\ 3 - 3" \\ 4 - 4" \\ 6 - 6" \\ 12 - 12" \end{array} $	P — Standard LP — Low Pressure SI — Std. Side Inlet* LPSI — Low Pressure SI	XF — X-Flow® Technology PR — Pressure Regulator PRX — Pressure Regulator with XF	COM — Check Valve**	E — Effluent
Exai	mple: A 570Z PRX Se	ries Sprinkler with a 6" pop-u	p height, side inlet would be spe	cified as: 570Z-6SI-PRX	

PRECISION[™] SERIES SPRAY NOZZLES

Toro[®] Precision[™] Series Spray Nozzles are the most efficient spray nozzles available and feature proprietary H²O 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.

FEATURES & BENEFITS

Patented H²0 Chip Technology

Each nozzle contains one or more H²O 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.

Third-Party Performance Validation

Precision[™] Series Spray Nozzles* have been tested and validated in the field and at the Center for Irrigation Technology (CIT).

* non-PCD models only

Pressure Compensating Disc (PCD)

The elastomeric PCD adjusts in response to changes in inlet pressure to maintain optimal nozzle performance. Recommended for use on systems operating above 40 psi, PCD models can easily be identified by the red Toro lettering across the top of the nozzle.







Male-threaded Model

Female-threaded Model

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°





Laboratory and third party independent field testing show efficiency to be 15-20% higher than competitive nozzles at 15 feet or less.

PRECISION[™] SERIES SPRAY NOZZLE MODEL LIST

5' NOZZLE (RI	ED)	8' NOZZLE (GREEN)			
Male	Female	Pattern	Male	Female	Pattern
0-T-5-60 0-T-5-Q 0-T-5-T 0-T-5-150 0-T-5-H 0-T-5-210 0-T-5-TT 0-T-5-TQ 0-T-5-F	0-5-60 0-5-Q 0-5-T 0-5-150 0-5-H 0-5-210 0-5-TT 0-5-TQ 0-5-F	60° Arc 90° Arc 120° Arc 150° Arc 180° Arc 210° Arc 240° Arc 270° Arc 360° Arc	0-T-8-60 0-T-8-Q 0-T-8-T 0-T-8-150 0-T-8-H 0-T-8-210 0-T-8-TT 0-T-8-TQ 0-T-8-F	0-8-60 0-8-Q 0-8-T 0-8-150 0-8-H 0-8-210 0-8-TT 0-8-TQ 0-8-F	60° Arc 90° Arc 120° Arc 150° Arc 180° Arc 210° Arc 240° Arc 270° Arc 360° Arc
10' NOZZLE (B	LUE)		12' NOZZLE (BRO	WN)	
0-T-10-60 0-T-10-Q 0-T-10-T 0-T-10-150 0-T-10-H 0-T-10-210 0-T-10-TT 0-T-10-TQ 0-T-10-F	0-10-60 0-10-Q 0-10-T 0-10-150 0-10-H 0-10-210 0-10-TT 0-10-TQ 0-10-F	60° Arc 90° Arc 120° Arc 150° Arc 210° Arc 210° Arc 240° Arc 270° Arc 360° Arc	0-T-12-60 0-T-12-Q 0-T-12-T 0-T-12-150 0-T-12-H 0-T-12-210 0-T-12-TT 0-T-12-TQ 0-T-12-F	0-12-60 0-12-Q 0-12-T 0-12-150 0-12-H 0-12-210 0-12-TT 0-12-TQ 0-12-F	60° Arc 90° Arc 120° Arc 150° Arc 180° Arc 210° Arc 240° Arc 270° Arc 360° Arc
15' NOZZLE (B	LACK)		SPECIAL PATTERNS (GREY)		
0-T-15-60 0-T-15-Q 0-T-15-T 0-T-15-150 0-T-15-H 0-T-15-210 0-T-15-TT 0-T-15-TQ 0-T-15-F	0-15-60 0-15-Q 0-15-T 0-15-150 0-15-H 0-15-210 0-15-TT 0-15-TQ 0-15-F	60° Arc 90° Arc 120° Arc 150° Arc 180° Arc 210° Arc 240° Arc 270° Arc 360° Arc	Male 0-T-4X9-RCS 0-T-4X9-LCS 0-T-4X18-SST 0-T-4X15-RCS 0-T-4X15-LCS 0-T-4X30-SST	Female 0-4X9-RCS 0-4X9-LCS 0-4X18-SST 0-4X15-RCS 0-4X15-LCS 0-4X30-SST	Right Corner Left Corner Side Strip Right Corner Left Corner Side Strip

PRESSURE-COMPENSATING PRECISION[™] SERIES SPRAY NOZZLE MODEL LIST

5' NOZZLE (RED)			8' NOZZLE (GREEN)		
Male	Female	Pattern	Male	Female	Pattern
0-T-5-60P	0-5-60P	60° Arc	0-T-8-60P	0-8-60P	60° Arc
0-T-5-QP	0-5-QP	90° Arc	0-T-8-QP	0-8-QP	90° Arc
0-T-5-TP	0-5-TP	120° Arc	0-T-8-TP	0-8-TP	120° Arc
0-T-5-150P	0-5-150P	150° Arc	0-T-8-150P	0-8-150P	150° Arc
0-T-5-HP	0-5-HP	18° Arc	0-T-8-HP	0-8-HP	18° Arc
0-T-5-210P	0-5-210P	210° Arc	0-T-8-210P	0-8-210P	210° Arc
0-T-5-TTP	0-5-TTP	240° Arc	0-T-8-TTP	0-8-TTP	240° Arc
0-T-5-TQP	0-5-TQP	270° Arc	0-T-8-TQP	0-8-TQP	270° Arc
0-T-5-FP	0-5-FP	360° Arc	0-T-8-FP	0-8-FP	360° Arc
10' NOZZLE (BL	UE)		12' NOZZLE (BRO	WN)	
0-T-10-60P	0-10-60P	60° Arc	0-T-12-60P	0-12-60P	60° Arc
0-T-10-QP	0-10-QP	90° Arc	0-T-12-QP	0-12-QP	90° Arc
0-T-10-TP	0-10-TP	120° Arc	0-T-12-TP	0-12-TP	120° Arc
0-T-10-150P	0-10-150P	150° Arc	0-T-12-150P	0-12-150P	150° Arc
0-T-10-HP	0-10-HP	18° Arc	0-T-12-HP	0-12-HP	18° Arc
0-T-10-	0-10-210P	210° Arc	0-T-12-210P	0-12-210P	210° Arc
210P	0-10-TTP	240° Arc	0-T-12-TTP	0-12-TTP	240° Arc
0-T-10-TTP	0-10-TQP	270° Arc	0-T-12-TQP	0-12-TQP	270° Arc
0-T-10-TQP	0-10-FP	360° Arc	0-T-12-FP	0-12-FP	360° Arc
0 T 10 ED	1	1	1	1	1
0-1-10-FP					

Specifying Information-Precision[™] Series Spray Nozzle

0-X-XXXX-XXXX-P												
Nozzle	Thread	Radius	Arc	PCD								
0	x	XXXX	ХХХХ	Р								
0—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' (PCD models only) 4X30-4'X30' (PCD models only) 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: 0-12-Q Example 2: A male-threaded Pressure-Compensating Precision [®] Series Spray with a spray radius of 10' and a 180° arc would be specified as 0-T-10-HP												

*Not available with Pressure Compensation.

PRECISION[™] SERIES SPRAY NOZZLES



$\textbf{PERFORMANCE DATA PRESSURE COMPENSATING - PRECISION^{\texttt{m}} \textbf{ SERIES SPRAY NOZZLES}$

Arc	model # (O-XX-XX)	psi	gpm	Radius	Precip. Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)	model # (O-XX-XX)	psi	gpm	Radius	Precip. Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)	model # (0-XX-XX)	psi	gpm	Radius	Precip. Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)
		40	0.07	6.0	1.2	1.4		40	0.11	7.5	1.1	1.3		40	0.16	9.5	1.0	1.2
	E (0D	50	0.07	5.5	1.3	1.5	9 (00	50	0.11	7.5	1.2	1.3	10 (00	50	0.18	10.5	1.0	1.1
60°	J-00F	60	0.07	6.0	1.0	1.2	0-00F	60	0.12	7.5	1.3	1.4	10-00F	60	0.20	11.0	1.0	1.1
		70	0.08	6.5	1.0	1.2		70	0.14	8.0	1.2	1.4		70	0.22	11.0	1.1	1.2
		40	0.06	4.6	1.0	1.2		40	0.14	7.0	1.1	1.3		40	0.26	9.5	1.0	1.1
	5-0P	50	0.08	5.1	1.2	1.4	8-0P	50	0.17	7.7	1.2	1.3	10_0P	50	0.28	10.0	1.1	1.2
90°	J-Gr	60	0.09	5.6	1.3	1.5	0-01	60	0.20	8.4	1.2	1.4	10-QT	60	0.29	10.5	1.1	1.3
		70	0.11	6.2	1.5	1.7		70	0.23	9.1	1.3	1.4		70	0.31	11.1	1.2	1.4
		40	0.07	4.4	1.0	1.1		40	0.20	7.6	1.0	1.2		40	0.31	9.5	1.0	1.1
	5-TP	50	0.11	4.9	1.3	1.5	8-TP	50	0.24	8.0	1.1	1.3	10_TP	50	0.36	10.0	1.1	1.2
120°	5-11	60	0.15	5.5	1.7	2.0	0-11	60	0.27	8.5	1.2	1.4	10-11	60	0.41	10.5	1.2	1.4
		70	0.19	6.0	2.0	2.4		70	0.31	8.9	1.3	1.5		70	0.46	11.0	1.3	1.5
		40	0.14	6.0	0.9	1.0		40	0.32	8.0	1.1	1.3		40	0.47	9.5	1.2	1.4
	5-150P	50	0.14	6.0	0.9	1.0	8-150P	50	0.32	8.5	1.0	1.2	10-150P	50	0.49	10.0	1.1	1.3
150°	5-1501	60	0.14	6.0	0.9	1.0	0-1301	60	0.32	8.0	1.1	1.3	10-1301	60	0.51	10.0	1.2	1.4
		70	0.14	6.0	0.9	1.0		70	0.32	8.0	1.1	1.3		70	0.53	10.5	1.1	1.3
		40	0.10	4.4	1.0	1.2		40	0.26	7.0	1.0	1.2		40	0.48	9.7	1.0	1.1
	БИР	50	0.13	4.9	1.1	1.3	8_UD	50	0.33	7.6	1.1	1.3	10_HP	50	0.53	10.1	1.1	1.2
180°	J-HF	60	0.16	5.4	1.3	1.5	0-111	60	0.39	8.1	1.2	1.4	10-111	60	0.57	10.4	1.1	1.3
		70	0.19	6.0	1.4	1.6		70	0.46	8.7	1.3	1.5		70	0.62	10.8	1.2	1.4
		40	0.16	5.0	1.1	1.2		40	0.34	8.0	0.9	1.0		40	0.57	9.5	1.1	1.2
	5 210D	50	0.18	5.5	1.0	1.1	0 210D	50	0.38	8.0	1.0	1.1	10 2100	50	0.64	10.0	1.1	1.2
210°	J-210F	60	0.20	6.0	0.9	1.1	0-210F	60	0.42	8.0	1.1	1.3	10-210F	60	0.70	10.0	1.2	1.3
		70	0.21	6.0	1.0	1.1		70	0.45	8.0	1.2	1.3		70	0.75	10.0	1.2	1.4
		40	0.14	4.3	1.1	1.3		40	0.34	7.0	1.0	1.1		40	0.63	9.6	1.0	1.1
	5 TTD	50	0.20	4.9	1.3	1.5	0 TTD	50	0.43	7.8	1.1	1.2		50	0.70	9.9	1.1	1.2
2600	J-ITF	60	0.25	5.4	1.4	1.7	0-11F	60	0.52	8.5	1.2	1.4	10-11F	60	0.77	10.3	1.1	1.3
240		70	0.31	6.0	1.6	1.8		70	0.61	9.3	1.3	1.5		70	0.84	10.6	1.2	1.4
		40	0.15	4.3	1.0	1.2		40	0.41	7.2	1.0	1.1		40	0.71	9.5	1.0	1.1
	E TOD	50	0.21	4.9	1.2	1.4	9 TOD	50	0.48	7.9	1.1	1.2	10 TOD	50	0.77	9.9	1.0	1.2
	5-1QP	60	0.26	5.6	1.4	1.6	0-14	60	0.55	8.6	1.2	1.4	IU-IQP	60	0.82	10.3	1.1	1.2
2703		70	0.32	6.2	1.5	1.7		70	0.62	9.3	1.3	1.5		70	0.88	10.7	1.1	1.3
		40	0.17	4.0	1.0	1.2		40	0.55	7.0	1.1	1.2		40	0.95	9.6	1.0	1.1
	5.50	50	0.24	4.8	1.1 1.3		50	0.65	7.5	1.1	1.2		50	1.06	10.0	1.1	1.2	
24.09	5-FP	60	0.31	5.5	1.2	1.4	0-FF	60	0.74	8.0	1.1	1.3	10-FP	60	1.16	10.5	1.1	1.3
300		70	0.38	6.3	1.3	1.5		70	0.84	8.5	1.1	1.3		70	1.27	10.9	1.2	1.4





PERFORMANCE DATA PRESSURE COMPENSATING – PRECISION[™] SERIES SPRAY NOZZLES

Arc	model # (O-XX-XX)	psi	gpm	Radius	Precip. Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)	model # (O-XX-XX)	psi	gpm	Radius	Precip. Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)	Arc	psi	gpm	Radius	Precip. Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)
		40	0.30	13.0	1.0	1.2		40	0.36	14.0	1.1	1.2		40	0.62	4x30	1.0	1.1
	12-60P	50	0.30	13.0	1.0	1.2	15-60P	50	0.41	15.0	1.0	1.2	4X30	50	0.65	4x30	1.0	1.2
60°		60	0.30	13.0	1.0	1.2	10 001	60	0.45	15.0	1.1	1.3	551P	60	0.67	4x30	1.1	1.3
		70	0.30	13.0	1.0	1.2		70	0.48	15.0	1.2	1.4		70	0.70	4x30	1.1	1.3
		40	0.34	12.0	1.0	1.2		40	0.53	14.2	1.0	1.2		40	0.32	4x15	1.0	1.2
	12-QP	50	0.39	12.2	1.1	1.3	15-QP	50	0.59	14.5	1.1	1.2	4X15	50	0.33	4x15	1.1	1.2
90°		60	0.43	12.5	1.2	1.3		60	0.64	14.8	1.1	1.3	LCSP	60	0.34	4x15	1.1	1.3
		70	0.48	12.7	1.2	1.4		70	0.70	15.1	1.2	1.3	_	70	0.35	4x15	1.2	1.3
		40	0.46	11.5	1.0	1.2		40	0.72	14.3	1.0	1.2		40	0.32	4x15	1.0	1.2
	12-TP	50	0.50	11.8	1.0	1.2	15-TP	50	0.77	14.8	1.0	1.2	4X15	50	0.33	4x15	1.1	1.2
120°		60	0.54	12.0	1.1	1.3		60	0.82	15.2	1.1	1.2	RCSP	60	0.34	4x15	11	1.3
		70	0.58	12.3	1.1	1.3		70	0.87	15.7	1.1	1.2		70	0.35	4x15	1.2	13
		40	0.59	12.0	1.0	1.1		40	0.93	14.0	1.1	1.3		40	0.00	4x10	1.2	11
	12-150P	50	0.66	11.5	1.2	1.3	15-150P	50	1.04	14.5	1.2	1.3	4X18	50	0.30	4×10	1.0	1.1
150°	12 1001	60	0.72	12.0	1.2	1.3		60	1.14	14.5	1.3	1.5	SSTP	50	0.37	4X10	1.0	1.2
		70	0.78	12.0	1.3	1.5		70	1.23	14.5	1.4	1.6		00	0.30	4x10	1.0	1.2
		40	0.70	11.5	1.0	1.2		40	1.10	14.5	1.0	1.2		/0	0.37	4X10	1.0	1.2
	12-HP	50	0.75	11.8	1.0	1.2	15-HP	50	1.20	14.3	1.1	1.2	489	40	0.18	4X9	1.0	1.1
180°	12.1.1	60	0.80	12.2	1.1	1.2		60	1.29	14.0	1.1	1.3	LCSP	50	0.19	4x9	1.1	1.2
		70	0.85	12.5	1.1	1.2		70	1.39	13.8	1.2	1.3		60	0.20	4x9	1.1	1.2
		40	0.86	11.0	1.2	1.4		40	1.23	14.0	1.0	1.2		70	0.21	4x9	1.2	1.3
	12-210P	50	0.96	11.5	1.2	1.4	15-210P	50	1.44	14.0	1.2	1.4	()(0	40	0.18	4x9	1.0	1.2
210°	12 2101	60	1.05	12.0	1.2	1.4	10 2101	60	1.56	14.0	1.3	1.5	4X9 RCSP	50	0.19	4x9	1.1	1.2
		70	1.13	12.0	1.3	1.5		70	1.70	15.0	1.2	1.4		60	0.20	4x9	1.1	1.2
		40	0.90	11.4	1.0	1.2		40	1.45	14.5	1.0	1.2		70	0.21	4x9	1.2	1.3
	12-TTP	50	1.03	11.5	1.1	1.3	15-TTP	50	1.57	14.8	1.0	1.2						
240°	12	60	1.16	11.5	1.2	1.3		60	1.68	15.0	1.1	1.2						
		70	1.29	11.6	1.2	1.4		70	1.80	15.3	1.1	1.3						
		40	1.05	11.4	1.0	1.2		40	1.60	14.0	0.9	1.0						
	12-TOP	50	1.14	11.7	1.0	1.2	15-TOP	50	1.70	14.4	1.0	1.1						
2708	12 100	60	1.23	12.0	1.1	1.3	15 101	60	1.80	14.8	1.0	1.2						
270		70	1.32	12.3	1.1	1.3		70	1.90	15.1	1.1	1.2						
		40	1.35	11.5	1.0	1.1		40	2.20	14.5	1.0	1.2						
	12-FP	50	1.49	11.8	1.0	1.2	15-EP	50	2.36	14.8	1.0	1.2						
3600	1211	60	1.63	12.2	1.1	1.3		60	2.52	15.1	1.1	1.2						
300		70	1.77	12.5	1.1	1.3		70	2.68	15.4	1.1	1.3						

PRECISION[™] SERIES SPRAY NOZZLES



$\textbf{PERFORMANCE DATA} - \textbf{PRECISION}^{\texttt{M}} \textbf{ SERIES SPRAY NOZZLES}$

Arc	model # (O-XX-XX)	psi	gpm	Radius	Precip. Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)	model # (0-XX-XX)	psi	gpm	Radius	Precip. Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)	model # (0-XX-XX)	psi	gpm	Radius	Precip. Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)
		20	0.04	4.7	1.0	1.2		20	0.10	7.6	1.0	1.2		20	0.16	9.5	1.0	1.2
	5.40	30	0.04	5.0	1.0	1.2	0 40	30	0.11	8.0	1.0	1.1	10 40	30	0.17	10.0	1.0	1.1
60°	5-60	40	0.04	5.0	1.0	1.2	0-00	40	0.12	8.1	1.1	1.2	10-60	40	0.18	10.0	1.0	1.2
		50	0.05	5.3	1.0	1.1		50	0.13	8.3	1.1	1.3		50	0.19	10.0	1.1	1.3
		20	0.06	4.6	1.0	1.2		20	0.14	7.0	1.1	1.3		20	0.26	9.5	1.0	1.1
	5-0	30	0.06	5.0	1.0	1.1	8-0	30	0.17	8.0	1.0	1.1	10_0	30	0.23	10.0	1.0	1.2
90°	J-04	40	0.07	5.0	1.0	1.2	0-0	40	0.18	8.2	1.0	1.2	10-0	40	0.28	10.2	1.0	1.2
		50	0.07	5.0	1.0	1.2		50	0.18	8.4	1.0	1.1		50	0.28	10.3	1.0	1.2
		20	0.07	4.4	1.0	1.2		20	0.20	7.6	1.0	1.2		20	0.31	9.5	1.0	1.1
	5-T	30	0.09	5.0	1.0	1.2	8-T	30	0.22	8.0	1.0	1.1	10_T	30	0.34	10.0	1.0	1.1
120°	5-1	40	0.09	5.2	1.0	1.2	0-1	40	0.23	8.2	1.0	1.1	10-1	40	0.36	10.0	1.0	1.2
		50	0.10	5.4	1.0	1.1		50	0.24	8.3	1.0	1.1		50	0.37	10.0	1.1	1.2
		20	0.07	4.0	1.0	1.2		20	0.25	7.5	1.0	1.2		20	0.41	9.8	1.0	1.1
	5-150	30	0.11	5.0	1.0	1.2	8-150	30	0.27	8.0	1.0	1.1	10-150	30	0.43	10.0	1.0	1.1
150°	5-150	40	0.12	5.2	1.0	1.2	8-150	40	0.28	8.1	1.0	1.1		40	0.44	10.2	1.0	1.1
		50	0.13	5.4	1.0	1.2		50	0.29	8.2	1.0	1.2		50	0.46	10.4	1.0	1.1
		20	0.10	4.4	1.0	1.2		20	0.26	7.0	1.0	1.2		20	0.48	9.7	1.0	1.1
	E LI	30	0.13	5.0	1.0	1.2	8_H	30	0.33	8.0	1.0	1.1	10_	30	0.51	10.0	1.0	1.1
180°	- J-П	40	0.14	5.1	1.0	1.2	0-11	40	0.34	8.0	1.0	1.2	10-11	40	0.55	10.3	1.0	1.2
		50	0.14	5.2	1.0	1.1		50	0.34	8.0	1.0	1.2		50	0.56	10.4	1.0	1.2
		20	0.10	4.4	1.0	1.2		20	0.33	7.6	1.1	1.3		20	0.56	9.8	1.1	1.3
	5 210	30	0.15	5.2	1.1	1.2	0 210	30	0.36	8.0	1.1	1.3	10 210	30	0.58	10.0	1.1	1.3
210°	5-210	40	0.16	5.3	1.1	1.3	0-210	40	0.37	8.1	1.1	1.3	10-210	40	0.60	10.4	1.1	1.2
		50	0.17	5.5	1.1	1.3		50	0.38	8.2	1.1	1.3		50	0.62	10.5	1.1	1.3
		20	0.14	4.3	1.1	1.3		20	0.34	7.0	1.0	1.2		20	0.63	9.6	1.0	1.1
	5-TT	30	0.17	5.0	1.0	1.1	8-TT	30	0.44	8.0	1.0	1.1	10_TT	30	0.69	10.0	1.0	1.2
260°	J-11	40	0.19	5.0	1.1	1.2	0-11	40	0.46	8.0	1.0	1.2	10-11	40	0.73	10.3	1.0	1.1
240		50	0.19	5.0	1.1	1.3		50	0.46	8.0	1.0	1.2		50	0.74	10.4	1.0	1.1
		20	0.15	4.3	1.0	1.2		20	0.41	7.2	1.0	1.1		20	0.71	9.5	1.0	1.1
	5-TO	30	0.20	5.0	1.0	1.2	8-TO	30	0.49	8.0	1.1	1.1	10-TO	30	0.79	10.0	1.0	1.1
2708	J-10	40	0.21	5.0	1.1	1.2	0-10	40	0.54	8.0	1.1	1.2	10-10	40	0.84	10.3	1.0	1.1
270-		50	0.22	5.0	1.1	1.3		50	0.55	8.0	1.1	1.2		50	0.86	10.4	1.0	1.1
		20	0.17	4.0	1.0	1.2		20	0.55	7.0	1.1	1.2		20	0.95	9.6	1.0	1.1
	5-F	30	0.26	5.0	1.0	1.2	8-F	30	0.66	8.0	1.0	1.1	10-F	30	1.03	10.0	1.0	1.1
360°	5-1	40	0.26	5.0	1.0	1.2	8-F 4	40	0.68	8.0	1.0	1.2		40	1.08	10.3	1.0	1.1
500		50	0.26	5.0	1.0	1.2		50	0.71	8.0	1.1	1.2		50	1.12	10.4	1.0	1.2





PERFORMANCE DATA – PRECISION[™] SERIES SPRAY NOZZLES

Arc	model # (O-XX-XX)	psi	gpm	Radius	Precip. Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)	model # (0-XX-XX)	psi	gpm	Radius	Precip. Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)	Arc	psi	gpm	Radius	Precip. Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)
		20	0.24	11.5	1.0	1.2		20	0.35	14.0	1.0	1.2		20	0.62	4x28	1.0	1.1
	12-60	30	0.25	12.0	1.0	1.2	15-60	30	0.39	15.0	1.0	1.2	4X30	30	0.66	4x30	1.1	1.2
60°	12 00	40	0.26	12.1	1.0	1.2	13 00	40	0.40	15.1	1.0	1.2	551	40	0.67	4x30	1.1	1.2
		50	0.28	12.2	1.1	1.3		50	0.42	15.3	1.0	1.2		50	0.68	4x30	1.1	1.3
		20	0.34	12.0	1.0	1.2		20	0.53	14.2	1.0	1.2		20	0.32	4x15	1.0	1.2
	12-0	30	0.37	12.1	1.0	1.1	15-0	30	0.58	15.0	1.0	1.1	4X15	30	0.33	4x15	1.1	1.2
90°	12 0	40	0.39	11.4	1.0	1.2	10 04	40	0.60	15.1	1.0	1.2	LCS	40	0.34	4x15	1.1	1.2
		50	0.39	12.0	1.0	1.1		50	0.61	15.3	1.0	1.2		50	0.34	4x15	1.1	1.3
		20	0.46	11.5	1.0	1.2		20	0.72	14.3	1.0	1.2		20	0.32	4x15	1.0	1.2
	12_T	30	0.49	12.0	1.0	1.1	15-T	30	0.77	15.0	1.0	1.1	4X15	30	0.33	/y15	11	1.2
120°	12-1	40	0.51	12.2	1.0	1.1	13-1	40	0.81	15.3	1.0	1.2	RCS	60	0.35	4×15	1.1	1.2
		50	0.52	12.3	1.0	1.1		50	0.82	15.4	1.0	1.2		40 50	0.34	4X15	1.1	1.3
		20	0.60	11.6	1.0	1.2		20	0.92	14.7	1.0	1.2		20	0.34	4x10	1.1	1.3
	12-150	30	0.62	12.0	1.0	1.1	15-150	30	0.96	15.0	1.0	1.2	4X18	20	0.30	4x10	1.0	1.1
150°	12-150	40	0.63	12.2	1.0	1.1	15-150	40	1.00	15.2	1.0	1.2	SST	30	0.37	4x18	1.0	1.1
		50	0.64	12.3	1.0	1.1		50	1.10	15.3	1.1	1.3		40	0.38	4x18	1.0	1.2
		20	0.70	11.5	1.0	1.2		20	1.10	14.5	1.0	1.2		50	0.38	4x18	1.0	1.2
		30	0.74	12.0	1.0	1.1	15 Ц	30	1.16	15.0	1.0	1.1	(20	20	0.18	4x9	1.0	1.2
180°	12-11	40	0.79	12.3	1.0	1.2	15-11	40	1.25	15.4	1.0	1.2	LCS	30	0.19	4x9	1.0	1.2
		50	0.80	12.4	1.0	1.2		50	1.28	15.5	1.0	1.2		40	0.2	4x9	1.1	1.2
		20	0.76	11.6	1.1	1.3		20	1.15	14.5	1.1	1.2		50	0.2	4x9	1.1	1.1
	12 210	30	0.82	12.0	1.1	1.3	15 210	30	1.20	15.0	1.0	1.2		20	0.18	4x9	1.0	1.2
210°	12-210	40	0.84	12.3	1.1	1.2	15-210	40	1.30	15.5	1.0	1.2	4X9 8CS	30	0.19	4x9	1.0	1.2
2.0		50	0.85	12.4	1.1	1.2		50	1.40	15.6	1.1	1.3		40	0.2	4x9	1.1	1.2
		20	0.90	11.4	1.0	1.2		20	1.45	14.5	1.0	1.2		50	0.2	4x9	1.1	1.2
	10 TT	30	0.99	12.0	1.0	1.1	15 77	30	1.54	15.0	1.0	1.1						
2/08	12-11	40	1.04	12.3	1.0	1.1	10-11	40	1.58	15.2	1.0	1.1						
240		50	1.05	12.4	1.0	1.1		50	1.61	15.3	1.0	1.1						
		20	1.05	11.4	1.0	1.2		20	1.72	14.5	1.0	1.2						
	10 70	30	1.15	12.0	1.0	1.2	15 70	30	1.78	15.0	1.0	1.1						
	12-10	40	1.19	12.2	1.0	1.2	15-10	40	1.82	15.0	1.0	1.2						
270°		50	1.22	12.3	1.0	1.2		50	1.90	15.3	1.0	1.2						
		20	1.35	11.5	1.0	1.1		20	2.20	14.5	1.0	1.2						
	10 5	30	1.48	12.0	1.0	1.1	15 5	30	2.31	15.0	1.0	1.1						
	12-F	40	1.59	12.4	1.0	1.1	15-F	40	2.35	15.2	1.0	1.1						
360°		50	1.60	12.5	1.0	1.1		50	2.40	15.3	1.0	1.1						

MPR & MPR PLUS SPRAY NOZZLES





5' MPR Plus Nozzle



8' Flat Spray







10' MPR Plus Nozzle 12' MPR Plus Nozzle

Special Patterns

Toro[®] MPR nozzles make system design and installation easier than ever. Simply select the needed radius and arc-the nozzle does everything else.

FEATURES & BENEFITS

Matched Precipitation Rates

Ensures all nozzles with a common radii apply water at approximately the same rate.

Pre-installed Pressure Compensation Disc

Eliminates excessive misting, conserves water and provides precise flow rates.

Additional Features

- Customized screens for each nozzle
- Fine-mesh snap-in filter screens for lower flow nozzles
- Convenient nozzle packaging nozzles and screens packed separately
- Adjustment screw allows up to 25% reduction in radius and complete shutoff

MPR PLUS SPRAY NOZZLES MODEL LIST

Model	Description	Model	Description
	5' MPR PLUS NOZZLE (RED)	8'	MPR PLUS NOZZLE (GREEN)
5Q	90° Arc	8Q	90° Arc
5T	120° Arc	8Т	120° Arc
5H	180° Arc	8Н	180° Arc
5TT	240° Arc	8TT	240° Arc
5TQ	270° Arc	8TQ	270° Arc
5F	360° Arc	8F	360° Arc
	8' FLAT SPRAY (BLACK)	10	MPR PLUS NOZZLE (BLUE)
FSQ	90° Arc	10Q	90° Arc
FSH	180° Arc	10T	120° Arc
FSF	360° Arc	10H	180° Arc
FSQ-LG	90° Arc, low flow	10TT	240° Arc
FSH-LG	180° Arc, low flow	10TQ	270° Arc
FSF-LG	360° Arc, low flow	10F	360° Arc
12	' MPR PLUS NOZZLE (BROWN)	15′	MPR PLUS NOZZLE (BLACK)
12Q	90° Arc	15Q	90° Arc
12T	120° Arc	15T	120° Arc
12H	180° Arc	15H	180° Arc
12TT	240° Arc	15TT	240° Arc
12TQ	270° Arc	15TQ	270° Arc
12F	360° Arc	15F	360° Arc
S	PECIAL PATTERNS (ORANGE)		
4SST	Side Strip 4'x30'		
4EST	End Strip 4'x15'		
4CST	Center Strip 4'x30'		
9SST	Side Strip 9'x18'		
4SSST	Side Strip 4'x18'		
2SST	Side Strip 2' x 6'		

Specifying Information—MPR Nozzles

XX-XXX-PC											
Radius	Arc	Optional									
ХХХ	XXX	PC									
5—5'	Q—90° T—120°	PC—Pressure									
8—8'	H—180°	Compensation									
10—10'	TT—240° Q—270°										
12—12'	F—360°										
15—15'	EST—End Strip										
	CST—Center Strip										
SST—Side Strip											
Example: A 570 MPR Plus Nozzle with a spray of 10', 180° arc and pressure											
compensation, would be specified as: 10-H-PC											

Note: To specify a MPR Plus nozzle with a 570Z sprinkler body, attach the body specification before the above nozzle specification. Do not use PCDs with 570Z PR & 570Z PRX models

SPECIFICATIONS

Operational

- Operating pressure range: 20-75 psi
- Recommended operating pressure: 30 psi
- Flow Rate: 0.05 4.58 gpm
- Nozzle trajectory:
- 5': 5° 8': 10° 10': 17° 12': 24° 15': 28°
- Corner and Side Strips: 17°
- 8' Flat Spray: 0°

Warranty

Two years

SPRAYS

PERFORMANCE DATA-MPR PLUS SPRAY NOZZLES

12

13

13

12

12

11

12

13

13

12

12

11

12

13

13

12

12

1.45

1.63

1.80

1.28

1.40

1.05

1.55

1.65

1.80

1.44

1.60

1.67

2.19

2.35

2.70

30

40

50

30-40

40-75

20

30

40

50

30-40

40-75

20

30

40

50

30-40 1.92

40-75 2.10

12-TT

12-TT-PC

12-TQ

12-TQ-PC

12-F

12-F-PC

240°

270°

1

360°

1.69 1.46

1.75

1.79 1.55

1.49

1.63

1.42

1.58

1.59 1.38

1.49 1.29

1.66 1.44

1.54

1.79

1.52

1.29

1.41

1.23

1.36

1.34

1.55

1.61 1.39

1.70 1.47

1.68 1.46

1.49 1.29

1.63 1.41

240°

270°

360°

5' SERIES WITH 5° TRAJECTORY (RED)

5' SERIES WITH 5° TRAJECTORY (RED) 8' SERIES WITH 10° TRAJECTORY (GREEN) 10' SERIES WITH 17° TRAJECTORY (BLUE)										
Arc	Desc.	psi	gpm	Rad	Prec	. Rate	Arc	Desc.	psi	gpm	Rad	Prec	Rate	Arc	Desc.	psi	gpm	Rad	Prec	. Rate
		20	0.05	4	1 4 0	1 21			20	0.17	7	1 5 5	13/			20	0.30	9	1.66	1.4.4
		30	0.00	5	1.40	1.21			30	0.17	8	1.55	1.54			30	0.50	10	1.00	1.44
90°	5-Q	40	0.07	6	1.01	1.40	90°	8-Q	40	0.24	0	1.00	1.40	90°	10-Q	40	0.40	11	1.95	1.55
		50	0.12	4	1.70	1.54			50	0.20	0	1.01	1.37			50	0.30	12	1.05	1.00
		20 / 0	0.15	5	1.00	1.02			20 40	0.27	7	1.00	1.37			20 /0	0.00	10	1.00	1.02
	5-Q-PC	30-40	0.07	5	1.01	1.40		8-Q-PC	30-40	0.22	0	1.54	1.33		10-Q-PC	30-40	0.33	10	1.40	1.20
		40-75	0.10	5	1./9	1.00			40-75	0.25	8	1.75	1.51			40-75	0.37		1.00	1.43
		20	0.07	4	1.47	1.27			20	0.23	/	1.58	1.30			20	0.42	9	1.74	1.51
120°	5-T	30	0.12	5	1.61	1.40	120°	8-T	30	0.30	8	1.5/	1.36	120°	10-T	30	0.52	10	1./5	1.51
		40	0.16	6	1.78	1.54			40	0.36	9	1.6/	1.45			40	0.65		1.80	1.56
		50	0.20	6	1.86	1.62			50	0.40	9	1.66	1.44			50	0.75	12	1./5	1.51
	5-T-PC	30-40	0.12	5	1.61	1.40		8-T-PC	30-40	0.29	8	1.52	1.32		10-T-PC	30-40	0.44	10	1.48	1.28
		40-75	0.13	5	1.79	1.55			40-75	0.35	8	1.84	1.59			40-75	0.50	10	1.68	1.45
		20	0.10	4	1.40	1.21			20	0.37	8	1.47	1.27			20	0.60	9	1.66	1.44
180°	5-H	30	0.19	5	1.70	1.47	180°	8-H	30	0.50	8	1.75	1.51	180°	10-H	30	0.71	10	1.59	1.38
100		40	0.23	6	1.70	1.47	100		40	0.58	9	1.80	1.56	100		40	0.85	11	1.57	1.36
		50	0.27	6	1.68	1.45			50	0.65	9	1.80	1.56			50	0.99	12	1.65	1.43
	5-H-PC	30-40	0.18	5	1.61	1.40		8-H-PC	30-40	0.44	8	1.54	1.33		10-H-PC	30-40	0.66	10	1.48	1.28
	••	40-75	0.20	5	1.79	1.55		••	40-75	0.50	8	1.75	1.51			40-75	0.75	10	1.68	1.45
		20	0.15	4	1.57	1.36			20	0.56	7	1.92	1.66			20	0.71	9	1.47	1.27
240°	5-TT	30	0.25	5	1.68	1.45	240°	8-TT	30	0.70	8	1.84	1.59	240°	10_TT	30	0.97	10	1.63	1.41
	J-11	40	0.30	6	1.66	1.44		0-11	40	0.80	9	1.86	1.61		10-11	40	1.10	11	1.67	1.45
		50	0.35	6	1.63	1.41			50	0.88	9	1.82	1.58			50	1.19	11	1.65	1.43
	E TT DC	30-40	0.23	5	1.54	1.34			30-40	0.59	8	1.55	1.34			30-40	0.89	10	1.49	1.29
	5-11-PC	40-75	0.27	5	1.81	1.57		0-11-PC	40-75	0.70	8	1.84	1.59		10-11-PC	40-75	1.00	10	1.68	1.45
		20	0.20	4	1.86	1.61			20	0.63	7	1.92	1.66			20	0.82	9	1.51	1.31
270°	F TO	30	0.29	5	1.73	1.50	270°	0.70	30	0.76	8	1.77	1.53	270°	10 TO	30	1.04	10	1.55	1.34
2.0	5-10	40	0.34	6	1.68	1.45	270	8-10	40	0.86	9	1.78	1.54		10-10	40	1.20	11	1.62	1.41
		50	0.40	6	1.66	1.44			50	0.93	9	1.71	1.48			50	1.35	11	1.66	1.44
		30-40	0.26	5	1.55	1.34			30-40	0.64	8	1.49	1.29		40 70 80	30-40	0.99	10	1.48	1.28
	5-1Q-PC	40-75	0.29	5	1.73	1.50		8-1Q-PC	40-75	0.70	8	1.63	1.41	1	10-10-PC	40-75	1.09	10	1.63	1.41
		20	0.25	4	1.75	1.51			20	0.74	7	1.69	1.46			20	1.11	9	1.72	1.49
3600		30	0.38	5	1.70	1.47	3600		30	1.00	8	1.75	1.51	3600		30	1.49	10	1.67	1.44
000	5-F	40	0.45	6	1.66	1.44	500	8-F	40	1.16	9	1.80	1.56	000	10-F	40	1.61	11	1.63	1.42
		50	0.53	6	1.65	1.43			50	1.30	9	1.80	1.56			50	1.85	11	1.71	1.48
		30-40	0.35	5	1.57	1.36			30-40	0.85	8	1.49	1.29			30-40	1.33	10	1.49	1.29
	5-F-PC	40-75	0.39	5	1.75	1.51		8-F-PC	40-75	1.00	8	1.75	1.51		10-F-PC	40-75	1.51	10	1.69	1.46
12' SEI	RIES WITH	1 24° TI	RAJEC	TORY	(BRO)	VN)	15' SEF	RIES WITH	28° TR		TORY (BLAC	К)	SPECIA		RNS (O	RANGE	<u>=</u>)		
Arc	Desc.	psi	apm	Rad	Prec	. Rate	Arc	Desc.	psi	apm	Rad	Prec	Rate	Pattern	Desc.	psi	apm S	pecial P	atterns	Prec.
		20	0.40	11	1 / 8	1 28			20	0.68	1/	1 5 5	1 3/			20	0.38	Vidth L	Length	Rate*
		30	0.40	12	1.40	1.20			30	0.00	15	1.55	1.54			30	0.50	5 x	15'	1.66
90°	12-Q	40	0.50	12	1.55	1.55	90°	15-Q	40	1.0.6	14	1.07	1.40		4-EST	40	0.43	5' ×	18'	1.44
-		50	0.00	12	1.04	1.42			50	1.04	14	2.15	1.07			50	0.00	5 A	20'	0.96
		20 (0	0.03	10	1.07	1.44			20 / 0	0.75	10	2.15	1.00	-		20 40	0.00	0 A	15'	1 20
	12-Q-PC	40 75	0.40	12	1.47	1.27		15-Q-PC	30-40 40.75	0./5	10	1.47	1.27		4-EST-PC	30-40 60.75	0.43	4 X	15	1.30
		40-75	0.53	11	1.00	1.43			40-75	0.01	10	1.0	1.40			40-73	0.30	4 X	24	1.01
		20	0.57	11	1.58	1.37			20	0.95	14	1./5	1.52	-		20	0.75	3 X	24	2.01
120°	12-T	30	0.72	12	1.68	1.45	120°	15-T	30	1.10	15	1.64	1.42		4-CST	30	0.90	4 X	30	1.44
		40	0.87	13	1.87	1.62			40	1.30	16	1.82	1.57			40	1.04	4 X	30	1.67
		50	0.97	13	1.93	1.67			50	1.45	16	2.03	1.75			50	1.16	4 X	31	1.80
	12-T-PC	30-40	0.64	12	1.49	1.29		15-T-PC	30-40	1.00	15	1.49	1.29		4-CST-PC	30-40	0.86	4' X	30'	1.38
L		40-75	0.70	12	1.63	1.41			40-75	1.10	15	1.64	1.42		4-CS1-PC	40-75	1.00	4' x	30'	1.61
		20	0.95	11	1.76	1.52			20	1.37	13	1.79	1.55			20	1.00	9' x	18'	1.19
180°	12-H	30	1.09	12	1.69	1.47	180°	15-H	30	1.65	15	1.66	1.44		9-SST	30	1.20	9' x	18'	1.43
100		40	1.30	13	1.72	1.49	100		40	2.02	16	1.77	1.53	9-SST 62 29 9-SST-PC	40	1.38	9' x	20'	1.48	
	L	50	1.55	14	1.77	1.53			50	2.14	16	1.87	1.62		50	1.55	10' x	22'	1.36	
	12-H-PC	30-40	0.96	12	1.49	1.29		15-H-PC	30-40	1.50	15	1.49	1.29		9-SST-PC	30-40	1.10	9' x	18'	1.31
	12-11-1-0	40-75	1.05	12	1.63	1.41		13-11-110	40-75	1.65	15	1.64	1.42		, 55110	40-75	1.20	9' x	18'	1.43
		20	1.12	11	1.55	1.35			20	1.78	14	1.59	1.38			20	0.65	4' x	24'	1.30

30

40

50

30-40

40-75

20

30

40

50

30-40

40-75

20

30

40

50

30-40

15-TT

15-TT-PC

15-TQ

15-TQ-PC

15-F

15-F-PC

2.20

2.66

2.84

2.00

2.20

2.10

2.60

3.00

3.40

2.30

2.50

2.85

3.60

4.20

4.58

3.00

40-75 3.30

15

16

16

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15

1.64 1.42

1.72 1.49

1.72

1.32

1.63

1.74 1.51

1.86 1.61

1.49 1.29

1.64 1.42

1.85 1.61

1.86 1.61

1.98

1.53

1.66 1.44

1.89

1.79 1.55

1.84 1.59

2.00 1.73

1.49 1.29

1.64 1.42

30

40

50

40-75 1.00 4' х 30'

20 0.08

30 0.09

40

50

40-75 0.10 2'

20 0.46 4' x 17'

30 0.55

40

50

30-40 0.50

40-75 0.59

30-40 0.88

30-40 0.09

4-SST

4-SST-PC

2-SST

2-SST-PC

4S-SST

4S-SST-PC

0.90 4'

1.16

0.10 2' x 7'

0.12

0.63

0.71 5' х 19'

4' 1.04

5'

4'

2'

2'

3'

2' х 6'

4'

4'

4'

4'

x 30'

x 33'

x 6'

7'

6'

19'

x 18'

x 18'

x 18'

30'

x 32'

x

x 5'

x

х

х

1.44

1.56

1.35

1.41

1.61

1.54

1.44

1.38

1.10

1.44

1.61

1.30

1.47

1 60

1.44

1.34

1.58

TVAN VARIABLE ARC NOZZLES

Quick, easy and infinitely adjustable! Toro[®] Variable Arc Nozzles (TVAN) are designed to deliver excellent irrigation efficiency with maximum versatility.

FEATURES & BENEFITS

Matched Precipitation Rates

Ensures all nozzles with a common radii apply water at approximately the same rate.

Unique Grip and Turn Adjustment

Requires no tools and makes arc setting fast and simple. Adjust from the top of the nozzle – wet or dry.

Infinitely Adjustable from 0° - 360°

The TVAN provides a variety of arc settings to precisely match any terrain and reduces inventory by meeting the needs of any size or shape landscape.

Five Color-coded Nozzles

Allows for quick and easy identification even when retracted.



- Stainless steel adjustment screw allows up to 25% radius reduction
- Nozzle arc adjustment opens from a fixed left stop position indicated by an arrow on the top





8' Variable Arc Nozzle

10' Variable Arc Nozzle



12' Variable Arc Nozzle



15' Variable Arc Nozzle





17' Variable Arc Nozzle

SPECIFICATIONS

- **Operational** Radius: 8' to 17'
- Operating pressure range: 20-50 psi
 Recommended operating pressure: 30 psi

Warranty

• Two years



Easy Grip Top The easy grip top makes arc adjustment from 0°-360° a snap

TVAN VARIABLE ARC NOZZLES MODEL LIST

Model	Description (Trajectory)
TVAN8	8' Variable Arc Pattern (8'=0°)
TVAN10	10' Variable Arc Pattern (10'=3°)
TVAN12	12' Variable Arc Pattern (12'=11°)
TVAN15	15' Variable Arc Pattern (15'=25°)
TVAN17	17' Variable Arc Pattern (17'=30°)

TVAN VARIABLE ARC NOZZLE PERFORMANCE DATA

Pattern psi		8	8' Series (Green)				10' Series (Blue)			12' Series (Brown)				15' Series (Black)				17' Series (Gray)			
Pattern	psi	gpm	Rad	Precip	o. Rate	gpm	Rad	Precip	o. Rate	gpm	Rad	Precip	o. Rate	gpm	Rad	Precip	o. Rate	gpm	Rad	Precip	. Rate
	20	0.58	7	5.26	4.56	0.59	9	3.24	2.81	0.76	10	3.38	2.93	1.06	15	2.09	1.81	1.25	16	2.17	1.88
0.0%	30	0.71	8	4.93	4.27	0.72	10	3.20	2.77	0.93	12	2.87	2.49	1.29	15	2.55	2.21	1.46	17	2.25	1.95
90*	40	0.82	9	4.50	3.90	0.84	10	3.73	3.24	1.07	12	3.30	2.86	1.49	16	2.59	2.24	1.68	18	2.31	2.00
	50	0.92	9	5.05	4.38	0.94	10	4.18	3.62	1.21	13	3.18	2.76	1.66	16	2.88	2.50	1.87	18	2.57	2.22
	20	0.81	7	3.67	3.18	0.94	9	2.58	2.24	1.35	10	3.00	2.60	1.71	14	1.94	1.68	1.95	15	1.93	1.67
10.0%	30	0.99	8	3.44	2.98	1.15	10	2.56	2.21	1.65	12	2.55	2.21	2.08	15	2.05	1.78	2.38	17	1.83	1.59
180-	40	1.15	8	3.99	3.46	1.33	10	2.96	2.56	1.91	12	2.95	2.55	2.40	15	2.37	2.05	2.74	17	2.11	1.83
	50	1.28	9	3.51	3.04	1.49	10	3.31	2.87	2.13	13	2.80	2.43	2.68	15	2.65	2.29	3.06	18	2.10	1.82
	20	1.08	7	3.27	2.83	1.37	9	2.51	2.17	1.90	11	2.33	2.02	2.41	14	1.82	1.58	2.69	14	2.03	1.76
2700	30	1.33	8	3.08	2.67	1.67	10	2.47	2.14	2.32	12	2.39	2.07	2.94	15	1.94	1.68	3.28	17	1.68	1.46
270	40	1.53	8	3.54	3.07	1.92	10	2.85	2.47	2.68	12	2.76	2.39	3.38	15	2.23	1.93	3.76	17	1.93	1.67
	50	1.70	9	3.11	2.69	2.15	10	3.19	2.76	2.99	12	3.08	2.67	3.77	16	2.18	1.89	4.19	18	1.92	1.66
	20	1.25	7	2.84	2.46	1.73	9	2.37	2.06	2.27	10	2.52	2.19	2.69	13	1.77	1.53	3.05	17	1.17	1.02
2/08	30	1.52	8	2.64	2.29	2.11	10	2.35	2.03	2.77	12	2.14	1.85	3.26	15	1.61	1.40	3.73	17	1.43	1.24
300	40	1.75	9	2.40	2.08	2.42	10	2.69	2.33	3.12	12	2.41	2.09	3.79	15	1.87	1.62	4.26	18	1.46	1.27
	50	1.96	9	2.69	2.33	2.69	10	2.99	2.59	3.47	12	2.68	2.32	4.33	16	1.88	1.63	4.71	18	1.62	1.40

Shaded data indicates optimal operating pressure. Radius shown in feet. Data based on 360 $^\circ\!.$

Specifying Information—TVAN

	TVANXX									
Model	Radius									
TVAN	XX									
TVAN—Toro Variable Arc Nozzle	8—8' Variable Arc Pattern 10—10' Variable Arc Pattern 12—12' Variable Arc Pattern 15—15' Variable Arc Pattern 17—17' Variable Arc Pattern									

Example: A TVAN8 nozzle, would be specified as: TVAN8

PRESSURE-COMPENSATING FLOOD BUBBLERS



FLOOD BUBBLER PERFORMANCE DATA

Pattern	Model No.	gpm @ 40 psi	gpm @ 50 psi	gpm @ 60 psi
	89-1727	0.25	0.25	0.25
Flood	89-1729	0.45	0.50	0.50
•	89-1731	0.95	1.00	1.00
	89-1733	1.90	2.00	2.00

SPECIFICATIONS

Operational

- Operating pressure range: 20-75 psi
- Maximum pressure: 75 psi • Flow Rate: Adjustable: 0–2.0 gpm Fixed Flow: 0.25, 0.50 and 1.0 gpm
- Flow Adjustment Screw (ADJ model only)
- Compatible with shrub adapter, 570Z Series Spray Bodies, risers and riser extenders

Warranty

• Two years



PRESSURE-COMPENSATING FLOOD BUBBLERS MODEL LIST

Model	Description
89-1727 (FB-25-PC)	0.25 gpm
89-1729 (FB-50-PC)	0.50 gpm
89-1731 (FB-100-PC)	1.00 gpm
89-1733 (FB-200-ADJ-PC)	Adjustable gpm

500 SERIES BUBBLERS



ADJUSTABLE FLOOD BUBBLER NOZZLE PERFORMANCE DATA

Pattern	Model No.	psi	gpm
		15	1.70
	514-20	20	2.00
Universal		25	2.20
Flood		30	2.40
•		35	2.50
		40	2.70

500 SERIES ADJUSTABLE STREAM BUBBLER NOZZLE PERFORMANCE DATA

Patto	c n	Madal No.	10	psi	20	psi	30	psi	40	psi
Faller		Model No.	gpm	Rad	gpm	Rad	gpm	Rad	gpm	Rad
2/60°	8	511-30	1.08	10	1.52	14	1.87	16	2.10	17
4/60°	-Y-	512-30	1.50	7	2.11	10	2.58	11	2.98	13
6/60°	-X-	514-30	1.89	6	2.61	8	3.20	10	3.70	11
2/180°	-0-	516-30	1.08	10	1.52	14	1.87	16	2.10	17

Radius shown in feet. Data based on 360°.

SPECIFICATIONS

Operational

- Operating pressure range:
 Flood: 15-75 psi
 - Stream: 10-75 psi
- Maximum pressure: 75 psi • Flow Rate:
- Flood: 1.7 2.7 gpm
- Stream: 1.08 3.70 gpm
- Inlet: 1/2" female thread
- Attaches directly to risers
- Radius adjusts up to 50%

Warranty

Two years



500 SERIES BUBBLERS MODEL LIST

Model	Description
511-30	90° Arc, Stream Bubbler
512-30	180° Arc, Stream Bubbler
514-30	360° Arc, Stream Bubbler
516-30	180° Arc, 2-stream Bubbler
514-20	Universal Flood Bubbler

STREAM SPRAY NOZZLES



PERFORMANCE DATA **10° STREAM SPRAY**

.					Prec. Rate*		
Pattern	Desc.	psi gpm i		Radius			
	10-SSQ	20	0.60	14	1.36	1.18	
		30	0.80	16	1.39	1.20	
90°		40	0.92	17	1.42	1.23	
		50	1.03	18	1.41	1.22	
	10-SSQ-	40-50	0.70	13	1.84	1.60	
	PC	60-70	0.70	15	1.38	1.20	
	10-SSH	20	1.00	14	1.13	.98	
		30	1.20	16	1.04	.90	
180°		40	1.38	17	1.06	.92	
		50	1.55	18	1.06	.92	
	10-SSH-	40-50	1.40	13	1.84	1.60	
	PC	60-70	1.40	15	1.38	1.20	
	10-SSF	20	1.80	14	1.02	.88	
2400		30	2.10	16	.91	.79	
300		40	2.42	17	.93	.81	
		50	2.70	18	.93	.80	
	10-SSF-	40-50	1.80	13	1.18	1.03	
	PC	60-70	2.00	15	.99	.86	

PERFORMANCE DATA **35° STREAM SPRAY**

	-				Prec.	Rate*
Pattern	Desc.	psi	gpm	Radius		
	35-SSQ	20	0.60	18	.82	.71
		30	0.80	20	.89	.77
90°		40	0.92	21	.93	.80
		50	1.03	22	.95	.82
	35-SSQ-	40-50	0.70	17	1.08	.93
	PC	60-70	0.70	18	.96	.83
	35-SSH	20	1.00	18	.69	.59
		30	1.20	20	.67	.58
180°		40	1.38	21	.70	.60
		50	1.55	22	.71	.62
	35-SSH-	40-50	1.40	17	1.08	.93
	PC	60-70	1.40	18	.96	.83
	35-SSF	20	1.80	18	.62	.54
2400		30	2.10	20	.58	.51
300		40	2.42	21	.61	.53
		50	2.70	22	.62	.54
	35-SSF-	40-50	1.80	17	.69	.60
	PC	60-70	2.00	18	.69	.59

SPECIFICATIONS

Operational

• Operating pressure range: 20-75 psi

- Flow Rate: 0.60 2.70 gpm
- Radius adjusts up to 50%
 10° or 35° Angle
- Non-Rotating

Warranty

• Two years



STREAM SPRAY NOZZLES MODEL LIST

Model	Description	Model	Description
NON-PRESSU	RE COMPENSATING	PRESSURE	COMPENSATING
89-1805	90° Arc	89-1547	90° Arc
89-1804	180° Arc	89-1521	180° Arc
89-1803	360° Arc	89-1519	360° Arc
89-1802	90° Arc	89-1495	90° Arc
89-1801	180° Arc	89-1493	180° Arc
89-1800	360° Arc	89-1491	360° Arc

STREAM BUBBLER NOZZLES



SPECIFICATIONS

Operational

- Operating pressure range: 10-75 psi
- Flow Rate: 0.49 2.02 gpm
- shrub adapters, risers and riser extenders

Warranty

• Two years



• Fits all Toro spray bodies,





STREAM BUBBLER NOZZLE PERFORMANCE DATA

-	-	-												
Dattara	Dattana		10 psi 20 psi 3		30	30 psi 40 psi		50 psi		60 psi				
Pattern		Description	gpm	Rad	gpm	Rad	gpm	Rad	gpm	Rad	gpm	Rad	gpm	Rad
2/60°	Я	SB-90	0.49	7	0.70	11	0.86	13	1.00	15	1.12	16	1.23	18
2/60°	Я	SB-90-PC2					0.21	1.5	0.22	1.5	0.23	1.5	0.24	1.5
4/60°	-Y-	SB-180	0.84	5	1.18	9	1.43	12	1.66	14	1.86	16	2.02	17
4/60°	-Y-	SB-180-PC2					0.46	2.5	0.49	2.5	0.50	2.5	0.51	2.5
6/60°	-X-	SB-360	1.18	3	1.63	6	2.00	8	2.29	9	2.55	10	2.82	11
6/60°	-X-	SB-360-PC2					0.74	1.5	0.75	1.5	0.76	1.5	0.77	1.5
2/180°	-0-	SB-2-180	0.49	7	0.70	11	0.86	13	1.00	15	1.12	16	1.23	18
2/180°	-0-	SB-2-180-PC2					0.21	1.5	0.22	1.5	0.23	1.5	0.24	1.5
2/60x2/60°	×Č×	SB-4-180	0.84	5	1.18	9	1.43	12	1.66	14	1.86	16	2.02	17
2/60x2/60°	×Č×	SB-4-180-PC2					0.46	2.5	0.49	2.5	0.50	2.5	0.51	2.5

STREAM BUBBLER NOZZLES MODEL LIST

Model	Description		
PRESSUR	E COMPENSATING		
89-7865 (SB-90-PC2) 89-7875 (SB-180-PC2) 89-7877 (SB-360-PC2) 89-7871 (SB-2-180-PC2) 89-7871 (SB-2-180-PC2)	90° Arc, 2' Radius 180° Arc, 2' Radius 360° Arc, 2' Radius 180° Arc, 2 Stream, 2' Radius 180° Arc, 4 Stream, 2' Padius		

Radius shown in feet. Data based on 360°.

LOW-FLOW STREAM BUBBLER NOZZLES

The Toro[®] low-flow stream bubbler nozzle combines the efficiency of micro-irrigation with the robustness of a sprayhead. The pressurecompensated low-flows and the tighter spacing between streams offer softer, more feathered watering, making them ideal for low precipitation applications.





STREAM BUBBLER NOZZLES MODEL LIST

Model	Description
	PRESSURE COMPENSATING
10-SBQ-PC3	90° Arc, 3' Radius, PC
10-SBH-PC3	180° Arc, 3' Radius, PC
10-SBF-PC3	360° Arc, 3' Radius, PC

UNADJUSTED*	UNADJUSTED* PERFORMANCE ON 570Z-4P					
		Precipitation Rate Inches/Hour				
Model	PSI	Flow	Radius Ft	50% SQ	50% TRI	
10-SBQ-PC3	30	0.11	3	4.7	5.4	
	40	0.12	3	5.1	5.9	
	50	0.14	3¼	5.1	5.9	
	60	0.16	31/2	5.0	5.8	
10-SBH-PC3	30	0.22	3	4.7	5.4	
	40	0.24	3	5.1	5.9	
	50	0.28	31⁄4	5.1	5.9	
	60	0.31	31/2	4.9	5.6	
10-SBF-PC3	30	0.45	3	4.8	5.6	
	40	0.49	3	5.2	6.1	
	50	0.57	31⁄4	5.2	6.0	
	60	0.62	31/2	4.9	5.6	

* Nozzle radius adjustment screw can be used to reduce radius down to 18" radius without compromising pressure compensation performance of nozzle. When radius is reduced, flow is reduced proportionally. Use flow rates above when designing with stream bubbler nozzles to avoid future hydraulic demand in excess of zone capacities.

SPECIFICATIONS

Operational

- Operating pressure range: 20-60 psi
- Recommended operating pressure: 30 psi
- Flow rate: 0.1 gpm to 0.62 gpm
- Fits all Toro spray bodies, shrub adapters, risers and riser extenders
- Radius adjustable down to six inches

Warranty

• Two years

DRIP BUBBLERS

Toro's pressure-compensating $\frac{1}{2}$ " threaded Drip Bubblers bring commercial grade ruggedness to drip irrigation. They're easy to install, virtually maintenance-free, and are a more robust alternative to traditional drip emitters connected to $\frac{1}{4}$ " tubing. The innovative design combines the low flow rates of drip emitters with the ease of $\frac{1}{2}$ " PVC riser installation.

FEATURES & BENEFITS

Easy to Install

Easily threads on to a $\frac{1}{2}$ " threaded riser. The self-sealing screen eliminates the cost and labor of having to use plumber's tape on every riser.

Easy to Maintain

Self-cleaning mechanism flushes at every startup, ensuring reliable operation and fewer maintenance headaches.

Durable Construction

Commercial-grade plastic and chloramine-stabilized silicone diaphragm provide dependable UV- and chemical-resistant performance in the least forgiving of environments.





SPECIFICATIONS

Operational

- Comes standard with check valve screen with 12' hold back
- Pressure Compensation: 20 60 psi
- Recommended operating pressure: 30 psi
- Minimum Filtration Requirement: 80 Mesh
- + $\, 1\!\!\!/ _2$ " FIPT inlet; diffuser cap outlet
- Flow rate molded onto the bubbler for easy identification
- Effluent and non-effluent models
- Installation of pressure-regulating drip zone kit recommended for optimal performance
- Drip Stream Bubbler models feature a unique four-outlet configuration with removable caps to ensure water does not trickle straight down to the PVC riser base if mounted vertically

Warranty

Two years

LOW FLOW BUBBLERS MODEL LIST

Model	Description
DB-04-PC	4 GPH PC Drip Bubbler (0.067 gpm)
DB-09-PC	9 GPH PC Drip Bubbler (0.15 gpm)
DB-15-PC	15 GPH PC Drip Bubbler (0.25 gpm)
DB-30-PC	30 GPH PC Drip Bubbler (0.5 gpm)
DB-04-PC-E	4 GPH PC Drip Bubbler, Effluent (0.067 gpm)
DB-09-PC-E	9 GPH PC Drip Bubbler, Effluent (0.15 gpm)
DB-15-PC-E	15 GPH PC Drip Bubbler, Effluent (0.25 gpm)
DB-30-PC-E	30 GPH PC Drip Bubbler, Effluent (0.5 gpm)
DSB-04-PC	4 GPH PC Drip Stream Bubbler (0.067 gpm)
DSB-08-PC	8 GPH PC Drip Stream Bubbler (0.13 gpm)
DSB-04-PC-E	4 GPH PC Drip Stream Bubbler, Effluent (0.067 gpm)
DSB-08-PC-E	8 GPH PC Drip Stream Bubbler, Effluent (0.13 gpm)

PRECISION[™] CHECK VALVE



Low head drainage can be seen in an elevation change of fewer than six inches. The resulting runoff and water waste can lead to landscape erosion, unsafe conditions on hardscapes and sidewalks, and pooling around spray heads. The Toro Precision[™] Check Valve saves water and eliminates runoff by immediately sealing the spray head at its connection point at the end of the irrigation cycle, thereby preventing the draining of lateral lines through the lowest-lying heads.

FEATURES & BENEFITS

Hold Back Strength of Up to 15 Feet

Capable of compensating for elevation changes in a zone of up to 15 feet, the Precision[™] Check Valve (PCV) eliminates issues with low head drainage and the resulting water waste.

Spring-Actuated Design

Spring actuation ensures an immediate check when the irrigation cycle ends.

Low Profile

With an overall profile of just under 11/4" cubic inches, the PCV-500 adds less than 3/8" of height to retrofitted spray heads and can be retrofit to side inlet spray heads with minimal digging. The low profile design makes the PCV-500 ideal for turf or slope applications.

A Universal Fit

Featuring 1/2" NPT threads, the PCV fits all major manufacturers' spray bodies and fittings.





PRECISION[™] CHECK VALVE MODEL LIST

Model	Description		
PCV-500	15' Check Valve, ¹ /2" NPT		

PCV-500 PRESSURE LOSS DATA

Flow Rate (gpm)	1	2	3	4	5		
Pressure Loss (psi)	5.1	6.0	6.5	7.0	10.2		

Note: Use of the PCV-500 is not recommended for irrigation systems with dynamic operating pressure of less than 35 psi.

Specifying Information—Precision[™] Check Valve

PCV-XXX						
Model Thread Size						
PCV	XXX					
PCV—Precision [™] Check Valve	500— ¹ /2" NPT, MxF					

SPRAYS

SPRAY TOOLS & ACCESSORIES

EFFLUENT WATER INDICATORS TOOLS SERVICEABLE PARTS **570S 570SEAL** (Nozzle not Serviceable included) seal for all 570Z • 570 Series shrub **PNOZZTOOL** models adapter Recommended • Riser pull up tool Installs onto a • Fits all 570Z for upgrades 1/2" NPT riser Sprays 570S-E **Check Valve** (Nozzle not **570CV** included) Check valve Lavender molded for all the 570Z 570S Series models shrub adapter Install in field to • Installs onto a prevent low head **PSTOOL** 1/2" NPT riser drainage Adjustment key for 10' hold back Precision[™] stem • 3/16" key 89-9752 **RISERS AND EXTENDERS** Lavender snapon cover for use 570-6X on 570Z Series (35 - 2636)pop-up models • 570Z Extender Male-inlet threads install 102-1211 onto any 570Z Lavender molded pop-up sprinkler or shrub adapter cap for use on 570Z Series to provide a 6" extension pop-up models Includes wiper • Maximum seal pressure: 75 psi Not for use on ACCESSORIES XF/PRX models 570SR-6 (35-2631) and 995-01 570SR-18 Flow gauge • 570Z stationary riser • 1/2" malethreaded inlet for installation on pipe fittings Maximum

- pressure: 75 psi
- Height: 6", 18"

PIPING

This unique piping acts like an extension cord, allowing you to put sprinklers exactly where you want them. Even deep-seated high-pops are easy to install in difficult, hard-to-trench locations.



SUPER FUNNY PIPE[®]

Toro[®] Super Funny Pipe is practical and saves time. Whether you are installing a new system or replacing an old sprinkler, Super Funny Pipe makes the job easier.

FEATURES & BENEFITS

Flexible, Thick-Walled Polyethylene Pipe

Super Funny Pipe is a high-strength poly tubing that solves tough sprinkler installation and replacement problems. It acts as an extension cord between the water line and the sprinkler.

Easy Installation for Problem Areas

One of the most useful and time-saving sprinkler installation aids whether you are installing a new system or replacing an old sprinkler. Also comes pre-assembled as the Super Funny Pipe Swing Joints in 8" and 12" lengths or just get the individual fittings as needed.

SPECIFICATIONS

Operational

- Maximum pressure: 120 psi
- Cushions sprinklers from external impact
- Connects to sprinklers and Toro fittings

Dimensions

- Wall thickness: .10" ± .01
- Inside diameter: .49" ± 0.005
- Outside diameter: .70"



SUPER FUNNY PIPE FRICTION LOSS DATA

gpm Flow							
gpm	1	2	3	4	5	6	7
psi Loss	0.01	0.02	0.06	0.09	0.15	0.21	0.27

This chart indicates the amount of pressure loss (psi) per foot of Super Funny Pipe at stated flow rates (gpm).

SUPER FUNNY PIPE MODEL LIST

Model	Description
850-23	20' Length, ½" Polyethylene Pipe
850-24	50' Coil, ½" Polyethylene Pipe
850-25	100' Coil, ½" Polyethylene Pipe

Warranty

• Two years

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SUPER FUNNY PIPE® SWING JOINTS



SPECIFICATIONS

Warranty

Two years

SUPER FUNNY PIPE SWING JOINTS MODEL LIST

Model	Description
SPFA-585	8" x ½"
SPFA-5875	8" x ³ /4"
SPFA-5125	12" x ½"
SPFA-51275	12" x ³/4"

SUPER FUNNY PIPE® FITTINGS



850-34



SUPER FUNNY PIPE FITTINGS FRICTION LOSS DATA

Madal Na	Description	gpm Flow							
Model No.	Description	1	2	3	4	5	6	7	
850-36	³ /4" Male Adapter	0.04	0.10	0.23	0.43	0.80	1.37	1.86	
850-35	1/2" Male Adapter	0.03	0.06	0.18	0.31	0.60	1.00	1.41	
850-31	1/2" Male Elbow	0.05	0.15	0.36	0.62	1.13	1.62	2.37	
850-34	1/2" Female Elbow	0.05	0.15	0.36	0.62	1.13	1.62	2.37	
850-32	³ ⁄4" Male Elbow	0.06	0.18	0.41	0.80	1.42	2.20	3.05	

This chart indicates the amount of pressure loss (psi) per foot of Super Funny Pipe at stated flow rates (gpm).

SPECIFICATIONS

Warranty

• Two years

SUPER FUNNY PIPE FITTINGS MODEL LIST

Model	Description
850-20	Coupling
850-31	Male Elbow, 1/2"
850-32	Male Elbow, ³ /4"
850-34	Female Elbow, 1⁄2"
850-35	Male Adapter, ½"
850-36	Male Coupling, ³ /4"
850-37	Tee, Barbed Inserts
850-60	Saddle Tee, ¾
850-61	Saddle Tee, 1"

LANDSCAPE DRIP







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DL2000[™] SERIES SUBSURFACE DRIPLINE

DL2000 with ROOTGUARD[®] delivers optimal water application directly to the root zone while impeding roots from clogging the emitters. DL2000 with ROOTGUARD[®] is suited to the irrigation of lawns and gardens, shrub areas, median strips, sports fields, vandal prone areas and more.

FEATURES & BENEFITS

U.S. Government-Approved ROOTGUARD[®] Protection

Pre-emergent, ROOTGUARD[®] creates a "force field" around emitter outlet, diverting root growth and assuring long term reliability.

At Grade or Buried Options

Can be installed at grade or buried 4" - 8" underground, delivering irrigation directly to the plant's root zone.

Environmentally Friendly

Irrigation takes place at or below grade so there is minimal water loss due to mist, evaporation, run-off or wind. Fertigation needs are reduced because water is applied only at the root zone.

Safety and Liability

When DL2000 is installed below ground, the landscape surface is free from irrigation equipment that may disrupt activities or cause injury. Sub-surface performance also avoids slippery walkways and roadways as well as wet walls, fences and windows.

SPECIFICATIONS

Operational

- Design flexibility for narrow, odd-shaped landscape areas
 Precise watering puts water where it's needed; avoids water
- marks on expensive hardscapes, glass or signage • Distinctive red stripe on tubing signifies DL2000 with ROOTGUARD[®]

Warranty

- Against Root Intrusion: Seven years
- Hose: Five years pro-rated
- Emitters: Two years



DL2000 MODEL LIST

Model	Description
RGP-212-01	0.5 gph, 12" emitter spacing, 100 ft. coil
RGP-412-01	1.0 gph, 12" emitter spacing, 100 ft. coil
RGP-218-01	0.5 gph, 18" emitter spacing, 100 ft. coil
RGP-418-01	1.0 gph, 18" emitter spacing, 100 ft. coil
RGP-212-05	0.5 gph, 12" emitter spacing, 500 ft. coil
RGP-412-05	1.0 gph, 12" emitter spacing, 500 ft. coil
RGP-218-05	0.5 gph, 18" emitter spacing, 500 ft. coil
RGP-418-05	1.0 gph, 18" emitter spacing, 500 ft. coil
RGP-212-10	0.5 gph, 12" emitter spacing, 1000 ft. coil
RGP-412-10	1.0 gph, 12" emitter spacing, 1000 ft. coil
RGP-218-10	0.5 gph, 18" emitter spacing, 1000 ft. coil
RGP-418-10	1.0 gph, 18" emitter spacing, 1000 ft. coil
RGP-212-05-E	0.5 gph, 12" emitter spacing, 500 ft. coil
RGP-412-05-E	1.0 gph, 12" emitter spacing, 500 ft. coil
RGP-218-05-E	0.5 gph, 18" emitter spacing, 500 ft. coil
RGP-418-05-E	1.0 gph, 18" emitter spacing, 500 ft. coil

Part No.	Flow Rate (gph)	Emitter Spacing	15 psi	25 psi	30 psi	40 psi
RGP-212	.53	12″	250'	360'	400'	460'
RGP-218	.53	18"	350'	515'	565'	650'
RGP-412	1.0	12"	160'	240'	260'	300'
RGP-418	1.0	18"	240'	340'	375'	430'

HOW IT WORKS



PRECIPITATION RATE FOR EVENLY SPACED LATERALS AND EMITTERS

Precipitation Rate for Drip Laterals (inches/hour)							
Emitter	Emitter		Spac	ing Betwe	en Drip La	terals	
Flow (gph)	Spacing (in.)	6 in.	12 in.	18 in.	24 in.	30 in.	36 in.
0.53	12	1.7	0.85	0.57	0.43	0.34	0.28
0.53	18	1.13	0.57	0.38	0.28	0.23	0.19
1.00	12	3.27	1.64	1.09	0.82	0.65	0.55
1.00	18	2.18	1.09	0.73	0.55	0.44	0.36
	Precipitation Rate Formula:						
Precipitation Rate (in./hr.) = 231.1 x Emitter Flow (gph) Lateral Spacing (in.) x Emitter Spacing (in.)							
	Note: Th	is formula a	pplies to eve	enly spaced	drip irrigatio	on laterals a	nd emitters.

DL2000 PERFORMANCE TABLE

Flow Rate	.53/1.00 gph
Inside Diameter	0.620"
Outside Diameter	0.710"
Wall	0.045"
Operating pressure (P)	15–60 psi
Minimum filtration requirement	120 Mesh

Specifying Information—DL2000

RGP X-XX-XX-E			
Emitter Flow	Emitter Spacing	Coil Length	Optional
X	XX	XX	E
2—.53 gph	12—12"	01—100'	E—Purple Tubing for Non-potable Water
4—1.0 gph	18—18"	05—500'	
		10—1000'	
Example: A 500' coil of Pressure-compensating Dripline with ROOTGUARD [®] , 12" emitter spacing and 0.5 gph, would be specified as: RGP-212-05			

Note: Specify/use Tri-Loc(TM) Fittings, Toro i620 Series barbed fittings, or .710 Compression Fittings.

17MM DRIP IN® BROWN SURFACE DRIPLINE

With higher water costs in our future, it makes more sense than ever to use inline tubing in suitable landscape applications. Drip In[®] PC is an effective and economical choice for at-grade installations and now comes in industry-standard 17mm size.

FEATURES & BENEFITS

New 17мм Size

Works with most standard-size barb fittings, making it compatible with most dripline and hose for easy retrofits and expansions.

Fully Pressure-compensating from 15 – 60 psi

The pressure-compensating design makes it ideal for slopes, high wind areas and areas with limited water supply or low pressure.

High Uniformity

Proven, dependable pressure-compensating Drip In emitters deliver uniform, precise emitter discharge rates with exceptionally low variability.

Keeps Water Off Hardscapes

Preventing unsightly water stains.



Effluent Options Available



New Laser Etching

Easy-to-identify product information right on the tubing, and holds up better over time in the field compared to inkjet printing.



Highly Clog Resistant

Unique, raised internal filtration design deflects debris upward and away from the emitter's inlet. Because the inlet is also raised, sediment won't collect at the inlet while the system is off.







Dual Opposed Outlets

In above ground installations, dual opposing ports in every emitter assure that at least one outlet provides air relief, which prevents back-siphonage of contamination into the emitter.

PRODUCT HIGHLIGHT



All Toro[®] landscape dripline uses a large double-outlet cylindrical emitter, which is much more tolerant of debris compared to the other market leaders, most of whom use a compact singleoutlet emitter. While filtration is always recommended for any drip irrigation installation, filters only protect the incoming water from the valve connection. In the event of a damaged line at any point from the filter on down, or any other possible point of entry into the system for debris, Toro outperforms the competition and consistently keeps on flowing.

*Test data collected in Toro's standardized 24-hour "grit test", used for qualifying all Toro low-flow Landscape and Agriculture products in an internal test lab.

Model	Description
PCB-212-010	0.58 gph, 12" emitter spacing, 100' coil
PCB-412-010	0.92 gph, 12" emitter spacing, 100' coil
PCB-218-010	0.58 gph, 18" emitter spacing, 100' coil
PCB-418-010	0.92 gph, 18" emitter spacing, 100' coil
PCB-212-025	0.58 gph, 12" emitter spacing, 250' coil
PCB-412-025	0.92 gph, 12" emitter spacing, 250' coil
PCB-218-025	0.58 gph, 18" emitter spacing, 250' coil
PCB-418-025	0.92 gph, 18" emitter spacing, 250' coil
PCB-212-050	0.58 gph, 12" emitter spacing, 500' coil
PCB-412-050	0.92 gph, 12" emitter spacing, 500' coil
PCB-218-050	0.58 gph, 18" emitter spacing, 500' coil
PCB-418-050	0.92 gph, 18" emitter spacing, 500' coil
РСВ-212-025-Е	0.58 gph, 12" emitter spacing, 250' coil, effluent
РСВ-412-025-Е	0.92 gph, 12" emitter spacing, 250' coil, effluent
РСВ-218-025-Е	0.58 gph, 18" emitter spacing, 250' coil, effluent
PCB-418-025-E	0.92 gph, 18" emitter spacing, 250' coil, effluent

DRIP IN PC MODEL LIST

	EMITTER FLOW RATE (GPH)			
INLET	0.58	0.58	0.92	0.92
(PSI)	EMITTER SPACING (INCHES))
	12 in.	18 in.	12 in.	18 in.
15	169	236	125	175
20	230	323	171	239
25	270	379	200	282
30	301	424	222	314
35	327	460	242	341
40	349	492	258	364
45	369	521	273	386
50	387	547	286	405
55	404	570	299	422
60	420	593	310	439

LENCTH OF DUN CHART

Specifying Information – Drip In PC

PCB-XXX-XXX-X				
Tubing Type	Emitter Flow	Emitter Spacing	Coil Length	Optional
PCB	X	XX	XXX	X
PCB	2 – 0.58 gph 4 – 0.92 gph	12 – 12" 18 – 18"	100 – 100' 250 – 250' 500 – 500'	E - Effluent
Example: A 29 emitter spacir	50' coil of pressure-c ng and 0.58 gph emitt	ompensating D er flow would b	rip In brown dr oe specified as	ipline with 12" PCB-212-025

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TRI-LOC[™] FITTINGS

FEATURES & BENEFITS

- Fits 16, 17 & 18mm OD Hose and Dripline
- 1 Fitting 3 Tubing Sizes Save Time!
- Superior Retention Strength
- Ergonomic Collars Reduce Fatigue
- Easy to Reuse Save Money!



TL-C Tri-Loc Coupling	TL-E Tri-Loc Elbow	TL-T Tri-Loc Tee	تل -M50 Tri-Loc ½" MPT Adapter
TL-M75	TL-FH75	TL-T-F50	TL-T-M50
Tri-Loc ¾" MPT Adapter	Tri-Loc ¾" FHT Adapter	Tri-Loc ½" FPT Tee	Tri-Loc ½" MPT Tee
TL-T-S50	TL-CAP	TL-BV	TL-C-HDR
Iri-Loc ½" Slip Tee	Ігі-Loc МНТ Сар	Iri-Loc Ball Valve Coupling	20mm OD x 20mm OD Coupling
TL-M75-HDR	TL-CAP-HDR	TL-T-HDR	
20mm OD Hose x ¾" MPT Adapter	20mm OD Hose x MHT Cap	Tri-Loc reducing header tee connects and drip hose to Toro [®] T-EHD2057 hos fitting also works with hose ID of .790	16, 17 and 18mm OD dripline se with .805 ID. TL-T-HDR D845" (20 – 21.5mm)

DRIP FITTINGS AND ACCESSORIES

18mm Fittings

- Fits 18mm 0D (5/8" ID) DL2000
- Fits Blue Stripe hose "1645" models



Specifying Information—18mm Fittings

Model	Description
I620-C	Insert Coupling
I620-E	Insert Elbow
I620-T	Insert Tee
I620-M50	½" MPT Adapter

17mm Fittings

- Fits 17mm 0D (1/2" ID) Drip In
- Fits model Blue Stripe hose "1554" models

Specifying Information—17mm Fittings

Model	Description
I560-C	Coupling
I560-E	Elbow
I560-T	Tee
I560-M50	1⁄2" MPT Adapter
I560-M75	¾" MPT Adapter
I560-T-M50	1⁄2" MPT Adapter



Specifying Information Accessories

Model	Description
T-YD-500-34	Air Vent— ¹ /2" MIPT Air Release & Vacuum Relief Valve
T-FCH-H-FIPT	Flush Valve— ³ /4" FPT (Pipe Thread), 0.8 gpm, 2 psi Sealing Pressure
T-FCH-H-FHT	Flush Valve— ³ /4" FHT (Hose Thread), 0.8 gpm, 2 psi Sealing Pressure
T-DL-MP9	DL2000 Pop-up Operation Indicator
T-FJQ16	⁵ /8" Figure-eight End Clamp
T-SS6-50	³ /4" Steel Soil Staple to Hold Tubing in Place
T-IPS1500	⁵ /8" Plastic Stake to Hold Tubing in Place
T-FPG02	Double-sided Goof Plug
T-CA-710	OD Compression Adapter 1/2" Spigot
T-CEFCH-H	OD Compression Adapter with Flush Valve, 0.8 gpm, 2 psi Sealing
T-FMP16	Stainless Steel Insertion Tool for ¹ /4" Barbed Fittings and Emitters

Specifying Information—Microline 1/4" Fittings

Model	Description
T-FTT0400	Tee (Barb x Barb)
T-FEE0400	Elbow (Barb x Barb)
T-FCC0400	Coupling (Barb x Barb)
T-FCV-BB	Microflow Valve (Barb x Barb)
T-FMP08	Hose Punch for ¹ /4" barbed fittings and emitter
T-IPS0104	¹ /4" plastic locator stake to hold tubing in place

Specifying Information—0.710 OD Compression Fittings

Model	Description
T-CA-710	OD Compression Adapter ¹ /2" Spigot
T-CEFCH-H	OD Compression Adapter with Flush Valve, 0.8 gpm, 2 psi Sealing

BLUE STRIPE® POLYETHYLENE HOSE

A reliable, trouble-free, cost effective water deliver system is central to any point-source drip installation. Toro Blue Stripe hose leads the industry as one of the most requested hose on the market.

FEATURES & BENEFITS

Manufactured From Premium Grade Linear Low Density Polyethylene

For dependable long-lasting operation.

Minimum 2% Carbon Black Added

To provide optimum protection against ultraviolet (UV) deterioration.

Available With Blue, White or Lavender Stripe

For easy on-site identification of drip zones or applications during installation and operation.

Wide Range of Choices

Available in a wide range of diameters, wall thicknesses, coil lengths and working pressures.



Effluent Options Available




LANDSCAPE DRIP

BLUE STRIPE[®] MICRO-DISTRIBUTION HOSE

	Part Number	Hose Size	N	ominal Hose Si	ze	Coil Length	Coil Ship Weight	Pressure Rating
		ID Inch	ID Inch	OD Inch	Wall Inch	Ft.	Lbs.	psi
Blue S	Blue Stripe Round Hose - Coil Stretch Wrapped							
	T-EHW0437-100	1/4"	0.170	0.250	0.040	1,000	9.64	161
Blue Stripe Round Hose - Coil Banded								
	T-EHD0437-010	1/4"	0.170	0.250	0.040	100	1.1	161

BLUE STRIPE POLYETHYLENE HOSE

Part Number		Hose Size	Nominal Hose Size		Coil Length	Coil Ship Weight	Pressure Rating	
		ID Inch	ID Inch	OD Inch	Wall Inch	Ft.	Min. Lbs.	psi
Blue	Blue Stripe® Round Hose – Coil Stretch Wrapped							
	T-EHW1645-010	5/8"	0.615	0.705	0.045	100	4.0	61
	T-EHW1645-050	5/8"	0.615	0.705	0.045	500	19.8	61
Blue	Blue Stripe® Round Hose - Coil Banded							
	T-EHD1554-050A (palletized)	-	0.570	0.680	0.055	500	21.5	77
P,X	T-EHD1645-050A (palletized)	5/8"	0.615	0.705	0.045	500	18.9	61
P,X	T-EHD2057-050A (palletized)	3/4"	0.805	0.920	0.057	500	31.2	59
	T-EHD2667-066A (palletized)	1"	1.060	1.195	0.067	660	63.3	53

Note: For the two designated part numbers above, replace "D" with "P" in the part number to specify Purple Hose for reclaimed water. For the same two designated part numbers above, replace "D" with "X" in the part number to specify White Stripe Hose.

BLUE STRIPE POLYETHYLENE HOSE MODE	LIST

Model	Description	Model	Description
		LAVENDER STRIPE R	OUND HOSE
T-EHW0437-100	1/4"; ID: 0.170"; OD: 0.250"; Wall: 0.040"; 1,000' coil		
		T-EHP1645-050A	5/8", ID-0.615'', OD-0.705'', Wall-0.045'', 500' coil (palletized)
T-EHD0437-010	1/4", ID-0.170'', OD-0.250'', Wall-0.040'', 100' coil	T-EHP2057-050A	3/4", ID-0.805'', OD-0.920'', Wall-0.057'', 500' coil (palletized)
		WHITE STRIPE [™] ROU	ND HOSE
T-EHW1645-010	5/8": ID: 0.615": 0D: 0.705": Wall: 0.045": 100' coil		
T-EHW1645-050	5/8": ID: 0.615": OD: 0.705": Wall: 0.045": 500' coil	T-EHX1645-050A	5/8", ID-0.615", OD-0.705", Wall-0.045", 500' coil (palletized)
		T-EHX2057-050A	3/4", ID-0.805", OD-0.920", Wall-0.057", 500' coil (palletized)
T-EHD1554-050A	ID: 0.570''; OD: 0.680''; Wall: 0.055''; 500' coil (palletized)		
T-EHD1645-050A	5/8 "; ID: 0.615''; OD: 0.705''; Wall: 0.045''; 500' coil (palletized)		
T-EHD2057-050A	3/4"; ID: 0.805'', OD: 0.920''; Wall: 0.057''; 500' coil (palletized)		
T-EHD2667-066A	1"; ID: 1.060''; OD: 1.195''; Wall: 0.067''; 660' coil		

Specifying Information—Blue Stripe Polyethylene Hose

Τ-ΕΗ-Χ-ΧΧ-ΧΧ-Α							
Model	Stripe Color/Packaging	Tubing Size (ID)	Wall Thickness	Optional			
T-EH	X	XX	XX	A			
T-EH - Blue Stripe Hose	D - Blue Stripe/Coil Banded W - Blue Stripe/Stretch Wrapped P - Lavender Stripe/Coil Banded X - White Stripe/Coil Banded	04 - 4mm (.17") 15 - 15mm (.57") 16 - 16mm (.62") 20 - 20mm (.81") 26 - 26mm (1.06")	37037" 45045" 54054" 57057" 67067"	A- Palletized			

PRESSURE REGULATING MULTI-OUTLET DRIP MANIFOLD



The T-PR25-9 can be installed on any 1/2" riser or fitting and easily converts traditional spray systems to drip, micro spray, or micro stream bubblers.

FEATURES & BENEFITS

- Built-in 25 psi pressure regulator delivers consistent, reliable, low-volume irrigation.
- Barbed outlets (9) accept 1/4" micro-tube & emitters, microbubblers or micro-sprays – ideal for mixed planting areas.
- Small shut-off caps provided with unit seal unused outlets.
- When system is off, cover unthreads for access to screen without disturbing 1/4" micro-tube connected to outlets.

Specifying Information—Pressure Regulating Drip Manifold

Model	Description
T-PR25-9	Pressure Regulating 9-outlet Drip Manifold



SPECIFICATIONS

Operational

- 1/2" FPT Inlet
- Operating Pressure: 20 100 psi
- Manifold Outlet Pressure: 21 28 psi
- Manifold Flow Range: 1 210 gph
- Individual Outlet Flow Range: 1 -20 gph
- Barbed outlets accept 1/4" tubing: ID: .170 .188

Warranty

• One year



E-2[™] CLASSIC TAKE APART EMITTER

First introduced in 1972, the E-2 emitter has a history of being easy to use, and providing consistent and reliable performance. While there have been some improvements over the years, this emitter offering still provides accurate performance at a cost-effective price.

FEATURES & BENEFITS

Fast Single Barb Installation

Install directly onto hose.

Large Open Flow Path

For resistance to plugging.

Take-Apart Feature

Allows fast simple field inspection.

SPECIFICATIONS

Operational

- Flow Rates:
- T-DBK04-100 1.0 gph
- T-DBK08-RED-100 2.0 gph
- T-DBK16-MB-100 4.0 gph
- Proven Classic hydraulic design
- Economic emitter for trouble-free applications
- Barbed inlet allows emitters to be installed directly onto
- hose or used with ¼" leader tubing (T-EHD0437)Exit barb may be used with ¼" exit tubing for precision

Warrantv

water placement

• One year

Specifying Information–E-2 Classic Emitter

Model	Description
T-DBK04-100	1.06 gph E-2 Emitter (Black)
T-DBK08-RED-100	2.11 gph E-2 Emitter (Red)
T-DBK16-MB-100	4.23 gph E-2 Emitter (Maroon)



gph _____

4.0 gph

2.0 gph



E-2 EMITTER FLOW RATE

psi	T-DBK04	T-DBK08	T-DBK16
5	0.58	1.03	2.09
10	0.88	1.53	3.08
15	1.12	1.93	3.87
20	1.33	2.27	4.55
25	1.52	2.58	5.15
30	1.70	2.87	5.71
35	1.87	3.13	6.23
40	2.03	3.38	6.71
45	2.17	3.62	7.17
50	2.32	3.84	7.61

*Recommended operating pressure. Values listed in gallons per hour.

E-2 EMITTER PERFORMANCE

	T-DBK04	T-DBK08	T-DBK16	
Nominal Flow Rate (Q)	gph @ 15 psi	1.06 gph	2.11 gph	4.23 gph
Operating Pressure Range (P) psi		0–50 psi		
Minimum Filtration Requirem	140 Mesh (105 Micron)			

NGE[®] EMITTERS

Designed for demanding drip irrigation installations, the Toro[®] New Generation Emitter (NGE) has what it takes to keep your system flowing.

FEATURES & BENEFITS

Uniform Flow Rates

Make the NGE ideal for use in difficult topographical conditions.

Unique Emitter Design And Pressure Compensating Diaphragm

Allows the emitter to self-flush during operation and shutdown to facilitate cleaning. This ensures the emitter is free of debris at start-up and during the emitter operation.

Low Coefficient of Variation (CV)

As tested by Toro and independent labs, the NGE is one of the best performing pressure-compensating emitters available.





T-DPCT02-MA-BLUE-S

T-DPCT04-MA-BLK-S T-DPCT08-MA-RED-S







T-DPCT02-DC-BLUE-S

T-DPCT04-DC-BLK-S

T-DPCT08-DC-RED-S







T-DPCT08-4-RED-S





The new T-DPC-TOOL insertion tool makes installing new self-piercing NGE emitters simple!

T-DPCT02-4-BLUE-S

T-DPCT04-4-BLK-S



T-DPC-TOOL





All new self-piercing inlet comes standard on all NGE models.



NGE PERFORMANCE TABLE

		T-DPCT02	T-DPCT04	T-DPCT08	
Nominal Flow Rate (Q)	gph	0.5 gph	1.0 gph	2.1 gph	
Recom. Pressure Range (P) psi		8–60 psi			
Min. Filtration Requirement		140 Mesh (105 Micron)			
Color (Base)		Blue	Black	Red	

NGE FLOW RATES

Pressure	T-DPCT02	T-DPCT04	T-DPCT08			
psi	gph	gph	gph			
6	0.46	0.91	1.73			
8	0.51	1.01	1.95			
10	0.53	1.08	2.11			
15	0.53	1.10	2.21			
20	0.53	1.08	2.17			
25	0.54	1.05	2.13			
30*	0.54	1.04	2.12			
35	0.55	1.04	2.12			
40	0.55	1.04	2.12			
45	0.55	1.04	2.14			
50	0.55	1.05	2.16			
55	0.54	1.05	2.18			
60	0.54	1.05	2.18			

*Recommended operating pressure

NGE MODEL LIST

Model	Description		
T-DPCT02-MA-BLUE-S	0.5 gph NGE emitter with male adapter outlet		
T-DPCT04-MA-BLK-S	1.0 gph NGE emitter with male adapter outlet		
T-DPCT08-MA-RED-S	2.1 gph NGE emitter with male adapter outlet		
T-DPCT02-DC-BLUE-S	0.5 gph NGE emitter with dust cap outlet		
T-DPCT04-DC-BLK-S	1.0 gph NGE emitter with dust cap outlet		
T-DPCT08-DC-RED-S	2.1 gph NGE emitter with dust cap outlet		
T-DPCT02-4-BLUE-S	0.5 gph NGE emitter with $1\!\!4''$ barbed outlet		
T-DPCT04-4-BLK-S	1.0 gph NGE emitter with ¼" barbed outlet		
T-DPCT08-4-RED-S	2.1 gph NGE emitter with ¼" barbed outlet		
T-DPC-TOOL	NGE self-piercing emitter insertion tool		

SPECIFICATIONS

Operational

- Recommended operating pressure: 8-60 psi
- Average Flow Rates:
- T-DPCT02 0.5 gph
- T-DPCT04 1.0 gph T-DPCT08 2.1 gph
- Snap-on dust cap deters dust and insects from entering the emitter
- Standard self-piercing inlet allows emitters to be installed directly into hose without the need to punch a hole beforehand, or can be installed at the end of 1/4" hose
- New $\ensuremath{\ensuremath{\mathcal{W}}}$ outlet version allows for installation of $\ensuremath{\ensuremath{\mathcal{W}}}$ hose downstream of the emitter

Warranty

• Two years

Specifying Information—NGE[®] Emitters

T-DPCTXX-XXXX-S					
Model	Flow	Outlet	Base Color	Inlet	
T-DPCT	XX	XX	XXXX	S	
T-DPCT – NGE Emitter	02 – 2 liter (0.5 GPH) 04 – 4 liter (1.0 GPH) 08 – 8 liter (2.1 GPH)	MA – Male Adapter DC – Dust Cap 4 – 4mm (1/4") Barb	BLUE – Blue (2 liter) BLK – Black (4 liter) RED – Red (8 liter)	S – Self-Piercing	

Example: A 4 liter (1.0 GPH) NGE emitter with a 4mm (¼") barbed outlet and self-piercing inlet would be specified as: T-DPCT04-4-BLK-S

TURBO-SC[™] PLUS PRESSURE-COMPENSATING EMITTER





From the company that has pioneered so many drip irrigation innovations, the Toro[®] Turbo SC Plus has an industry track record for proven performance and affordability. Known as the DPJ emitter, Turbo SC Plus offers the two features liked by so many users. Pressure-compensation for system uniformity and "take-apart" for simple on site inspection.

FEATURES & BENEFITS

Take-Apart Feature

Permits fast, easy on-site inspection and cleaning.

Large Self-Flushing, Turbulent Flow Path

For higher resistance to plugging where water conditions may be a problem.

Male Adapter with Bug Shield

Deters the entry of insects, but also can be used with $1\!\!\!\!/ 4''$ exit tubing for precision water placement.

Specifying Information—Turbo-SC Plus

Description
0.5 gph PC Emitter
1.0 gph PC Emitter
2.0 gph PC Emitter
0.5 gph PC Emitter with $\frac{1}{2}$ " FPT Inlet and Check Screen
1.0 gph PC Emitter with ½" FPT Inlet and Check Screen
2.0 gph PC Emitter with $\frac{1}{2}$ " FPT Inlet and Check Screen



SPECIFICATIONS

Operational

- Proven PC (pressure-compensating) emitter design
- Barbed inlet allows emitters to be installed directly onto hose or used with 1/4" tubing
- High quality diaphragm for improved pressure compensation and uniformity over a wide range of pressure
- Half inch FPT version comes standard with check valve screen with 12' hold back

WarrantyOne year



FLOW RATE

LOW NAIL				
psi	T-DPJ02	T-DPJ04	T-DPJ08	
5	0.42	0.73	1.41	
10	0.44	0.97	1.80	
15	0.47	0.96	2.00	
20	0.49	0.97	2.12	
25	0.50	1.00	2.15	
*30	0.51	1.01	2.15	
35	0.51	1.01	2.11	
40	0.50	1.00	2.04	
45	0.49	0.98	1.95	
50	0.47	0.95	1.84	
55	0.45	0.91		

*Recommended operating pressure. Values listed in gallons per hour.

TURBO-SC PERFORMANCE TABLE

		T-DPJ02-A	T-DPJ02-A T-DPJ04-A		
Nominal Flow Rate (Q)	gph	0.5 gph	1.0 gph	2.0 gph	
Recom. Pressure Range (P) psi		10–50 psi			
Min. Filtration Requirement		140 Mesh (105 Micron)			
Color (Base)		Blue	Black	Red	

VARIS[™] AND VARISTAKE[™] ADJUSTABLE EMITTERS





FEATURES & BENEFITS

Available as Stake Assembly or as Barbed Emitter

Varistake connects to ¼" micro-tube (T-EHD0437) for precise placement at plant. Varis emitter installs directly onto drip lateral.

Adjustable Flow Rate

Allows for ease of installation even to the smallest of areas.

Easy to Maintain

Green top unthreads completely to permit easy inspection and cleaning.

Specifying Information—Varis and Varistake Emitters

Model	Description
T-DAK05	Varis Adjustable Emitter with 1/4" Barbed Inlet
T-DAK15	Varistake Adjustable Emitter with 4 ³ /4" Stake and ¹ /4" Barbed Inlet



VARIS AND VARISTAKE ADJUSTABLE EMMITERS MODEL LIST

Diameter of Throw (maximum opening at 30 clicks):

20	6"		8"		
30	13	3 ¹ / ₂	15 ¹ /2"		
40	2	1"	27"		
V	Varis and Varistake Flows:				
10		0-7 gph			
20		0-10 gph			

30

40

PRESSURE REGULATORS



0-11 gph

0-14 gph





Specifying Information—Pressure Regulators

Model	Description
T-PMR30	1", 30 psi, 0.1-35 gpm pressure regulator
T-PMR40	1", 40 psi, 0.1-35 gpm pressure regulator

DRIP ZONE VALVE KITS



Pre-packaged and ready for installation – Drip Zone Valve Kits provide everything you need for drip zone automation. No need to specify or purchase separate parts.

FEATURES & BENEFITS

Everything You Need is in the Kit

- Y-Filter protects against contamination.
- Control Valve controls the flow of water
- Pressure Regulator reduces system pressure to levels suitable for drip irrigation

Specially Designed for Low-volume Drip Applications

- These kits are a simple, one-stop package
- Less-valve kits also available

DRIP ZONE VALVE KITS MODEL LIST

Model	Description
2400DK-1-MF	1" 2400 Series Drip Zone Valve Kit with Filter & Regulator
2500DK-1-MF	1" 2500 Series Drip Zone Valve Kit with Filter & Regulator
700DK-1-MF	1" 700 Series Drip Zone Valve Kit with Filter & Regulator
2713APRDK-MF	1" 2713APR Series Drip Zone Valve Kit with Filter & Regulator
DK-LV-MF	Less-Valve Drip Zone Kit with Filter & Regulator Only

	COMING SOON!				
Specifications					
Part Number	2400DK-1-MF	2713APRDK-MF	2500DK-1-MF	700DK-1-MF	
Valve Included	1" 2400 In-line	1" 2713APR AVB	1" 2500 In-line	1" 700 In-line	
Connection Size	1"	1"	1"	1"	
Control Valve Solenoid	24 Vac, Inrush: 0.4 amps, 11.5 VA, Holding 0.20 amps, 5.75 VA				
Minimum Flow Rate	0.25 gpm	0.25 gpm	0.25 gpm	0.10 gpm	
Maximum Flow Rate	25 gpm	25 gpm	25 gpm	30 gpm	
Maximum Pressure	120 psi	120 psi	120 psi	120 psi	
Y-Filter Degree of Filtration	150 mesh/100 microns	150 mesh/100 microns	150 mesh/100 microns	150 mesh/100 microns	
Regulator-Preset Pressure	30 psi	30 psi	30 psi	40 psi	
Thread Connection- Upstream	Female NPT	Female NPT	Female NPT	Female NPT	
Thread Connection- Downstream	Female NPT	Female NPT	Female NPT	Female NPT	

Note: Consult your local plumbing code for backflow prevention requirements.

AVB = Atmospheric Vacuum Breaker (Anti-siphon Valve).

Specifying Information—Drip Zone Valve Kits

XXXXXXX-DK-1-MF						
Model	Kit	Valve Size	Flow Rate			
700 – 700 Series Valve 2500 – 2500 Series Valve 2507 – 2507 Series Valve 2711APR – 2711 Series Valve 2713APR – 2713 Series Valve	DK – Drip Zone Kit	1 – 1"	MF – Medium Flow			
Example: A Drip Zone Valve Kit with a 1" 700 Series UltraFlow						
valve would be specified as 700DK-1-MF						

DK-LV-MF				
Model	Less-Valve	Flow Rate		
DK – Drip Zone Kit	LV – Less Valve	MF – Medium Flow		

PLASTIC Y-FILTERS

Filtration for your drip system doesn't have to be difficult. Since low volume systems require filtration for effective and efficient watering, Toro[®] F-Series filters are designed to perform.

FEATURES & BENEFITS

1/2" Male Thread Outlet

With cap for quick flush cleaning.

Easy Element Access

For trouble free maintenance.

Constructed of Highest Quality Plastics

For durability and corrosion resistance.



SPECIFICATIONS

Operational

- Recommended pressure range: 5 120 psi
- Flow Rate: 5 80 gpm
- ³/₄" and 1" screen filters are available in small- and large-size bodies
- Body and cap constructed of nylon
- Locking ring constructed of glass reinforced nylon
- O-ring constructed of Buna-N

Dimensions

- L: 11¹/₂" H x 9" W x 9" D
- S: 8" H x 51/2" W x 51/2" D

Warranty

• One year



Specifying Information—Plastic Y-Filters (Disc)

Model	Size	Maximum Flow	Element	Mesh	Body	Head Loss Curve
T-ALFD75150-L	3/4"	25 gpm	Disc	150	Large	2
T-ALFD10150-L	1"	35 gpm	Disc	150	Large	3
T-ALFD15150-L	1 ¹ /2"	80 gpm	Disc	150	Large	4



Specifying Information—Plastic Y-Filters (Screen)

Model	Size	Maximum Flow	Element	Mesh	Body	Head Loss Curve
T-ALFS75150-S	3/4"	18 gpm	Screen	150	Small	1
T-ALFS75150-L	3/4"	25 gpm	Screen	150	Large	2
T-ALFS10150-S	1"	25 gpm	Screen	150	Small	2
T-ALFS10150-L	1"	35 gpm	Screen	150	Large	3
T-ALFS15150-L	1 ¹ /2"	80 gpm	Screen	150	Large	4

Specifying Information—Replacement Screen/Disc Filter Elements

Model	Size	Element	Mesh	Body
T-AMP-0004-4F	³ /4", 1" and 1 ¹ /2"	Disc	150	Large Body Size Filters
T-AMP0004-1S	³ /4" and 1"	Screen	150	Small Body Size Filters
T-AMP0004-2F	³ /4", 1" and 1 ¹ /2"	Screen	150	Large Body Size Filters

SPRAY-TO-DRIP RETROFIT KIT

The new Spray-to-Drip Retrofit Kit makes converting an existing 570 spray zone to landscape drip simple. Just replace one or more spray heads in a zone with the Spray-to-Drip Retrofit Kit, connect to dripline or hose and shut off any remaining 570 sprays on the zone using 570 caps.

FEATURES & BENEFITS

Convenient All-in-One Design

Filtration and pressure regulation are critical when installing low-flow drip irrigation systems. Toro's Spray-to-Drip Retrofit Kit conveniently contains both components in a single compact spray body footprint. There is no need to install any additional parts at the zone valve.

Easy to Connect

A Toro Tri-Loc[™] tee is included with each Spray-to-Drip Retrofit Kit to easily connect to almost any common size or type of dripline or drip hose (16mm to 18mm OD).

Design Flexibility

Most jobs only require one Spray-to-Drip Retrofit Kit per zone, however for jobs where multiple points of connection to dripline or hose are required, multiple kits may be used.



Model 570-CAP

Model SXD-RETRO



LANDSCAPE DRIP

SPRAY-TO-DRIP RETROFIT KIT MODEL LIST

Model	Description
SXD-RETRO	Spray-to-Drip Retrofit Kit with internal 25 psi pressure regulator and filter
570-CAP	570 plug cap

SXD-RETRO SPRAY-TO-DRIP RETROFIT KIT INCLUDES



SPECIFICATIONS

SXD-RETRO

- Inlet: ½" FPT
- Outlet: ½" MPT (with Tri-Loc™ model TL-T-F50 included)
- Flow rate: 0.5 to 6 gpm
- Regulated outlet pressure: 25 psi
- Recommended operating pressure: 15-70 psi • Filtration: 200 mesh

570-CAP

• Recommended operating pressure: 0-75 psi

Warranty

• Two years

SPRAY-TO-DRIP RETROFIT KIT EXAMPLE INSTALLATION



ROTORS







Mini 8 Series	50-51
300 Series Stream Rotor®	52-53
T5 Series Rotors	54-55

MINI 8 SERIES ROTORS

Simple to use, water-efficient, and versatile, the Mini 8 Series does it all. Designed to meet coverage areas between 20 feet and 35 feet radius, the Mini 8 has a simple to use top-ofrotor arc setting feature that ensures easy and accurate arc adjustments from 40 degrees to reversing full-circle 360 degrees.

FEATURES & BENEFITS

Top-of-Rotor Arc Adjustment

Allows easy arc setting with a slotted screwdriver and features a quick reference dial for fast and accurate adjustments (40° to 360°).

Pressure-Activated Riser Seal

Helps prevent debris intrusion into the rotor's body and, ultimately, the system's water lines.

Ratcheting Riser

Allows the riser and fixed left edge to quickly be turned to the desired position without having to re-orient the entire rotor.

Five Interchangeable Nozzles

To cover varying flow and radius requirements.

Part and Full Circle In One

Offers more flexibility on new system installs and reduces inventory requirements.









Check Valve Options Available Optional for field installations

R OTORS

PRODUCT HIGHLIGHT



from 45° to 360°

Nozzle retainer screw and stream diffuser

Not Too Big and Not Too Small the Mini 8 is Just Right

The Mini 8 nozzles are designed for the efficient watering of smaller spaces, which means water savings when compared to full-size rotors. When compared to fixed sprays, the flexibility of the Mini 8 reduces the number of heads required, which in turn reduces the number of valves and stations needed. In either scenario, the Mini 8 brings together money savings and better water management.

MINI 8 SERIES MODEL LIST

Model	Description
MINI8-4P	Mini 8 Rotor, 4" Lawn Pop-up
MINI8-4PE	Mini 8 Rotor, 4" Lawn Pop-up Effluent

SPECIFICATIONS

Operational

- Radius: 20'-35' • Arc Adjustment – 40° to 360°
- Operating pressure range: 30-60 psi
- Flow Rate: 0.80 3.40 gpm
- Trajectory: 25°

Dimensions

- Body height: 6"
- Pop-up to nozzle height: 3³/4"
- Exposed diameter: 1³/4"
- Cap diameter: 21/4"
- Inlet: 1/2" female-thread

Options Available

- 102-2024 Adjustment Tool
- MINI8-CV Check Valve

Warranty

• Two years

MINI 8 SERIES PERFORMANCE DATA

Nozzle	psi	gpm	Radius	Precipitation Rate (in./ hour)			
			(ft.)				
	30	0.8	20	0.42	0.36		
.75	40	0.9	21	0.44	0.38		
	50	1.0	22	0.46	0.40		
	30	1.0	26	0.30	0.26		
1.0	40	1.1	27	0.34	0.30		
	50	1.3	28	0.36	0.32		
	30	1.3	29	0.24	0.30		
1.5*	40	1.5	30	0.38	0.32		
	50	1.7	31	0.40	0.34		
	30	1.7	30	0.42	0.36		
2.0	40	2.0	31	0.46	0.40		
	50	2.3	31	0.54	0.46		
	30	2.6	34	0.50	0.44		
3.0	40	3.0	35	0.54	0.48		
	50	3.4	35	0.62	0.54		

Radius shown in feet. Data based on 180.

▲ Precipitation rates are for triangular spacing, shown in inches per hour, calculated at 50% of diameter. Precipitation rates are for square spacing, shown in inches per hour, calculated at 50% of diameter. All performance specifications are based on the stated working pressure available at the base of the sprinkler. *Pre-installed nozzle.

Specifying Information–Mini 8 Series Rotors

MINI8-4P-XX-E						
Description	Body	Nozzle	Optional			
MINI8	4P	XX	E			
MINI8—Mini 8 Rotor	4P—Lawn Pop-up	1.5–1.5 gpm 2.0–2.0 gpm 3.0–3.0 gpm	E—Effluent			
Example: A Mini 8 Series sprinkler with a 3.0 nozzle, would be specified as: MINI8-4P-30						

300 SERIES MULTI-STREAM ROTOR®

The 300 Series Multi-Stream Rotor[®] combines a highly distinctive way to irrigate with the reliability you've come to expect. Uniquely designed, Stream Rotors feature multiple rotating streams, a slower precipitation rate and successfully fights wind. The 300 Series utilizes Matched Precipitation Rate (MPR) nozzles ensuring precise, proportional flow for uniform water coverage every time.

FEATURES & BENEFITS

Unique Multiple Rotating Streams

Provides slow, effective watering, and the ability to couple different arcs on the same zone, which saves time and water.

Matched Precipitation Rate Arc Discs

Ensures uniform delivery of water across each square foot of an irrigated area, resulting in high-precision water application.

Choice of Six Nozzles and Nine Interchangeable Arc Discs

For maximum versatility covering varying landscape needs.





Specifying Information— 300 Series Multi-Stream Rotor

3ХХ-ХХ-ХХ-Е						
Arc	Body	Nozzle	Optional			
3XX	XX	XX	E			
04-90° 05-112° 06-135° 07-157.5° 08-180° 09-202.5° 10-225° 12-270° 16-360°	00—Lawn Pop-up 10—Shrub 12—High Pop	01/21—Small Radius, 12 Ports 02/22—Medium Radius, 12 Ports 03/23—Large Radius, 12 Ports 15—Adjustable Shrub & Lawn Pop-up 25—Adjustable, High Pop-up 63—Large Radius, 6 Ports, Low gpm* 93—Large Radius, 9 Ports, Low gpm*	E—Effluent			
Example: A 300 Series Shrub Sprinkler with a 90° arc and an adjustable nozzle, would be specified as: 304-10-15						

^{*} Available on Lawn Pop-up and Shrub only.

ROTORS

PRODUCT HIGHLIGHT



A Winning Combination of Watering Efficiency and Visual Appeal

The exclusive "fingers of water" application takes a flow of water and divides it into smaller streams at different trajectories for a stronger performance all across the landscape. Shorter radii get the coverage needed with enough water still in the main stream to reach longer distances. This also creates a heavier watering stream at the tail end of the spray allowing for greater wind resistance.

300 SERIES: 300-15 (LAWN) AND 300-25 (HIGH POP) OMNI PERFORMANCE CHART

		Precip	itation								1	
psi	Radius	Ra	te*	90°	112°	135°	157.7°	180°	202.5°	225°	270°	360°
								gpm				
35	15	1.69	1.46	0.85	1.06	1.28	1.49	1.70	1.91	2.13	2.55	3.41
35	18	1.37	1.19	1.00	1.24	1.50	1.75	2.00	2.25	2.50	3.00	4.00
35	21	1.15	1.00	1.15	1.42	1.72	2.01	2.29	2.58	2.86	3.44	4.58
35	24	0.99	0.86	1.29	1.60	1.94	2.26	2.58	2.91	3.23	3.88	5.17
35	26	0.95	0.82	1.44	1.79	2.16	2.52	2.88	3.24	3.60	4.32	5.76
50	18	1.60	1.38	1.16	1.44	1.74	2.04	2.33	2.62	2.91	3.49	4.65
50	21	1.35	1.17	1.34	1.66	2.01	2.35	2.68	3.02	3.35	4.02	5.36
50	24	1.17	1.02	1.52	1.88	2.28	2.66	3.04	3.42	3.80	4.56	6.08
50	27	1.04	0.90	1.70	2.10	2.55	2.97	3.40	3.82	4.24	5.09	6.79
50	30	0.93	0.80	1.88	2.33	2.82	3.29	3.75	4.23	4.69	5.63	7.51

300 SERIES: FIXED RADIUS NOZZLE PERFORMANCE CHART

			Precip	itation								7	•
Nozzle	psi	Radius	Ra	ite*	90°	112°	135°	157.7°	180°	202.5°	225°	270°	360°
									gpm				
01/21	35	16	0.99	0.86	0.57	0.71	0.86	1.00	1.14	1.28	1.43	1.71	2.28
01/21	50	18	0.99	0.86	0.72	0.90	1.08	1.26	1.44	1.62	1.80	2.16	2.88
02/22	35	21	0.73	0.63	0.72	0.90	1.08	1.26	1.44	1.62	1.80	2.16	2.88
02/22	50	24	0.66	0.57	0.85	1.06	1.28	1.49	1.71	1.92	2.13	2.56	3.41
02/22	35	28	0.77	0.67	1.36	1.69	2.04	2.38	2.72	3.05	3.39	4.07	5.43
03/23	50	30	0.80	0.69	1.61	2.01	2.42	2.82	3.23	3.63	4.03	4.84	6.45
(2*	35	28	0.39	0.33	0.68	0.85	1.02	1.19	1.36	1.53	1.70	2.04	2.72
63	50	30	0.40	0.35	0.81	1.00	1.21	1.41	1.62	1.82	2.02	2.42	3.23
0.2*	35	28	0.58	0.50	1.02	1.27	1.53	1.78	2.04	2.29	2.54	3.05	4.07
73	50	30	0.60	0.52	1.21	1.51	1.82	2.12	2.42	2.72	3.03	3.63	4.84

* Precipitation rates are for triangular spacing, shown in inches per hour, calculated at 50% of diameter.
 Precipitation rates are for square spacing, shown in inches per hour, calculated at 50% of diameter.
 All performance specifications are based on the stated working pressure available at the base of the sprinkler.
 Low gallonage. Radius shown in feet. Data based on 30°.

SPECIFICATIONS

Operational

- Radius: 14'-33'
- Flow Rate:
 Lawn Pop-up and High pop: 0.57-7.51 gpm
- Shrub (COM): 2.07-6.36 gpm
- Operating Pressure Range: 35-50 psi
- Pop-up Height to Nozzle:
- Lawn Pop-up: 2³/4"
- High Pop: 11³/4"
- Inlet (Female-threaded):
- Lawn Pop-up and High pop: ³/₄"
 Shrub: Combined ¹/₂" to ³/₄"
- Large basket filter screen

Dimensions

- Body Diameter: 2³/8"
- Cap Diameter: 3"
- Height:
 - Lawn Pop-up: 6¹/8"
 - High Pop: 16"
- Shrub Base Diameter: 1³/4"

Options Available

- Recycled Water Indicators:
- Lavender Cover, High-Pop
- (89-7854 fits 300-25 Omni only)
- Lavender Cover, Lawn & Shrub (89-7853 fits 300-15 Omni only)
- Lavender Cap, Standard Nozzles (118-6242 fits 01, 02, 03, 63, 93)

Warranty

• Two years

300 SERIES SHRUB (360° ARC DISC)

Nozzle	psi	300 Series gpm	Radius
01	50	2.07	14
01	75	2.95	16
02	50	2.48	23
02	75	3.69	25
03	50	4.55	27
03	75	6.24	29
63	50	2.66	28
63	75	3.82	30
93	50	3.64	29
93	75	5.29	31
Omni (Min)	50	2.67	16
Omni (Min)	75	3.95	18
Omni (Max)	50	5.08	30
Omni (Max)	75	6.36	33

300 SERIES LAWN POP-UP APEX @ 50 PSI

Nozzle	27°
	Max. Ht. of Spray
01	4' 10"
02	5' 1"
03	5' 11"
63	7' 0"
93	6' 3"

300 SERIES MULTI-STREAM ROTOR MODEL LIST

Model	Description			
300-00-00	Lawn Pop-up without Nozzle			
300-10-00	Shrub without Nozzle			
300-12-00	12" High Pop without Nozzle			

T5 SERIES ROTORS



The Toro[®] T5 Series Rotor can be set in seconds. Engineered to use the slip clutch to adjust the arc, the T5 Series rotor requires NO TOOLS for arc adjustments. Along with a five inch pop-up height of the Lawn model, the T5 Series rotor feature exclusive Airfoil Technology[™] standard and low angle nozzles that deliver class-leading^{*} distribution uniformity.

FEATURES & BENEFITS

RapidSet[®] **Arc Adjustment** (Available on RapidSet models only) Arc adjustments from 40° to 360° can be made quickly with a few twists of the turret – no tools required. The RapidSet slip clutch also protects against gear damage caused by intentional vandalism or inexperienced users.

Lawn Model with a 5" Pop-up Height

Fits in the same footprint as many competing 4" rotors for hassle-free retrofits, but delivers an extra inch of pop-up height, allowing the nozzle to clear tall grasses.

Airfoil Technology[™] Nozzles

The T5 Series rotor comes with a full set of 8 standard nozzles (25° trajectory) and 4 low angle (10° trajectory) nozzles that utilize proprietary Airfoil Technology, which creates a zone of low pressure just below the main stream to gently guide water downward for unmatched uniformity without forcefully washing out newly-laid seeds.

Design Flexibility

T5 RapidSet rotors are available in Effluent, Shrub, 12" High Pop and Stainless Steel models.



Stainless Steel Model Features

- 304 Stainless Steel riser and nozzle base protection
- Ideal for settings with heavy foot traffic or sandy soil conditions
- Heavy-duty construction protects the rotor from damage caused by vandalism









Check Valve Options Available

T5 RAPIDSET® ROTOR MODEL LIST

Model	Description
T5P-RS-LN	5" RapidSet Lawn pop-up
T5PE-RS-LN	5" RapidSet Lawn pop-up, Effluent
T5PCK1.5-RS	5" RapidSet Lawn pop-up with Check Valve, 1.5 gpm nozzle
T5PCK2.0-RS	5" RapidSet Lawn pop-up with Check Valve, 2.0 gpm nozzle
T5PCK2.5-RS	5" RapidSet Lawn pop-up with Check Valve, 2.5 gpm nozzle
T5PCK3.0-RS	5" RapidSet Lawn pop-up with Check Valve
T5HP-RS	12" RapidSet High Pop
T5HPE-RS	12" RapidSet High Pop, Effluent
T5S-RS	RapidSet Shrub (Check Included)
T5SE-RS	RapidSet Shrub, Effluent (Check Included)
T5PSS3.0-RS	5" RapidSet Stainless Steel Lawn pop-up, 3.0 gpm nozzle
T5PSSE3.0-RS	5" RapidSet Stainless Steel Lawn pop-up, Effluent, 3.0 gpm nozzle
T5PCKSS3.0-RS	5" RapidSet Stainless Steel Lawn pop-up with Check Valve, 3.0 gpm nozzle

LOW ANGLE NOZZLE PERFORMANCE DATA

Nozzle	psi	Radius	gpm	Precipita (in/hr) ▲	ation Rate (in/hr) ■
	25	25	0.74	0.26	0.23
	35	28	0.94	0.27	0.23
1.0LA	*45	28	1.02	0.29	0.25
	55	29	1.14	0.30	0.26
	65	29	1.25	0.33	0.29
	25	27	1.10	0.34	0.29
	35	30	1.35	0.33	0.29
1.5LA	*45	31	1.52	0.35	0.30
	55	31	1.75	0.40	0.35
	65	31	1.90	0.44	0.38
	25	29	1.40	0.37	0.32
	35	31	1.72	0.40	0.34
2.0LA	*45	32	2.05	0.45	0.39
	55	33	2.25	0.46	0.40
	65	33	2.45	0.50	0.43
	25	29	2.20	0.58	0.50
	35	33	2.60	0.53	0.46
3.0LA	*45	34	3.05	0.59	0.51
	55	36	3.40	0.58	0.51
	65	36	3.70	0.63	0.55

*Recommended operating pressure. Data based on 180°.

SPECIFICATIONS

Operational

- Radius: 25 50 feet
- Flow rate: 0.74 9.70 gpm
- Arc: 40° to 360°, adjustable
- Inlet: 3/4" NPT
- Operating pressure range: 25-65 psi
- Recommended operating pressure: 45 psi
- Trajectory: 25° standard, 10° low angle
- Pop-up height: 5" (measured from top of cap to nozzle high-pop height opening)
- Available with factoryinstalled 1.5, 2.0, 2.5, or 3.0 gpm nozzle, or with no nozzle installed.

Dimensions

- Body Diameter:
- Lawn Pop-up: 21/4" – Shrub: 21/4"
- High Pop: 2 1/4"
- Cap Diameter:
- Lawn Pop-up: 25/8"
- Shrub: N/A
- High Pop: 2⁵/8"
- Height:
- Lawn Pop-up: 7¹/2"
- Shrub: 7³/4"
- High Pop: 16 7/8"

Warranty

• Five years

T5 RAPIDSET NOZZLE PERFORMANCE DATA

Nozzle	psi	Radius	gpm	Precipita	ation Rate
	05	22	1.15	(11/11)	(11/11)
	25	33	1.15	0.23	0.20
1 5	35	34	1.38	0.27	0.23
1.5	-45	35	1.59	0.29	0.25
	55	35	1.74	0.32	0.27
	65	36	1.88	0.32	0.28
	25	35	1.45	0.26	0.23
	35	36	1.80	0.31	0.27
2.0	*45	37	2.12	0.34	0.30
	55	37	2.30	0.37	0.32
	65	37	2.58	0.42	0.36
	25	35	1.75	0.32	0.28
	35	36	2.20	0.38	0.33
2.5	*45	37	2.55	0.41	0.36
	55	37	2.80	0.45	0.39
	65	37	3.05	0.50	0.43
	25	36	2.20	0.38	0.33
	35	38	2.60	0.40	0.35
3.0	*45	40	3.05	0.42	0.37
Standard	55	40	3.52	0.49	0.42
	65	40	3.80	0.53	0.46
	25	37	2.95	0.48	0.41
	35	40	3.55	0.49	0.43
4.0	*45	42	4.10	0.52	0.45
	55	42	4.45	0.56	0.49
	65	43	4.85	0.58	0.50
	25	39	3.75	0.55	0.47
	35	41	4.50	0.60	0.52
5.0	*45	43	5.10	0.61	0.53
	55	45	5.75	0.63	0.55
	65	45	6.10	0.67	0.58
	25	39	4.20	0.61	0.53
	35	43	5.20	0.63	0.54
6.0	*45	46	6.05	0.64	0.55
0.0	55	47	6.65	0.67	0.58
	65	48	7.25	0.70	0.61
	25	36	5.75	0.99	0.85
	35	43	710	0.85	0.74
8.0	*45	47	8.05	0.81	0.74
0.0	55	48	8.95	0.86	0.75
	45	50	9.70	0.86	0.75
	00		7.70	0.00	0.75

*Recommended operating pressure. Data based on 180°.

Specifying Information — T5 Series Rotors

T5XX XX XX X.X E-RS										
Base Model	Body	Optional	Optional	Custom Nozzles	Optional		Optional			
T5	XX	XX	XX	X.X	E	-RS	-LN			
T5— T5 Series Rotor	P - Lawn S - Shrub HP - High Pop	CK — Check Valve	SS — Stainless Steel Riser	1.5-1.5 gpm 2.0-2.0 gpm 2.5-2.5 gpm 3.0-3.0 gpm	E — Effluent	RS — RapidSet	LN — Less Nozzle			
Exam	ple: A T5 Series F	Rotor Lawn Pop-up sp	prinkler with a 2.5 gpm nozzle a	nd Check Valve would b	e specified as: T5P	CK2.5-RS				

SPORTS FIELDS & GROUNDS SOLUTIONS







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640 SERIES ROTORS

With over 30 years of history, the heavy-duty Toro[®] 640 Series rotor is a proven commercial-grade sprinkler for athletic fields, parks, campuses, and commercial sites.

FEATURES & BENEFITS

Normally Open Valve-In-Head Body

Allows individual head control - the only commercial grade Toro rotor available with this feature.

Standard Check Valve

Prevents low head drainage and keeps laterals charged with water.

640 SERIES MODEL LIST

Model	Description				
ASSEMBLED F	ROTORS				
641-02-40 641-02-41 641-02-42 641-02-43 641-02-43 641-02-44 642-02-40	90°Arc with #40 Nozzle 90°Arc with #41 Nozzle 90°Arc with #42 Nozzle 90°Arc with #43 Nozzle 90°Arc with #44 Nozzle 180°Arc with #40 Nozzle				
642-02-41 642-02-42 642-02-43 642-02-44 644-02-40 644-02-41 644-02-42 644-02-43 644-02-43	180°Arc with #41 Nozzle 180°Arc with #42 Nozzle 180°Arc with #43 Nozzle 180°Arc with #44 Nozzle 360°Arc with #40 Nozzle 360°Arc with #41 Nozzle 360°Arc with #42 Nozzle 360°Arc with #44 Nozzle				
BODY PACKAG	E				
640-10 640-20	640 Body Package, VIH (Valve-In-Head) 640 Body Package, COM (Check-O-Matic)				
DRIVE ASSEM	BLY				
640-0045 640-0060 640-0108 640-0127 640-0127 640-0148 640-0173 640-0180 640-0192 640-0238 640-0270 640-0220	640 Drive Assembly, 45 degrees 640 Drive Assembly, 60 degrees 640 Drive Assembly, 90 degrees 640 Drive Assembly, 108 degrees 640 Drive Assembly, 127 degrees 640 Drive Assembly, 173 degrees 640 Drive Assembly, 173 degrees 640 Drive Assembly, 180 degrees 640 Drive Assembly, 238 degrees 640 Drive Assembly, 238 degrees 640 Drive Assembly, 270 degrees 640 Drive Assembly, 270 degrees				
N0771 F/STAT	NR SET				
640-40 640-41 640-42 640-43 640-44	#40 Nozzle and Stator #41 Nozzle and Stator #42 Nozzle and Stator #43 Nozzle and Stator #44 Nozzle and Stator				

Scan for more information and additional Sports Fields and Grounds products.

Specifying Information—640 Series Rotors (Assembled Rotors)

64X-XX-XX									
Arc	Thread	Valve Type	Nozzle	Optional					
64X	Х	X	ХХ	E					
0—Special Arc 1—90° 2—180° 3—270° 4—360°	0—NPT Thread 5—BSP Thread	1—Normally Open Valve-In-Head 2—Check-O-Matic	40 - #40 Nozzle 41 - #41 Nozzle 42 - #42 Nozzle 43 - #43 Nozzle 44 - #44 Nozzle	E—Effluent Model					
Example: A 640 Series Sprinkler with a 90° arc, 40 nozzle and a check valve, would be specified as: 641-02-40									

Most 640 sprinklers are available in component parts only. Consult Res/Com Finished Goods. Price List for a complete list of sprinklers available as finished goods.

Operational

- Radius: 47' 67'
- Flow Rate: 6 25 gpm
- Operating Pressure Range: 40-90 psi
- Trajectory: 27°
- Pop-up to nozzle: 2³/8"
- Inlet: 1" female-threaded
- Below-grade installation: up to 1/2"
- Check-O-Matic maintains up to 15' in elevation change
- Selection of five nozzles and 12 arcs
- Adjustment screw allows up to 25% radius reduction

Dimensions

- Body diameter: 2¹/2"
- Cap diameter: 31/4"
- Body height:
- Check-O-Matic 9"
- Valve-In-head $10^{1/2''}$
- Exposed surface diameter when buried 1/2" below grade: 1 3/4"

Options Available

- Valve-In-Head Snap Ring Pliers (995-100)
- Valve Removal Tool (995-08)
- #41 Fast Rotating Stator (35-0579)

Warranty

• Five years

040 JERI					-		_		-	1		1		1	
Nozzle	nsi	anm	Radius	360°		270°	7	238°		192°		180°		173°	
1102210	p51	gpin	- Radius												
	40	6.0	47	0.30	0.26	0.40	0.35	0.46	0.39	0.57	0.49	0.60	0.52	0.63	0.54
	50	6.7	50	0.30	0.26	0.40	0.34	0.45	0.39	0.56	0.49	0.60	0.52	0.62	0.54
40	60	7.3	52	0.30	0.26	0.40	0.35	0.45	0.39	0.56	0.49	0.60	0.52	0.62	0.54
	70	8.0	53	0.32	0.27	0.42	0.36	0.48	0.41	0.60	0.52	0.63	0.55	0.66	0.57
	80	8.6	54	0.33	0.28	0.44	0.38	0.50	0.43	0.62	0.53	0.66	0.57	0.68	0.59
	40	9.5	48	0.34	0.27	0.45	0.37	0.51	0.44	0.84	0.55	0.88	0.37	0.70	0.81
	50	10.2	53	0.40	0.35	0.54	0.47	0.61	0.58	0.76	0.60	0.81	0.70	0.84	0.73
	60	11.0	54	0.42	0.36	0.56	0.48	0.63	0.55	0.79	0.68	0.84	0.73	0.87	0.76
41	70	11.9	55	0.44	0.38	0.58	0.50	0.66	0.57	0.82	0.71	0.87	0.76	0.91	0.79
	80	12.7	56	0.45	0.39	0.60	0.52	0.68	0.59	0.85	0.73	0.90	0.78	0.94	0.81
	90	13.4	57	0.46	0.40	0.61	0.53	0.69	0.60	0.86	0.74	0.92	0.79	0.95	0.83
	40	12.0	52	0.49	0.43	0.66	0.57	0.75	0.65	0.93	0.80	0.99	0.85	1.03	0.89
	50	12.9	55	0.47	0.41	0.63	0.55	0.72	0.62	0.89	0.77	0.95	0.82	0.99	0.85
42	70	14.0	57	0.50	0.43	0.66	0.57	0.75	0.65	0.93	0.81	1.01	0.87	1.03	0.89
	80	15.8	58	0.50	0.44	0.69	0.50	0.70	0.68	0.75	0.85	1.04	0.07	1.03	0.71
	90	16.8	58	0.56	0.48	0.74	0.64	0.84	0.73	1.04	0.90	1.11	0.96	1.16	1.00
	40	13.2	56	0.47	0.41	0.62	0.54	0.71	0.61	0.88	0.76	0.94	0.81	0.97	0.84
	50	14.5	59	0.46	0.40	0.62	0.53	0.70	0.61	0.87	0.75	0.93	0.80	0.96	0.83
13	60	15.7	59	0.50	0.43	0.67	0.58	0.76	0.66	0.94	0.82	1.00	0.87	1.04	0.83
43	70	17.0	61	0.51	0.44	0.68	0.59	0.77	0.67	0.96	0.83	1.02	0.88	1.06	0.92
	80	18.3	63	0.51	0.44	0.68	0.59	0.77	0.67	0.96	0.83	1.03	0.89	1.07	0.92
	90	19.4	64	0.53	0.46	0.70	0.61	0.80	0.69	0.99	0.86	1.05	0.91	1.10	0.95
	40 50	10./	55	0.61	0.53	0.82	0.71	0.93	0.80	1.15	1.00	1.23	1.06	1.28	1.11
	60	19.9	61	0.57	0.50	0.78	0.88	0.87	0.75	1.08	0.74	1.15	1.00	1.20	1.03
44	70	21.9	63	0.61	0.53	0.82	0.71	0.93	0.80	1.15	1.00	1.23	1.06	1.28	1.11
	80	23.4	65	0.62	0.53	0.82	0.71	0.93	0.81	1.16	1.00	1.23	1.07	1.28	1.11
	90	25.0	67	0.62	0.54	0.82	0.71	0.94	0.81	1.16	1.01	1.24	1.07	1.29	1.12
			Dedius		_		_		_						
Nozzla	nci	anm	Radius	148°		127°		108°		90°	· 🔺	60°	· 🔺	45°	
Nozzle	psi	gpm	Radius	148°		127°		108°		90°		60°		45°	
Nozzle	psi 40	gpm 6.0	Radius	148° 0.73	0.64	127° .85	0.74	108°	0.87	90°	▲ ■ 1.05	60°	1.57	45°	2.09
Nozzle	psi 40 50	gpm 6.0 6.7	Radius 47 50	148° 0.73 0.72	0.64 0.63	127° 0.85 0.84	0.74	108° 1.01 0.99	0.87 0.86	90° 1.21 1.19	1.05 1.03	60°	1.57 1.55	45°	2.09 2.06
Nozzle 40	psi 40 50 60	gpm 6.0 6.7 7.3	Radius 47 50 52	148° 0.73 0.72 0.73	0.64 0.63 0.63	127° A 0.85 0.84 0.85	0.74 0.73 0.74	108° 1.01 0.99 1.00	0.87 0.86 0.75	90° 1.21 1.19 1.20	1.05 1.03 1.04	60° 1.81 1.79 1.80	1.57 1.55 1.56	45° 2.42 2.38 2.40	2.09 2.06 2.08
Nozzle 40	psi 40 50 60 70	gpm 6.0 6.7 7.3 8.0	Radius 47 50 52 53	148° 0.73 0.72 0.73 0.77 0.77	0.64 0.63 0.63 0.67	127° 0.85 0.84 0.85 0.90 0.90	0.74 0.73 0.74 0.78	108°	0.87 0.86 0.75 0.91	90° 1.21 1.19 1.20 1.27 1.21	1.05 1.03 1.04 1.10	60°	1.57 1.55 1.56 1.65	45° 2.42 2.38 2.40 2.53	2.09 2.06 2.08 2.19
Nozzle 40	psi 40 50 60 70 80	gpm 6.0 6.7 7.3 8.0 8.6 8.2	Radius 47 50 52 53 54 54	148° 0.73 0.72 0.73 0.77 0.80 0.82	0.64 0.63 0.63 0.67 0.69	127° 0.85 0.84 0.85 0.90 0.93 0.94	0.74 0.73 0.74 0.78 0.80 0.82	108° 1.01 0.99 1.00 1.05 1.09 1.12	0.87 0.86 0.75 0.91 0.95	90° 1.21 1.19 1.20 1.27 1.31 1.25	1.05 1.03 1.04 1.10 1.14	60° ▲ 1.81 1.79 1.80 1.90 1.97 2.02	1.57 1.55 1.56 1.65 1.70	45° 2.42 2.38 2.40 2.53 2.62 2.71	2.09 2.06 2.08 2.19 2.27 2.27
Nozzle 40	psi 40 50 60 70 80 90 60	gpm 6.0 6.7 7.3 8.0 8.6 9.2	Radius 47 50 52 53 54 55 48	148° 0.73 0.72 0.73 0.77 0.80 0.82 111	0.64 0.63 0.63 0.67 0.69 0.71	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30	0.74 0.73 0.74 0.78 0.80 0.83 112	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53	0.87 0.86 0.75 0.91 0.95 0.98 1 32	90° 1.21 1.19 1.20 1.27 1.31 1.35 1.83	1.05 1.03 1.04 1.10 1.14 1.17 1.59	60° ▲ 1.81 1.79 1.80 1.90 1.97 2.03 2.75	1.57 1.55 1.56 1.65 1.70 1.76 2.38	45° 2.42 2.38 2.40 2.53 2.62 2.71 3.67	2.09 2.06 2.08 2.19 2.27 2.34 3.18
Nozzle 40	psi 40 50 60 70 80 90 40 50	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2	Radius 47 50 52 53 54 55 48 53	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.11 0.98	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16	90° ▲ 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40		■ 1.57 1.55 1.56 1.65 1.70 1.76 2.38 2.10	45° ▲ 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80
40	psi 40 50 60 70 80 90 40 50 60	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0	Radius 47 50 52 53 54 55 48 53 54	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.11 0.98 1.02	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.88	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.19	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21	90° ▲ 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.68	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45	60° ▲ 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.42 2.52	1.57 1.55 1.56 1.65 1.70 1.76 2.38 2.10 2.18	45° ▲ 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91
40	psi 40 50 60 70 80 90 40 50 60 70	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9	Radius 47 50 52 53 54 55 48 55 54 53 54 55	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.11 0.98 1.02 1.06	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.88 0.92	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.19 1.24	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26	90° ▲ 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.68 1.75	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52	60° ▲ 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.42 2.52 2.62	1.57 1.55 1.56 1.65 1.70 1.76 2.38 2.10 2.18 2.27	45° ▲ 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03
40 41	psi 40 50 60 70 80 90 40 50 60 70 80	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7	Radius 47 50 52 53 54 55 48 55 54 55 54 55 56	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.11 0.98 1.02 1.06 1.09	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.85 0.88 0.92 0.95	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.19 1.24 1.27	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10	108° 1.01 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.50	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30	90° ▲ 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.80	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56	60° ▲ 1.81 1.79 1.90 1.90 1.97 2.03 2.75 2.42 2.52 2.62 2.70	1.57 1.55 1.55 1.65 1.70 1.76 2.38 2.10 2.18 2.27 2.34	45° ▲ 2.42 2.38 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12
40 41	psi 40 50 60 70 80 90 40 50 60 70 80 90	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4	Radius 47 50 52 53 54 55 48 53 54 55 54 55 56 56 57	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.11 0.98 1.02 1.06 1.09 1.11	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.88 0.92 0.95 0.97	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.19 1.24 1.27 1.30	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.50 1.53	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32	90° ▲ 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.80 1.83	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.59	60° ▲ 1.81 1.79 1.90 1.90 1.97 2.03 2.75 2.42 2.52 2.62 2.70 2.75	1.57 1.55 1.55 1.65 1.70 1.76 2.38 2.10 2.10 2.18 2.27 2.34 2.38	45° ▲ 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.60	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18
40 41	psi 40 50 60 70 80 90 40 50 60 70 80 90 90	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.0	Radius 47 50 53 53 54 55 48 53 54 55 55 55 55 55 57 52	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.11 0.98 1.02 1.06 1.09 1.11 1.20 1.11	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.85 0.88 0.92 0.95 0.97 1.04	127° 0.85 0.84 0.90 0.93 0.96 1.30 1.14 1.27 1.30 1.40 1.40	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.21	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.50 1.53 1.64	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.42	90° 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.80 1.83 1.97 1.80	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.59 1.71	60° ▲ 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.42 2.52 2.62 2.70 2.75 2.96	1.57 1.55 1.56 1.65 1.70 2.38 2.10 2.18 2.27 2.34 2.38 2.56	45° ▲ 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.67 3.95	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18 3.42 3.42
40 41	psi 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.0 12.9	Radius 47 50 52 53 54 55 48 53 54 55 56 56 57 52 55 52 55	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.11 0.98 1.02 1.06 1.09 1.11 1.20 1.15 1.01	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.88 0.92 0.95 0.97 1.04 1.00 4.05	127° 0.85 0.84 0.90 0.93 0.96 1.30 1.14 1.27 1.30 1.40 1.34 (0)	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.16 4.22	108° 100° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.50 1.53 1.64 1.58 1.58	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.42 1.37	90° ▲ 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.80 1.83 1.97 1.90 1.90	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.59 1.71 1.64	60° ▲ 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.42 2.52 2.62 2.75 2.42 2.75 2.42 2.52 2.62 2.75 2.96 2.85 2.85	1.57 1.55 1.56 1.65 1.70 2.38 2.10 2.18 2.27 2.34 2.38 2.56 2.46 2.46	45° ▲ 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.60 3.67 3.79 3.79 3.79	2.09 2.06 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18 3.42 3.29 2.24
40 41 42	psi 40 50 60 70 80 40 50 60 70 80 70 80 90 40 50 60 70	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.0 12.9 14.0	Radius 47 50 52 53 54 55 48 53 54 55 55 55 55 55 55 55 55 55	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.01 1.02 1.06 1.09 1.11 1.20 1.15 1.21 1.22	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.88 0.92 0.95 0.97 1.04 1.00 1.05	127° 0.85 0.84 0.90 0.93 0.96 1.30 1.14 1.27 1.30 1.40 1.34 1.40 1.42 1.42	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.10 1.12 1.21 1.16 1.22 1.23	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.50 1.53 1.64 1.58 1.65 1.65 1.65	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.42 1.37 1.43	90° ▲ 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.80 1.83 1.97 1.90 1.99 2.01	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.59 1.71 1.64 1.72	60° ▲ 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.42 2.52 2.62 2.70 2.75 2.96 2.85 2.98 2.98 2.92	1.57 1.55 1.56 1.65 1.70 1.76 2.38 2.10 2.18 2.27 2.34 2.34 2.34 2.56 2.56 2.46 2.58	45° ▲ 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.60 3.67 3.95 3.79 3.97 4.02	2.09 2.06 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18 3.42 3.29 3.42 3.29 3.44
Nozzle 40 41 42	psi 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 80 80 90 80 90 80 90 80 90 80 90 80 80 80 80 80 80 80 80 80 8	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.0 12.9 14.0 14.7 15.8	Radius 47 50 52 53 54 55 48 53 54 55 56 57 52 55 56 57 58	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.01 1.02 1.06 1.09 1.11 1.20 1.15 1.21 1.22 1.27	0.64 0.63 0.63 0.67 0.71 0.96 0.85 0.88 0.92 0.95 0.97 1.04 1.00 1.05 1.06	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.27 1.30 1.40 1.34 1.40 1.42 1.42 1.48	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.16 1.22 1.23 1.28	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.50 1.53 1.64 1.58 1.65 1.68 1.76	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.42 1.37 1.43 1.445	90° ▲ 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.80 1.83 1.97 1.90 1.99 2.01 2.09	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.59 1.71 1.64 1.72 1.74 1.81	60° ▲ 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.42 2.52 2.62 2.70 2.75 2.96 2.85 2.98 3.02 3.13	1.57 1.55 1.56 1.65 1.70 1.76 2.38 2.10 2.18 2.27 2.34 2.38 2.56 2.46 2.58 2.46 2.58 2.61 2.71	45° ▲ 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.60 3.67 3.79 3.79 3.79 3.79 4.03 4.18	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18 3.42 3.29 3.44 3.42 3.44 3.42
Nozzle 40 41 42	psi 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.0 12.9 14.0 14.7 15.8 16.8	Radius 47 50 52 53 54 55 48 53 54 55 56 57 52 55 56 57 58	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.01 0.98 1.02 1.06 1.09 1.11 1.20 1.15 1.21 1.22 1.27 1.35	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.88 0.92 0.95 0.97 1.04 1.00 1.05 1.06 1.10 1.17	127° ▲ 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.19 1.24 1.27 1.30 1.40 1.34 1.40 1.34 1.40 1.42 1.48 1.57	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.16 1.22 1.23 1.28 1.36	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.50 1.53 1.64 1.58 1.65 1.68 1.74 1.85	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.42 1.37 1.43 1.445 1.51 1.60	90° ▲ 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.80 1.83 1.97 1.90 1.97 1.90 1.97 2.01 2.09 2.22	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.59 1.71 1.64 1.72 1.74 1.81	60° ▲ 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.42 2.52 2.62 2.70 2.75 2.96 2.85 2.98 3.02 3.13 3.33	1.57 1.55 1.56 1.65 1.70 1.76 2.38 2.10 2.18 2.27 2.34 2.38 2.56 2.46 2.58 2.61 2.71 2.89	45° ▲ 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.60 3.67 3.95 3.79 3.79 3.79 4.03 4.18 4.44	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18 3.42 3.29 3.44 3.49 3.44 3.49 3.85
40 41 42	psi 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.0 14.0 14.7 15.8 16.8 13.2	Radius 47 50 52 53 54 55 48 55 56 57 52 55 56 57 58 58 58 56 57 58 58 56 57 58 58 56 57 58 58 56 57 58 58 56 57 58 58 56 57 58 58 56 57 58 58 58 56 57 58 58 58 56 57 58 58 58 58 58 56 57 58 58 58 58 58 58 58 58 58 58 58 58 58	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.11 0.98 1.02 1.06 1.09 1.10 1.10 1.15 1.21 1.22 1.27 1.35 1.14	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.85 0.88 0.92 0.95 0.97 1.04 1.00 1.05 1.06 1.10 1.17 0.98	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.40 1.24 1.27 1.30 1.40 1.34 1.40 1.34 1.40 1.42 1.48 1.57 1.32	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.16 1.22 1.23 1.28 1.36 1.15	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.50 1.53 1.64 1.58 1.65 1.68 1.74 1.85 1.56	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.42 1.37 1.43 1.445 1.51 1.60 1.35	90° 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.80 1.83 1.62 1.68 1.75 1.80 1.83 1.97 1.90 1.97 2.01 2.09 2.22 1.87	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.59 1.71 1.64 1.72 1.74 1.81 1.92 1.62	60° ▲ 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.75 2.42 2.52 2.62 2.70 2.75 2.96 2.85 2.98 3.02 3.13 3.33 2.81	1.57 1.55 1.56 1.65 1.70 1.76 2.38 2.10 2.18 2.27 2.34 2.38 2.56 2.46 2.58 2.46 2.58 2.61 2.71 2.89 2.43	45° ▲ 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.67 3.79 3.79 3.79 3.79 4.03 4.18 4.44 3.74	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18 3.42 3.29 3.44 3.49 3.62 3.85 3.24
40 41 42	psi 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 40 50	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.9 14.0 14.7 15.8 16.8 13.4 14.5	Radius 47 50 52 53 54 55 48 55 56 57 52 55 56 57 52 55 56 57 58 58 58 58 58 58 58 59	148° 0.73 0.72 0.77 0.80 0.82 1.11 0.98 1.02 1.06 1.09 1.11 1.20 1.15 1.21 1.22 1.27 1.35 1.14 1.13	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.88 0.92 0.95 0.97 1.04 1.00 1.05 1.06 1.10 1.17 0.98 0.97	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.19 1.24 1.27 1.30 1.40 1.34 1.40 1.34 1.40 1.42 1.48 1.57 1.32 1.31	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.16 1.22 1.23 1.28 1.36 1.15 1.14	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.53 1.54 1.56 1.54	0.87 0.87 0.91 0.95 0.98 1.32 1.32 1.32 1.32 1.30 1.32 1.42 1.37 1.43 1.445 1.51 1.60 1.35 1.34	90° 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.80 1.83 1.97 1.90 1.97 2.01 2.09 2.22 1.87 1.85	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.59 1.71 1.64 1.72 1.74 1.81 1.92 1.62 1.60	60° 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.62 2.70 2.75 2.62 2.70 2.75 2.85 2.96 3.02 3.13 3.33 2.81 2.78	1.57 1.55 1.56 1.65 1.70 1.76 2.38 2.10 2.18 2.27 2.34 2.38 2.56 2.46 2.58 2.46 2.58 2.61 2.71 2.89 2.43 2.43	45° 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.60 3.67 3.79 3.79 3.79 4.03 4.18 4.44 3.71	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18 3.42 3.29 3.44 3.49 3.62 3.84 3.82 3.24 3.21
40 41 42	psi 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.9 14.0 14.7 15.8 16.8 13.2 14.5 15.7	Radius 47 50 52 53 54 55 48 55 48 55 56 57 52 55 56 57 52 56 57 58 58 58 56 59 59 59	148° 0.73 0.72 0.77 0.80 0.82 1.11 0.98 1.02 1.06 1.09 1.11 1.20 1.15 1.21 1.22 1.27 1.35 1.14 1.13 1.22	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.85 0.85 0.92 0.95 0.97 1.04 1.00 1.05 1.06 1.10 1.17 0.98 0.97 1.06	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.27 1.30 1.40 1.34 1.40 1.34 1.40 1.34 1.40 1.42 1.32 1.31 1.42	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.16 1.22 1.23 1.28 1.36 1.15 1.14 1.23	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.53 1.54 1.56 1.54 1.54 1.67	0.87 0.87 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.42 1.37 1.43 1.445 1.51 1.60 1.35 1.34 1.45	90° 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.62 1.68 1.75 1.80 1.83 1.97 1.90 1.99 2.01 2.09 2.22 1.87 1.85 2.01	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.59 1.71 1.64 1.72 1.74 1.81 1.92 1.62 1.60 1.74	60° 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.42 2.52 2.62 2.70 2.75 2.96 2.85 2.98 3.02 3.13 3.33 2.81 2.78 3.01	1.57 1.55 1.56 1.65 1.70 1.76 2.38 2.10 2.18 2.27 2.34 2.38 2.56 2.46 2.58 2.46 2.58 2.61 2.71 2.89 2.43 2.43 2.41 2.61	45° 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.67 3.79 3.79 3.79 3.79 4.03 4.18 4.44 3.74 3.71 4.01	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18 3.42 3.29 3.44 3.49 3.62 3.85 3.24 3.21 3.47
40 41 42 43	psi 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.0 12.9 14.0 12.9 14.7 15.8 16.8 13.2 14.5 15.7 17.0	Radius 47 50 52 53 54 55 48 55 56 57 52 55 56 57 52 55 56 57 58 58 58 56 59 59 59 61	148° 0.73 0.72 0.77 0.80 0.82 1.11 0.98 1.02 1.06 1.09 1.10 1.10 1.15 1.21 1.22 1.27 1.35 1.14 1.13 1.22 1.23	0.64 0.63 0.63 0.67 0.71 0.96 0.85 0.85 0.85 0.92 0.95 0.97 1.04 1.00 1.05 1.06 1.10 1.17 0.98 0.97 1.06 1.07	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.19 1.24 1.27 1.30 1.40 1.40 1.40 1.42 1.48 1.57 1.32 1.31 1.42 1.44	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.16 1.22 1.23 1.28 1.36 1.15 1.14 1.23 1.25	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.53 1.64 1.58 1.65 1.68 1.74 1.85 1.54 1.54 1.54 1.67 1.69 1.69 1.54 1.65 1.65 1.54 1.54 1.65 1.65 1.64 1.54 1.65 1.64 1.54 1.65 1.64 1.65 1.54 1.67 1.69 1.69 1.69 1.69 1.69 1.69 1.69 1.69 1.69 1.60 1	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.42 1.37 1.43 1.445 1.51 1.60 1.35 1.34 1.45	90° ▲ 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.83 1.62 1.68 1.75 1.80 1.83 1.97 1.90 1.99 2.01 2.09 2.22 1.87 1.85 2.01 2.03	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.59 1.71 1.64 1.72 1.62 1.60 1.74 1.76	60° 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.42 2.52 2.62 2.75 2.96 2.85 2.98 3.02 3.13 3.33 2.81 2.78 3.01 3.05	1.57 1.55 1.56 1.65 1.70 2.38 2.10 2.18 2.27 2.34 2.38 2.56 2.46 2.58 2.46 2.58 2.46 2.58 2.41 2.71 2.89 2.43 2.41 2.61 2.64	45° ▲ 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.60 3.60 3.67 3.95 3.79 3.97 4.03 4.18 4.44 3.71 4.01 4.06	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18 3.42 3.29 3.44 3.49 3.62 3.85 3.24 3.24 3.24 3.24 3.24 3.24
Nozzle 40 41 42 43	psi 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.0 12.9 14.0 14.7 15.8 16.8 13.2 14.5 15.7 17.0 18.3	Radius 47 50 52 53 54 55 48 53 54 55 56 57 52 55 56 57 52 55 56 57 58 58 58 56 57 59 61 63	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.02 1.06 1.09 1.11 1.20 1.15 1.21 1.22 1.27 1.35 1.14 1.13 1.22 1.23 1.25	0.64 0.63 0.63 0.67 0.71 0.76 0.85 0.88 0.92 0.95 0.97 1.04 1.00 1.05 1.06 1.10 1.17 0.98 0.97 1.06 1.07 1.08	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.27 1.30 1.40 1.34 1.40 1.42 1.42 1.42 1.42 1.42 1.42 1.44 1.45	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.16 1.22 1.23 1.28 1.36 1.15 1.14 1.23 1.25 1.25	108° 108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.50 1.53 1.64 1.58 1.65 1.68 1.74 1.85 1.56 1.54 1.67 1.69 1.71	0.87 0.886 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.42 1.37 1.43 1.445 1.51 1.60 1.35 1.34 1.45 1.47 1.48	90° 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.83 1.62 1.83 1.62 1.83 1.97 1.90 1.99 2.01 2.09 2.22 1.87 1.85 2.03 2.05	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.59 1.71 1.64 1.72 1.74 1.74 1.72 1.74 1.72 1.60 1.74 1.74 1.76 1.78	60° ▲ 1.81 1.79 1.80 1.97 2.03 2.75 2.42 2.52 2.62 2.70 2.75 2.96 3.02 3.13 3.33 2.81 2.78 3.01 3.05 3.08	1.57 1.55 1.56 1.65 1.70 2.38 2.10 2.18 2.27 2.34 2.38 2.56 2.46 2.58 2.61 2.71 2.89 2.43 2.41 2.61 2.64 2.66	45° 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.60 3.60 3.67 3.95 3.79 3.97 4.03 4.18 4.44 3.71 4.01 4.06 4.10	2.09 2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.03 3.12 3.03 3.12 3.03 3.18 3.42 3.29 3.44 3.49 3.42 3.29 3.44 3.42 3.85 3.24 3.21 3.55
Nozzle 40 41 42 43	psi 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 12.7 14.0 12.9 14.0 12.9 14.0 12.9 14.0 12.9 14.0 12.5 15.8 16.8 13.2 14.5 15.7 17.3 19.4 14.5 15.7 17.0 18.3 19.4 17.5 18.0 18.0 19.5 19.7 19.5 19.5 19.7 19.7 19.5 19.7 19	Radius 47 50 52 53 54 55 48 53 54 55 56 57 52 55 56 57 52 55 56 57 58 58 58 58 56 59 59 61 63 64 57	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.02 1.06 1.09 1.11 1.20 1.15 1.21 1.22 1.27 1.35 1.14 1.13 1.22 1.23 1.25 1.28 1.28	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.88 0.92 0.95 0.97 1.04 1.00 1.05 1.06 1.10 1.17 0.98 0.97 1.06 1.10 1.17	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.19 1.24 1.27 1.30 1.40 1.34 1.40 1.42 1.48 1.57 1.32 1.31 1.42 1.44 1.45 1.49	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.16 1.22 1.23 1.28 1.36 1.15 1.14 1.23 1.25 1.25 1.25 1.25 1.29 1.25	108° 1.01 1.01 1.09 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.50 1.53 1.64 1.53 1.64 1.55 1.68 1.74 1.85 1.65 1.54 1.67 1.69 1.71 1.75 2.55 1.69 1.71 1.75 1.75 1.69 1.71 1.75 1.75 1.69 1.71 1.75 1.75 1.69 1.71 1.75 1.75 1.69 1.71 1.75 1.75 1.69 1.71 1.75 1.75 1.69 1.71 1.75 1.75 1.69 1.71 1.75 1.75 1.69 1.71 1.75 1.75 1.69 1.71 1.75 1.75 1.69 1.71 1.75 1.69 1.71 1.75 1.75 1.69 1.71 1.75 1.75 1.75 1.69 1.71 1.75 1.75 1.75 1.69 1.71 1.75 1.75 1.75 1.75 1.75 1.69 1.71 1.75 1	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.42 1.37 1.43 1.445 1.51 1.60 1.35 1.34 1.45 1.34 1.45 1.445	90° 1.21 1.19 1.20 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.80 1.83 1.97 1.90 1.99 2.01 2.09 2.22 1.87 1.85 2.01 2.03 2.05 2.11 2.11	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.57 1.71 1.64 1.72 1.74 1.74 1.72 1.74 1.74 1.72 1.62 1.74 1.74 1.74 1.74 1.74 1.74 1.74 1.75 1.74 1.74 1.75 1.74 1.75 1.74 1.75 1.74 1.75 1.75 1.77 1.76 1.78 1.78 1.78 1.78 1.78 1.78 1.78 1.78 1.78 1.78 1.78 1.78 1.78 1.78 1.78 1.78 1.78 1.58 1.57 1.57 1.58 1.58 1.58 1.78 1.78 1.78 1.78 1.58 1.57 1.58	60° ▲ 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.42 2.52 2.62 2.70 2.75 2.96 3.02 3.13 3.33 2.81 2.78 3.01 3.05 3.08 3.16	1.57 1.55 1.56 1.65 1.70 1.76 2.38 2.10 2.18 2.27 2.34 2.27 2.34 2.56 2.46 2.58 2.61 2.71 2.89 2.43 2.41 2.61 2.64 2.64 2.64 2.74	45° 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.60 3.67 3.95 3.79 3.97 4.03 4.18 4.44 3.74 3.71 4.01 4.06 4.10 4.21 5.1 5.1 5.1 5.1 5.1 5.1 5.1 5.	2.09 2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.03 3.12 3.18 3.42 3.29 3.44 3.42 3.29 3.44 3.42 3.29 3.44 3.42 3.21 3.42 3.22 3.55 3.55 3.55 3.55
Nozzle 40 41 42 43	psi 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.0 12.9 14.0 12.9 14.0 14.7 15.8 13.2 14.5 15.7 17.3 19.4 16.7 17.3 17.3 17.3 17.3 17.3 17.3 17.3 17.3 17.3 17.3 17.3 17.3 17.3 17.5 17	Radius 47 50 52 53 54 55 48 53 54 55 56 57 52 55 56 57 58 58 56 59 59 59 61 63 64 55	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.02 1.06 1.09 1.11 1.20 1.15 1.21 1.22 1.27 1.35 1.14 1.13 1.22 1.25 1.28 1.49 1.49	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.88 0.92 0.95 0.97 1.04 1.00 1.05 1.06 1.10 1.17 0.98 0.97 1.06 1.10 1.17 0.98 0.97 1.06 1.07 1.08 1.11 1.29	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.27 1.30 1.42 1.40 1.34 1.40 1.42 1.48 1.57 1.32 1.31 1.42 1.44 1.45 1.44 1.45 1.49 1.74 1.49	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.16 1.22 1.23 1.23 1.36 1.15 1.14 1.23 1.25 1.25 1.25 1.29 1.50 1.11	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.50 1.53 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.65 1.54 1.67 1.69 1.71 1.75 2.04 1.61 1.62 1.62 1.69 1.71 1.75 2.04 1.61 1.62 1.62 1.69 1.71 1.75 2.04 1.61 1.62 1.62 1.65 1.69 1.71 1.75 2.04 1.61 1.62 1.62 1.65 1.69 1.71 1.75 2.04 1.61 1.62 1.62 1.62 1.65 1.65 1.69 1.71 1.75 2.04 1.62 1	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.42 1.37 1.43 1.445 1.51 1.51 1.60 1.35 1.34 1.45 1.47 1.48 1.52 1.77 1.47	90° 1.21 1.21 1.20 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.80 1.83 1.62 1.83 1.62 1.83 1.97 1.90 1.97 2.01 2.09 2.22 1.87 1.85 2.01 2.03 2.05 2.11 2.46 2.22 1.87 2.22 1.87 2.03 2.05 2.11 2.46 2.22 1.87 2.22 1.87 2.22 1.87 2.03 2.05 2.11 2.46 2.22 1.87 2.22 1.87 2.03 2.05 2.11 2.46 2.22 1.87 2.22 1.87 2.03 2.05 2.11 2.46 2.22 1.87 2.22 1.87 2.03 2.05 2.11 2.46 2.22 1.87 2.22 1.87 2.03 2.05 2.11 2.46 2.22 1.87 2.22 1.87 2.03 2.05 2.11 2.46 2.22 1.87 2.22 2.11 2.46 2.22 2.25 2.11 2.26 2.26 2.26 2.27 2.26 2.27 2.	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.57 1.71 1.64 1.72 1.74 1.72 1.74 1.72 1.62 1.62 1.74 1.76 1.78 1.82 2.13 1.02	60° ▲ 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.42 2.52 2.62 2.70 2.75 2.96 2.85 2.98 3.02 3.13 3.33 2.81 2.78 3.01 3.05 3.08 3.16 3.68	1.57 1.55 1.56 1.65 1.70 1.76 2.38 2.10 2.18 2.27 2.34 2.58 2.56 2.46 2.58 2.61 2.61 2.43 2.43 2.43 2.41 2.61 2.64 2.64 2.64 2.64 2.64 2.64 2.64 2.64	45° 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.60 3.60 3.79 3.95 3.79 3.97 4.03 4.18 4.44 3.74 3.71 4.01 4.01 4.01 4.21 4.91 4.91 4.91	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18 3.42 3.29 3.44 3.42 3.29 3.44 3.42 3.29 3.44 3.42 3.21 3.42 3.21 3.42 3.21 3.55 3.65 3.65
Nozzle 40 41 42 43	psi 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.0 12.9 14.0 12.9 14.0 12.9 14.0 12.9 14.0 14.7 15.8 13.2 14.5 15.7 17.3 19.4 16.7 18.3 19.4 16.7 18.0 19.2 19.5 10.2 11.0 11.9 12.7 13.0 12.9 14.0 14.7 15.8 13.2 14.5 15.7 17.3 19.4 16.8 19.2 19.5 10.2 10.2 11.0 12.9 14.0 14.7 15.8 15.7 17.7 17.5 16.8 13.2 14.5 15.7 17.7 18.0 19.5 19.5 19.5 19.5 10.2 11.0 12.9 14.0 14.7 15.8 13.2 14.5 15.7 17.7 18.0 18.5 19	Radius 47 50 52 53 54 55 48 53 54 55 56 57 52 55 56 57 52 55 56 57 58 58 56 57 59 61 63 64 55 60 60 41	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.01 1.02 1.06 1.09 1.11 1.20 1.15 1.21 1.22 1.27 1.35 1.14 1.13 1.22 1.23 1.25 1.28 1.49 1.40 1.40 1.40	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.88 0.92 0.95 0.97 1.04 1.00 1.05 1.06 1.10 1.17 0.98 0.97 1.06 1.10 1.17 0.98 0.97 1.06 1.107 1.08 1.11 1.29 1.21 1.25	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.27 1.30 1.40 1.34 1.40 1.34 1.40 1.42 1.48 1.57 1.32 1.31 1.42 1.44 1.45 1.44 1.45 1.49 1.74 1.63 1.49	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.16 1.22 1.23 1.28 1.36 1.15 1.14 1.25 1.25 1.25 1.29 1.50 1.41 1.44	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.50 1.53 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.64 1.55 1.65 1.54 1.55 1.69 1.71 1.75 2.04 1.91 1.99 1	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.42 1.37 1.43 1.445 1.51 1.51 1.60 1.35 1.34 1.45 1.51 1.47 1.48 1.52 1.77 1.66 1.74	90° 1.21 1.21 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.80 1.83 1.62 1.68 1.75 1.80 1.83 1.97 1.90 1.97 1.90 1.97 2.01 2.09 2.22 1.87 1.85 2.01 2.03 2.05 2.11 2.46 2.30 2.29 2.20 2.	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.59 1.56 1.59 1.71 1.64 1.72 1.74 1.81 1.92 1.62 1.60 1.74 1.78 1.82 2.13 1.99 2.94	60° ▲ 1.81 1.79 1.80 1.97 2.03 2.75 2.42 2.52 2.62 2.70 2.75 2.96 2.85 2.98 3.02 3.13 3.33 2.81 2.78 3.01 3.05 3.08 3.16 3.45	 ■ 1.57 1.55 1.56 1.65 1.70 1.76 2.38 2.10 2.18 2.27 2.34 2.38 2.56 2.46 2.58 2.61 2.71 2.89 2.43 2.41 2.61 2.64 2.64 2.64 2.64 2.64 2.64 2.64 2.64 2.74 3.19 2.99 2.99 2.99 	45° ▲ 2.42 2.42 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.60 3.67 3.95 3.79 3.97 4.03 4.18 4.44 3.74 3.71 4.01 4.06 4.10 4.21 4.91 4.60 4.74	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18 3.42 3.29 3.44 3.42 3.29 3.44 3.49 3.62 3.24 3.21 3.24 3.21 3.47 3.55 3.65 4.25 3.98
Nozzle 40 41 42 43 44	psi 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.0 12.9 14.0 12.9 14.0 12.9 14.0 12.7 15.8 13.2 14.5 15.7 17.0 18.6 19.2 19.5 10.2 14.7 15.8 16.7 17.3 19.4 16.7 18.6 19.9 21	Radius 47 50 52 53 54 55 48 53 54 55 56 57 52 55 56 57 52 55 56 57 58 58 58 58 58 58 59 61 63 64 55 60 61 63	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.11 0.98 1.02 1.06 1.09 1.10 1.15 1.21 1.22 1.27 1.35 1.14 1.13 1.22 1.23 1.23 1.25 1.28 1.49 1.49	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.88 0.92 0.95 0.97 1.04 1.00 1.05 1.06 1.10 1.17 0.98 0.97 1.06 1.10 1.17 1.08 1.07 1.08 1.11 1.29 1.21 1.25 1.29	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.27 1.30 1.44 1.27 1.30 1.40 1.34 1.40 1.34 1.40 1.32 1.41 1.42 1.42 1.42 1.42 1.42 1.42 1.42 1.42 1.42 1.42 1.44 1.45 1.44 1.45 1.74 1.68 1.74	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.16 1.22 1.23 1.28 1.36 1.15 1.14 1.25 1.25 1.25 1.29 1.50 1.41 1.46 1.53	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.50 1.53 1.64 1.58 1.64 1.58 1.64 1.74 1.56 1.56 1.54 1.56 1.54 1.57 1.69 1.71 1.75 2.04 1.91 1.98 2.04 2.04 2.04 1.98 1.98 1	0.87 0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.42 1.37 1.43 1.445 1.51 1.51 1.51 1.43 1.445 1.51 1.34 1.45 1.35 1.34 1.47 1.48 1.52 1.77 1.66 1.71 1.84	90° 1.21 1.21 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.80 1.83 1.62 1.68 1.75 1.80 1.83 1.97 1.90 1.97 2.01 2.09 2.01 2.09 2.01 2.05 2.11 2.46 2.38 2.45 	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.55 1.56 1.59 1.56 1.59 1.56 1.59 1.64 1.72 1.64 1.72 1.64 1.72 1.64 1.72 1.62 1.60 1.74 1.78 1.82 2.13 1.99 2.06 2.76	60° 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.42 2.52 2.62 2.70 2.75 2.96 2.85 2.98 3.02 3.13 3.33 2.81 2.78 3.01 3.05 3.08 3.16 3.68 3.45 3.57 3.68	1.57 1.55 1.56 1.65 1.70 1.76 2.38 2.10 2.18 2.27 2.34 2.38 2.27 2.34 2.38 2.46 2.58 2.46 2.58 2.46 2.58 2.41 2.71 2.41 2.64 2.41 2.64 2.64 2.64 2.74 3.19 2.99 3.09 3.48	45° ▲ 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.67 3.95 3.79 3.79 3.79 3.79 3.79 4.03 4.18 4.44 3.74 3.71 4.01 4.06 4.10 4.21 4.91 4.60	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18 3.42 3.29 3.44 3.42 3.29 3.44 3.49 3.65 3.24 3.21 3.47 3.55 3.55 3.65 4.25 3.98 4.12 5.55
Nozzle 40 41 42 43 44	psi 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.0 14.7 15.8 16.8 14.5 15.7 17.0 18.5 19.4 16.7 18.6 19.9 21.9 23.4	Radius 47 50 52 53 54 55 48 55 56 57 52 55 56 57 58 58 58 58 58 59 61 63 59 61 63 64 55 60 61 63	148° 0.73 0.72 0.73 0.77 0.80 0.82 1.11 0.98 1.02 1.06 1.09 1.11 1.20 1.15 1.21 1.22 1.27 1.35 1.14 1.13 1.22 1.23 1.25 1.28 1.49 1.40 1.45 1.49 1.50	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.88 0.92 0.95 0.97 1.04 1.00 1.05 1.06 1.10 1.17 0.98 0.97 1.06 1.10 1.07 1.08 1.07 1.08 1.11 1.29 1.21 1.25 1.29 1.30	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.27 1.30 1.42 1.40 1.34 1.40 1.42 1.48 1.57 1.32 1.31 1.42 1.44 1.45 1.57 1.32 1.31 1.42 1.44 1.45 1.45 1.45 1.74 1.68 1.74 1.74	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.16 1.22 1.23 1.28 1.36 1.15 1.14 1.25 1.25 1.29 1.50 1.41 1.46 1.53 1.51	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.50 1.53 1.64 1.58 1.65 1.68 1.74 1.85 1.56 1.54 1.56 1.54 1.56 1.54 1.75 2.04 1.91 2.04 2.05 .05	0.87 0.87 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.42 1.37 1.43 1.445 1.51 1.60 1.35 1.34 1.445 1.51 1.60 1.35 1.34 1.45 1.47 1.48 1.52 1.77 1.66 1.71 1.84 1.78	90° 1.21 1.21 1.20 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.80 1.83 1.62 1.68 1.75 1.80 1.83 1.97 1.90 1.97 2.01 2.09 2.22 1.87 1.85 2.01 2.03 2.05 2.11 2.46 2.	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.59 1.71 1.64 1.72 1.74 1.81 1.92 1.62 1.60 1.74 1.76 1.78 1.82 2.13 1.99 2.06 2.76 2.13	60° 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.62 2.70 2.75 2.62 2.70 2.75 2.96 2.85 2.98 3.02 3.13 3.33 2.81 2.78 3.01 3.05 3.08 3.16 3.68 3.70	1.57 1.55 1.56 1.65 1.70 1.76 2.38 2.10 2.18 2.27 2.34 2.38 2.61 2.71 2.58 2.64 2.58 2.64 2.58 2.61 2.71 2.43 2.41 2.64 2.64 2.64 2.64 2.64 2.64 2.64 2.64	45° 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.50 3.60 3.67 3.95 3.79 3.79 3.97 4.03 4.18 4.44 3.74 3.71 4.01 4.06 4.10 4.21 4.91 4.93	2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18 3.42 3.29 3.44 3.49 3.62 3.85 3.24 3.21 3.47 3.52 3.55 4.25 3.98 4.12 4.25
Nozzle 40 41 42 43 44	psi 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 40 50 60 70 80 90 60 70	gpm 6.0 6.7 7.3 8.0 8.6 9.2 9.5 10.2 11.0 11.9 12.7 13.4 12.0 12.9 14.0 12.9 14.7 15.8 16.8 13.2 14.5 15.7 17.0 18.3 19.4 16.7 18.6 19.9 21.9 23.4 19.5 19.5 10.2 10.7 12.9 14.7 15.8 16.8 13.2 14.7 15.7 17.0 18.3 19.4 19.7 19.4 19.7 21.9 21.9 21.9 21.9 21.9 21.9 21.9 21.9 21.9 21.9 21.9 21.9 23.0 21.9 21.9 23.0 25	Radius 47 50 52 53 54 55 48 55 56 57 52 55 56 57 58 58 58 58 59 61 63 59 61 63 65 67	148° 0.73 0.72 0.77 0.80 0.82 1.11 0.98 1.02 1.06 1.09 1.11 1.20 1.15 1.21 1.22 1.27 1.35 1.14 1.13 1.22 1.23 1.25 1.28 1.49 1.40 1.45 1.50	0.64 0.63 0.63 0.67 0.69 0.71 0.96 0.85 0.88 0.92 0.95 0.97 1.04 1.00 1.05 1.06 1.10 1.17 0.98 0.97 1.06 1.10 1.17 0.98 0.97 1.06 1.10 1.17 1.29 1.21 1.25 1.29 1.30 1.30	127° 0.85 0.84 0.85 0.90 0.93 0.96 1.30 1.14 1.27 1.30 1.40 1.34 1.40 1.34 1.40 1.34 1.40 1.34 1.40 1.32 1.31 1.42 1.48 1.57 1.32 1.31 1.42 1.44 1.45 1.32 1.31 1.42 1.44 1.45 1.57 1.32 1.31 1.42 1.44 1.45 1.57 1.32 1.31 1.42 1.44 1.45 1.57 1.32 1.31 1.42 1.45 1.47 1.74 1.74 1.74 1.74 1.74 1.74 1.74	0.74 0.73 0.74 0.78 0.80 0.83 1.12 0.99 1.03 1.07 1.10 1.12 1.21 1.16 1.22 1.23 1.28 1.36 1.15 1.14 1.23 1.25 1.25 1.25 1.29 1.50 1.41 1.46 1.51 1.51	108° 1.01 0.99 1.00 1.05 1.09 1.13 1.53 1.34 1.40 1.46 1.53 1.64 1.53 1.64 1.53 1.64 1.55 1.64 1.54 1.98 2.04 2.05 2.06 2	0.87 0.86 0.75 0.91 0.95 0.98 1.32 1.16 1.21 1.26 1.30 1.32 1.43 1.445 1.51 1.60 1.35 1.34 1.45 1.47 1.48 1.52 1.77 1.66 1.71 1.84 1.78 1.79	90° 1.21 1.27 1.31 1.35 1.83 1.62 1.68 1.75 1.83 1.62 1.68 1.75 1.80 1.83 1.97 1.90 1.99 2.09 2.22 1.87 1.85 2.01 2.03 2.05 2.11 2.46 2.30 2.38 2.45 2.46 2.48 3.	1.05 1.03 1.04 1.10 1.14 1.17 1.59 1.40 1.45 1.52 1.56 1.59 1.71 1.64 1.72 1.62 1.60 1.74 1.81 1.92 1.60 1.74 1.78 1.82 2.13 1.99 2.06 2.76 2.13 2.15	60° 1.81 1.79 1.80 1.90 1.97 2.03 2.75 2.42 2.52 2.62 2.75 2.96 2.85 2.98 3.02 3.13 3.33 2.81 2.78 3.01 3.05 3.08 3.16 3.68 3.45 3.57 3.68 3.70 3.72	1.57 1.55 1.56 1.65 1.70 2.38 2.10 2.18 2.27 2.34 2.38 2.56 2.46 2.58 2.46 2.58 2.46 2.58 2.46 2.58 2.41 2.71 2.89 2.43 2.41 2.64 2.64 2.64 2.64 2.64 2.74 3.19 2.99 3.09 3.20 3.22	45° 2.42 2.38 2.40 2.53 2.62 2.71 3.67 3.23 3.36 3.60 3.67 3.95 3.79 3.97 4.03 4.18 4.44 3.74 3.71 4.01 4.06 4.10 4.21 4.60 4.76 4.91 4.95	2.09 2.09 2.06 2.08 2.19 2.27 2.34 3.18 2.80 2.91 3.03 3.12 3.18 3.42 3.29 3.44 3.29 3.42 3.29 3.44 3.49 3.62 3.85 3.24 3.24 3.24 3.25 3.55 3.55 3.55 3.55 3.55 3.98 4.12 4.25 3.98

A Precipitation rates are for triangular spacing, shown in inches per hour, calculated at 50% of diameter.

• Precipitation rates are for square spacing, shown in inches per hour, calculated at 50% of diameter, and the stated working pressure available at the base of the sprinkler. Radius shown in feet. Note: For the 640, differing arcs cannot be valved together.

T7 SERIES ROTORS

The 1" inlet Toro[®] T7 Series rotor is built rugged to withstand the performance and durability requirements of municipal/government, sports fields and large commercial settings. Driven by customer feedback, the T7 Series rotor has been designed and tested to ensure consistent performance and features a full 5" pop-up height, a visual top-of-rotor arc adjustment dial, and Smart Arc[™] Memory that resets the rotor's arc should it be changed due to vandalism or inexperienced users.

FEATURES & BENEFITS

Visual Arc Indication

Arc setting indicator on top of the rotor allows for easy wet or dry adjustments from 45°-360°.

High Efficiency Nozzles

Single port design ensures water is evenly distributed across the stream.

Vandal and Abuse Resistance

Smart Arc[™] memory safely returns the sprinkler to previously set arc if vandalized. An integrated slip clutch prevents the breaking and stripping of gears.

Design Solutions and Safety

Standard Check-O-Matic Seal prevents low head drainage, and a minimal 2.2" exposed rubber cover diameter reduces the potential for injuries on play areas.

Durability

Heavy-duty retract spring and wiper seal reduce the occurrence of stick-ups and seal leakage, while a waterlubricated gear drive contributes to long-term consistent performance.

Available

Scan for more information and additional Sports Fields and Grounds products.

Operational

- Radius capability:
- Low flow models—39'-56' - Standard models—46'-75'
- Flow rates:
- Low flow models—1.7-12.8 gpm - Standard models—6.6-30.6 gpm
- Operating pressure range: 40-100 psi
- Recommended operating pressure:
- 60-70 psi
- Inlet size: 1" female NPT
- Nozzle trajectory: 25°
- Arc adjustment: 45°-360° (unidirectional at 360°)

TANDARD NOZZI ES PERFORMANCE DATA

Dimensions

- Pop-up height (measured from
- top of cap to nozzle): 5"
- Body height: 8.8" • Body diameter: 2.7"
- Rubber cover diameter: 2.2"

Available Options

- Stainless steel riser
- Effluent lavender rubber cover

Warranty

- Five years

Nozzle	psi	Radius (ft)	gpm	Precip. Rate (in/hr)	Precip. Rate (in/hr)
	40	46	6.6	0.72	0.62
	50	47	7.4	0.75	0.65
	60	48	8.1	0.73	0.03
70	70	40	8.8	0.82	0.00
7.0	80	51	9.6	0.83	0.71
	90	52	10.3	0.85	0.72
	100	54	10.3	0.03	0.73
	40	47	7.4	0.00	0.66
	50	50	83	0.70	0.66
	60	51	8.7	0.76	0.64
9.0	70	52	9.4	0.70	0.00
7.0	80	54	9.9	0.80	0.69
	90	55	10.9	0.82	0.07
	100	56	11.5	0.02	0.71
	40	50	9.5	0.89	0.73
	50	51	11.6	0.07	0.77
	60	53	12.7	0.70	0.70
12.0*	70	54	13.8	0.71	0.83
12.0	80	55	14.7	0.70	0.05
	90	56	14.7	1.02	0.00
	100	57	14.5	1.02	0.00
	40	53	13.0	1.04	0.70
	50	56	15.0	1.00	0.72
	60	58	16.2	1.00	0.72
16.0	70	59	17.5	1.04	0.70
10.0	80	61	18.8	1.07	0.75
	90	62	20.0	1.10	0.75
	100	63	20.0	1.14	1.01
	40	53	16.0	1.17	1.01
	50	58	17.5	1.20	1.10
	60	60	19.5	1.22	1.05
20.0	70	61	20.6	1.21	1.00
20.0	80	65	20.0	1.20	1.07
	90	66	23.6	1.23	1.00
	100	67	24.8	1.25	1.00
	40	52	15.8	1.27	1 10
	50	60	17.5	1.09	0.95
	60	63	19.3	1 11	0.96
24 0	70	65	20.7	1 1 4	0.99
2	80	67	22.3	1 15	1.00
	90	68	23.8	1.20	1.04
	100	71	25.3	1.16	1.01
	40	55	18.7	1.42	1.23
	50	65	23.4	1.16	1.00
	60	71	23.6	1,05	0.91
27.0	70	72	25.8	1.10	0.95
	80	73	27.4	1.14	0.99
	90	74	291	1 18	1.02
	,,,	/ -	27.1	1.10	1.02

T7 ROTOR MODEL LIST

Model	Description
T7P-02	1" Rotor
T7P-02E	1" Rotor, Effluent rubber cover
T7P-02L	1" Rotor, Low Flow
T7P-02LE	1" Rotor, Low Flow, Effluent rubber cover
T7PSS-02	1" Stainless Steel Rotor
T7PSS-02E	1" Stainless Steel Rotor, Effluent rubber cover
T7PSS-02L	1" Stainless Steel Rotor, Low Flow
T7PSS-02LE	1" Stainless Steel Rotor, Low Flow, Effluent rubber cover

LOW FLOW NOZZLES PERFORMANCE DATA

Nozzle	psi	Radius (ft)	gpm	Precip. Rate (in/hr) 🔺	Precip. Rate (in/hr) 🔳
	40	39	1.7	0.25	0.22
	50	39	2.0	0.29	0.25
	60	40	2.2	0.30	0.26
2.0	70	40	2.4	0.33	0.28
	80	40	2.6	0.35	0.31
	90	41	2.7	0.36	0.31
	100	41	2.9	0.38	0.33
	40	39	2.4	0.36	0.31
	50	40	2.8	0.39	0.33
	60	41	3.1	0.41	0.36
3.0*	70	41	3.4	0.45	0.39
	80	42	3.6	0.46	0.40
	90	42	3.9	0.47	0.41
	100	43	4.1	0.49	0.42
	40	38	4.1	0.63	0.54
	50	41	4.7	0.62	0.53
	60	41	5.2	0.68	0.59
4.5	70	42	5.7	0.71	0.62
	80	42	6.1	0.77	0.66
	90	43	6.5	0.78	0.68
	100	43	6.9	0.83	0.72
	40	43	5.0	0.59	0.51
	50	46	5.7	0.59	0.51
	60	48	6.3	0.61	0.52
6.0	70	49	7.0	0.65	0.57
	80	49	7.4	0.68	0.59
	90	50	7.9	0.70	0.61
	100	50	8.4	0.74	0.64
	40	44	5.8	0.66	0.58
	50	46	6.7	0.70	0.60
	60	48	7.4	0.71	0.62
7.5	70	49	8.0	0.75	0.65
	80	50	8.8	0.78	0.67
	90	50	9.5	0.84	0.73
	100	52	10.0	0.81	0.70
	40	45	7.4	0.81	0.70
	50	49	8.5	0.78	0.68
	60	51	9.4	0.80	0.70
9.0	70	53	10.4	0.83	0.72
	80	55	11.3	0.83	0.72
	90	55	12.0	0.89	0.77
	100	56	12.8	0.90	0.78

[†] When the sprinkler is adjusted to 360°, it will be uni-directional in that direction of rotation (clockwise or counterclockwise) at the moment when the sprinkler was changed to 360° * Pre-installed nozzle. Data based on 180°.

Specifying Information—T7 Series Rotors

T7PXX-02XX												
Description	Description Optional Thread Optional											
T7P	XX	02	XX									
T7 Series Rotor	SS-Stainless Steel Riser	NPT Thread	E—Effluent L—Low Flow									
Example: A low flow T7 Series rotor with a Stainless Steel riser and Effluent rubber cover would be specified as: T7PSS-02LE												

TS90 SERIES ROTORS

For big open spaces, the Toro[®] TS90 provides unparalleled features and performance into a fully adjustable rotor. Designed for large turf areas, its radius of 53' to 95' is ideal for parks, sports fields, synthetic turf athletic fields and horse arenas. In addition, Toro patented TruJectory[™] allows for the fine tuning of nozzle spray height from 7-30° to ensure wind resistance and headto-head spacing.

FEATURES & BENEFITS

TruJectory[™] Adjustment from 7° to 30°

Fine tunes nozzle spray height, helps provide true head-tohead coverage, and compensates for windy conditions.

Part- and Full-Circle in One Sprinkler

No need to inventory multiple models or service parts

Back Nozzle Capable

Perfect for perimeter of sports fields. Provides the flexibility for fine-tuning any watering requirement.

Ratcheting Riser

Allows you to adjust the riser position in the body without disassembling. Simply pull up the riser and ratchet it to the precise position you want to water.

Three Nozzle Configuration

Provides better distribution uniformity, nozzle flexibility and system efficiency.

Constant-Velocity Drive

Provides reliable rotation speed – from sprinkler to sprinkler.

TurfCup[™] for Sports Fields

The optional TurfCup version seamlessly integrates into either natural grass or artificial turf sports fields, enhancing player safety, surface playability and field aesthetics.

Operational

- Radius: 53'-95' at 25° trajectory
- Flow Rate: 14.0-61.5 gpm
- Precipitation Rate: 0.6" per hour
- Arc: Full- and Part-circle in one
- Full-circle: 360° unidirectional rotation - Part-circle: 40°-330°
- Rotation Speed: 3 minutes ± 30 seconds (360°)
- Inlet: 1" female-threaded (NPT)
- Operating pressure range: 40-100 psi

Dimensions

- Body Height: 10"
- Overall Height: 12¹/2"
- Retracted Height: 8 1/2"
- Pop-Up Height: 4"
- Exposed Cap Diameter: 2¹/4"

Options Available

- Nozzle, #9 Main (102-4259)
- Effluent Cap Marker (118-0063)
- Main Nozzle Tool (995-99)
- Intermediate nozzle and TruJectory[™] tool (995-105)

Additional Features

- Full set of color-coded nozzles that thread directly into the nozzle port
- Rubber cover and below grade installation
- Check Valve standard maintains up to 10' elevation
- Nozzle options: nine main, three intermediate, one inner

TS90 SERIES MODEL LIST

Model	Description								
TS90TP-02-14	#3 Main Nozzle and Yellow Stator pre-installed (includes #1, #2, and #4 Main nozzles)								
TS90TP-02-58	#6 Main Nozzle and White Stator pre-installed (includes #5, #7, and #8 Main nozzles)								
TS90TP-02TC	#8 Main Nozzle, White Stator, and TurfCup pre- installed (includes #5, #6, and #7 Main nozzles)								

Warranty

• Five years

	Nozzle Set		50 psi		60	60 psi		70 psi		80 psi		90 psi		100 psi	
Number	Main/Intermediate	Stator	Radius (ft.)	Flow (gpm)	Radius (ft.)	Flow (gpm									
1	Yellow/Blue		53	14.0	54	15.2	55	16.4	55	17.4	54	18.5	56	19.4	
2	Blue/Red	102-1939	55	18.8	59	20.5	61	22.1	59	23.6	59	25.0	62	26.3	
3	Brown/Orange	Yellow	-	-	57	22.7	60	24.5	61	26.1	63	27.6	68	29.1	
4	Orange/Orange		-	-	-	-	74	32.7	80	35.1	81	37.0	82	38.9	
5	Green/Blue		-	-	-	-	-	-	79	37.7	82	39.9	84	41.8	
6	Gray/Blue	102-1940	-	-	-	-	-	-	82	39.6	86	41.9	87	44.1	
7	Black/Orange	White	-	-	-	-	-	-	80	43.6	87	46.2	84	48.6	
8	Red/Blue		-	-	-	-	-	-	86	48.5	88	51.4	88	54.1	
9	Beige/Blue	102-1941 White	-	-	-	-	-	-	85	55.1	91	58.3	95	61.6	

TS90TP NOZZLE PERFORMANCE DATA

Specifying Information—TS90 Series

TS90TP-02-XX									
Arc Threads Configuration TurfCup [™]									
TS90TP	02	x	тс						
TS90TP— TS90TP 1" Rotor with TruJectory [™]	02—NPT	14–Yellow Stator 58–White Stator	TC—TurfCup option						
Example: A TS90 Series sprinkler with TruJectory. NPT threads, and with an 82' radius would be specified as: TS90TP-02-58									

TS120 SERIES IMPACT SPRINKLERS

The TS120 Series Impact Sprinkler is capable of achieving long-range throws of up to 125 feet, making it well suited to meet the needs of both Synthetic and natural Turf sports fields. Available in Part Circle and Full Circle models, the TS120 can be configured with a factory-installed 4" TurfCup[™] that helps to seamlessly blend the sprinkler into natural Turf surfaces and preserve field aesthetics.

FEATURES & BENEFITS

Synthetic or Natural Turf applications

The TS120 Series Nozzles offer excellent water distribution and radius capability, giving the TS120 sprinkler the ability to meet the needs and expectations of groundskeepers of both Synthetic and natural Turf fields.

Flexibility and Ease of Use

A Full Circle rotation speed of 60 seconds and easy tool-free arc adjustments allow flexibility in field design and irrigation schedules to best meet the needs of the site. All sprinkler parts can be dismantled and serviced from the top, limiting the need for digging or sub-surface access.

Top Serviceable Valve-in-Head

Electric Valve-In-Head (VIH) models feature ON/OFF/ Auto control at the top of the sprinkler and provide individual control of each sprinkler to help ensure optimal performance and ease of maintenance.

Durable and Versatile

With the ability to operate on reclaimed and grey water systems, the robust and heavy-duty design makes the TS120 insensitive to many environmental conditions, such as frost and sand.

TS120V

TS121V

Operational

- Radius Capability: 62-125 feet
- Arc Adjustment: Part Circle (30°-330°) / Full Circle (360°)
- Output Flow: 20-121 gallons per minute
- Recommended Operating Pressure range: 45-120psi
- Maximum Operating Pressure: 145 psi
- Minimum Operating Pressure: 45 psi
- Nozzle Options: 7,8,9,10,11,12,13,14,15 and 17.5 mm
- Nozzle Trajectory: 22°
- Speed of Rotation (360°): 60 seconds
- Valve Type: Electric Valve-in-Head (VIH) 24V ac actuated solenoid

TS120 SERIES MODEL LIST

Model	Description
TS120P-02	TS120 Impact Sprinkler, Part Circle
TS120F-02	TS120 Impact Sprinkler, Full Circle
TS120VP-02	TS120 Impact Sprinkler with VIH, Part Circle
TS120VF-02	TS120 Impact Sprinkler with VIH, Full Circle
TS121VP-02	TS120 Impact Sprinkler with VIH and TurfCup™, Part Circle
TS121VF-02	TS120 Impact Sprinkler with VIH and TurfCup, Full Circle
TS122VP-02	TS120 Impact Sprinkler with VIH and Synthetic Turf Cover, Part Circle
TS122VF-02	TS120 Impact Sprinkler with VIH and Synthetic Turf Cover, Full Circle

Dimensions

- Inlet Size: 11/2" NPT female
- Overall Dimensions:
 - 14.8" H x 10.1" W (Block Style model)
- 17.9" H x 10.1" W (VIH model)
- 26.0" H x 10.1" W (VIH with TurfCup models)
- Pop-up Height (measured from grade to top of lid):
- 4" (Standard)

TS120

Mode

- 8.1" (with TurfCup)

Standard Nozzles*

- TS120 17.5 mm
- TS121 15 mm
- TS122 15 mm

Warranty

• Five years

*Other nozzle sizes sold separately.

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SEF	RIES NOZZLES		
l	Description	Model	Description
53	7 mm Nozzle	RT17469	13 mm Nozzle
54	8 mm Nozzle	RT17470	14 mm Nozzle

RT17463	7 mm Nozzle	RT17469	13 mm Nozzle
RT17464	8 mm Nozzle	RT17470	14 mm Nozzle
RT17465	9 mm Nozzle	RT17471	15 mm Nozzle
RT17466	10 mm Nozzle	RT17472	16 mm Nozzle
RT17467	11 mm Nozzle	RT17473	17.5 mm Nozzle (Standard Nozzle)
RT17468	12 mm Nozzle		

SWING-JOINTS

Swing-Joints for TS120:							
TS120-SJ-150-BDI	SJ-DI, 1-1/2" Gasket X 1-1/2" BSP, TS120						
TS120-SJ-150-NDI	SJ-DI, 1-1/2" Gasket X 1-1/2" NPT, TS120						
TS120-SJ-200-NDI	SJ-DI, 2" Gasket X 1-1/2" NPT, TS120						
TS120-IV2K-SJ	SJ-DI, 2" ISO, Compact, 1-1/2" NPT, TS120						
Swing-Joints for QCV:							
QCV-SJ-150100NDI	SJ-DI, 1½" Gasket X 1" NPT, QCV						

TS120 SERIES NOZZLE PERFORMANCE DATA – PART CIRCLE MODELS

nci	7 mm Nozzle		8 mm Nozzle		9 mm Nozzle		10 mm Nozzle		11 mm Nozzle		12 mm Nozzle		13 mm Nozzle		14 mm Nozzle		15 mm Nozzle		17.5 mm Nozzle	
psi	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow
	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)
40	62	20.3	64	25.1	65	30.0	67	34.8	69	38.8	70	44.1	72	49.3	74	55.9	75	62.1	79	74.9
60	64	22.9	67	28.6	69	34.4	72	39.6	75	44.9	79	50.7	82	56.8	85	64.3	88	71.8	92	86.3
70	68	25.6	71	31.7	73	39.3	76	44.1	81	49.8	87	56.4	90	63.4	95	71.8	98	79.7	102	96.0
90	70	28.2	74	34.8	77	41.9	81	48.5	87	54.6	92	61.7	95	69.2	100	78.4	105	87.2	111	104.4
100	72	30.0	76	37.4	81	44.9	86	52.0	91	58.6	96	66.5	100	74.4	105	84.6	110	94.3	120	113.7
115	73	32.2	79	40.1	84	48.0	90	55.5	95	62.6	101	70.9	105	83.3	110	90.3	115	100.9	125	121.1

TS120 SERIES NOZZLE PERFORMANCE DATA – FULL CIRCLE MODELS WITH BACK NOZZLE

	7 mm Nozzle		8 mm Nozzle		9 mm Nozzle		10 mm Nozzle		11 mm Nozzle		12 mm Nozzle		13 mm Nozzle		14 mm Nozzle		15 mm Nozzle		17.5 mm Nozzle	
psi	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow
	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)	(ft)	(gpm)
40	62	24.7	64	29.5	65	34.4	67	39.2	69	43.2	70	48.5	72	53.7	74	60.4	75	66.5	79	79.3
60	64	27.8	67	33.5	69	39.2	72	44.5	75	49.8	79	55.5	82	61.7	85	69.2	88	76.7	92	91.2
70	67	31.3	70	37.4	73	44.1	76	49.8	81	55.5	87	62.1	90	69.2	95	77.5	98	85.5	102	101.8
90	70	34.8	74	41.4	77	48.5	81	55.1	87	61.2	92	68.3	95	75.8	100	85.0	105	93.8	111	111.9
100	72	36.6	76	44.5	81	52.0	86	59.0	91	65.6	96	73.6	100	81.5	105	91.6	110	101.3	120	120.7
115	73	39.6	79	47.6	84	56.0	90	63.0	95	70.5	101	78.4	105	87.2	110	97.8	115	108.4	125	126.0

Specifying Information – TS120 Series Impact Sprinklers

TS12XXX-02							
Configuration	Style	Агс	Threads				
TS12X	X	X	02				
TS120 – TS120 long-range impact sprinkler TS121 – TS120 long-range impact sprinkler with TurfCup TS122 – TS120 long-range impact sprinkler with Synthetic Turf cover	Blank – Block Style V – Valve-In-Head	P – Part Circle F – Full Circle	02 – 1.5" NPT				
Example: A full circle TS120 Series Impact Sprinkler with VIH, TurfCup would be specified as: TS121VF-02 (15 mm nozzle included)							

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TS170 SERIES ROTORS

The piston-driven Toro[®] TS170 Series long radius rotor is the irrigation solution of choice for the cooling and washing down of large synthetic turf fields. Capable of achieving a throw of 177 feet, the TS170 Series Rotor can be installed along the outer perimeter of the playing surface, which helps preserve player safety and maintain field aesthetics.

FEATURES & BENEFITS

Innovative Nozzle Technology

The unique nozzle design minimizes water turbulence, which helps to maintain stream exit speed at the nozzle outlet, resulting in higher radii at reduced flows. Nozzles are available in 16, 20, and 24 mm sizes.

Low Maintenance Piston Drive

A fully enclosed piston drive system presents smooth, continuous rotation.

Integrated Valve-in-Head

Electric valve in head models feature ON/OFF/Auto control at the rotor, and provide individual management of each rotor to help ensure they perform at their highest level of efficiency.

Reduced Watering Time

High flow capability of up to 303 gallons per minute, in combination with adjustable rotation speed allows a synthetic turf field featuring a system of TS170 Series Rotors to be wet down in under ten minutes.

TS170

CONTRACTOR STATES

TS170V

Operational

- Radius Capability: 111-177 feet
- Arc Adjustment: Part circle (30°-330°) / Full circle (360°)
- Output Flow: 113-303 gallons per minute
- Recommended Operating Pressure: 100 psi
- Maximum Operating Pressure: 145 psi
- Minimum Operating Pressure: 60 psi
 Nozzle Options: 16, 20 and 24 mm
- Nozzle Options: 16, 20 a
 Nozzle Trajectory: 25°
- Speed of Rotation (180° arc): 50-120 seconds, adjustable (pressure dependent)
- Valve Type: Electric Valve-in-Head (VIH) 24V ac actuated solenoid

TS170 SERIES MODEL LIST

Dimensions

- Inlet Size: 2" NPT Female
- Overall Dimensions: 20.8" H x 13.75" W (Block Style model), 26.8" H x 13.75" W (VIH model)
- Cover Diameter: 10.1"
- Pop-up Height: 4.7"
- Overall Weight: 23 pounds (Block Style model), 26 pounds (VIH model)
- Warranty
- Five years

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Model	Description
TS170-02-16	TS170 Rotor, 16 MM, NPT
TS170-02-20	TS170 Rotor, 20 MM, NPT
TS170-02-24	TS170 Rotor, 24 MM, NPT
TS170V-02-16	TS170 Rotor with VIH, 16 MM, NPT
TS170V-02-20	TS170 Rotor with VIH, 20 MM, NPT
TS170V-02-24	TS170 Rotor with VIH, 24 MM, NPT
TS171-02-16	TS170 Rotor with Synthetic TurfCup, 16 MM, NPT
TS171-02-20	TS170 Rotor with Synthetic TurfCup, 20 MM, NPT
TS171-02-24	TS170 Rotor with Synthetic TurfCup, 24 MM, NPT
TS171V-02-16	TS170 Rotor with Synthetic TurfCup and VIH, 16 MM, NPT
TS171V-02-20	TS170 Rotor with Synthetic TurfCup and VIH, 20 MM, NPT
TS171V-02-24	TS170 Rotor with Synthetic TurfCup and VIH, 24 MM, NPT

TS170 SERIES NOZZLES

Model	Description
RB25412	16 mm Nozzle
RB25413	20 mm Nozzle
RB25414	24 mm Nozzle

SWING-JOINTS

Swing-Joints for TS170:								
TS170-IV3K-3LC-SJ	SJ-DI, 3" ISO, COMPACT, 2" NPT, TS170							
TS170-IV3K-3L-SJ	SJ-DI, 3" ISO, DEEPLONG, 2" NPT, TS170							
TS170-IV4K-4L-SJ	SJ-DI, 4" ISO, DEEPLONG, 2" NPT, TS170							
TS170-SJ-300NDI	SJ-DI, 3" GASKET X 2" NPT, TS170							
Swing-Joints for QCV:								
QCV-SJ-150100NDI	SJ-DI, 1½" Gasket X 1" NPT, QCV							

TS170 PERFORMANCE DATA*

Desserves	16 mm	Nozzle	20 mm	Nozzle	24 mm Nozzle		
(psi)	Radius Flow (ft) (gpm)		Radius (ft)	adius Flow (ft) (gpm)		Flow (gpm)	
60	111	114	131	159	137	214	
70	121	127	137	178	144	239	
90	131	139	147	195	160	262	
100	137	151	157	211	170	283	
115	144	161	163	225	177	303	

*Block style radius measurements at minimum rotation speed.

Specifying Information—TS170 Series Rotors

T\$170-XX-XX							
Configuration	Inlet Thread	Nozzle					
T\$170	XX	XX					
TS170 - TS170 long-range rotor	02 - 2" NPT	16 - 16 mm					
TS170V - TS170 long-range rotor with VIH		20 - 20 mm					
TS171 - TS170 long-range rotor with Synthetic TurfCup		24 - 24 mm					
TS171V - TS170 long-range rotor with Synthetic TurfCup and VIH							

Example: A TS170 Rotor with 16 mm nozzle would be specified as: **TS170-02-16**

P2 SERIES SPRINKLERS

The lightweight and versatile P2 Series Sprinklers are capable of achieving radii of up to 226 feet, making them well suited for a wide range of applications, including dust suppression and control, cooling and washdown of synthetic turf, and the distribution of reclaimed water. The P2 Series' fully-enclosed, adjustable-speed piston drive presents smooth and continuous rotation, allowing for the near vibrationfree delivery of water.

FEATURES & BENEFITS

Adjustable Rotation Speed

Easy-to-adjust rotation speed allows a complete rotation to be accomplished between two and seven minutes.

Low Maintenance Piston Drive

A fully enclosed piston drive system presents smooth, near vibration-free rotation, which helps to maintain the even distribution of water.

Wide Range of Nozzles

Nozzle choices from 14 mm to 34 mm provide a wide range of irrigation options and the flexibility to tailor the P2 Series to the specific needs of the site.

Part- and Full-Circle in One

Infinitely adjustable between 30° and 330°, or capable of uni-directional 360°.

P2S SERIES MODEL LIST

Model	Description
T-P2S	P2S High Volume Gun with 14 mm Nozzle
RT25150	14 mm Nozzle, P2S
RT25151	16 mm Nozzle, P2S
RT25152	18 mm Nozzle, P2S
RT25153	20 mm Nozzle, P2S
RT25154	22 mm Nozzle, P2S
RT25155	24 mm Nozzle, P2S

P2M SERIES MODEL LIST

Model	Description
T-P2M	P2M High Volume Gun with 26 mm Nozzle
T-P2M-VAR	P2M High Volume Gun with Adjustable Trajectory and 26 mm Nozzle
RT24961	18 mm Nozzle, P2M
RT24962	20 mm Nozzle, P2M
RT24963	22 mm Nozzle, P2M
RT24964	24 mm Nozzle, P2M
RT24965	26 mm Nozzle, P2M
RT24966	28 mm Nozzle, P2M
RT24967	30 mm Nozzle, P2M
RT24968	32 mm Nozzle, P2M
RT24969	34 mm Nozzle, P2M

Operational

Radius Capability

- P2S: 105-180 feet
- P2M/VAR: 138-226 feet
- Output Flow
 P2S: 70-267 gallons per minute
 D2M000 121 525 collocations
- P2M/VAR: 131-535 gallons per minute
 Recommended Operating Pressure range:
 P2S: 60-115 psi
- P2M/VAR: 70-115 psi
- Maximum Operating Pressure: - 120 psi
- Minimum Operating Pressure: - 60 psi

- Nozzle Options:
- P2S: 14, 16, 18, 20, 22, 24 mm - P2M/VAR: 18, 20, 22, 24, 26, 28, 30, 32, and 34 mm
- Nozzle Trajectory:
- 25°
- Speed of Rotation:
 Adjustable between 2-7 minutes
- Arc Adjustment:
 Part circle (30°-330°) / Full circle (360°)

Dimensions

- Inlet Size
 P2S: 2 ½" NPT female
 P2M/VAR: 3" NPT female
- Overall Dimensions:
 P2S: 15.2" H x 21.3" L
 P2M/VAR: 17.4" H x 26.3" L
- Overall Weight:
 P2S: 9.5 pounds
 P2M/VAR: 10.8 pounds
- Warranty
- Five years

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PORTS

Pressure	14 mm	Nozzle*	16 mm Nozzle		18 mm	18 mm Nozzle 20 mm Nozzle		22 mm	Nozzle	24 mm	Nozzle	
(psi)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
60	105	69.9	114	88.7	131	109.6	136	133.8	140	160.2	147	189.0
70	111	78.1	124	99.2	141	123.0	147	149.6	150	179.1	157	211.3
90	118	85.6	134	108.6	150	134.8	157	163.9	164	196.2	170	231.5
100	124	92.5	141	117.4	154	145.6	164	177.1	169	211.9	175	250.0
115	131	98.9	144	125.5	160	155.6	167	189.3	173	226.5	180	267.3
							*C+	1 1 - 1	((- + h -			

*Standard nozzle, 14 mm (other nozzles ordered separately).

P2M NOZZLE PERFORMANCE DATA

Pressure	18 mm Nozzle 20 mm Nozzle 22 mm Nozzle 24 mm Nozz		Nozzle	26 mm Nozzle* 28 mm Nozzle		30 mm Nozzle		32 mm Nozzle		34 mm Nozzle								
(psi)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
70	138	130.8	144	157.2	151	186.8	157	218.9	164	254.2	174	292.1	180	332.6	187	376.2	190	422.5
90	148	143.2	154	172.2	161	204.8	167	240.1	174	278.4	184	319.8	190	364.3	197	411.9	200	463.0
100	157	154.6	164	186.3	170	221.1	177	259.0	187	300.4	197	345.4	207	393.4	213	444.9	216	499.6
115	164	165.2	170	199.1	177	236.1	184	277.1	193	321.1	203	369.2	213	420.7	220	475.8	226	534.6

*Standard nozzle, 14 mm (other nozzles ordered separately).

Specifying I	nformation – P2	Series Sprinkler
	T DOV V	

I-P2X-X									
Configuration	Trajectory	Nozzle							
T-P2X	X	XX							
T-P2S – P2 Series High Volume gun-style sprinkler (2.5" NPT) T-P2M – P2 Series High Volume gun-style sprinkler (3" NPT) T-P2M-VAR – P2 Series High Volume gun-style sprinkler with adjustable trajectory	Blank – 25° VAR – Adjustable (15° to 47°)**	14 – 14 mm 16 – 16 mm 18 – 18 mm 20 – 20 mm 22 – 22mm 24 – 24 mm	26 – 26 mm* 28 – 28 mm* 30 – 30 mm* 32 – 32 mm* 34 – 34 mm*						
Example: A P2S Sprinkler would be specified as: T-P2S									

sprinkter would be specified as: I-P2S

* Nozzle sizes are only available for P2M models. ** Variable TraJectory only available for P2M model.

ROLLCART[™] TRAVELING SPRINKLER

The Toro RollcarT[™] offers a cost-effective, easy-tosetup solution for irrigating sports fields, golf course roughs, and other large, open turf areas where an underground irrigation system is not practical. The RollcarT is hydraulically powered and travels the length of the field while applying consistent irrigation through the top-mount long radius impact sprinkler. The RollcarT travels along its integrated high-strength guide cable, and automatically shuts off the flow of water once it has reached the end of the line.

FEATURES & BENEFITS

Variable Speed

Adjustable travel speed allows the RollcarT to be dialed in to meet the specific needs of the turf.

Auto Shutoff

To eliminate water waste and over-watering, the RollcarT will stop irrigation and traveling once the guide cable has been fully retracted and the pass/ cycle is complete.

Ease of Maintenance

Encased in a sealed gearbox, the drive gears have a very low friction factor and are practically maintenance free.

Flexible

A guide cable length of over 350 feet presents a wide range of applicable settings.

RollcarT[™] Traveling Sprinkler

The autonomous RollcarT[™] can operate in part-or full-circle mode and starts travelling along its integrated guide cable as soon as the water supply is turned on. The RollcarT will automatically stop and shut off the irrigation at the end of its run.

Operational

- Radius capability: 52-64 feet
- Arc Adjustment: Part circle (30°-330°) / Full circle (360°)
- Output Flow: 11-20 gallons per minute
- Travel Speed: 20-70 feet per hour, adjustable
- Travel Distance: up to 390 feet
- Recommended Operating Pressure: 65 psi
- Maximum Operating Pressure: 100 psi • Minimum Operating Pressure: 50 psi
- Nozzle Options: 6 and 7 mm

Dimensions

- Inlet Size: 1"
- Overall Dimensions: 30" long x 18" wide x 16" tall
- Overall Weight: 60 pounds

Warranty

- Two Years

✓ 1" hose inlet

- High-density body construction with stainless steel and brass components
- Galvanized anchor stake

Additional Features

ROLLCART PERFORMANCE DATA

psi	6 mm Nozzle		7 mm Nozzle	
	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
60	52	11.3	56	15.4
70	55	12.6	59	18.0
90	58	13.8	61	19.6
100	60	14.9	64	20.3

Specifying Information – RollcarT[™]

Rollcart Traveling Sprinkler			
Model	Description		
T-ROLLCART	Rollcart Traveling Sprinkler		

ROTOR ACCESSORIES

EFFLUENT WATER INDICATORS FOR 300 SERIES

89-7854

- Lavender cover for 300 Series Omni nozzle high-pop models
 - Use with part no. 300-25 (Omni Nozzle)

89-7853

- Lavender cover for 300 Series Omni nozzle lawn and shrub models • Use with part
 - no. 300-15 (Omni Nozzle)

118-6242

- Lavender cap for 300 Series standard lawn and shrub models • Use with nozzle
- assy (01, 02, 03, 63, 93)

INSTALLATION/ADJUSTMENT TOOLS

Mini 8 Adjustment Tool 102-2024

T5 Rotor Check Valve Kit 102-7714

 20 valve seals per bag

T5, T7 and TS90 **Rotor Adjustment** Tool 102-6527

TOOLS (continued) 995-51 Pressure gauge kit

INSTALLATION/ADJUSTMENT

995-50 • Pilot tube

995-49 • 0-200 psi

pressure gauge hermetically sealed shake resistant-free

995-01 • Flow gauge

INSTALLATION/ADJUSTMENT **TOOLS FOR 640 SERIES**

from body

NOZZLES

Standard T7 **Nozzle Tree** 102-2633

Low Flow T7 Nozzle Tree 118-5978

Tree Kit 102-7712

• 20 nozzle trees per bag

TS120/TS170 SERIES STAINLESS STEEL ENCLOSURES

Individual Components (Separate Boxes, Lids, Clamps):				
TSSB-1818-18	BOX, TORO SFG, SST, 18X18X18			
TSSB-CLAMP	CLAMP, TORO SFG, SST, UNIV CLAMP			
TSSL-1818-LID	LID, TORO SFG, SST, SOLID			
TSSL-1818-170	LID, TORO SFG, SST, TS170			
TSSL-1818-120	LID, TORO SFG, SST, TS120			
TSSL-1818-121	LID, TORO SFG, SST, TS121-TC			
Complete Kits Including all Components (Assembled):				
TSSB-1212-12	KIT, BOX-LID, SST, 12X12X12, SOLID LID			
TCCDK 10 COLUD				
ISSBK-18-SULID	KIT, BOX-LID, SST, 18X18X18, SOLID LID			
TSSBK-18-SOLID	KIT, BOX-LID, SST, 18X18X18, SOLID LID KIT, BOX-LID, SST, 18X18X18, SOLID LID & CLAMP			
TSSBK-18-SOLID TSSBKC-18-SOLID TSSBK-18-170	KIT, BOX-LID, SST, 18X18X18, SOLID LID KIT, BOX-LID, SST, 18X18X18, SOLID LID & CLAMP KIT, BOX-LID, SST, 18X18X18, TS170 LID			
TSSBK-18-SOLID TSSBKC-18-SOLID TSSBK-18-170 TSSBKC-18-120	KIT, BOX-LID, SST, 18X18X18, SOLID LID KIT, BOX-LID, SST, 18X18X18, SOLID LID & CLAMP KIT, BOX-LID, SST, 18X18X18, TS170 LID KIT, BOX-LID, SST, 18X18X18, TS120 LID & CLAMP			




TORO

0080











250/260 & 254/264 SERIES VALVES

Heavy-duty. Hard-working. The Toro[®] 250/260 and 254/264 Series globe-style valves are made to withstand all that a large residential or light commercial application can dish out. The durable and dependable, glass-filled bonnet and ABS body construction allow these valves to be rated up to 150 psi, and are available in various inlet/outlet configurations meant to meet contractors' unique preferences. The 1" inlet/outlet 250/260 Series valves feature female inlets with female or barbed outlets available in electric, hydraulic or pin-type styles, while the 254/264 Series valves are electric valves with male inlets and male or barbed outlets available in ³/4" or 1" sizes.

FEATURES & BENEFITS

Heavy-Duty Toro Solenoid Provides dependable operation and long life.

Optional Flow Control

Allows the ability to adjust the flow of each zone.

Comprehensive Inlet and Outlet Choices Flexibility for new installations and retrofit projects.

Single-Piece Rubber Diaphragm For reliable, leak-tight closing.

Tough, Glass-Filled Nylon Bonnet and ABS Body

Durable construction that provides years of reliable operation.



Effluent Options Available







Operational

- Flow range:
- ³/4": 0.25 to 15.0 gpm - 1": 5.0 to 30.0 gpm
- Operating Pressure
- ³/4": 10 to 150 psi
- 1": 20 to 150 psi
- Solenoid: 24 Vac
- ³/4": Inrush: 0.25 amps, 6.00 VA;
 Holding: 0.19 amps, 4.56 VA
- 1": Inrush: 0.30 amps, 7.20 VA;
 Holding: 0.20 amps, 4.80 VA
- Burst pressure safety rating: 380 psi

Dimensions

- ³/₄": 3" H x 4" W
- 1" 250 & 254 (with flow control): 6" H x 4 ½" W
- + 1" 260 & 264 (without flow control): $4^{1}\slash_{2}$ H x $4^{1}\slash_{2}$ W

Options Available

• Effluent Water Valve Flow Control Knob (89-7855)



• Two years



Specifying Information—250/260 Series Valves (Female)

2X0-0X-04								
Flow Control	Activation Type	Size						
2%0	OX	04						
5—with Flow Control 6—without Flow Control	0—Pin-type Hydraulic 1—Normally Open Hydraulic 6—Electric	04—1"						
Example: A 1" 250 Series Valve with flow control and electric activation would be specified as: 250-06-04								

Note: DC Latching Solenoid not available.

254/264 SERIES PRESSURE LOSS DATA

Size	Model		gpm Flow										
		0.5	1	2	5	10	15	20	25	30	35	40	45
3/4"	Electric	<1.0	<1.0	<1.0	1.5	3.0	6.5						
1"	Electric				2.0	2.0	2.3	3.1	4.0	5.4	7.0	8.7	10.5

Note: For optimum sprinkler performance when designing a system, calculate total Pressure Loss to ensure sufficient downstream pressure. Flow rates are recommended not to exceed 5 psi loss. Values are listed in psi.

250/260 SERIES PRESSURE LOSS DATA

Cine .	Madal	gpm Flow										
Size	Model	0.5	10	15	20	25	30	40				
1"	Hydraulic	<1.0	1.0	2.0	3.0	4.0	6.0	9.5				
1"	Electric		4.4	4.5	5.0	5.0	7.0	9.5				

250/260 SERIES MODEL LIST

Model	Description
FEMALE THREADS	
250-06-04	1" Female NPT, In-line, with Flow Control
260-06-04	1" Female NPT, In-line, without Flow Control
250-00-04	1" Female NPT, In-line, Pin-type Hydraulic, with Flow Control
250-01-04	1" Female NPT, In-line, Normally Open Hydraulic, with Flow Control
MALE THREADS	
264-06-03	³ /4" Male Thread x Male Thread, In-Line, without Flow Control
254-06-04	1" Male Thread x Male Thread, In-Line, with Flow Control
264-06-04	1" Male Thread x Male Thread, In-Line, without Flow Control
254-16-04	1" Male Thread x Barbed Insert, In-Line, with Flow Control
264-16-04	1" Male Thread x Barbed Insert, In-Line, without Flow Control

Specifying Information—254/264 Series Valve (Male)

2X4-X6-0X							
Flow Control	Body Style	Size					
2%4	X6	OX					
5—with Flow Control	0—Male Thread x Male Thread	3—3/4"					
6—without Flow Control	1—Male Thread x Barbed Insert	4—1"					
Example: A 1" electric 264 Series Valve without flow control with a barb would be specified as: 264-16-04							

Note: DC Latching Solenoid not available.



252 SERIES VALVES

Toro[®] 252 Series valves are built tough and ready to withstand the harshest conditions in any commercial application. With several configurations to choose from, 252 Series valves are available in electric or hydraulic, 1", 1.5" and 2" globe/angle models with flow control. Offering the same glass-filled cap and ABS body construction as the 250/260 Series, these valves are also rated up to 150 psi. Each valve diaphragm is a single piece and made with fabric-reinforced rubber for long-term tear and stretch tolerance. All models are female inlet/outlet NPT and their durable plastic construction makes them a cost effective option for commercial applications.

FEATURES & BENEFITS

Heavy-Duty Toro Solenoid

Provides dependable operation and long life.

Fabric-Reinforced Rubber Diaphragm

Provides long-term resistance to tears and stretching.

Flow Control Handle

Adjusts the flow of each zone on a system.

Robust ABS Body Material and Durable Glass-Filled Cap

Ensures the valve can withstand high pressures and flows without compromise.



Effluent Options Available

Additional Features

- 24" lead solenoid wires on 11/2" and 2" models, 18" lead wires 1" models
- Self-cleaning, stainless steel metering pin (electric)
- ✓ Tough, glass-filled bonnet
- ✓ Single-piece diaphragm

Operational

- Recommended Flow Range:
- 1": 5.0 to 40 gpm
- 1 1/2": 25 to 120 gpm
- 2": 60 to 180 gpm

PRODUCT HIGHLIGHT

- Operating Pressure: 20 to 150 psi
 Solenoid: 24 Vac, 50/60 Hz
- -Inrush: 0.30 amps, 7.20 Vac
 -Holding: 0.20 amps, 4.80 Vac
 Burst prossure cafety rating: 38
- Burst pressure safety rating: 380 psi

Dimensions

- 1": 6³/₄" H x 4¹/₂" W
- 1¹/₂": 7³/₄" H x 6" W
- 2": 91/2" H x 7" W

Options Available

• Effluent Water Indicator Flow Control Knob (89-7855) Warranty

Two years



External Bleed

The external bleed allows manual operation of the valve without electrically charging the solenoid. System flushing can also be accomplished using the external bleed with debris and other material being flushed out of the port.



Combination Globe and Angle Valve

The all-in-one globe and angle configuration allows flexibility in design and installation. Angle installations allow for less pressure loss across the piping system, while globe configurations are standard in many irrigation systems.

Size Type	Tuno	Config							gpm Fl	.ow					
	Conng.	5	10	20	25	30	40	50	60	70	80	100	120	150	
1 ¹ /2" Hydraulic	Hydraulic	Globe				1.0	1.0	2.0	3.0	4.0	5.5	6.5			
	Angle				1.0	1.0	1.5	1.5	3.0	4.0	5.0				
	Globe								1.5	2.0	2.0	3.5	5.0	8.0	
2	2 Hydraulic	Angle								1.0	1.0	1.5	2.0	3.0	5.0
1"	Flootnia	Globe	3.0	4.0	5.0	6.0	7.0	9.5							
1	Electric	Angle	2.0	3.5	4.5	4.5	5.0	7.5							
1 1/5"	Flootnia	Globe				1.5	1.0	2.0	3.0	4.0	5.0	7.0			
Electric	Angle				1.5	1.0	1.5	2.0	3.0	3.0	5.0				
2" Electric	E la atoi a	Globe								2.0	2.0	2.5	3.5	5.5	8.0
	Angle								1.0	1.0	2.0	3.0	4.0	5.0	

252 SERIES PRESSURE LOSS DATA

Note: For optimum performance when designing a system, be sure to calculate total Pressure Loss to ensure sufficient downstream pressure. For optimum regulation performance, size regulating valves toward the higher flow ranges. Flow rates are recommended not to exceed 5 psi loss. = Debris-resistant models

252 SERIES MODEL LIST

Model	Description				
FEMALE NPT GLOBE/A	NGLE WITH FLOW CONTROL				
252-06-04	1"				
252-26-06	1 ¹ /2"				
252-26-08	2"				
252-21-06	1 ¹ /2" Normally Open				
252-21-08	2" Normally Open				

Specifying Information—252 Series Valves

252-XX-0X								
Model	Activation Type	Size						
252	XX	OX						
252—252 Series Valve	06—1" Electric 21—Normally Open Hydraulic	4—1" 6—1 ¹ /2"						
26-11/2" or 2" Electric 8-2" Example: A 1 1/2" electric 252 Series Valve, would be specified as: 252-26-06								

Note: DC Latching Solenoid not available.

P-220 SERIES VALVES

For proven reliability in the field, the Toro[®] P-220 Series valves deliver. Constructed of heavyduty, glass-filled nylon material, these valves are ready to consistently withstand pressures up to 220 psi.

FEATURES & BENEFITS

Durable Glass-Filled Nylon

Ensures the P-220 can operate at pressures up to 220 psi.

Precise Pressure Control Option

Compact EZReg[®] dial-design technology can be factory or field installed and does not require the removal of the solenoid.

External Manual Bleed

Keeps valve box dry and easy to use.

Standard Schrader Valve at Outlet Simple verification of downstream pressure.

Optional Spike Guard[™] Solenoid* Reduces wire size requirements, allows twice as many valves to run simultaneously on a transformer, and lowers power costs with a lightning rating exceeding 20,000 volts.

Filter Screen on 2" and 3" Models

Allows for upstream filtration of water to ensure no clogging occurs inside the valve.

Flow Control Handle

Adjusts the flow of each zone on a system.

*Not compatible with 2-wire systems









Additional Features

- ✓ Tough glass-filled nylon and stainless steel construction
- ✓ No external tubing for either pressure-regulating model
- Self-aligning bonnet to ensure correct installation
- ✓ Self-cleaning, stainless steel metering rod
- Low-flow capability down to 5 gpm with EZReg
- Low-power requirement for longer wire runs
- ✓ EPDM diaphragm and seat seal

-r

Operational

- Flow Range:
- 1": 5 to 50 gpm
- 11/2": 30 to 110 gpm
- 2": 80 to 150 gpm - 3": 130 to 300 gpm
- 3 : 130 to 300 gpm
 Operating Pressure
- 1" & 1¹/₂" Models: 10 to 220 psi
- 2" & 3" Models: 20 to 220 psi
- Pressure Regulating:
- Outlet (EZR-30): 5 to 30 psi ± 3
- Outlet (EZR-100): 5 to 100 psi ± 3
 Minimum flow requirement
- of 5 gpm

- Minimum Pressure Differential (between inlet and outlet) for Pressure Regulation: 10 psi
- Body Styles:
 Globe/Angle 1", 1¹/₂", 2" &
- 3" female threads 118-5982 Solenoid: 24 Vac (60 Hz) Standard -Inrush: 60 Hz, 0.4 amps -Holding: 60 Hz, 0.2 amps

Options Available

- EZReg[°], 5–30 psi Regulator Module (EZR-30)
- EZReg, 5–100 psi Regulator Module (EZR-100)
 Effluent Water Solenoid
- Effluent Water Solehold Assembly, 24 Vac, 60 Hz; and Warning Tag (EFF-KIT-60HZ)
- Standard Solenoid, 24 Vac, 60 Hz (118-5982)
- Potted DC Latching Solenoid Assembly (DCLS-P)
- Spike Guard[™] Solenoid, 24 Vac, 50/60 Hz (SGS-12)

Dimensions

- 1": 6³/4" H x 35/8" W
- 11/2": 71/4" H x 35/8" W
- 2": 9¹/₂" H x 6¹/₈" W
 3": 10³/₄" H x 6¹/₈" W
- J. 10 74 11 X 0 78 W

Warranty

• Five years



Pressure Regulator

The EZReg® module can regulate flows as low as 5 gpm with a 1" valve and only requires 10 psi differential to operate. The pressure regulator can be easily and quickly installed—even under pressure—with no danger of water geysers.

P-220 SERIES MODEL LIST

Model	Description	
		WITH PRE-INSTALLED Latching solenoids
P220-26-04	1" NPT, Globe/Angle	P220-26-94
P220-26-06	1½" NPT, Globe/Angle	P220-26-96
P220-26-08	2" NPT, Globe/Angle	P220-26-98
P220-26-00	3" NPT, Globe/Angle	P220-26-90
PRESSURE-REGUL	ATED WITH EZ REG	WITH PRE-INSTALLED Latching solenoids
P220-27-04	1" NPT, Globe/Angle	P220-27-94
P220-27-06	1½" NPT, Globe/Angle	P220-27-96
P220-27-08	2" NPT, Globe/Angle	P220-27-98
P220-27-00	3" NPT, Globe/Angle	P220-27-90

P-220 SERIES PRESSURE LOSS DATA

6:=0	Config		gpm Flow																				
SIZE	conny.	5	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	180	200	225	250	275	300
1"	Globe	4.00	4.20	3.20	4.10	7.20																	
1	Angle	4.00	4.20	3.10	2.70	4.80																	
114"	Globe				1.60	2.30	3.60	5.20	7.00	9.20	11.20	13.60	16.40										
1 1 1 2	Angle				1.30	1.60	2.80	4.00	5.50	7.10	8.90	10.90	13.50										
0.1	Globe									2.10	2.70	3.30	4.00	4.80	5.60	6.50	7.50	8.70					
2	Angle									1.20	1.60	2.00	2.40	2.80	3.30	3.90	4.40	5.20					
2"	Globe																2.50	3.00	4.10	5.30	6.70	8.30	10.10
3	Angle																1.90	2.40	3.30	4.30	5.50	6.90	8.50

Note: For optimum performance when designing a system, be sure to calculate total Pressure Loss to ensure sufficient downstream pressure. For optimum regulation performance, size regulating valves toward the higher flow ranges.

Flow rates are recommended not to exceed 5 psi loss.

Specifying Information—P-220 Series Valves

P220-2X-XX								
Model	Activation Type	Solenoid	Size					
P220	2X	Х	Х					
P220—P-220 Series Plastic Valve	26—NPT, Electric 27—NPT, Pressure-regulated EZR-100 (Standard)	0—Standard Solenoid 9—DC Latching Solenoid	4—1" 6—1½" 8—2" 0—3"					
Example: A 1" P-220 Series plastic electric, pressure-regulating valve would be specified as: P220-27-04								

P-220S SCRUBBER SERIES VALVES

True dirty water irrigation valves, the Toro[®] P-220S Scrubber Series valves are built to handle chlorine, chloramine, and other chemicals found in reclaimed and non-potable water systems. Constructed of heavy duty glass-filled nylon and EPDM rubber components, the P-220S valves feature Toro's patented ACT[™] (Active Cleansing Technology), which helps prevent the build-up of sand, algae, and other organic materials that may inhibit water from metering properly through the valve.

FEATURES & BENEFITS

Multiple Design Configurations

Available in 1", 1 $^{1}/^{2}$ ", 2", and 3" inlet/outlet designs, all of which allow the flexibility of globe or angle orientation.

Durable Glass-Filled Nylon Construction Robustly built to operate at pressures of up to 220 psi.

ACT (Active Cleansing Technology)

The industry's first active scrubber valve cleans continuously, whereas competing valves only clean upon their opening and closing.

Fabric-reinforced EPDM Diaphragm and EPDM Seat Seal

Designed to work in virtually all water applications.

Rugged Internal Plastic and Stainless Steel Components

The ACT scrubber turbine, nut and metering system are constructed of marine and aerospace-grade plastics and metals that make them resistant to chlorine- and ozone-treated water.

Available with Precise Pressure Regulation

Compact EZReg[®] dial-design technology ensures precise downstream pressure for optimized sprinkler head performance.

Completely Serviceable and Retrofittable

The ACT scrubber diaphragm assembly can be replaced, and can also be retrofit into previously installed P-220 models.









No external tubing for either pressure-regulating model Standard, built-in Schrader-type valve for downstream pressure verification

Additional Features

Internal and external bleeds

- Flow control independent of solenoid
- Self-aligning bonnet to ensure correct installation
- ✓ Self-cleaning stainless steel metering rod



Operational

- Flow Range:
- 1": 5 to 50 gpm
- 1 1/2": 30 to 110 gpm
- 2": 80 to 150 gpm
- 3": 130 to 300 gpm • Operating Pressure
- 1" & 1 1/2" Models: 10 to 220 psi
- 2" & 3" Models: 20 to 220 psi
- Pressure Regulating:
- Outlet (EZR-30): 5 to 30 psi ± 3
- Outlet (EZR-100): 5 to 100 psi ± 3 - Minimum flow requirement of 5 gpm

- Minimum Pressure Differential (between inlet and outlet) for Pressure Regulation: 10 psi
- · Body Styles: - Globe/Angle with female
- threads • Solenoid: 24 Vac (60 Hz) Standard (118-5982)
- Inrush: 60 Hz: 0.4 amps – Holding: 60 Hz: 0.2 amps

Options Available

- EZReg, 5-30 psi regulator module (EZR-30)
- EZReg, 5-100 psi regulator module (EZR-100)
- Effluent Water Solenoid Assembly, 24 Vac, 60 Hz; and Warning Tag (EFF-KIT-60HZ)
- Potted DC Latching Solenoid (DCLS-P)

Dimensions

- 1": 6 ³⁄₄" H x 3 ⁵/₈" W
- 1 1/2": 7 1/4" H x 3 5/8" W
- 2": 9 ½" H x 6 1/8" W
- 3": 10³/4" H x 6¹/8" W

Warranty

• Five years



The P-220S Scrubber Series Valves Feature Toro's Patented ACT™ (Active Cleansing Technology) system

The ACT system's durable turbine is in constant rotation, which in turn keeps the metering and filtration area free of dirt and algae build-up. The turbine is constructed of materials resistant to chlorine, chloramines, and ozone, thereby keeping the valve operating at peak performance.

Model	Description
P220S-26-04	1" with ACT System
P220S-26-06	1 ¹ /2" with ACT System
P220S-26-08	2" with ACT System
P220S-26-00	3" with ACT System
P220S-27-04	1" with EZReg and ACT [™] System
P220S-27-06	$1^{1/2}$ " with EZReg and ACT System
P220S-27-08	2" with EZReg and ACT System
P220S-27-00	3" with EZReg and ACT System
P220S-26-94	1" with ACT System & DC Latching Solenoid
P220S-26-96	$1{}^{1}\!/_{2}$ " with ACT System & DC Latching Solenoid
P220S-26-98	2" with ACT System & DC Latching Solenoid
P220S-26-90	3" with ACT System & DC Latching Solenoid
P220S-KIT-04	1" Scrubber diaphragm assembly kit
P220S-KIT-06	1 1/2" Scrubber diaphragm assembly kit
P220S-KIT-08	2" Scrubber diaphragm assembly kit
P220S-KIT-00	3" Scrubber diaphragm assembly kit

TORO P-220S SCRUBBER VALVES

C:=0	Config		Flow																		
Size	coning.	5	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	180	200	250	300
1"	Globe	4.63	4.74	3.10	6.05	10.75															
	Angle	4.14	4.64	2.54	5.53	9.46															
11/"	Globe				1.56	2.85	4.36	6.28	8.57	11.20	14.03	17.20	20.46								
1 1/2	Angle				1.51	2.28	3.69	5.29	6.97	9.26	11.80	14.60	17.40								
2"	Globe									3.57	4.62	5.33	6.80	8.20	9.02	10.46	11.61				
2	Angle									2.79	3.50	4.41	5.62	6.39	7.35	8.81	9.37				
3"	Globe														2.06	2.34	2.70	3.88	4.86	7.26	10.23
	Angle														1.86	2.16	2.44	3.35	4.11	6.42	9.31

Note: For optimum performance when designing a system, be sure to calculate total Pressure Loss to ensure sufficient downstream pressure. For optimum regulation performance, size regulating valves toward the higher flow ranges. Flow rates are recommended not to exceed 5 psi loss.

Specifying Information—P-220S Scrubber Series Valves

P220S-2X-XX								
Model	Size							
P220S	2 X	X	Х					
P220S—P-220S Scrubber Series Plastic Valve	6—NPT, Electric 7—NPT, Pressure-regulated EZR-100 (Standard)	0—Standard 24 Vac Solenoid 9—DC Latching Solenoid	4—1" 6—1½" 8—2" 0—3"					
Exam	Example: A 2" P-220S Series plastic electric, pressure-regulating valve would be specified as: P220S-27-08							



P-220S SCRUBBER SERIES MODEL LIST

220 BRASS SERIES VALVES

Heavy-duty brass construction for superior performance under the harshest conditions. Toro[®] 220 Brass Series valves are rugged and reliable, and offer dependable performance in the toughest situations and settings.

FEATURES & BENEFITS

Leading Lighting Protection (Spike Guard[™])

A lightning rating that exceeds 20,000 volts – nearly three times the protection of competing products.

Dirty Water Ready

A stainless steel 120-mesh filter enables dependable valve operation in dirty and reclaimed water applications.

Spike Guard Solenoid*

Reduces wire size requirements and allows twice as many valves to run simultaneously on a transformer, all while lowering power consumption and related costs.

EZReg[®] Pressure Regulator compatible

Available in two fully-adjustable models, Toro EZReg Pressure Regulators allow the consistent regulation of pressure within a zone, ensuring optimal operation of all downstream sprinklers. EZReg Pressure Regulators thread directly to the valve bonnet – no special adaptor required and no need to remove the solenoid. The desired pressure can be set fast and with a high level of accuracy thanks to an easy-to-read turn dial design.

*Not compatible with 2-wire systems

Pressure

Regulation







DC Latching Solenoid Option

Additional Features

- Commercial-grade 316 Stainless Steel stem for maximum corrosion resistance
- Manual Flow Control; adjustable to full shut-off
- Robust, double-beaded, fabric-reinforced rubber diaphragm
- Built-in Schrader-type valve is standard on all models for fast downstream pressure verification
- EZReg Pressure Regulator can be installed as a service kit without having to drain the main line



Operational

- Flow Range:
- 1" model: 5 to 40 gpm
- 1 1/4" model: 20 to 100 gpm
- 1 ½" model: 20 to 120 gpm
- 2" model: 30 to 170 gpm
- 2¹/₂" model: 60 to 250 gpm
- 3" model: 80 to 350 gpm • Operating Pressure: 10 to 220 psi
- Pressure Regulating:
- Outlet (EZR-30): 5 to 30 psi ± 3
- Outlet (EZR-100): 5 to 100 psi ± 3 - Minimum flow requirement of 5 gpm

- Minimum Pressure Differential (between inlet and outlet) for Pressure Regulation:
- 1", 11/4", and 11/2" models: 10 psi - 2", 21/2", and 3" models: 20 psi
- Burst Pressure Safety Rating: 750 psi
- Body Styles: - Globe orientation - 1", 11/4", 1¹/2", and 2" models, female
 - threads – Angle orientation – 21/2" and 3" models, female threads

Options Available

•

• EZReg[®], 5-30 psi adjustable Pressure Regulator (EZR-30)

- EZReg[®], 5-100 psi adjustable Pressure Regulator (EZR-100)
- Effluent Water Solenoid and warning tag; lavender color, 24V AC / 60 Hz (EFF-KIT-60HZ)
- 24 Vac Solenoid; 60 Hz, 18-inch leads, and captive plunger (118-5982)
- Potted DC Latching Solenoid (DCLS-P)

Dimensions

- 1" model: 51/4" H x 5" W
- 1 1/4" model: 6 1/2" H x 6" W
- 1 ½" model: 6 1/2" H x 6" W
- 2" model: 7 1/2" H x 7" W
- 21/2" model: 83/4" H x 81/2" W
- 3" model: 8³/₄" H x 8¹/₂" W

Warranty

• Five years



Dirty Water Resistance

The 120 mesh stainless steel filter screen is positioned on the supply side of the water stream. It is constantly flushed by the flow, enabling the use of very dirty water without clogging. Stainless steel construction of both the filter screen and the valve solenoid seat ensures long component life in all types of water and pressures.

22

20 BRAS	D BRASS SERIES VALVES PRESSURE LOSS DATA																			
Madal	Туре		Gallons Per Minute																	
Model		5	10	15	20	30	40	50	60	70	80	100	120	150	170	180	200	250	300	350
1"	Electric	1.8	2.0	2.2	3.1	5.1	7.8													
1 ¹ /4"	Electric				1.9	2.5	2.7	3.5	4.1	5.6										
1 ¹ /2"	Electric				2.2	2.5	2.8	3.1	3.8	5.0	6.6									
2"	Electric					3.1	3.2	2.9	3.0	3.3	3.4	4.5	6.6	10.1	13.5	14.9				
2 ¹ /2"	Electric								2.0	2.2	2.3	2.4	2.5	3.0	4.0	4.5	5.5			
3"	Electric										2.2	2.4	2.5	3.0	4.0	4.5	5.5	6.5	7.0	7.5

Notes: For optimal performance when designing a system, it is recommended that total Pressure Loss be calculated to ensure sufficient downstream pressure. For optimum pressure regulation performance, size regulating valves towards the higher flow ranges.

Flow rates are recommeded not to exceed 5 psi loss.

Specifying Information – 220 Brass Series Valves

220-2X-X-X								
Model Type Solenoid Thread Size								
220	2 X	X	2	X				
220-220 Series Brass Valve	6 - NPT, Electric 7 - NPT, Pressure-regulated (5-100 psi)	0 - Spike Guard Solenoid 6 - Less Solenoid 7 - 24 Vac Solenoid 9 - DC Latching Solenoid	4—1" 5—1 ¼" 6—1 ½"	8—2" 9—2 ¹ ⁄2" 0—3"				
Example: A 1	NPT, pressure-regulated 220 Series Brass	Valve with Spike Guard Solenoid, would	d be specificed as: 220-27-04	•				

Note: 1", 1¹/₂" and 2"—globe configuration. 2¹/₂" and 3"—angle configuration.

220 BRASS SERIES VALVES MODEL LIST

Model	Description	Model	Description
220-26-04	1" Inlet/Outlet; Globe	WITH DC LATCH	ING SOLENOID
220-26-05	1 1/4" Inlet/Outlet; Globe	220-26-94	1" Inlet/Outlet;
220-26-06	1 1/2" Inlet/Outlet; Globe	220-20-74	Globe
220-26-08	2" Inlet/Outlet; Globe	220-26-95	1 ¼" Inlet/Outlet; Globe
220-26-09	2 ^{1/2} " Inlet/Outlet; Angle	220-26-96	1 ¹ /2" Inlet/Outlet;
220-26-00	3" Inlet/Outlet; Angle	220-20-70	Globe
PRESSURE REG	ULATED WITH EZREG®	220-26-98	2" Inlet/Outlet; Globe
220-27-04	1" Inlet/Outlet; Globe	220-26-99	2 ¹ /2" Inlet/Outlet;
220-27-05	1 1/4" Inlet/Outlet; Globe	220-20-77	Angle
220-27-06	1 1/2" Inlet/Outlet; Globe	220-26-90	3" Inlet/Outlet;
220-27-08	2" Inlet/Outlet; Globe		
220-27-09	2 ¹ /2" Inlet/Outlet; Angle	ELECTRIC VALV	ES LESS SULENUID
220-27-00	3" Inlet/Outlet; Angle	220-26-64	1" Inlet/Outlet; Globe
NITH 24 VAC SO	LENOID	220-26-66	1 1/2" Inlet/Outlet;
220-26-74	1" Inlet/Outlet; Globe	220-20-00	Globe
220-26-75	1 1/4" Inlet/Outlet; Globe	220-26-68	2" Inlet/Outlet; Globe
220-26-76	1 1/2" Inlet/Outlet; Globe	220 27 72	2" In Int (Outline to the
220-26-78	2" Inlet/Outlet: Globe	220-26-60	3" Inlet/Outlet; Angle

VALVES



QUICK COUPLER SERIES

Whether for hand watering the hot spots, fertilizer wash in, or washing down equipment, Toro[®] Quick Coupler Valves and Keys are designed for everyday use in environments that require quick remote access to the mainline water supply.

FEATURES & BENEFITS

Stainless Steel and Brass Construction

Quick Couplers are also available with metal or vinyl covers in locking or non-locking options.

Multiple Models to Choose From

There are a variety of one-piece and two-piece models in $^{3/4^{\prime\prime}}$ and $1^{\prime\prime}$ sizes, including ACME thread key connections.

Eliminate Tangled Hoses

The 360-degree hose swivel provides movement without hose tangling.

QUICK COUPLER SERIES PRESSURE LOSS DATA

Madal						gpm	Flow					
Model	10	15	20	25	30	35	40	50	60	70	85	100
¾" inlet	1.5	3.1	5.3	8.5								
1" inlet			1.1	2.2	3.6	5.7	8.0					

Note: For optimum sprinkler performance when designing a system, be sure to calculate total Pressure Loss to ensure sufficient downstream pressure. Values listed in psi. Flow rates are recommended not to exceed 5 psi loss.

QUICK COUPLER VALVES MODEL LIST

Model	Description	Key(s)						
075-SLSC	$\%^{\prime\prime}$ inlet QCV, one-piece body, Single Lug with Stainless Steel cover	075-SLK						
100-SLSC	1" inlet QCV, one-piece body, Single Lug with Stainless Steel cover	100-SLK						
100-SLVC	1" inlet QCV, one-piece body, Single Lug with Yellow Vinyl cover	100-SLK						
100-SLVLC	1" inlet QCV, one-piece body, Single Lug with Yellow Vinyl locking cover	100-SLK						
100-2SLVC	1" inlet QCV, two-piece body, Single Lug with Yellow Vinyl cover	100-SLK						
100-ATLVC	1" inlet QCV, one-piece body, ACME thread with Effluent Vinyl locking cover	100-AK						
100-2SLLVC	1" inlet QCV, two-piece body, Single Lug with Effluent Vinyl locking cover	100-SLK						

Specifying Information—Quick Couplers

100-SLSC

100-AK

100-ATLVC

	XXX-XXX-XXX							
Size	Configuration	Cover						
XXX	XXX	XXX						
075—¾"	SL—One-piece, Single Lug	SC—Standard Cover						
100—1"	2SL—Two-piece, Single Lug	VC—Vinyl Cover						
	AT—ACME Thread	LVC—Effluent Vinyl Cover						
		VLC—Vinyl Locking Cover						

QUICK COUPLER KEYS AND ACCESSORIES MODEL LIST

075-75-MHS

Effluent

Options Available

	Model	Description
	075-SLK	¾" Single Lug Key with ¾" Male and ½" Female NPT Outlet
	100-AK	1" ACME Thread Key with 1" Pipe Thread Outlet
	100-SLK	1" Single Lug Key with 1" Male Pipe Thread and ¾" Fe- male NPT Outlet
	075-75-MHS	¾" NPT x ¾" MHT Hose Swivel
	075-MHS	1" NPT x ¾" MHT Hose Swivel
	100-MHS	1" NPT Inlet x 1" MHT, Hose Swivel
	LK	Key for Locking Cap

Example: A 1" one-piece, single lug Quick Coupler with a vinyl locking cover, would be specified as: 100-SLVLC

VALVE ACCESSORIES

SOLENOIDS

DCLS-P

- Potted DC Latching Solenoid for Toro valves
- Compatible with P-200, P-220S Scrubber and 220 Brass Series valves

118-5982

- 24 Vac Solenoid assembly for P-220, P-220S Scrubber, and 220 Brass Series valves. Captive hex
- plunger • 18" leads

SGS-12

- 24 Vac Spike **Guard Solenoid** assembly for P-220, P-220S Scrubber, and 220 Brass Series
 - valves • 20,000 volts lightning rating
 - Inrush 0.2 amps/ Holding 0.1 amps

Note: Not compatible with 2-wire systems.

EFFLUENT WATER INDICATORS

EFF-KIT-60HZ

- Lavendercolored 118-5982 Solenoid assembly for P-220, P-220S Scrubber, and 220 Brass Series valves
- Lavendercolored Effluent warning tag



RWSG-Kit

Effluent tag and solenoid sticker

EZREG® PRESSURE/INSTALLATION **REGULATOR & EHC ACCESSORIES**



EZR-30 and EZR-100

 Pressure regulator module for use with P-220, P-220S Scrubber and 220 Brass Series Valves

- EZR-30: 5–30 psi
- EZR-100: 5–100 psi



995-51

 Pressure gauge kit



995-49

- 0-200 psi pressure gauge
- Hermetically sealed shock resistant face



995-14

• Supply screen fitting





995-02 • Flushing adaptor

CONTROLLERS



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CONTROLLERS

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SMRT LOGIC®

The SMRT Logic[®] internet gateway provides secure, on-demand access to your Toro[®] or Irritrol[®] irrigation controller, Unique Lighting Systems[®] outdoor landscape lighting transformer, or other landscape features through your smartphone, tablet, or PC.

FEATURES & BENEFITS

Simple

Simply plug the SMRT Logic into any internet modem or router and let it connect to the web on its own. No Wi-Fi passwords or permissions required.

Connected

SMRT Logic communicates to the controller and other landscape features through a secure and proprietary 900 MHz radio signal. Giving it more range and better reliability than competing Wi-Fi and Bluetooth platforms.

Secure

SMRT Logic features industry standard encryption and is not dependent on your home or business Wi-Fi network, making it virtually invisible to would-be hackers and data thieves.



Compatible

SMRT Logic is backward compatible with Toro° EVOLUTION° Series, TMC Series, Custom Command[™] and Irritrol[®] Climate Logic[®] equipped controllers.



SMRTscape[™] EVO Mobile App Available through iTunes App Store/Google Play.







*Google Play, Amazon Alexa and iTunes are registered trademarks of their respective companies in the U.S. and other countries.

Operational

- Input: 5Vdc, 1 amp
- FCC

Dimensions

- 4.5" W x 5.5" H x 4.5" D (antenna installed in typical orientation)
- Weight: 0.6 lbs.

Warranty

• Five Years



Additional Features

- Add users (representatives) to an account for greater flexibility and ease to system management
- Control and manage up to 10 irrigation controllers through a single SMRT Logic gateway
- Control and program any 120V-powered indoor or outdoor device with a Wireless Auxiliary Relay (e.g., pond lights, fountains, awnings, holiday lights, or indoor lamps)
- ✓ Custom name stations and programs, and add images through the SMRTscape[™] mobile app and website
- ✓ Compatible with existing TMC-424, TMC-212, and Custom Command[™] Controllers equipped with Irritrol[®] Mini-Receiver (CL-MR)

Easy to Setup, Easy to Use

- Connect the SMRT Logic Internet Gateway (Ethernet connection to router)
- 2. Register and create an account at www.SMRTscape.com
- Configure Location(s), irrigation controllers, lighting scenes, and AUX relays.





Google Assistant logo is a trademarks of Google Inc. Amazon Alexa is a trademark of Amazon, Inc.

Specifying Information-SMRT Logic[®]

Model	Description
SMRT-T	SMRT Logic Internet Gateway

EVOLUTION® SERIES CONTROLLER

The Toro[®] EVOLUTION series controller has changed the way we think about irrigation control. It combines a modern and intuitive design with wideranging functionality, making it perfect for everyday residential use, yet able to meet the needs of more complex landscapes.

FEATURES & BENEFITS

Ease of Use

The EVOLUTION controller's user interface was designed with the customer in mind. Shortcut buttons provide quick access to basic functions while the advanced menu leverages the experience and knowledge of the irrigation professional, all shown on a graphics display that navigates similar to many modern consumer electronic devices.

Water-Saving Wireless Accessories

The unique Smart Connect[®] receiver plugs into the back of the front panel, enabling it to wirelessly communicate directly with a number of add-on devices, including the wireless ET Weather Sensor, Precision[™] Soil Sensor, Handheld Remote, and up to two Auxiliary Relays.

Control from Anywhere

Manage your clients' new or existing EVOLUTION Series controllers through the internet using the SMRT Logic[®] gateway and SMRTscape[™] mobile app or website.

Powerful Features

The EVOLUTION controller comes standard with features ready to meet the wide-ranging needs of your clients, such as three independent watering schedules, a stand-alone Auxiliary schedule, modular expansion from 4 to 16 zones, and the capability to power up to four standard solenoids.



When equipped with a Wireless ET Weather Sensor (EVO-WS)



Additional Features

- Three scheduling choices:
 - Seven-day calendar
 - 1- to 30-day interval with up to seven day exclusions
 - Odd/even days with up to seven day exclusions
- ✓ Pump start delay from 10 seconds to 30 minutes
- Master valve ON/OFF by zone



Electrical

- Electrical input power:
- 120V ac
- 30 VA maximum
- UL, CUL Listed
- Station output power: – 24V ac
- 0.75 amps per station maximum
- 0.75 amps pump/master valve
- 1.0 amps total load
- Surge Protection:
- 6.0 KV common mode; 1.0 KV normal mode
- Operation of two solenoids per station

Programming Features

- ✓ Up to six schedules:
 - Three irrigation schedules with four start times per schedule
 - One wired auxiliary schedule, plus two optional wireless auxiliary schedules
- Monthly season adjust by schedule
- Schedule stacking, with automatic split cycle when watering adjustments are greater than 100%
- Grow-In schedule can be set for up to 90 days and automatically reverts to base irrigation schedule
- ✔ Station runtimes from one minute to twelve hours
- Allows 30, 60, or 90 second manual runtimes for things such as winterization/blowouts
- Programmable well-recovery, station, or pump start delays from 10 seconds to 30 minutes
- Timed water off from one to fourteen days
- Compatible with normally-closed rain sensors
- Automatic short detection for circuit protection and faster troubleshooting
- Non-volatile memory doesn't require batteries and holds programming for up to five years
- Diagnostic zone test measures and displays current draw of solenoid and identifies short, over current and open conditions



12-station configuration with two 4-station modules (EMOD-4)

Dimensions

- 11¹/4" W x 7³/4" H x 4¹/4" D
- Weight: 4.5 lbs.

Warranty

• Five years

EVOLUTION SERIES MODEL LIST

Model	Description
EV0-4ID	4-station Indoor Controller
EV0-40D	4-station Outdoor Controller
	Add-ons and Accessories
EMOD-4	4-station Expansion Module
EMOD-12	12-station Expansion Module
EV0-SC	Smart Connect [®] Plug-In Receiver
PSS-SEN	Wireless Precision™ Soil Sensor
EV0-WS	Wireless ET Weather Sensor
EVO-HH	Wireless Handheld Maintenance Remote
EVO-AR	Wireless Auxiliary Relay
SMRT-T	SMRT Logic [®] Internet Gateway

Hardware Features

- ✓ Backlit LCD display
- 4-station base; expandable to 16-stations with 4- and 12-station hot-swappable modules
- Powerful 1.25 mA transformer can run up to 4 standard solenoids at once
- Red LED next to display lights in the event of an alert
- ✓ Option for 9V battery allows for armchair programming
- Outdoor key-lock cabinet manufactured out of durable UV-resistant plastic and includes standardized key used on many of the most popular controllers
- Indoor cabinet includes internal transformer and factory installed power cord

Specifying Information- EVOLUTION® Series

EVO-XX-XX-SC				
Description	Cabinet Type	Module	Connector Options	
EVO	XX	XX	SC	
EVO – EVOLUTION Controller	ID – Indoor OD – Outdoor	4 – No Additional Modules 8 – One, 4-Station Modules 12 – Two, 4-Station Modules 16 – One, 12-Station Module	SC – Smart Connect®	
Example: A 16-station EVOLUTION controller in an indoor cabinet with Smart Connect would be specified as: EVO-ID-16-SC				



16-station configuration with one 12-station module (EMOD-12)

DXI[™] CENTRAL CONTROL SYSTEM

Toro DXi Central Control Satellite is a single powerful hardware platform capable of supporting two powerful software packages, Rain Master[®] Laguna[™] or Sentinel[®] Water Management Software (WMS). DXi comes loaded with features to make precise water management convenient and flexible. **Cloud-Based Data Management** simplifies irrigation management with access from anywhere, anytime. **Enhanced Features** and new precision irrigation management capabilities make water management, scheduling and monitoring adaptable to site specific or user specific needs. And the **Future Ready** hardware platform means the DXi can accommodate new innovations and changing site needs quickly and economically.

FEATURES & BENEFITS

Convenient Mobile Access

The free ProMax[™] Connect app offers irrigation managers access to DXi controllers from anywhere, anytime.

Build to Order

Comes in a variety of configurations, from multiple enclosure options, to multiple irrigation methods: conventional, 2-wire or hybrid.

Multiple Communication Options

Including cellular; cellular communication kits include 10-years of service with no initial service subscription.

Range of Functionality

DXi offers a wide range of functionality, from basic irrigation scheduling to ET, Flow-Sharing and Flow Management.

Evolve at your own Pace

Current Laguna and WMS users can retrofit their existing irrigation controllers without having to replace the central software.















CONTROL カ S

PRODUCT HIGHLIGHT



"Electronic Paper-style" Soft Keys LCD Display

DXi[™] Central Control System

Advanced Central Control Satellite

Toro[®] DXi satellite is one of the most advanced, easy to use controllers on the market. It's "Automatic Intelligence" takes corrective action when certain system issues arise, ensuring, the water management professional is equipped with the ultimate flexibility in "smart" irrigation central control and the water management tools to maximize returns on any project.

Communication Options

- Cellular (ProMax Connect Compatible)
- Serial
- Ethernet (ProMax[™] Connect Compatible)
- Ethernet-to-radio
- **UHF** Radio
- Wi-Fi (ProMax Connect Compatible)

Pivoting Bracket for Easy Installation

for All Boards



SPECIFICATIONS

Electrical

- Input power: 100-120VAC, 50/60HZ
- Output power: 24VAC, 2.75 amps max total draw @ 140°F (60°C), 2.5 amps max per station/pump/master valve
- Transformer: 24VAC, 100VA
- UL, CUL & FCC approved

Dimensions

- PWM: H:23" W:19" D:8"
- SWM: H:23" W:19" D:9"
- SPED: H:35" W:16" D:14"
- PSB: H:38" W:16" D:15.5"
- DPSB: H:38" W:24" D:17"
- PPED: H:35" W:16" D:14"

Additional Features

- 8-96 stations conventional/200 stations 2-wire
- Hybrid option available*
- Built to order with many configurations to choose from
- 16 programs + independent station control (ISC)
- 12 start times per program
- 2 customizable establishment programs & up to 48 "omit day(s)"
- Dedicated port for up to 3 master valves, 3 flow sensors & 2 pumps
- 6 auxiliary sensor ports
- Compatible with 2-Wire Moisture Sensor
- "Electronic paper-style" LCD display for use in heavy sunlight, integrated LED backlight for dark conditions (superior contrast level)
- Innovative soft keys for screen
 - Specific functions & LED "ring" indicators
 - Custom-fit clear covers for all electrical boards
 - Pivotech[™] pivoting bracket for easy installation (SPED and PSB only)
 - Innovative "fridge light" cabinet illumination (see next page)
 - Nonvolatile memory
 - Industrial lightning/surge protection comes standard
 - 5-year limited warranty

*48-Station Conventional output + 152-Station 2-wire output in SPED enclosure





- •

TEMPUS[™] DC SERIES CONTROLLERS

With its advanced features, the new TEMPUS DC battery-operated controller is ideal for managing irrigation in areas without an electrical connection. Wireless connectivity is integrated to allow intuitive programming through the new Toro TEMPUS DC mobile app. TEMPUS DC is completely waterproof and available both with or without an LCD screen.

FEATURES & BENEFITS

Saves Time

Easily access and program the TEMPUS DC battery-operated controller with your blue-tooth enabled smartphone or tablet through the free TEMPUS DC mobile app.

Rain Sensor Ready

Rain sensor compatibility ensures that irrigation does not occur during a rain event.

Water Savings

With water budget, seasonal irrigation can be easily set up for the whole year, and the run times can then be adjusted from 0% to 200% in increments of 10%.



Dimensions & Weights

- TEMPUS DC with LCD: 4.1" x 6.1" x 1.9" (W x H x D) / 0.57 pounds
- TEMPUS DC without LCD: 4.5" x 4.5" x 1.9" (W x H x D) / 0.55 pounds

Power

- 1 x 9V or 4 x 1.5V AAA batteries
- Compatible with Toro®, Irritrol®, and Hunter® DC latch-type solenoids
- Maximum 1 station ON at a time
 Valve wire runs up to 325 feet (20 AWG wire)

Working Pressure

• Qualified on DCL samples up to 85 psi of water pressure

Working Temperature

• From 14°F to 122°F

Warranty

• 2 years

TEMPUS[™] DC Controller Features

- Simple and easy app navigation
- ✓ 1-, 2-, 4-, and 6-station models available
- Four independent watering programs with three start times per program
- Watering schedule by 7 day calendar, day interval or odd/even days
- Automatic program stacking in cases of start time and/ or runtime overlap
- ✓ Run times up to 8 hours with 1 minute increment
- ✓ Permanent program retention in memory without battery
- ✔ Waterproof (IP68) and submersible up to 6½ feet
- ✓ Input for a wired rain sensor

TEMPUS DC LCD CONTROLLER MODEL LIST

Model	Description
TEMP-1-DC-L	1-Station Controller
TEMP-2-DC-L	2-Station Controller
TEMP-4-DC-L	4-Station Controller
TEMP-6-DC-L	6-Station Controller

TEMPUS NON-LCD CONTROLLER MODEL LIST

Model	Description
TEMP-1-DC	1-Station Controller
TEMP-2-DC	2-Station Controller
TEMP-4-DC	4-Station Controller
TEMP-6-DC	6-Station Controller



Specifying Information – TEMPUS DC Controller

XX -XXX			
Tempus Controller	Station Count	Interface	
X	X	DC	
TEMP	1 - 1-Station	L - with LCD screen	
	2 - 2-Station	(Blank) - no screen	
	4 - 4-Station		
	6 - 6-Station		
Example: A 2-station	Tempus DC controller with an LCD interface would be speci	ified as: TEMP-2-DC-L	

EVOLUTION® SERIES CONTROLLER

SMART CONNECT® ADD-ON DEVICES



Toro[®] Smart Connect[®] Plug-In Receiver (P/N EVO-SC)

Installs easily on the backside of the EVOLUTION[°] controller's front panel. No wires, no externally mounted receiver. One Smart Connect Receiver is all that is required to communicate to all Add-On Devices.





SMRT Logic® Internet Gateway (P/N SMRT-T)

Installs easily on the backside of the EVOLUTION® controller's front panel. No wires, no externally mounted receiver. One Smart Connect Receiver is all that is required to communicate to all Add-On Devices.



Wireless ET Weather Sensor (P/N EVO-WS)

Combines real-time temperature and solar measurements with historical ET data for your location to automatically calculate and adjust the irrigation schedule.



Precision[™] Soil Sensor (P/N PSS-SEN)

Up to three soil sensors can be used (one per schedule) to monitor the moisture level in the soil and prevent over- and underwatering. With up to a 500 feet wireless range, there's no digging required to install.



Handheld Remote (P/N EVO-HH)

Backlit display makes maintenance checks a snap, day or night, allowing you to run sprinklers or schedules from up to 1000 feet away.



Wireless Auxiliary Relay (P/N EVO-AR)

Up to two wireless relay switches can be used to power and control a wide range of 120V ac devices, such as outdoor lighting, pumps, fountains, or outdoor entertainment systems.

ToBo

TECHNICAL SUPPORT TEAM NEARLY 100 YEARS OF EXPERIENCE

CONTROLLER REPAIR TORO® GENUINE IRRIGATION PARTS & SERVICE

Whether your irrigation system is 5 years old or 55 years old, Toro Genuine Parts and Service is here to help with service, repair, troubleshooting and suitable replacement options when needed. Our team of experts specialize in irrigation and turf management and have the knowledge and experience required to fully understand your turf management needs. We understand that when problems arise time is of the essence. Our team of Technical Support Representatives are available for no charge technical guidance and troubleshooting, strive to resolve controller issues before your site suffers significant damage, and are dedicated to ensuring you receive replacement parts immediately.

For more information see your local Toro distributor or call at 877-345-TORO (8676).

SENSORS & REMOTES

SIRO







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SENSORS

PRECISION[™] SOIL SENSOR

Leveraging Toro[®] sensing technology used on high-end commercial sites and worldclass golf courses around the globe, the Toro Precision[™] Soil Sensor reduces water waste by continuously measuring moisture levels in the soil and determining when to allow your controller to water, maximizing the efficiency of your irrigation system. Communication between the sensor probe and receiver is completely wireless, so installation is quick and easy with no digging required.

FEATURES & BENEFITS

Works with Nearly All Irrigation Controllers

Can be installed on any irrigation controller, including competitive models.

Prevents Overwatering

Continuously measures soil moisture levels and determines when to allow your irrigation controller to water, making sure just the right amount of water is applied.

No Digging Required

Communication between the sensor probe and the receiver is completely wireless, with up to a 500' range (line of sight). Installation doesn't disturb the soil, giving you accurate moisture readings starting as soon as the sensor is put in the ground.

Automatic Calibration

The sensor will automatically detect the soil type and adjust all calculations accordingly.

Freeze Detection

The only soil sensor to offer freeze detection that prevents irrigation when temperatures approach freezing.





PSS-SEN Model Can be used with the EVOLUTION[®] Controller with integrated Smart Connect[®]

SENSORS

PRODUCT HIGHLIGHT



- Once installed, the sensor calculates field capacity for your soil (or the maximum amount of water the soil can hold after excess water has drained away) and sets that as "100%".
- Any time the moisture level in the soil exceeds field capacity, the irrigation controller is prevented from watering until the moisture level falls below the level set in the receiver (default is 50% of field capacity, adjustable by the user).

UNIVERSAL PSS-KIT INSTALLATION



SPECIFICATIONS

Electrical

- Receiver input power: 24 Vac
- Probe: Three AA batteries

Temperature

- Operating (Probe): 14° F to 170° F
- Operating (Receiver): 14° F to 140° F
- Storage: -22° F to +149° F

Dimensions

- Probe body: 5" x 3³/₄" x ³/₄"
- Probe spikes: 4³/4"
- Receiver body: 3" x 3³/₄" x 1¹/₂"

Warranty

Two years

Additional Features

- Sensor receiver hooks up to irrigation controller's sensor port (if available) or is wired into common wire
- ✓ Up to 500' range, line of sight
- ✓ One sensor per receiver
- Adjustable moisture threshold in 1% increments allows the user to set the desired moisture level
- ✓ Smart Bypass[™] overrides the sensor for a userdefined length of time (especially useful during system winterization)
- If the sensor is tripped while the irrigation controller is in the middle of a watering program, the optional "Cycle Delay" feature ensures all subsequent zones in the irrigation program have a chance to get watered before the sensor halts watering
- Multi-color LED on the sensor probe indicates radio signal strength
- Sensor probe's ultra-slim ³/4" profile allows it to avoid being damaged by mowing equipment
- Extra long stainless-steel electrodes measure over 4" down into the soil profile
- Sensor probe's support stakes hold sensor firmly in place when installed
- Easily replaceable batteries last up to two years with alkaline batteries (longer with lithium)

Specifying Information—Precision[™] Soil Sensor

Model	Description
PSS-KIT	Universal Precision [™] Soil Sensor Kit (Probe + Receiver)
PSS-SEN	Sensor Only (for use with EVOLUTION Smart Connect®)

TURF GUARD[®] SOIL MONITORING SYSTEM

Get the essential soil information you need, when you need it. Stay up to date on your current soil moisture, salinity, and temperature conditions no matter where you are. Sensors are quick and easy to install and are completely buried beneath the surface of your turf. Turf Guard gets you the information you need to make important decisions in real time.

FEATURES & BENEFITS

Wireless Communication

Turf Guard's advance wireless MESH network technology makes for an easy installation with no trenching required.

Monitor Moisture Levels in the Soil

Reduce water usage and improve playability without risking turf quality. Promote root growth by avoiding over watering and detect dry areas before it impacts the turf's health.

Track Salt Build-up And Schedule Flushing

Take the guesswork out of monitoring and managing salinity levels. Know when and how much water to flush with.

Review Daily Soil Temperatures

Predict peak soil temperatures early in the day to start remediation activities before an emergency. Schedule fungicide applications and pesticides for optimal effectiveness.





Sensor

- Measures soil moisture, temperature, and salinity
- Two distinct depths in the soil profile—Critical root zone level and a second 4.5 inches lower
- Field-replaceable battery with 3 year expected life
- Durable housing is resistant to aeration damage



Repeater

- Increases the allowable distance between sensors and the base station
- Multiple sensors can be run through just one repeater, no configuration required
- Can run off of a standard 120v outlet
- Installs within 500 feet of the sensor(s) and within 5,000 feet of the base station





Base Station

- Connects to Internet in the office
- Plugs into standard 120v outlet
- Installs within 500 feet of the sensor(s) or within 5,000 feet of the repeater(s)



SiteVision[™] Interface

- Easy-to-read graphical interface
- Displays sensor data in real time
- Track historical data
- Compare readings from multiple sensors side-by-side



CUSTOMER SUPPORT



Toro Technical Support 877-345-8676



Toro NSN® 888-676-8676 toronsn.com



Toro Controller Repair 877-345-8676



Order Services 800-654-1882



toro.com/irrigation



youtube.com/toro



specifier.toro.com



toro.com/watersmart

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TORO LIMITED WARRANTY FOR IRRIGATION PRODUCTS

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrants to the owner each new piece of irrigation product (featured in the current catalog at date of installation) against defects in material and workmanship for a period described herein, provided they are used for irrigation purposes under manufacturer's recommended specifications.

During the warranty period, we will repair or replace, at our option, any part found to be defective. Your remedy is limited solely to the replacement or repair of defective parts. This warranty does not apply (i) to Acts of God (e.g., lightning, flooding, etc.) unless specifically listed under the Extended Lightning Protection Warranty provided herein; or (ii) to products not manufactured by Toro when used in conjunction with Toro products; or (iii) where equipment is used or installation is performed in any manner contrary to Toro's specifications and instructions, or where equipment is altered or modified; or (iv) to natural infestations (e.g., insects, rodents, etc.).

Return the defective part to your irrigation contractor or installer, or your local distributor who may be listed in your telephone/web directory under "Irrigation Supplies" or "Sprinkler Systems", or contact:

The Toro Warranty Company

5825 Jasmine Street, Riverside, California, 92504, phone (877) 345-8676

For the location of your nearest Toro distributor, or outside the U.S., call (951) 688-9221.

Neither Toro nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of equipment, including but not limited to vegetation loss, the cost of substitute equipment or services required during periods of malfunction or resulting non-use, property damage or personal injury resulting from installer's actions, whether negligent or otherwise. Some states do not allow the exclusion of incidental or consequential damages, so this exclusion may not apply to you. All implied warranties, including those of merchantability and fitness for use, are limited to the duration of this express warranty. Some states do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.

This warranty gives you specific legal rights and you may have other rights, which vary from state to state.

STANDARD WARRANTY

Toro Irrigation Business products are covered by this warranty for a period of two years from the date of installation, except as otherwise noted.

EXTENDED THREE-YEAR WARRANTY

The following products are covered by this warranty for three years from date of installation: DDC[™]WP Controller.

EXTENDED FIVE-YEAR WARRANTY

The following products are covered by this warranty for five years from date of installation:

Fixed Sprays: All 570Z Series Spray Bodies;

Rotors: T5, T7, TS90, 640 Series, TS120, TS170 and T-P2;

Valves: P-220 and 220 Brass Series;

Controllers: EVOLUTION°, TMC-424E, Custom Command[™] and TDC Series, AC and DC Decoders

Sensors & Accessories: TWRS Wireless RainSensor[™] Series (receiver and transmitter), Smart Connect[®], EVO-WS, EVO-AR, EVO-HH, SMRT-T.

DXI[™] SERIES PRODUCT WARRANTY

All DXi Centrals, with the exception of centrals covered by the Toro National Support Network (NSN®), and ProMax™ hand-held remotes are covered by this warranty for a period of two years from date of installation. All DXi Series satellites are covered by this warranty for a period of five years from date of installation.

LANDSCAPE DRIP WARRANTY

Warranty period from date of delivery:

DL2000[™] Series Dripline

- Emitters 2 years
- Hose 5 years (prorated)
- Root Intrusion 7 years

Drip In° Series Dripline

- Emitters 2 years
- Hose 5 years (prorated)

Blue Stripe[®] Hose

• All – 7 years (prorated)

Fittings

• All – 1 year

Emission Devices

- All (except NGE) 1 year
- NGE[®] Emitter and
 Drip Pubblance 2 years
- Drip Bubblers 2 years

Filters and Components

• All – 1 year

Other Accessories

• All – 1 year

GROUNDING

The Toro Warranty for Irrigation Controllers is void if controller is not properly grounded per instruction manual. A good ground source is a mandatory component of overall surge protection for Toro Irrigation Control Systems. Grounding electrode(s) should be placed at each automatic controller or controller group locations. The resistance to the grounding electrode should not exceed 10 Ohms when measured with a Megger Earth Resistance Testing instrument or equivalent. It is the responsibility of the installer to connect all electronic irrigation equipment for which he is responsible to earth around in accordance with Article 250 of the National Electrical Code (NEC). Even with optimum grounding, neither Toro nor Toro Warranty Company are liable for product failures due to acts of God (i.e., lightning, flooding, etc.), and these failures are not covered by warranty.



www.toro.com

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Products depicted in this brochure are for demonstration purposes only. Actual products offered for sale may vary in design and features.



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