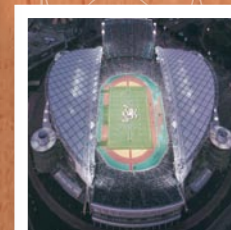
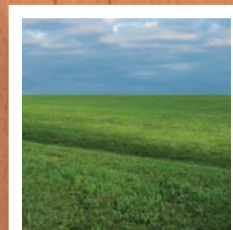
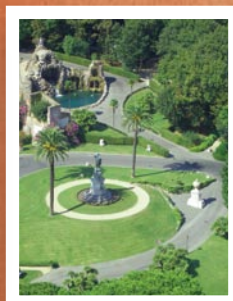
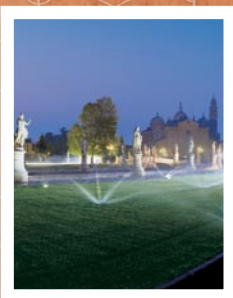


TORO[®]

Count on it.

Specification Catalog



Residential and Commercial Irrigation Products
International Markets





International



Dear Irrigation Professional,

The dedicated team here at Toro Irrigation is working hard to be the leader in product innovation, efficient water management, and education. Through continuous improvement initiatives and new process development, we are committed to ensuring high-quality practical solutions for our valued customers

Growing Through Innovation

Your feedback is important to us. We want to help our industry achieve new standards in water management and our focus is on developing innovative new products that promote efficient irrigation practices. With our commitment to developing products based on your real-world needs combined with state-of-the-art research and comprehensive testing, we're trying hard to deliver great products to fit today's needs.

Forming Long-Term Partnerships

No matter where you live or work, we are always close by. Our network of experienced employees and distributors are ready to help you every step of the way with technical support, field services, product training, controller repair, Toro NSN (National Support Network) and genuine Toro parts. All of these efforts are aimed at keeping our irrigation systems up and running and making you more successful.

Practical Water Management Solutions

Our goal is to offer a complete line of professional-grade products that work together to provide practical water management solutions. We're also looking forward to building strong alliances and strengthening our leadership position in the water management effort. We are committed to leading the way with our practical WaterSmart® solutions that help you create lush, beautiful landscapes while using our resources more efficiently.

Investing In The Future

By partnering with you on our research and development initiatives, we're working to help you stay out in front of the industry changes so you can successfully grow your business. But for us, success is measured not just in numbers but also in the empowerment of our employees, the preservation and beauty of our environment and the satisfaction of our customers.

We enjoy working with you, and we're grateful for your support. And we hope that Toro remains the preferred company for all your landscape irrigation needs.

Sincerely,

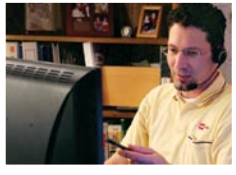
A handwritten signature in black ink, appearing to read "Tim Emery".

Tim Emery

Director, International ResCom Irrigation, Toro International Business



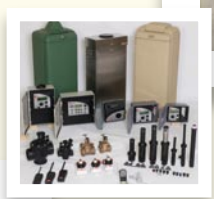
Satisfied
Customers



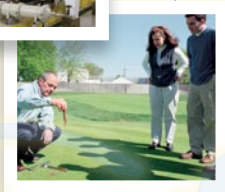
Partnerships and
Customer Care



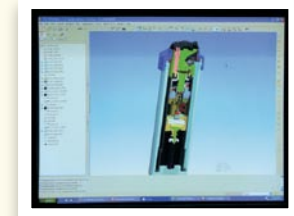
Our People



Practical Water Management
Solutions



State of the Art
Research and
Comprehensive
Testing



The Future



New and Enhanced Products Table of Contents

T5 Series

The New T5 Series Rotor delivers a full 5 inches of pop-up height, part and full circle in one with a quick and easy top adjustment feature.



Precision™ Series Nozzles

The exclusive, innovative technology of the new Precision™ Series Nozzles provides a lower precipitation rate spray nozzle with superior distribution efficiencies.

TR70PSS and TR50PSS Rotors

The TR70P and TR50P Series rotors now available with a stainless steel sleeve for additional strength when needed.



TS90

The TS90 Series rotors now available. The new long throw TS90 Series rotor is ideal for sports turf applications.



Spike-Guard Solenoids on P-220 and 220 Brass Valves

Toro's New Spike-Guard technology for the P-220 and 220 Brass Series valves operates on less power per solenoid reducing wire size requirements and lowering overall power costs.



TPV Series

The search for a full featured, yet economically priced, residential and commercial valve is over thanks to Toro's newest 1" valve offering, the TPV Series.



TBCWP

The Toro Waterproof Battery Controller: A battery-powered controller that is perfect for use in areas without standard electrical power with advanced features such as the monthly water budget.



DDCWP & DDC Series – New monthly seasonal adjust feature

Monthly watering schedule feature adjusts from 0-200% and January to December scheduling options.

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570 MPR Series-Fixed Arc Nozzles
Precision™ Series Nozzles
TVAN Variable Arc Nozzles
Maxijet® Series
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TMR-1 Maintenance Remote

New handheld remote is compatible with new Custom Command, TMC-424E and TDC models for ease of use, troubleshooting, and field maintenance operation.



TMC-212 – Two solenoids per station

Upgraded controller electrical limits and modifications now give the TMC-212 the ability to run two solenoids on a station.



TMC-424E

Upgraded controller



New Pedestal Option

New optional pedestal provides mounting flexibility for a variety of installations. The TIS-PED can be used with the Custom Command 36 and 48 station models.



The TriComm System

The TriComm System's feature set is unlike any site management solution available for smaller municipal and commercial applications. Specifically designed with flexibility and ease of use in mind.



Sentinel

Engineered to be the highest quality and reliability, yet simple to use, the Sentinel Global Irrigation System is ideal for controlling multiple irrigation sites with diverse landscapes and watering requirements.



Valves

EZ-Flo® Plus Series "Jar-Top" Plastic Valves
TPV Valve Series "Jar-Top" Plastic Valves
252 Series Valves
P-150 Series Valves
P-220 Plastic Series Valves
220 Brass Series Valves
Quick Coupler Valves
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DDC™ Series
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All specifications in this catalog are accurate at the time of printing, but are subject to change without notice. Please be sure to check www.toro.com for the latest performance information. The performance data in this catalog show average values. This includes all sprinkler data and hydraulic valve radii, flow and check height and friction loss. All products are tested in a controlled environment; therefore uncontrolled elements, for example but not limited to wind, may affect your results.

Photos courtesy of: FreeStockPhotos.com; Sarah Williams

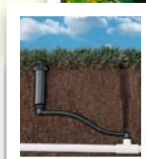
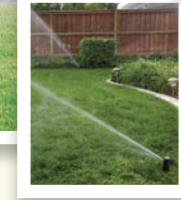
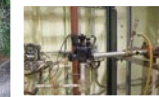
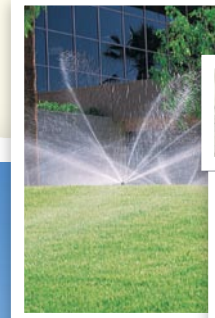
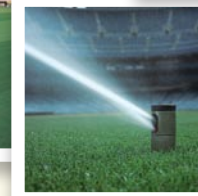
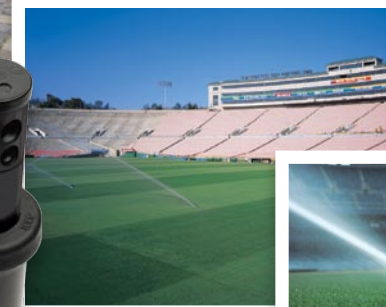
Sprinklers and Rotors



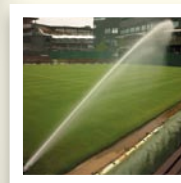
Fixed Sprays
and Nozzles



Commercial and
Sport Sprinklers



Residential Turf
Sprinklers



Fixed Sprays and Nozzles *Innovative and Versatile*

Toro sprays help you meet every turf requirement with a wide range of models and nozzles, that are as attractive as they are functional. Toro. Recognized worldwide for unbeatable versatility and built-in dependability to meet your needs.



Super Funny Pipe Flex Assemblies
20 and 30cm (8" and 12") lengths
13mm (1/2") inlets



		570Z Series				
		LPS Series	Classic	XF	PR	PRX
Specifications	Radius	2,2-5,5m (7'-18')	0,5-5,5m (2'-18')	0,5-5,5m (2'-18')	0,5-5,5m (2'-18')	0,5-5,5m (2'-18')
	Flow Range	1,3-17 LPM (0.3-4.5 GPM)	0,2-17,3 LPM (0.05-4.58 GPM)	0,2-17,3 LPM (0.05-4.58 GPM)	0,2-17,3 LPM (0.05-4.58 GPM)	0,2-17,3 LPM (0.05-4.58 GPM)
	Operating pressure	1,4-4,8 Bar (20-70 PSI)	1,4-5,2 Bar (20-75 PSI)	1,4-5,2 Bar (20-75 PSI)	1,4-5,2 Bar (20-75 PSI)	1,4-5,2 Bar (20-75 PSI)
Features	Pop-up Height	50, 100mm (2", 4")	50, 75, 100, 150, 300mm (2", 3", 4", 6", 12")	100, 150, 300mm (4", 6", 12")	100, 150, 300mm (4", 6", 12")	100, 150, 300mm (4", 6", 12")
	Side Inlet Option		150, 300mm (6", 12")	150, 300mm (6", 12")	150, 300mm (6", 12")	150, 300mm (6", 12")
	Check Valve Option	X	X	X	X	X
	Effluent Water Option	X	X	X	X	X
	Shrub Model		X	X	X	X
	X-Flow® Water Shut-off			X		X
	Built-in Pressure Regulator				X	X
Applications	Residential	X	X			
	Commercial			X	X	X
	Turf	X	X	X	X	X
	Shrubs/Ground Cover	X	X	X	X	X
	Slopes	X	X	X	X	X
	High Pressure Systems				X	X
	Low Pressure Systems	X	X	X		
	Roundabouts/Medians	X	X	X		
	High Traffic Areas			X	X	X
	High Wind Conditions				X	X

Fixed Sprays and Nozzles Comparison

	570Z Series				
LPS Series	Classic	XF	PR	PRX	
					
TVAN Nozzle	TVAN Nozzle	TVAN Nozzle	TVAN Nozzle	TVAN Nozzle	
					
MPR Fixed Nozzle	MPR Fixed Nozzle	MPR Fixed Nozzle	MPR Fixed Nozzle	MPR Fixed Nozzle	
					
Precision™ Series Nozzle	Precision™ Series Nozzle	Precision™ Series Nozzle	Precision™ Series Nozzle	Precision™ Series Nozzle	
					
	Zero-Flush Seal	Zero-Flush Seal	Zero-Flush Seal	Zero-Flush Seal	
		 Without X-Flow®		 Without X-Flow®	
		 With X-Flow®		 With X-Flow®	
			 Patented in-riser pressure regulator	 Patented in-riser pressure regulator	
					

*Fixed nozzle optional; LPS comes pre-installed with TVAN nozzles

LPS Series Fixed Sprays

2,4, 3,0, 3,7, 4,6 and 5,2m
(8', 10', 12', 15' and 18') Radius

The LPS features a compact body with pre-installed TVAN nozzles in 50mm or 100mm (2" or 4") pop-up heights. The LPS is ideal for residential applications with its small diameter cap that allows it to blend into many landscapes.

The pre-installed TVAN nozzles have matched precipitation rates that provide even coverage. The spray features a sturdy, one piece molded body and a heavy duty, stainless steel retraction spring, which ensures positive pop-down.

Key Features

- Available with pre-installed, color-coded Toro Variable Arc Nozzles in five radii
- Matched precipitation rate nozzles provide even coverage
- Adjustable arc patterns from 0° to 360°
- Ratcheting riser permits easy arc adjustment in the field
- Easy to grip nozzles make adjustments simple—wet or dry



Additional Features

- Pressure-activated seal reduces flow-by during pop-up and keeps debris away from stem during retraction
- Heavy-duty, stainless steel retraction spring ensures positive pop-down
- One-piece molded body adds durability
- Removable nozzle, screen and internal components for flushing and servicing
- Optional check valve (Model No. LPSCV)

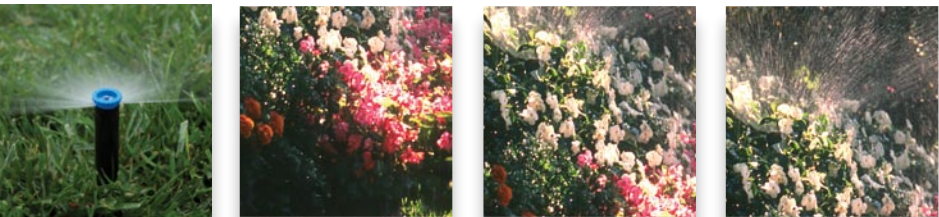
Specifications

- 1,4-4,8 Bar (20-70 PSI)
- Spacing:
 - 2,4m (8') VAN: 2,1-2,7m (7'-9')
 - 3,0m (10') VAN: 2,4-3,1m (8'-10')
 - 3,7m (12') VAN: 3,1-4,3m (10'-14')
 - 4,6m (15') VAN: 3,7-4,9m (12'-16')
 - 5,2m (17') VAN: 4,3-5,5m (14'-18')
- Flow-by: 0 at 0,7 Bar (10 PSI) or greater, 1,9 LPM (.5 GPM) otherwise
- Inlet: 13mm (1/2") female NPT/BSP threads
- Riser accepts Toro male thread TVAN or 570Z nozzles
- Exposed diameter: 32mm (1 1/4")
- Body height:
 - LPS200: 50mm (2")
 - LPS400: 100mm (4")
- Optional check valve maintains up to 2,1m (7') of elevation change to prevent low-head drainage (LPSCV)



Easy Arc Adjustment Means Accurate Watering

No matter the landscape area, TVAN Series nozzles are designed to deliver effective watering coverage with maximum irrigation efficiency. Whether a standard size, odd angle or irregularly shaped area, the TVAN Series is able to meet the watering requirements with just one nozzle. There is no need to worry about dry spots on lawns or wasting water on sidewalks, driveways and other hardscapes. A TVAN nozzle solves your over and under-watering concerns by allowing precise fine-tuning for better water management.



LPS Series – Specifying Information

LPS X XX XX			
Spray	Size	Nozzle	Optional
LPS – LPS	2 – 50mm (2") 4 – 100mm (4")	08 – 2,4m (8') 10 – 3,0m (10') 12 – 3,7m (12') 15 – 4,6m (15') 17 – 5,2m (17')	E – Effluent CV – Check Valve
For Example: When specifying a 50mm (2") LPS with a 3,0m (10') nozzle, you would specify: LPS 2 10			



570Z Classic Series Sprinklers

0-5,5m (0'-18") Radius

Featuring a low-pressure seal that flushes only upon retraction, 570Z models are ideal for small garden and turf areas. Seven distinct pop-up sprinkler bodies and a host of interchangeable fixed or variable arc nozzles provide unlimited design flexibility.



Key Features

- Zero flush seal prevents flushing on pop-up, enabling more heads to be placed on same zone
- Low-pressure sealing at 1 Bar (15 PSI)
- Retraction flushing clears debris for reliable pop-down
- Accepts all Toro spray nozzles – including 570 MPR Plus fixed, Toro Variable Arc, Precision™ Series, bubbler and low angle nozzles
- All bodies shipped with a flush plug in place for ease of flushing and riser pull up
- Ratcheting riser permits easy arc adjustment in the field

Additional Features

- Small, 50mm (2") diameter black cap is less visible, reducing damage from exposure or vandals
- Accepts Maxijet® micro-spray nozzles for low-application-rates
- Check valve models with heavy-duty retraction spring prevent low-head drainage and keep laterals charged with water (optional)
- Side-inlet models available on both 150mm (6") and 300mm (12") sprinkler bodies for sandy soils or applications prone to high pressure surges and spikes
- Durable engineered plastic construction



Zero flush seal

- Stainless-steel retraction spring

Specifications

- Spacing: 0,6-5,5m (2'-18')
- Flow rate: 0,2-17 LPM (0.05-4.58 GPM)
- Recommended operating pressure: 1,4-3,5 Bar (20-50 PSI)
- Maximum operating pressure: 5,2 Bar (75 PSI)
- Minimum operating pressure for COM models: 1,7 Bar (25 PSI)
- 13mm (1/2") female-threaded inlet
- Check valve maintains up to 3m (10') in elevation change (The Check-O-Matic feature requires use of the bottom inlet.)
- Dimensions:
 - Body diameter:
 - 35mm (1 3/8") on shrub, 2P, 3P, 4P, 6P and 6P-SI bodies
 - 41mm (1 5/8") on 12P bodies
 - 44mm (1 3/4") on 12P-SI bodies
 - Cap diameter: 50mm (2")
 - Side inlet: 120mm (4 3/4") from top of sprinkler to center of side inlet



570Z-6P-COM

- 1 MPR Plus nozzle with standard PCD's
- 2 Ratcheting riser lets you fine-tune after installation
- 3 Zero flush on pop up
- 4 50mm (2") cap diameter
- 5 Optional: Check-O-Matic seal installed into riser prevents low-head drainage

570Z Series – Specifying Information

570X - XXP - SI - COM - E			
Model	Pop-Up Height	Optional	Optional
Z – Lawn-Pop and High-Pop S – Shrub	2 – 50mm (2") 3 – 75mm (3") 4 – 100mm (4") 6 – 150mm (6") 12 – 300mm (12")	SI – Side Inlet for 150 and 300mm (6" and 12")	COM – Check-O-Matic* E – Effluent
For Example: When specifying a 570Z Series Sprinkler with a pop-up height of 150mm (6") and a check valve, you would specify: 570Z-6P-COM			

*Not available on side inlet models

*COM feature requires use of bottom inlet only.

570Z XF/PR/PRX Series Sprayheads

0-5,5m (0'-18') Radius

Key Features (XF Series)

- All the features of the 570Z Classic Series plus:
- Patented X-Flow® high-flow shut-off device built into the riser
- Restricts water loss by 99% if the nozzle is removed or damaged, eliminating potential erosion or safety-issues
- Allows for “dry” nozzle and filter-replacement or maintenance, while the system is running



- 1 MPR Plus nozzle
- 2 Nozzle filter screen
- 3 Patented X-Flow® shut-off device
- 4 Patented in-riser pressure regulator maintains constant 2 Bar (30 PSI) outlet pressure
- 5 Zero-flush seal prevents flushing on pop-up
- 6 Optional side inlet on non-Check-O-Matic models (not illustrated)
- 7 Optional Check-O-Matic seal prevents low-head drainage

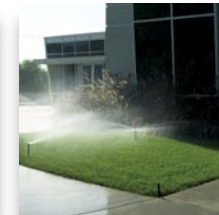
570Z
PRX Series

Key Features (PR Series)

- All the features of the 570Z Classic Series plus:
- Patented in-riser pressure regulator
 - Maintains constant 2 Bar (30 PSI) outlet pressure
 - Eliminates misting and fogging caused by pressures above 2 Bar (30 PSI)
 - Ideal for applications with high or varying operating pressure, including long runs and slopes.



Without X-Flow® Device
At 40 psi, the standard pressure fixed spray with a missing nozzle wastes water at a rate of 40 GPM



With X-Flow® Device
That same fixed spray with an X-Flow feature wastes almost no water—99% less.

Note: You must have a nozzle screen or flush plug in place to deactivate the X-Flow® function. Without either, there will not be flow through the sprinkler.

Key Features (PRX Series)

- All the features of the 570Z Classic Series plus:
- Patented X-Flow® high-flow shut-off device built into the riser
 - Restricts water loss by 99% if the nozzle is removed or damaged, eliminating potential erosion or safety-issues
 - Allows for “dry” nozzle and filter-replacement or maintenance, while the system is running
- Patented in-riser pressure regulator
 - Maintains constant 2 Bar (30 PSI) outlet pressure
 - Eliminates misting -and fogging caused by pressures above 2 Bar (30 PSI)
 - Ideal for applications with high or varying operating pressure, including long runs and slopes.
- Extended 5-year warranty



Without pressure
regulator



With pressure
regulator

570Z Series Specifying Information

570X - XXP - SI - XXX - COM - E

Model	Pop-Up Height	Optional	570Z Style	Optional
Z-Lawn Pop-up and High Pop S-Shrub	12- 300mm (12") 6- 150mm (6") 4- 100mm (4")	SI - Side Inlet*	XF-with X-Flow® PR-with Pressure Regulator PRX-with X-Flow® and Pressure Regulator	COM - Check Valve** E - Effluent

For Example:
When specifying 570Z PRX Series sprinkler with a pop-up height of 150mm (6") with a side inlet and non-potable water option, you would specify:

570Z - 6P - SI - PRX - E

*Available for 150mm (6") and 300mm (12") models.

**COM feature requires use of bottom inlet only.



570 MPR Plus Series Fixed Arc Nozzles

True matched precipitation rates and color coding by radius are just a few of the performance features of 570 MPR Plus spray nozzles. Fits any 570 pop-up body, shrub adapter, riser extender or shrub riser.

Key Features

- Matched precipitation rates ensure all nozzles (every radius and pattern) apply water at the same rate
- Low-flow rates allow for more sprinklers to be placed on the same zone
- Free PCDs eliminate fogging, conserve water and provide precise flow rates; available pre-installed or separate
- Color coding by radius for easy identification
- Complete selection of arcs for all radius options – full, 3/4, 2/3, 1/2, 1/3 and 1/4

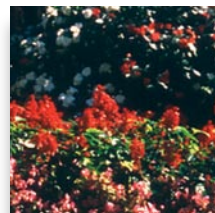
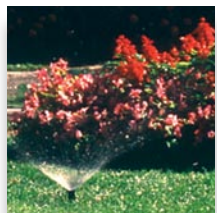
Additional Features

- Uniform watering patterns eliminate over and under throw; refined design of part-circle patterns for better arc
- Precise radius/flow adjustment, will not lose adjustment
- 1,5m (5') nozzles adjust to 1m (3')



570 MPR Plus Nozzle

- 1 Radius-adjustment screw provides 25% radius reduction and complete shutoff
- 2 Precision molded opening to ensure true matched precipitation rates
- 3 Color-coded band to indicate radius
- 4 Threaded to fit any Toro 570 pop-up body, riser or adapter
- 5 Free pressure-compensating device maintains constant performance



- Standard and special spray patterns for small areas
- Full set of arcs for 3, 2,4 and 1,5m (10', 8' and 5') radius nozzles
- 1,2 x 5,5m (4'x18') side strip ideal for parking lot medians
- 0,6 x 1,8m (2'x6') for small planter beds and other narrow areas
- 5 levels of trajectory
- Convenient nozzle packaging – nozzles and screens packed separately in attached bags
- Fine-mesh filter screens prevent clogging of lower volume nozzles
- Adjustment screw allows up to 25% reduction in radius and complete shutoff

Apex at 2 Bar (30 PSI)					
Nozzle Series	Maximum Height of Spray				
	27°	23°	12°	5°	0°
4,6m (15') Series	1,4m (4'8")				
3,7m (12') Series		1,1m (3'7")			
3m (10') Series			0,7m (2'4")		
2,4m (8') Series				0,66m (2'2")	
1,5m (5') Series					0,46m (1'6")

Specifications

- Flow rate: 0,2–17 LPM (0.05–4.58 GPM)
- Operating pressure for optimum nozzle performance:
- 2 Bar (30 PSI)
- Recommended operating pressure range:
- 1,4–3,5 Bar (20–50 PSI)
- Maximum operating pressure: 5,2 Bar (75 PSI)

570 Series Nozzle Screens		
White	Red	Red and Metal
4,6m (15') Series	2,4m (8') Series	1,5m (5') Series
3,7m (12') Series	1,2 x 9,1m (4'x30') SST	0,6 x 1,8m (2'x6') SST
3m (10') Series	1,2 x 5,5m (4'x18') SST	10° Stream Spray Series
1,2 x 9,1m (4'x30') CST Stream Bubblers		35° Stream Spray Series Flood Bubbler Series
Flat-Spray (Non-MPR)		Flat-Spray, Low Volume (Non-MPR)
1,2 x 9,1m (4'x30') EST		
2,7 x 5,5m (9'x18') SST		

*Indicates screen provided with nozzle. Refer to current Parts Breakout Book for more information.

570 MPR Series Specifying Information

XX - XXX - PC			
Radius	Arc		Optional
5–1,5m (5') 8–2,4m (8') 10–3,0m (10') 12–3,7m (12') 15–4,6m (15')	Q—90° T—120° H—180° TT—240° TQ—270°	F—360° EST—End Strip CST—Center Strip SST—Side Strip	PC – Pressure Compensating
For Example: When specifying a 570 MPR Plus Nozzle with a spray of 3m (10'), 180° arc and pressure compensation, you would specify: 10-H-PC			

Note: To specify a 570 MPR Plus nozzle with a 570Z sprinkler body, attach the body specification (pg. 11-12) before the above nozzle specification.

570 MPR Plus Series Fixed Arc Nozzles (continued)



5 Series



8 Series



10 Series



12 Series



15 Series



Special Patterns

570 MPR Series – Performance Data (Metric)																							
Pressure				5 Series w/ 0° Trajectory				8 Series w/ 5° Trajectory				10 Series w/ 12° Trajectory				12 Series w/ 23° Trajectory				15 Series w/ 27° Trajectory			
Nozzle	Bar	kPa	Kg/cm ²	Flow (LPM)	Radius (m)	Prec. Rate*		Flow (LPM)	Radius (m)	Prec. Rate*		Flow (LPM)	Radius (m)	Prec. Rate*		Flow (LPM)	Radius (m)	Prec. Rate*		Flow (LPM)	Radius (m)	Prec. Rate*	
						▲	■			▲	■			▲	■			▲	■			▲	■
	1,5	150	1,53	0,22	1,3	9,0	7,8	0,69	2,2	9,9	8,5	1,20	2,8	10,6	9,2	1,58	3,4	9,5	8,2	2,69	4,3	10,1	8,7
	2,0	200	2,04	0,33	1,5	10,1	8,8	0,88	2,4	10,6	9,2	1,48	3,0	11,4	9,9	1,85	3,6	9,9	8,6	3,15	4,5	10,8	9,3
	2,5	250	2,55	0,41	1,6	11,1	9,6	0,96	2,5	10,6	9,2	1,75	3,2	11,8	10,2	2,13	3,8	10,2	8,8	3,67	4,8	11,0	9,5
	3,0	300	3,06	0,49	1,7	11,7	10,2	1,02	2,6	10,4	9,0	2,03	3,5	11,5	9,9	2,31	4,0	10,0	8,6	4,19	4,9	12,1	10,5
	3,5	350	3,57	0,58	1,8	12,4	10,7	1,11	2,8	9,8	8,5	2,30	3,7	11,6	10,1	2,39	4,0	10,3	8,9	4,71	4,9	13,6	11,8
PC	2,07-2,76	207-276	2,11-2,82	0,34	1,5	10,5	9,1	0,83	2,4	10,0	8,6	1,25	3,0	9,6	8,3	1,82	3,7	9,2	8,0	2,84	4,6	9,3	8,0
	2,76-5,18	276-518	2,82-5,28	0,38	1,5	11,7	10,1	0,95	2,4	11,4	9,9	1,40	3,0	10,8	9,3	2,01	3,7	10,2	8,8	3,07	4,6	10,0	8,7
	1,5	150	1,53	0,30	1,3	12,3	10,6	0,92	2,2	13,1	11,4	1,66	2,8	14,6	12,7	2,26	3,4	13,5	11,7	3,70	4,2	14,5	12,6
	2,0	200	2,04	0,44	1,5	13,5	11,7	1,11	2,4	13,3	11,5	1,93	3,0	14,8	12,8	2,67	3,6	14,3	12,3	4,11	4,5	14,0	12,2
	2,5	250	2,55	0,55	1,6	14,9	12,9	1,28	2,5	14,2	12,3	2,28	3,2	15,4	13,3	3,08	3,8	14,8	12,8	4,64	4,7	14,5	12,6
	3,0	300	3,06	0,66	1,7	15,8	13,7	1,42	2,6	14,5	12,6	2,59	3,5	14,6	12,7	3,43	3,9	15,6	13,5	5,12	4,7	16,0	13,9
	3,5	350	3,57	0,77	1,8	16,4	14,2	1,53	2,8	13,5	11,7	2,87	3,7	14,5	12,6	3,70	4,0	16,0	13,9	5,53	4,7	17,3	15,0
	2,07-2,76	207-276	2,11-2,82	0,45	1,5	13,8	12,0	1,10	2,4	13,2	11,4	1,67	3,0	12,8	11,1	2,42	3,7	12,2	10,6	3,79	4,6	12,4	10,7
	2,76-5,18	276-518	2,82-5,28	0,49	1,5	15,1	13,0	1,33	2,4	16,0	13,8	1,89	3,0	14,5	12,6	2,65	3,7	13,4	11,6	4,16	4,6	13,6	11,8
	1,5	150	1,53	0,44	1,3	18,0	15,6	1,49	2,3	21,3	18,4	2,34	2,8	20,6	17,9	3,69	3,4	22,1	19,1	5,37	4,1	22,1	19,1
	2,0	200	2,04	0,69	1,5	21,2	18,4	1,84	2,4	22,1	19,1	2,65	3,0	20,4	17,6	4,07	3,6	21,7	18,8	6,14	4,5	21,0	18,2
	2,5	250	2,55	0,81	1,6	21,9	19,0	2,08	2,5	23,0	19,9	3,02	3,2	20,4	17,7	4,62	3,8	22,1	19,2	7,12	4,8	21,4	18,5
	3,0	300	3,06	0,92	1,7	22,0	19,1	2,29	2,6	23,4	20,3	3,40	3,4	19,2	16,6	5,25	4,1	23,9	20,7	7,81	4,9	22,5	19,5
	3,5	350	3,57	1,03	1,8	22,0	19,0	2,48	2,8	21,9	18,9	3,79	3,5	19,1	16,6	5,94	4,3	25,7	22,2	8,13	4,9	23,4	20,3
	2,07-2,76	207-276	2,11-2,82	0,68	1,5	20,9	18,1	1,67	2,4	20,1	17,4	2,50	3,0	19,2	16,6	3,63	3,7	18,3	15,9	5,68	4,6	18,6	16,1
	2,76-5,18	276-518	2,82-5,28	0,76	1,5	23,4	20,2	1,89	2,4	22,7	19,7	2,84	3,0	21,8	18,9	4,00	3,7	20,2	17,5	6,25	4,6	20,4	17,7
	1,5	150	1,53	0,63	1,3	25,8	22,3	2,21	2,2	31,6	27,4	2,86	2,8	25,2	21,9	4,46	3,4	26,7	23,1	7,02	4,3	26,3	22,7
	2,0	200	2,04	0,91	1,5	28,0	24,2	2,60	2,4	31,2	27,0	3,57	3,0	27,4	23,8	5,36	3,6	28,6	24,8	8,17	4,5	27,9	24,2
	2,5	250	2,55	1,06	1,6	28,6	24,8	2,89	2,5	31,7	27,4	3,98	3,1	26,9	23,3	5,91	3,8	28,3	24,5	9,42	4,8	28,3	24,5
	3,0	300	3,06	1,20	1,7	28,7	24,9	3,13	2,6	32,0	27,7	4,28	3,3	24,2	20,9	6,40	3,9	29,1	25,2	10,31	4,9	29,7	25,7
	3,5	350	3,57	1,34	1,8	43,3	37,5	3,35	2,8	29,6	25,6	4,53	3,4	22,9	19,8	6,86	4,0	29,7	25,7	10,80	4,9	31,1	26,9
	2,07-2,76	207-276	2,11-2,82	0,87	1,5	26,7	23,2	2,23	2,4	26,8	23,2	3,40	3,0	26,1	22,6	4,85	3,7	24,5	21,2	7,57	4,6	24,7	21,4
	2,76-5,18	276-518	2,82-5,28	1,02	1,5	31,4	27,2	2,65	2,4	31,8	27,6	3,79	3,0	29,1	25,2	5,30	3,7	26,8	23,2	8,33	4,6	27,2	23,6
	1,5	150	1,53	0,82	1,3	33,6	29,1	2,47	2,2	35,3	30,6	3,25	2,8	28,7	24,8	4,31	3,3	25,8	22,3	8,28	4,1	34,1	29,5
	2,0	200	2,04	1,06	1,5	32,6	28,2	2,83	2,4	34,0	29,4	3,85	3,0	29,6	25,6	5,68	3,6	30,3	26,3	9,65	4,5	33,0	28,5
	2,5	250	2,55	1,22	1,6	33,0	28,5	3,11	2,5	34,4	29,8	4,32	3,1	29,2	25,3	6,10	3,8	29,2	25,3	10,79	4,7	33,8	29,3
	3,0	300	3,06	1,37	1,7	32,8	28,4	3,35	2,6	34,3	29,7	4,74	3,3	26,8	23,2	6,44	3,9	29,3	25,4	11,89	4,8	35,7	30,9
	3,5	350	3,57	1,53	1,8	43,3	37,5	3,54	2,8	31,2	27,0	5,15	3,4	26,0	22,5	6,86	4,0	29,7	25,7	12,98	4,9	37,4	32,4
	2,07-2,76	207-276	2,11-2,82	0,98	1,5	30,1	26,1	2,42	2,4	29,1	25,2	3,75	3,0	28,8	25,0	5,45	3,7	27,5	23,8	8,71	4,6	28,5	24,7
	2,76-5,18	276-518	2,82-5,28	1,10	1,5	33,8	29,3	2,65	2,4	31,8	27,6	4,13	3,0	31,7	27,5	6,06	3,7	30,6	26,5	9,47	4,6	31,0	26,8
	1,5	150	1,53	1,03	1,3	42,2	36,5	2,97	2,2	42,4	36,8	4,45	2,7	39,3	34,0	6,67	3,4	39,9	34,6	11,29	4,1	46,5	40,2
	2,0	200	2,04	1,39	1,5	42,7	37,0	3,69	2,4	44,3	38,4	5,50	3,0	42,3	36,6	8,09	3,6	43,2	37,4	13,34	4,5	45,6	39,5
	2,5	250	2,55	1,60	1,6	43,2	37,4	4,16	2,5	46,0	39,9	5,92	3,1	40,0	34,6	8,67	3,8	41,5	36,0	15,05	4,8	45,2	39,1
	3,0	300	3,06	1,81	1,7	43,3	37,5	4,58	2,6	46,9	40,6	6,41	3,3	36,2	31,3	9,36	3,9	42,6	36,9	16,40	4,9	47,2	40,9
	3,5	350	3,57	2,03	1,8	43,3	37,5	4,96	2,8	43,8	37,9	7,07	3,4	35,7	30,9	10,32	4,0	44,6	38,6	17,45	4,9	50,3	43,5
PC	2,07-2,76	207-276	2,11-2,82	1,33	1,5	40,9	35,4	3,22	2,4	38,7	33,5	5,04	3,0	38,7	33,5	7,27	3,7	36,7	31,8	11,36	4,6	37,1	32,2
	2,76-5,18	276-518	2,82-5,28	1,48	1,5	45,5	39,4	3,79	2,4	45,5	39,4	5,72	3,0	44,0	38,1	7,95	3,7	40,2	34,8	12,49	4,6	40,8	35,4

▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

■ Precipitation rates are for square spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

All performance specifications are based on the stated working pressure available at the base of the sprinkler.

570 MPR Plus Series Fixed Arc Nozzles (continued)



5 Series



8 Series



10 Series



12 Series



15 Series



Special Patterns

570 MPR Series – Performance Data (English)

Pressure		5 Series with 0° Trajectory ●				8 Series with 5° Trajectory ●				10 Series with 12° Trajectory ●				12 Series with 23° Trajectory ●				15 Series with 27° Trajectory ●				Special Patterns ●			
Nozzle	PSI	Flow GPM	Radius (ft)	Prec. Rate* ▲ ■		Flow GPM	Radius (ft)	Prec. Rate* ▲ ■		Flow GPM	Radius (ft)	Prec. Rate* ▲ ■		Flow GPM	Radius (ft)	Prec. Rate* ▲ ■		Flow GPM	Radius (ft)	Prec. Rate* ▲ ■		Nozzle	Flow GPM	Special Patterns (W x L)	Prec. Rate* ■
	20	0.05	4	1.40	1.21	0.17	7	1.55	1.34	0.30	9	1.66	1.44	0.40	11	1.48	1.28	0.68	14	1.55	1.34		0.38	3 x 12	2.03
	30	0.09	5	1.61	1.40	0.24	8	1.68	1.45	0.40	10	1.79	1.55	0.50	12	1.55	1.35	0.85	15	1.69	1.46		0.45	4 x 15	1.44
	40	0.12	6	1.78	1.54	0.26	9	1.61	1.39	0.50	11	1.85	1.60	0.60	13	1.64	1.42	1.04	16	1.82	1.57		0.53	5 x 18	1.13
	50	0.15	6	1.86	1.62	0.29	9	1.60	1.39	0.60	12	1.86	1.62	0.63	13	1.67	1.44	1.23	16	2.15	1.86		0.60	6 x 20	0.96
PC	30-40	0.09	5	1.61	1.40	0.22	8	1.54	1.33	0.33	10	1.48	1.28	0.48	12	1.49	1.29	0.75	15	1.49	1.29		0.43	4 x 15	1.38
	40-75	0.10	5	1.79	1.55	0.25	8	1.75	1.51	0.37	10	1.66	1.43	0.53	12	1.65	1.43	0.81	15	1.61	1.40		0.50	4 x 15	1.61
	20	0.07	4	1.47	1.27	0.23	7	1.58	1.36	0.42	9	1.74	1.51	0.57	11	1.58	1.37	0.95	14	1.75	1.52		0.75	3 x 24	2.01
	30	0.12	5	1.61	1.40	0.30	8	1.57	1.36	0.52	10	1.75	1.51	0.72	12	1.68	1.45	1.10	15	1.64	1.42		0.90	4 x 30	1.44
	40	0.16	6	1.78	1.54	0.36	9	1.67	1.45	0.65	11	1.80	1.56	0.87	13	1.87	1.62	1.30	16	1.82	1.57		1.04	4 x 30	1.67
	50	0.20	6	1.86	1.62	0.40	9	1.66	1.44	0.75	12	1.75	1.51	0.97	13	1.93	1.67	1.45	16	2.03	1.75		1.16	4 x 31	1.80
PC	30-40	0.12	5	1.61	1.40	0.29	8	1.52	1.32	0.44	10	1.48	1.28	0.64	12	1.49	1.29	1.00	15	1.49	1.29		0.86	4 x 30	1.38
	40-75	0.13	5	1.79	1.55	0.35	8	1.84	1.59	0.50	10	1.68	1.45	0.70	12	1.63	1.41	1.10	15	1.64	1.42		1.00	4 x 30	1.61
	20	0.10	4	1.40	1.21	0.37	8	1.47	1.27	0.60	9	1.66	1.44	0.95	11	1.76	1.52	1.37	13	1.79	1.55		1.00	9 x 18	1.19
	30	0.19	5	1.70	1.47	0.50	8	1.75	1.51	0.71	10	1.59	1.38	1.09	12	1.69	1.47	1.65	15	1.66	1.44		1.20	9 x 18	1.43
	40	0.23	6	1.70	1.47	0.58	9	1.80	1.56	0.85	11	1.57	1.36	1.30	13	1.72	1.49	2.02	16	1.77	1.53		1.38	9 x 20	1.48
	50	0.27	6	1.68	1.45	0.65	9	1.80	1.56	0.99	12	1.65	1.43	1.55	14	1.77	1.53	2.14	16	1.87	1.62		1.55	10 x 22	1.36
PC	30-40	0.18	5	1.61	1.40	0.44	8	1.54	1.33	0.66	10	1.48	1.28	0.96	12	1.49	1.29	1.50	15	1.49	1.29		1.10	9 x 18	1.31
	40-75	0.20	5	1.79	1.55	0.50	8	1.75	1.51	0.75	10	1.68	1.45	1.05	12	1.63	1.41	1.65	15	1.64	1.42		1.20	9 x 18	1.43
	20	0.15	4	1.57	1.36	0.56	7	1.92	1.66	0.71	9	1.47	1.27	1.12	11	1.55	1.35	1.78	14	1.59	1.38		0.65	4 x 24	1.30
	30	0.25	5	1.68	1.45	0.70	8	1.84	1.59	0.97	10	1.63	1.41	1.45	12	1.69	1.46	2.20	15	1.64	1.42		0.90	4 x 30	1.44
	40	0.30	6	1.66	1.44	0.80	9	1.86	1.61	1.10	11	1.67	1.45	1.63	13	1.75	1.52	2.66	16	1.74	1.51		1.04	4 x 32	1.56
	50	0.35	6	1.63	1.41	0.88	9	1.82	1.58	1.19	11	1.65	1.43	1.80	13	1.79	1.55	2.84	16	1.86	1.61		1.16	5 x 33	1.35
PC	30-40	0.23	5	1.54	1.34	0.59	8	1.55	1.34	0.89	10	1.49	1.29	1.28	12	1.49	1.29	2.00	15	1.49	1.29		0.88	4 x 30	1.41
	40-75	0.27	5	1.81	1.57	0.70	8	1.84	1.59	1.00	10	1.68	1.45	1.40	12	1.63	1.41	2.20	15	1.64	1.42		1.00	4 x 30	1.61
	20	0.20	4	1.86	1.61	0.63	7	1.92	1.66	0.82	9	1.51	1.31	1.05	11	1.42	1.23	2.10	13	1.85	1.61		0.08	2 x 5	1.54
	30	0.29	5	1.73	1.50	0.76	8	1.77	1.53	1.04	10	1.55	1.34	1.55	12	1.61	1.39	2.60	15	1.72	1.49		0.09	2 x 6	1.44
	40	0.34	6	1.68	1.45	0.86	9	1.78	1.54	1.20	11	1.62	1.41	1.65	13	1.58	1.36	3.00	16	1.86	1.61		0.10	2 x 7	1.38
	50	0.40	6	1.66	1.44	0.93	9	1.71	1.48	1.35	11	1.66	1.44	1.80	13	1.59	1.38	3.40	16	1.98	1.72		0.12	3 x 7	1.10
PC	30-40	0.26	5	1.55	1.34	0.64	8	1.49	1.29	0.99	10	1.48	1.28	1.44	12	1.49	1.29	2.30	15	1.53	1.32		0.09	2 x 6	1.44
	40-75	0.29	5	1.73	1.50	0.70	8	1.63	1.41	1.09	10	1.63	1.41	1.60	12	1.66	1.44	2.50	15	1.66	1.44		0.10	2 x 6	1.61
	20	0.25	4	1.75	1.51	0.74	7	1.69	1.46	1.11	9	1.72	1.49	1.67	11	1.54	1.34	2.85	13	1.89	1.63		0.46	4 x 17	1.30
	30	0.38	5	1.70	1.47	1.00	8	1.75	1.51	1.49	10	1.67	1.44	2.19	12	1.70	1.47	3.60	15	1.79	1.55		0.55	4 x 18	1.47
	40	0.45	6	1.66	1.44	1.16	9	1.80	1.56	1.61	11	1.63	1.42	2.35	13	1.68	1.46	4.20	16	1.84	1.59		0.63	4 x 19	1.60
	50	0.53	6	1.65	1.43	1.30	9	1.80	1.56	1.85	11	1.71	1.48	2.70	13	1.79	1.55	4.58	16	2.00	1.73		0.71	5 x 19	1.44
PC	30-40	0.35	5	1.57	1.36	.85	8	1.49	1.29	1.33	10	1.49	1.29	1.92	12	1.49	1.29	3.00	15	1.49	1.29		0.50	4 x 18	1.34
	40-75	0.39	5	1.75	1.51	1.00	8	1.75	1.51	1.51	10	1.69	1.46	2.10	12	1.63	1.41	3.30	15	1.64	1.42		0.59	4 x 18	1.58

▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

■ Precipitation rates are for square spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

All performance specifications are based on the stated working pressure available at the base of the sprinkler.

Precision™ Series Fixed Arc Nozzles

The Toro-exclusive Precision™ Series technology brings new innovation and options to the spray nozzle category. The nozzle uses a rapid, oscillating stream to deliver water with a lower precipitation rate and superior distribution efficiencies.

Key Features

- Innovative rapid oscillating stream technology requires no moving parts
- Delivers larger droplet size for a lower precipitation rate and 35% less flow than regular MPR fixed spray nozzles
- Delivers more consistent and uniform application for Scheduling Coefficient of 1.5
- More stable spray patterns in both windy and variable pressure conditions up to 3.5 Bar (50 psi)
- Matched Precipitation Rates on all nozzles (every radius and pattern)
- Even with radius adjustment screw in use, maintains uniform application and MPR
- Radius adjustment screw allows up to 25% reduction in radius, complete shutoff, and bubbling mode

Additional Features

- Color-coding by radius for easy identification with five (5) radius options: 2,4m (5'), 3,0 (8'), 3,7m (10'), 4,6m (12'), 5,2m (15')
- Complete section of arcs for all radius options: 360°, 270°, 240°, 210°, 180°, 150°, 120°, 90°, 60° and (3) side strip nozzles (SST, LCS, RCS)
- Both a complete male- and female-threaded nozzle selection in all radius and arc options
- Convenient nozzle packaging - nozzles with attached screen packed in resealable bags
- Attached fine-mesh filter screen prevents clogging of lower volume nozzles

Specifications

- Flow Rate: .19 to 11.4 LPM (.05 to 3.00 GPM)
- Operating pressure range: 1,0 to 3,5 Bar (15 psi to 50 psi)
Maximum pressure: 4 Bar (60 psi)
- 5 levels of trajectory
Maximum trajectory: 27°
- Precipitation rate: 25mm/hr (1"/hr)



NEW

Coming in 2009



TVAN Variable Arc Nozzles

Easily adjustable from 0° to 360°, the Toro Variable Arc Nozzles provide a variety of angle settings to precisely match any terrain. With the 570Z VAN, high-precision water application is easy to achieve.

Features

- Matched precipitation rates (MPR) within and between families
- Fits all Toro LPS and 570Z sprinkler bodies
- Infinitely adjustable arc from 0°–360°
- Five different nozzles for various radii
- Color-coded for easy identification
- Exceptional uniform coverage

- Adjustment screw allows up to 25% radius reduction
- Flow increases or decreases proportionately with radius adjustment
- Unique grip-and-turn adjustment—wet or dry
- Fine-mesh, snap-in green filter screens prevent clogging

Specifications

- Recommended operating pressure: 1,4–3,5 Bar (20–50 PSI)
- Maximum operating pressure: 5,2 Bar (75 PSI)



2,4m (8') Green



3,0m (10') Blue



3,7m (12') Brown



4,6m (15') Black



5,2m (17') Gray

TVAN Variable Arc Nozzles – Performance Data (Metric)

Pattern	Bar	8 Series ●				10 Series ●				12 Series ●				15' Series ●				17' Series ●			
		LPM		Precip. Rate		LPM		Precip. Rate		LPM		Precip. Rate		LPM		Precip. Rate		LPM		Precip. Rate	
				▲	■			▲	■			▲	■			▲	■			▲	■
90	1,50	1,30	2,20	74,44	64,46	1,80	2,80	63,63	55,10	3,00	3,40	71,92	62,28	3,90	4,60	51,08	44,23	4,60	4,90	53,10	45,98
	2,00	1,40	2,40	67,36	58,33	1,90	3,00	58,51	50,67	3,10	3,60	66,29	57,41	4,20	4,60	55,01	47,64	5,10	5,20	52,27	45,27
	2,50	1,60	2,60	65,59	56,80	2,30	3,00	70,82	61,33	3,80	3,80	72,93	63,16	4,90	4,80	58,94	51,04	5,80	5,40	55,12	47,74
	3,00	1,80	2,70	68,43	59,26	2,60	3,00	73,90	64,00	4,50	4,10	74,19	64,25	5,60	4,90	64,64	55,98	6,50	5,50	59,55	51,57
	3,50	1,90	2,70	72,23	62,55	2,80	3,00	86,22	74,67	4,80	4,30	71,94	62,30	6,10	4,90	70,41	60,97	7,00	5,50	64,13	55,54
180	1,50	2,10	2,20	60,12	52,07	3,20	2,50	70,95	61,44	5,20	3,40	62,33	53,98	6,50	4,10	53,58	46,40	7,40	4,40	52,97	45,87
	2,00	2,40	2,40	57,74	50,00	3,60	2,70	64,63	55,97	5,70	3,60	60,94	52,78	7,10	4,50	48,58	42,07	8,00	5,10	42,62	36,91
	2,50	2,60	2,40	62,55	54,17	3,90	2,90	64,26	55,65	6,40	4,00	55,43	48,00	8,00	4,60	52,39	45,37	10,70	5,30	52,78	45,71
	3,00	2,80	2,50	62,08	53,76	4,30	3,00	66,20	57,33	7,10	4,30	53,21	46,08	8,80	4,60	57,63	49,91	10,70	5,30	52,78	45,71
	3,50	2,90	2,80	51,26	44,39	4,70	3,00	72,36	62,67	7,70	4,30	57,71	49,97	9,40	4,60	61,56	53,31	11,60	5,50	53,14	46,02
270	1,50	3,20	2,20	61,08	52,88	4,50	2,50	66,51	57,59	7,40	3,20	66,76	57,80	8,60	3,80	55,02	47,63	9,90	4,20	51,85	44,89
	2,00	3,50	2,40	56,13	48,60	4,90	2,70	62,09	53,76	8,10	3,90	49,20	42,59	9,90	4,50	45,16	39,10	10,80	5,10	38,36	33,21
	2,50	3,80	2,40	60,95	52,76	5,60	2,90	61,51	53,26	9,40	4,20	49,23	42,62	10,90	4,60	47,59	41,20	12,70	5,20	43,39	37,56
	3,00	4,20	2,50	62,08	53,75	6,20	3,00	63,64	55,10	10,40	4,30	51,96	44,99	11,90	4,70	49,77	43,09	14,20	5,30	46,70	40,43
	3,50	4,60	2,80	54,20	46,93	6,70	3,00	68,77	59,54	10,90	4,30	54,46	47,15	12,90	4,90	49,63	42,97	15,40	5,50	47,03	40,72
360	1,50	4,20	2,20	60,12	52,07	6,20	2,50	68,73	59,52	8,60	3,00	66,21	57,33	9,90	3,80	47,50	41,14	11,00	5,20	28,19	24,41
	2,00	4,80	2,40	57,74	50,00	6,90	2,70	65,58	56,79	10,00	3,80	47,98	41,55	11,80	4,50	40,37	34,96	12,80	5,50	29,32	25,39
	2,50	5,50	2,60	56,37	48,82	7,90	2,90	65,09	56,36	11,10	3,60	59,34	51,39	12,90	4,60	42,24	36,58	14,20	5,50	32,52	28,17
	3,00	6,10	2,70	57,98	50,21	8,80	3,00	67,75	58,67	12,10	3,50	68,44	59,27	14,00	4,70	43,91	38,03	15,60	5,50	35,73	30,94
	3,50	6,70	2,70	63,68	55,14	9,50	3,00	73,14	63,33	12,90	3,70	65,29	56,54	15,00	4,90	43,29	37,48	17,00	5,50	38,94	33,72

TVAN Variable Arc Nozzles – Performance Data (English)

Pattern	PSI	8 Series ●				10 Series ●				12 Series ●				15' Series ●				17' Series ●			
		GPM		Precip. Rate		GPM		Precip. Rate		GPM		Precip. Rate		GPM		Precip. Rate		GPM		Precip. Rate	
				▲	■			▲	■			▲	■			▲	■			▲	■
90	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
	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
	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
180	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
	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
	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
	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
	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
360	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

▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.
 ■ Precipitation rates are for square spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.
 All performance specifications are based on the stated working pressure available at the base of the sprinkler.

Bold type indicates optimal operating pressure.
 Radius shown in meters (Metric) or feet (English).
 Data based on 360°.

Maxijet® Series Microspray Irrigation

Maximum versatility, with low-volume irrigation benefits. Toro Maxijet microsprays can be used with all Toro fixed-spray pop-up sprinklers, shrub adapters, risers and extenders to easily retrofit spray systems to low-volume irrigation.

Features

Spray Head Configuration

- Ideal for ground cover, flowerbeds and low-water-use plants
- Nozzle, adapter and pressure-compensating screens are pre-assembled
- Retrofits 570Z bodies for low application-rate spray
- Pressure compensation provides uniform application over elevation changes and long runs
- Flush mount Top-Hat design allows the nozzle assembly to retract into the body (on pop-up models) for added debris and vandal resistance
- Low precipitation rate reduces runoff in tight soil
- Four nozzle patterns: 90°, 180°, 360° and Center Strip
- Three flow module choices with removable pressure compensating washer
 - 38 LPH – 1,2m (10 GPH – 4'), Blue
 - 57 LPH – 1,5m (15 GPH – 5'), Green
 - 91 LPH – 1,8m (24 GPH – 6'), Red
- Tops and screens are color-coded by flow
- Fine, 149-micron screen reduces line clogging

570Z Series Maxijet 0° Trajectory Nozzle Adaptors – Performance Data (Metric)

Nozzle Radius	Pressure			● 38 LPH Series				● 57 LPH Series				● 91 LPH Series			
	Bar	kPa	Kg/cm ²	Flow (LPM)	Radius (m)	Prec. Rate*		Flow (LPM)	Radius (m)	Prec. Rate*		Flow (LPM)	Radius (m)	Prec. Rate*	
MJ-4Q ▲	1,5	150	1,53	0,69	1,4	24,3	21,0	1,05	2,0	18,2	15,7	1,55	2,2	22,1	19,1
	2,0	200	2,04	0,79	1,5	24,4	21,1	1,23	2,1	19,3	16,7	1,80	2,4	21,6	18,7
	2,5	250	2,55	0,88	1,6	23,7	20,6	1,37	2,2	19,5	16,9	1,93	2,5	21,4	18,5
MJ-4Q-PC	1,5 - 3,5	150-350	1,53-3,57	0,63	1,4	22,3	19,3	0,95	1,7	22,7	19,6	1,51	2,0	26,2	22,7
MJ-4H ●	1,5	150	1,53	0,69	1,2	33,1	28,6	1,05	2,0	18,2	15,7	1,55	1,6	41,7	36,2
	2,0	200	2,04	0,79	1,4	28,0	24,2	1,23	2,1	19,3	16,7	1,80	1,7	43,1	37,3
	2,5	250	2,55	0,88	1,4	31,0	26,8	1,37	2,2	19,5	16,9	1,93	1,8	41,3	35,7
MJ-4H-PC	1,5 - 3,5	150-350	1,53-3,57	0,63	1,2	30,3	26,3	0,95	1,7	22,7	19,6	1,51	1,7	36,2	31,3
MJ-4F ●	1,5	150	1,53	0,69	1,3	28,2	24,4	1,05	1,4	37,1	32,1	1,55	1,6	41,7	36,2
	2,0	200	2,04	0,79	1,5	24,4	21,1	1,23	1,5	37,9	32,8	1,80	1,9	34,5	29,9
	2,5	250	2,55	0,88	1,5	27,0	23,4	1,37	1,5	42,0	36,4	1,93	2,2	27,6	23,9
MJ-4F-PC	1,5 - 3,5	150-350	1,53-3,57	0,63	1,1	36,1	31,3	0,95	1,5	29,1	25,2	1,51	1,7	36,2	31,4

570Z Series Maxijet 0° Trajectory Nozzle Adaptors – Performance Data (English)

Nozzle Radius	Pressure PSI	● 10 GPH Series				● 15 GPH Series				● 24 GPH Series			
		Flow (GPM)	Radius (ft)	Prec. Rate*		Flow (GPM)	Radius (ft)	Prec. Rate*		Flow (GPM)	Radius (ft)	Prec. Rate*	
MJ-4Q ▲	20	0.18	4.5	0.96	0.83	0.27	6.5	0.70	0.61	0.39	7	0.89	0.77
	30	0.21	5	0.95	0.82	0.33	7	0.75	0.65	0.49	8	0.84	0.73
	40	0.24	5.5	0.89	0.77	0.38	7.5	0.75	0.65	0.53	8.5	0.81	0.70
MJ-4Q-PC	20-50	0.17	4.5	0.92	0.79	0.25	5.5	0.92	0.80	0.40	6.5	1.05	0.91
MJ-4H ●	20	0.18	4	1.22	1.05	0.27	6.5	0.70	0.61	0.39	5	1.74	1.51
	30	0.21	4.5	1.17	1.01	0.33	7	0.75	0.65	0.49	5.5	1.78	1.54
	40	0.24	4.5	1.34	1.16	0.38	7.5	0.75	0.65	0.53	6	1.63	1.41
MJ-4H-PC	20-50	0.17	4	1.16	1.00	0.25	5.5	0.92	0.80	0.40	5.5	1.47	1.27
MJ-4F ●	20	0.18	4	1.22	1.05	0.27	4.5	1.46	1.27	0.39	5	1.74	1.51
	30	0.21	5	0.95	0.82	0.33	5	1.48	1.28	0.49	6.5	1.28	1.11
	40	0.24	5	1.08	0.94	0.38	5	1.68	1.46	0.53	7.5	1.04	0.90
MJ-4F-PC	20-50	0.17	3.5	1.51	1.31	0.25	5	1.11	0.96	0.40	5.5	1.47	1.27

▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or feet (English) per hour, calculated at 50% of diameter.
 ■ Precipitation rates are for square spacing, shown in millimeters (Metric) or feet (English) per hour, calculated at 50% of diameter.
 All performance specifications are based on the stated working pressure available at the base of the sprinkler.

Stake Assembly Configuration

- Ideal for ground cover, flowerbeds and low-water-use plants
- Stake or riser black nozzles used with color-coded, pressure-compensating devices provide low-flow rates to reduce runoff in compacted soils and deep percolation in sandy soils
- Three nozzle patterns
 MJ-Q-90°
 MJ-H-180°
 MJ-F-360°

Specifications

- Flow rate: 40–119,6 LPH (10–31.6 GPH)
- Minimum 100-mesh system filtration recommended
- Recommended operating pressure range: 1,4–3,5 Bar (20–50 PSI)
- Maximum operating pressure: 3,5 Bar (50 PSI)



Maxijet Microspray Irrigation Nozzles
Fits all 570 Sprayhead Bodies

Maxijet® Series Specifying Information

MJ X XXX		
Description	Radius	Arc
MJ–Maxijet Microspray Nozzle Assemblies	4–1,2m (4')	Q–90°
	5–1,5m (5')	H–180°
	6–1,8m (6')	F–360°
CST–Center Strip		
For Example: When specifying a 1,2m (4') radius Maxijet Microspray Nozzle Assembly with a 180° arc, you would specify: MJ-4H		

570 Series Stream Spray Nozzles

Ideal for slope applications. Use 10° nozzle at the top of slopes and 35° nozzle at the bottom of slopes.

Features

- Multiple stream pattern selections
- Radius adjusts up to 50%
- Pressure-compensating spray nozzles available to maintain constant 2 Bar (30 PSI) performance at pressures exceeding 2 Bar (30 PSI)
- Low-angle for better wind resistance
- Low-application rate for slopes and tight soils
- Use on shrub adapter, 570Z Series fixed sprays, 570-risers, and riser extenders

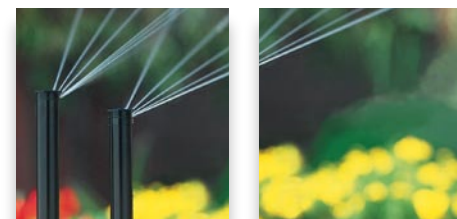


570Z Stream Spray Nozzles

Specifications

- Flow rate: 2,7–10,2 LPM (0.60–2.7 GPM)
- Recommended operating pressure range: 0,7-2,8 Bar (10-40 PSI)
- Maximum operating pressure: 5,2 Bar (75 PSI)

Note: Stream sprays not recommended for turf applications.



570Z Stream Spray Nozzles – Performance Data (Metric)											
Nozzle	Pressure			10° Stream Spray ●				35° Stream Spray ●			
	Bar	kPa	Kg/cm ²	Flow (LPM)	Radius (m)	Prec. Rate* ▲ ■		Flow (LPM)	Radius (m)	Prec. Rate* ▲ ■	
90°	1,5	150	1,53	2,4	4,4	8,6	7,4	2,4	5,6	5,3	4,6
	2,0	200	2,04	3,0	4,8	8,9	7,7	3,0	6,0	5,7	4,9
	2,5	250	2,55	3,3	5,1	8,8	7,6	3,3	6,3	5,8	5,0
	3,0	300	3,06	3,6	5,3	8,9	7,7	3,6	6,5	5,9	5,1
	3,5	350	3,57	3,9	5,5	9,0	7,8	3,9	6,7	6,1	5,2
PC	2,07-2,76	280-350	2,86-3,57	2,7	4,0	11,5	9,9	2,7	5,2	6,8	5,9
	2,76-5,18	410-480	4,18-4,90	2,7	4,6	8,7	7,5	2,7	5,5	6,1	5,2
180°	1,5	150	1,53	3,9	4,4	14,0	12,1	3,9	5,6	8,6	7,5
	2,0	200	2,04	4,5	4,8	13,4	11,6	4,5	6,0	8,6	7,4
	2,5	250	2,55	5,0	5,1	13,2	11,4	5,0	6,3	8,7	7,5
	3,0	300	3,06	5,5	5,3	13,4	11,6	5,5	6,5	8,9	7,7
	3,5	350	3,57	5,9	5,5	13,5	11,7	5,9	6,7	9,1	7,9
PC	2,07-2,76	280-350	2,86-3,57	5,3	4,0	22,9	19,8	5,3	5,2	13,6	11,7
	2,76-5,18	410-480	4,18-4,90	5,3	4,6	17,3	15,0	5,3	5,5	12,1	10,5
360°	1,5	150	1,53	7,0	4,4	25,0	21,7	7,0	5,6	15,5	13,4
	2,0	200	2,04	7,8	4,8	23,5	20,4	7,8	6,0	15,1	13,0
	2,5	250	2,55	8,7	5,1	23,2	20,1	8,7	6,3	15,2	13,1
	3,0	300	3,06	9,5	5,3	23,5	20,3	9,5	6,5	15,6	13,5
	3,5	350	3,57	10,3	5,5	23,6	20,4	10,3	6,7	15,9	13,7
PC	2,07-2,76	280-350	2,86-3,57	6,8	4,0	29,4	25,5	6,8	5,2	17,4	15,1
	2,76-5,18	410-480	4,18-4,90	7,6	4,6	24,7	21,4	7,6	5,5	17,3	15,0

570Z Stream Spray Nozzles – Performance Data (English)									
Nozzle	Pressure			10° Stream Spray ●			35° Stream Spray ●		
	PSI	Flow (GPM)	Radius (ft)	Prec. Rate* ▲ ■		Flow (GPM)	Radius (ft)	Prec. Rate* ▲ ■	
90°	20	0.6	14	1.36	1.18	0.6	18	0.82	0.71
	30	0.8	16	1.39	1.20	0.8	20	0.89	0.77
	40	0.9	17	1.42	1.23	0.9	21	0.93	0.80
	50	1.0	18	1.41	1.22	1.0	22	0.95	0.82
PC	40-50	0.7	13	1.84	1.60	0.7	17	1.08	0.93
	60-70	0.7	15	1.38	1.20	0.7	18	0.96	0.83
180°	20	1.0	14	1.13	0.98	1.0	18	0.69	0.59
	30	1.2	16	1.04	0.90	1.2	20	0.67	0.58
	40	1.4	17	1.06	0.92	1.4	21	0.70	0.60
	50	1.6	18	1.06	0.92	1.6	22	0.71	0.62
PC	40-50	1.4	13	1.84	1.60	1.4	17	1.08	0.93
	60-70	1.4	15	1.38	1.20	1.4	18	0.96	0.83
360°	20	1.8	14	1.02	0.88	1.8	18	0.62	0.54
	30	2.1	16	0.91	0.79	2.1	20	0.58	0.51
	40	2.4	17	0.93	0.81	2.4	21	0.61	0.53
	50	2.7	18	0.93	0.80	2.7	22	0.62	0.54
PC	40-50	1.8	13	1.18	1.03	1.8	17	0.69	0.60
	60-70	2.0	15	0.99	0.86	2.0	18	0.69	0.59

▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.
 ■ Precipitation rates are for square spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.
 All performance specifications are based on the stated working pressure available at the base of the sprinkler.

570 Series Pressure Compensating Flood Bubbler and Stream Bubbler Nozzles



570 Series Nozzles — Stream Bubblers

Features

- Built-in pressure regulation
- 8 LPM (2 GPM) adjustable flow
- 1, 2 and 4 LPM (0.25, 0.50 and 1.0 GPM) fixed flow
- Ideal for trees and large shrubs
- Retracts into high-pop for greater vandal resistance
- All pressure compensating, maintaining constant 2 Bar (30 PSI) performance at pressures exceeding 2 Bar (30 PSI)
- Use on shrub adapter, 570Z Series, 570 risers and riser extenders
- Adjustment screw allows up to 25% reduction in radius

Specifications

- Flow rate: 1,1–9,0 LPM (0.25–2.0 GPM)
- Recommended operating range:
- 1,4–3,5 Bar (20–50 PSI)
- Maximum operating pressure:
- 5,2 Bar (75 PSI)



570 Series Nozzles — Flood Bubblers

570 Series Stream Bubbler – Performance Chart (Metric)

Description		Stream Patterns	1 Bar		1,5 Bar		2 Bar		2,5 Bar		3 Bar		3,5 Bar		4 Bar	
			100 kPa/1,02 Kg/cm ²		150 kPa/1,53 Kg/cm ²		200 kPa/2,04 Kg/cm ²		250 kPa/2,55 Kg/cm ²		300 kPa/3,06 Kg/cm ²		350 kPa/3,57 Kg/cm ²		400 kPa/4,08 Kg/cm ²	
			Radius (m)	Flow (LPM)	Radius (m)	Flow (LPM)	Radius (m)	Flow (LPM)	Radius (m)	Flow (LPM)	Radius (m)	Flow (LPM)	Radius (m)	Flow (LPM)	Radius (m)	Flow (LPM)
SB-90	☪	2/60°	2,7	2,2	3,5	2,8	3,9	3,2	4,3	3,6	4,7	3,9	4,9	4,3	5,4	4,6
SB-90-PC2	☪	2/60°							0,5	0,8	0,5	0,9	0,5	0,9	0,5	0,9
SB-180	☪☪	4/60°	2,1	3,8	2,9	4,6	3,6	5,3	4,0	6,0	4,5	6,6	4,9	7,1	5,1	7,5
SB-180-PC2	☪☪	4/60°							0,8	1,8	0,8	1,9	0,8	1,9	0,8	1,9
SB-360	☪☪☪	6/60°	1,3	5,2	1,9	6,4	2,4	7,4	2,6	8,3	2,8	9,0	3,1	9,7	3,7	11,8
SB-360-PC2	☪☪☪	6/60°							0,5	2,8	0,5	2,9	0,5	2,9	0,5	2,9
SB-2-180	☪☪☪☪	2/180°	2,7	2,2	3,5	2,8	3,9	3,2	4,3	3,6	4,7	3,9	4,9	4,3	5,4	4,6
SB-2-180-PC2	☪☪☪☪	2/180°							0,5	0,8	0,5	0,9	0,5	0,9	0,5	0,9
SB-4-180	☪☪☪☪☪	2/60°x2/60°	2,1	3,8	2,9	4,6	3,6	5,3	4,0	6,0	4,5	6,6	4,9	7,1	5,1	7,5
SB-4-180-PC2	☪☪☪☪☪	2/60°x2/60°							0,8	1,8	0,8	1,9	0,8	1,9	0,8	1,9

570 Series Stream Bubbler – Performance Chart (English)

Description		Stream Patterns	10 PSI		20 PSI		30 PSI		40 PSI		50 PSI		60 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)
SB-90	☪	2/60°	7	0.5	11	0.7	13	0.9	15	1.0	16	1.1	18	1.2
SB-90-PC2	☪	2/60°					1.5	0.2	1.5	0.2	1.5	0.2	1.5	0.2
SB-180	☪☪	4/60°	5	0.8	9	1.2	12	1.4	14	1.7	16	1.9	17	2.0
SB-180-PC2	☪☪	4/60°					2.5	0.5	2.5	0.5	2.5	0.5	2.5	0.5
SB-360	☪☪☪	6/60°	3	1.2	6	1.6	8	2.0	9	2.3	10	2.6	11	2.8
SB-360-PC2	☪☪☪	6/60°					1.5	0.7	1.5	0.8	1.5	0.8	1.5	0.8
SB-2-180	☪☪☪☪	2/180°	7	0.5	11	0.7	13	0.9	15	1.0	16	1.1	18	1.2
SB-2-180-PC2	☪☪☪☪	2/180°					1.5	0.2	1.5	0.2	1.5	0.2	1.5	0.2
SB-4-180	☪☪☪☪☪	2/60°x2/60°	5	0.8	9	1.2	12	1.4	14	1.6	16	1.9	17	2.0
SB-4-180-PC2	☪☪☪☪☪	2/60°x2/60°					2.5	0.5	2.5	0.5	2.5	0.5	2.5	0.5

570 Series Flood Bubbler – Performance Chart (Metric)

Model No.	LPM @ 2,5 Bar 250 kPa 2,55 Kg/cm ²	LPM @ 3 Bar 300 kPa 3,06 Kg/cm ²	LPM @ 3,5 Bar 350 kPa 3,57 Kg/cm ²	LPM @ 4 Bar 400 kPa 4,08 Kg/cm ²
FB-25-PC	0,95	0,95	0,95	0,95
FB-50-PC	1,63	1,77	1,89	1,89
FB-100-PC	3,53	3,66	3,79	3,79
FB-200-ADJ-PC	7,05	7,32	7,57	7,57

570 Series Flood Bubbler – Performance Chart (English)

Model No.	GPM @ 40 PSI	GPM @ 50 PSI	GPM @ 60 PSI
FB-25-PC	0.25	0.25	0.25
FB-50-PC	0.45	0.50	0.50
FB-100-PC	0.95	1.00	1.00
FB-200-ADJ-PC	1.90	2.00	2.00

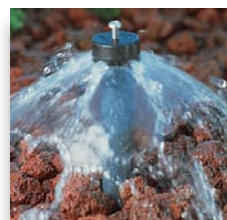
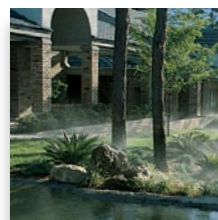
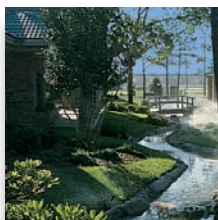
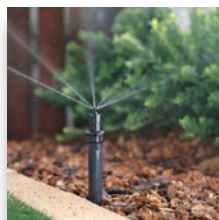
Note: For each 570 Series nozzle selection, the performance of the pressure compensation option is shown in shaded area
All performance specifications are based on the stated working pressure available at the base of the sprinkler.

500 Series Bubblers

Stream Bubblers

Features

- Multiple stream pattern-selection
- Radius adjusts up to 50%
- Pressure-compensating spray-nozzles available, maintaining constant 2-Bar (30 PSI) performance at pressures exceeding 2-Bar (30 PSI)
- Use on shrub adapter and pop-up sprinklers, risers and riser extenders



500 Series Stream Bubbler

500 Series Adjustable Stream Bubbler – Performance Data (Metric)

Model Number	Stream Patterns	1 Bar 100 kPa/1,02 Kg/cm ²		1,5 Bar 150 kPa/1,53 Kg/cm ²		2 Bar 200 kPa/2,04 Kg/cm ²		2,5 Bar 250 kPa/2,55 Kg/cm ²		3 Bar 300 kPa/3,06 Kg/cm ²	
		Radius (m)	Flow (LPM)	Radius (m)	Flow (LPM)	Radius (m)	Flow (LPM)	Radius (m)	Flow (LPM)	Radius (m)	Flow (LPM)
511-30	2/60°	4,84	3,6	5,99	4,4	6,95	4,8	7,62	5,1	8,25	5,3
512-30	4/60°	6,72	2,5	8,30	3,1	9,59	3,3	10,71	3,7	11,81	4,2
514-30	6/60°	8,38	2,1	10,27	2,5	11,89	3,0	13,3	3,2	14,67	3,5
516-30	2/180°	4,84	3,6	5,99	4,4	6,95	4,8	7,62	5,1	8,25	5,3

500 Series Adjustable Stream Bubbler – Performance Data (English)

Model Number	Stream Patterns	10 PSI		20 PSI		30 PSI		40 PSI	
		Radius (ft)	Flow (GPM)	Radius (ft)	Flow (GPM)	Radius (ft)	Flow (GPM)	Radius (ft)	Flow (GPM)
511-30	2/60°	10	1.1	14	1.5	16	1.9	17	2.1
512-30	4/60°	7	1.5	10	2.1	11	2.6	13	3.0
514-30	6/60°	6	1.9	8	2.6	10	3.2	11	3.7
516-30	2/180°	10	1.1	14	1.5	16	1.9	17	2.1

All performance specifications are based on the stated working pressure available at the base of the sprinkler.

Specifications

- Flow rate: 2,2–9,1 LPM (0.49–2.02 GPM)
- Recommended operating pressure range: 0,7–2,8-Bar (10–40 PSI)
- Maximum operating pressure: 5,2 Bar-(75-PSI)

Flood Bubblers

Features

- For use with fixed risers
- Adjustable flow (flood bubbler models)
- Serviceable filter screen
- Durable engineering plastic and stainless-steel construction

Specifications

- Flow rate: 4,9–16,8 LPM (1.08–3.70 GPM)
- Recommended operating pressure: 1,4-3,5 Bar (20-50 PSI)
- Maximum pressure: 5,2 Bar (75 PSI)
- 13mm (1/2") female-threaded inlet



Flood Bubblers

500 Series Flood Bubbler

500 Series Adjustable Flood Bubbler – Performance Data (Metric)

Model Number	Pattern	Bar	kPa	Kg/cm ²	LPM
514-20	(360°) Flood	1,0	100	1,02	6,32
		1,25	125	1,28	7,14
		1,5	150	1,53	7,84
		1,75	175	1,79	8,38
		2,0	200	2,04	8,93
		2,25	225	2,30	9,28
		2,5	250	3,55	9,65
		2,75	275	3,81	10,20

500 Series Adjustable Flood Bubbler – Performance Data (English)

Model Number	Pattern	PSI	GPM
514-20	(360°) Flood	15	1.70
		20	2.00
		25	2.20
		30	2.40
		35	2.50
		40	2.70

Adapters and Accessories

LPS Effluent Water Indicators

Use with any LPS Series sprinkler to identify the effluent water system.



LPSCV
LPS Check Valve



LPS
Effluent Water
Indicator



570 Risers and Extenders

Modify existing systems to irrigate small shrubs and planters in non-traffic areas. For use with any 570 MPR Plus spray, Precision™ Series spray, stream bubbler or Maxijet® nozzle.

Features

- Male-inlet threads install onto any 570Z pop-up spray-sprinkler or 570 shrub-adapter to provide a 150mm (6") extension (570-6X)
- Accepts all Toro nozzles and filter screens
- Durable engineering plastic-construction
- Stabilizer available for 2P, 3P, 4P, and 6P models
- 570 female-outlet threads accept all Toro nozzles
- Maximum pressure: 5,2 Bar (75 PSI)
- Height: 150mm (6") for 570SR-6
460mm (18") for 570SR-18



570-6X



570SR-6



570SR-18

570 Effluent Water Indicators

89-9752

Snap-on cover for use on 570Z Series

102-1211

- Lavender cap assembly (includes seal)
- For-use on 570Z-E pop-up models

102-5470

- For-use on 570Z-PR-E pop-up models

102-5471

- For-use on 570Z-PR-COM-E pop-up models

89-5818

- Lavender snap-on cover for use on 570Z Series shrub adapters

102-0563 (570S-E)

- Lavender molded 570Z Series shrub adapter for effluent applications
- Installs onto a 13mm (1/2") NPT riser

102-2367

- Lavender molded 570S-PRX-E Series shrub adapter for effluent applications
- Installs onto a 13mm (1/2") NPT riser



570 Shrub Adapters

For use with any 570 MPR Plus spray, stream bubbler or Maxijet® nozzle to effectively irrigate small shrubs and planters in non-traffic areas. Accepts all Toro nozzles and filter screens, and installs onto a 13mm (1/2") NPT riser.

9-6807

- 570S Shrub Adapter for use with 570Z Series

102-0006

- Molded 570ZPRX-E Series shrub adapter for effluent applications



Adapters and Accessories

Sprinkler Accessories

Polyethylene Risers

Model 850-43

- 13 x 75mm with 13mm cut-offs (1/2" x 3" with 1/2" cut-offs)



850-43

Model 850-49

- 20 x 13 x 150mm with 13mm cut-offs (3/4" x 1/2" x 6" with 1/2" cut-offs)

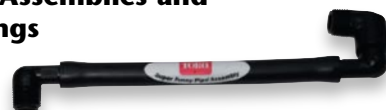
Model 850-62

- 20 x 50mm (3/4" x 2")

Model 850-63

- 13 x 20 x 50mm (1/2" x 3/4" x 2")

Flex Assemblies and Fittings



- See Super Funny Pipe/Flex Assembly page in the Fixed Sprays and Nozzles section



Saddles

- Snap-on solvent weld feature reduces labor
- May also be used as repair saddle
- ABS to PVC solvent recommended
- 13mm (1/2") NPT/BSP female-threaded outlet

Model 850-60

- Fits 20mm (3/4") PVC pipe

Model 850-61

- Fits 25mm (1") PVC pipe

Tubing Accessories

Control Tubing

- 6mm (1/4") polyethylene, 610m (2000') roll, specially formulated for Toro systems.
- Color-coded to assist in installation.

Model 900-11

- Blue print on black tubing

Model 900-12

- Yellow print on black tubing

Model 900-13

- Pink print on black tubing

Model 900-14

- White print on black tubing

6mm (1/4") Tube Fittings*

Model 900-30

- Metal Coupler, 6 x 6mm (1/4" x 1/4")

Model 850-21

- Plastic Coupler, 6 x 6mm (1/4" x 1/4")

Model 900-40

- Retainer, 6mm (1/4")

Model 900-21

- Adapter, 6mm (1/4") compression to 6mm (1/4") polyethylene

Model 900-50

- Metal tee, 6 x 6 x 6mm (1/4" x 1/4" x 1/4")

Model 850-22

- Plastic tee, 6 x 6 x 6mm (1/4" x 1/4" x 1/4")

Model 995-14

- Supply screen fitting 6mm (1/4") male NPT threads x 3mm (1/8") female NPT threads

Model 900-24

- Adapter, 3mm (1/8") Male NPT x 6mm (1/4")

Model 900-70

- Tubing plug, 6mm (1/4")

Flushing Adapter

Model 995-02

- Use to flush out or pre-fill polyethylene tubing before connecting tubing to automatic valves or controller. Screws onto male hose end.

Installation/Adjustment Tools

89-6395

- Riser pull-up tool for 570Z Series models



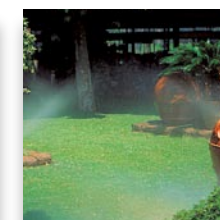
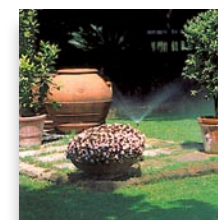
102-1777

- X-tool for removing or changing fixed arc nozzles on 570Z XF and PRX sprays under pressure (redirects spray of water until X-Flow® device is activated.)



89-7350

- Adjustment tool for 570Z Series models



Super Funny Pipe and Flex Assemblies

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.

Features

- Provides easy installation for problem areas
- Cushions sprinklers from external impact
- Connects to sprinklers and Toro fittings
- Flexible, thick-walled polyethylene pipe
- 30,5m (100') coils available in stretch wrap

Specifications

- Wall thickness: 2,5mm (.10") $\pm$.01
- Inside diameter: 12,4mm (.49") $\pm$.01
- Outside diameter: approximately 18mm (.70")

Super Funny Pipe

- 850-23 6m (20') length working pressure: 8,2 Bar (120 PSI)
- 850-24 15,2m (50') coil working pressure: 8,2 Bar (120 PSI) (36Kg)
- 850-25 30,5m (100') coil working pressure: 8,2 Bar (120 PSI) (68Kg) (more flexible)

Fittings

To be used only with Toro Super Funny Pipe

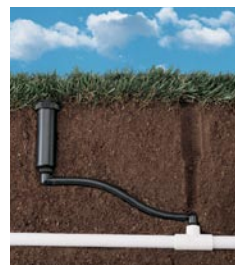
- 850-20 Coupling
- 850-31 13mm (1/2") Male Elbow
- 850-32 20mm (3/4") Male Elbow
- 850-34 13mm (1/2") Female Elbow
- 850-35 13mm (1/2") Male Adapter
- 850-36 20mm (3/4") Male Insert 3/4" x 3/8"
- 850-37 Tee Barbed inserts require no clamps.



Super Funny Pipe



One of the most useful and time-saving sprinkler installation aids is Toro Super Funny Pipe. Whether you are installing a new system or replacing an old sprinkler, Super Funny Pipe can make your job faster and easier.



Super Funny Pipe is a high-strength poly tubing that solves tough sprinkler installation and replacement problems. Simply put, it acts as a flexible extension cord between the water line and the sprinkler, allowing you to position sprinklers easily where you need them—even in hard-to-reach areas.



Super Funny Pipe Fittings

Super Funny Pipe Friction Loss (Metric)

Flow (LPM)	5	10	15	20	25
Pressure Loss (kPa)	0,30	1,02	2,00	3,77	5,58

Note: This chart indicates the amount of pressure loss (in kPa) per meter of Super Funny Pipe installed at stated flow rates (LPM).

Super Funny Pipe Friction Loss (English)

Flow (GPM)	1	2	3	4	5	6	7
Pressure Loss (PSI)	0.01	0.02	0.06	0.09	0.15	0.21	0.27

Note: This chart indicates the amount of pressure loss (PSI) per foot of Super Funny Pipe installed at stated flow rates (GPM).

Super Funny Pipe Fittings Pressure Loss Data (Metric)

Model No.	Description	Flow (LPM)				
		5	10	15	20	25
850-31	13mm Male Elbow	1,87	6,43	13,8	28,7	46,9
850-32	20mm Male Elbow	2,23	7,42	17,8	37,1	61,4
850-34	13mm Female Elbow	1,87	6,43	13,8	28,7	46,9
850-35	13mm Male Adapter	0,89	3,08	6,89	16,1	28,2
850-36	20mm Male Adapter	1,35	4,13	9,55	21,7	37,7

Note: This chart indicates the amount of pressure loss (in kPa) per meter of Super Funny Pipe at stated flow rates (LPM).

Super Funny Pipe Fittings Pressure Loss Data (English)

Model No.	Description	Flow (GPM)						
		1	2	3	4	5	6	7
850-31	1/2" Male 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
850-34	1/2" Female Elbow	0.05	0.15	0.36	0.62	1.13	1.62	2.37
850-35	1/2" Male Adapter	0.03	0.06	0.18	0.31	0.60	1.00	1.41
850-36	3/4" Male Adapter	0.04	0.10	0.23	0.43	0.80	1.37	1.86

Note: This chart indicates the amount of pressure loss (PSI) per foot of Super Funny Pipe at stated flow rates (GPM).

Residential Turf Sprinklers

Toro gear-driven rotors have set numerous industry standards, and are installed on premium turf properties across the world.

This collection of residential sprinklers is extremely easy to use, and incorporates much of Toro's premium Golf and Commercial sprinkler technology.



Super Funny Pipe Flex Assemblies
20 and 30cm (8" and 12") lengths
13mm (½") inlets



		MINI 8 Series	T5 Series	Super 800 Series	300 Series	TR50P Series	TR70P Series
Specifications	Radius	6,1-10,7m (20'-35')	7,6-15,2m (25'-50')	8,5-15,2m (28'-50')	4,6-9,2m (15'-30')	10-15,2m (33'-50')	9,8-21,7m (32'-71')
	Inlet Size	13mm (½")	20mm (¾")	20mm (¾")	20mm (¾")	20mm (¾")	25mm (1")
	Flow Range	3-11,3 LPM (.8-3.0 GPM)	2,8-36,5 LPM (.76-9.63 GPM)	1,9-37,8 LPM (.5-10 GPM)	2-28 LPM (.57-7.51 GPM)	3,1-39,5 LPM (0.8-10.2 GPM)	26,5-113 LPM (7.0-29.6 GPM)
	Operating Pressure	2,0 - 4,1 Bar (30-60 PSI)	1.7-5,2 Bar (25-75 PSI)	2,1-4,8 Bar (30-70 PSI)	2,4-5,2 Bar (35-75 PSI)	2,0-4,8 Bar (30-70 PSI)	1,7 - 7 Bar (25-100 PSI)
Features	Part/Full Circle in One	X	X	X		X	X
	Full Circle				X		
	Part-Circle Fixed				X		
	Stainless Steel Riser Option					X	X
	Check Valve Option	X	X	X	X	X	X (standard)
	Effluent Water Option		X	X	X	X	X
	Shrub Model Available		X	X	X	X	N/A
	High-pop Model Available		X	X	X	X	N/A
Applications	Turf	X	X	X	X	X	X
	Shrubs/Ground Cover	X	X	X	X	X	
	Low Pressure Systems	X	X	X	X	X	

MINI 8 Series Sprinklers

The Mini 8, a 13mm (1/2") gear-drive rotor, serves as the perfect in-between fit for your applications where the landscape is too big for sprays, but too small for a full-size rotor. When using a 13mm (1/2") rotor, you can water efficiently, thereby saving water (and money). The cost to irrigate is less and compared to fixed-sprays; it requires fewer stations to cover an area.

Key Features

- Visible arc indication from the top of sprinkler, for infinite adjustments from 40° to 360°
- Five interchangeable nozzles (comes pre-installed with a 1.5 nozzle)
- Part- and full-circle arcs in one sprinkler
- Stainless steel radius adjustment screw allows up to 25% reduction
- Pressure activated seal and robust trip mechanism for enhanced reliability
- Ratcheting riser for easy arc adjustment



- 1 Dry pull-up slot
- 2 Visible arc indication from the top of sprinkler
- 3 Radius adjustment screw
- 4 Infinite arc adjustment from 40° to 360°

Nozzle Tree

MINI8-CV
Optional Check Valve

Specifications

Nozzle Performance

- Radius: 6,1–10,7mm (20'-35')
- Flow rate: 3–11,3-LPM (0.8–3.0 GPM)
- Trajectory: 25°

Lawn Pop-up

- Flow rate: 3–11,3-LPM (0.8–3.0 GPM)
- Recommended operating pressure range: 2,0–3,5 Bar (30–50 PSI)
- Maximum operating pressure: 4,1 Bar (60 PSI)
- 13mm (1/2") threaded-NPT/BSP inlet
- Pop-up to nozzle: 95mm (3 3/4")
- Dimensions:
 - Body diameter: 44mm (1 3/4")
 - Cap diameter: 57mm (2 1/4")
 - Height: 150mm (6")

MINI 8 Series Lawn Pop-up Apex @ 2,8 Bar (40 PSI)

Nozzle	25°	
	Maximum Height of Spray Meters (Feet)	
0.75	0,95m	(3' 11")
1.0	1,55m	(5' 1")
1.5	2,04m	(6' 7")
2.0	2,32m	(7' 6")
3.0	2,32m	(7' 6")

MINI 8 Series Specifying Information

MINI8 - 4P - XX - XX

Description	Body	Nozzle	Optional
MINI8 - Mini8 Rotor	4P - Lawn Pop-up	75 - .75 10 - 1.0 15 - 1.5 20 - 2.0 30 - 3.0	CV - Check Valve

For Example: When specifying a Mini 8 Series sprinkler with a 3.0 nozzle, you would specify:

MINI8-4P-30

Mini 8 Series – Performance Data (Metric)					
Nozzle	Pressure (Bar)	Flow (LPM)	Radius (m)	Prec. Rate ▲ ■	
.75	2,0	3,0	6,1	5,6	4,8
	2,5	3,3	6,3	5,8	5,0
	3,0	3,8	6,5	6,2	5,4
	3,5	4,6	6,7	7,1	6,1
1.0	2,0	4,2	7,9	4,7	4,0
	2,5	4,6	8,1	4,8	4,2
	3,0	5,2	8,3	5,2	4,5
	3,5	5,7	8,6	5,3	4,6
1.5*	2,0	4,5	8,8	4,0	3,5
	2,5	5,0	9,0	4,3	3,7
	3,0	5,6	9,3	4,5	3,9
	3,5	6,1	9,5	4,7	4,0
2.0	2,0	5,3	9,1	4,4	3,8
	2,5	6,0	9,3	4,8	4,2
	3,0	6,8	9,4	5,3	4,6
	3,5	7,7	9,4	6,0	5,2
3.0	2,0	8,7	10,3	5,7	4,9
	2,5	9,4	10,6	5,8	5,0
	3,0	10,4	10,7	6,3	5,4
	3,5	11,5	10,7	6,9	6,0

Mini 8 Series – Performance Data (English)					
Nozzle	Pressure (psi)	Flow (GPM)	Radius (ft)	Prec. Rate ▲ ■	
.75	30	0.8	20	0.21	0.18
	40	0.9	21	0.22	0.19
	50	1.0	22	0.23	0.20
1.0	30	1.0	26	0.15	0.13
	40	1.1	27	0.17	0.15
	50	1.3	28	0.18	0.16
1.5*	30	1.3	29	0.12	0.15
	40	1.5	30	0.19	0.16
	50	1.7	31	0.20	0.17
2.0	30	1.7	30	0.21	0.18
	40	2.0	31	0.23	0.20
	50	2.3	31	0.27	0.23
3.0	30	2.6	34	0.25	0.22
	40	3.0	35	0.27	0.24
	50	3.4	35	0.31	0.27

*Pre-installed nozzle.

▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

■ Precipitation rates are for square spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

All performance specifications are based on the stated working pressure available at the base of the sprinkler.

T5 Series Sprinklers

The new Toro T5 Series Rotor has the features to satisfy all your basic irrigation needs while surprising you with a few extras. This multi-purpose rotor packs a lot of convenience into one competitively priced 20 mm (3/4") unit. For those day-in and day-out installations, the T5 is the only rotor you'll need.



Superior Nozzle Technology



Patented Air Foil Technology
Provides in-close watering without seed washout



Cross-slot Mid-Range Technology
Provides excellent mid-range distribution.



Stream Straighteners
Align the water flow behind the nozzle for longer range accuracy

Key Features

- Innovative in-ground profile of any standard 4" pop-up, but delivers a full 5" pop-up
- Superior irrigation efficiency from highly engineered nozzles. The nozzle tree includes eight standard and four low angle nozzles
- Part and full sprinkler in one head with heavy duty rubber cover attached to the top of the sprinkler to minimize impact
- Arc changes are made with a small slotted screwdriver from the top of the sprinkler while popped up or down
- Standard rubber cover

Specifications:

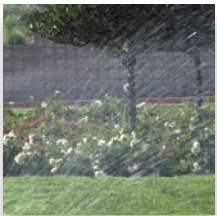
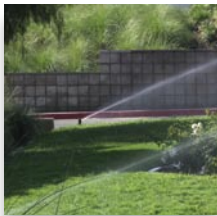
- Dimensions:
Body Diameter: 57mm (2 1/4")
Cap Diameter: 67mm (2 5/8")
Height: 190mm (7 1/2")

Operating Specifications:

- Radius: 7,6-15,2m (25'-50')
- Flow Rate: .2,8-36,5 LPM (.76-9.63 GPM)
- Recommended Operating Pressure Range: 1,7-4,5 Bar (25-65 psi)
Maximum Operating Pressure: 5,2 Bar (75 psi))
- Trajectory: 25° standard, 10° low angle
- Pop-up to nozzle: 5"
- Inlet: 20mm (3/4") female threaded
- Factory installed with a #3.0 nozzle
- Options Available:
 - Check valve
- Two year warranty

T5 Series Specifying Information

T5 XX - XXXX - COM - E					
Description	Body	Nozzle		Optional	Effluent
T5—T5 Sprinkler	P—Lawn Pop-up S—Shrub HP—High Pop	15—1.5 GPM	Low Angle Nozzle	COM—Check-O-Matic	E—Effluent
		20—2.0 GPM 25—2.5 GPM 30—3.0 GPM 40—4.0 GPM 50—5.0 GPM 60—6.0 GPM 80—8.0 GPM	10LA—1.0 GPM 15LA—1.5 GPM 20LA—2.0 GPM 30LA—3.0 GPM		
Example: A T5 Lawn Pop-up sprinkler with a 2.5 nozzle, would be specified as: T5P-25					



T5 Series Sprinklers

T5 Series Nozzle Performance Data (Metric)													
Nozzle	Pressure Bar	Radius m.	Flow m³/hr	Flow l/m	Prec Rate ▲ ■		Nozzle	Pressure Bar	Radius m.	Flow m³/hr	Flow l/m	Prec Rate ▲ ■	
1.5	1,7	10,10	0,25	4,2	6,0	5,0	4.0	1,7	11,30	0,66	10,8	12,0	10,0
	2,0	10,20	0,28	4,8	6,0	5,0		2,0	11,60	0,71	12,0	12,0	11,0
	2,5	10,40	0,31	5,4	7,0	6,0		2,5	12,30	0,81	13,2	13,0	11,0
	3,0	10,60	0,34	6,0	7,0	6,0		3,0	12,70	0,89	15,0	13,0	11,0
	3,5	10,70	0,37	6,0	8,0	7,0		3,5	12,80	0,97	16,2	14,0	12,0
	4,0	10,60	0,40	6,6	8,0	7,0		4,0	12,80	1,04	17,4	15,0	13,0
	4,5	10,40	0,42	7,2	9,0	8,0		4,5	12,80	1,10	18,0	15,0	13,0
2.0	1,7	10,70	0,34	5,4	7,0	6,0	5.0	1,7	11,90	0,84	13,8	14,0	12,0
	2,0	10,80	0,36	6,0	7,0	6,0		2,0	12,10	0,91	15,	14,0	12,0
	2,5	11,00	0,41	6,6	8,0	7,0		2,5	12,70	1,03	17,4	15,0	13,0
	3,0	11,20	0,45	7,8	8,0	7,0		3,0	13,50	1,13	18,6	14,0	12,0
	3,5	11,30	0,49	8,4	9,0	8,0		3,5	13,70	1,23	20,4	15,0	13,0
	4,0	11,10	0,42	9,0	10,0	8,0		4,0	13,70	1,32	22,2	16,0	14,0
	4,5	10,70	0,55	9,0	11,0	10,0		4,5	13,70	1,40	23,4	17,0	15,0
2.5	1,7	10,70	0,41	6,6	8,0	7,0	6.0	1,7	11,90	0,97	16,2	16,0	14,0
	2,0	10,90	0,44	7,2	8,0	7,0		2,0	12,40	1,05	17,4	16,0	14,0
	2,5	11,30	0,50	8,4	9,0	8,0		2,5	13,20	1,21	20,4	16,0	14,0
	3,0	11,30	0,56	9,6	10,0	9,0		3,0	13,90	1,34	22,2	16,0	14,0
	3,5	11,30	0,60	10,2	11,0	9,0		3,5	14,20	1,45	24,0	17,0	14,0
	4,0	11,30	0,64	10,8	12,0	10,0		4,0	14,90	1,55	25,8	17,0	15,0
	4,5	11,30	0,68	11,4	12,0	11,0		4,5	14,60	1,64	28,2	18,0	15,0
3.0	1,7	11,00	0,51	8,4	10,0	8,0	8.0	1,7	11,00	1,34	22,2	26,0	22,0
	2,0	11,20	0,55	9,0	10,0	9,0		2,0	11,80	1,45	24,0	24,0	21,0
	2,5	11,20	0,62	10,2	11,0	9,0		2,5	13,30	1,63	27,0	21,0	19,0
	3,0	12,10	0,69	11,4	11,0	9,0		3,0	14,10	1,79	30,0	21,0	18,0
	3,5	12,20	0,74	12,6	12,0	10,0		3,5	14,90	1,93	32,4	20,0	18,0
	4,0	12,20	0,80	13,2	12,0	11,0		4,0	15,20	2,06	34,2	21,0	18,0
	4,5	12,20	0,84	13,8	13,0	11,0		4,5	15,20	2,19	36,6	22,0	19,0

T5 Low Angle Nozzle Performance Data (Metric)													
Nozzle	Pressure Bar	Radius m.	Flow m³/hr	Flow l/m	Prec Rate ▲ ■		Nozzle	Pressure Bar	Radius m.	Flow m³/hr	Flow l/m	Prec Rate ▲ ■	
1.0 LA	1,7	7,60	0,17	3,0	7,0	6,0	2.0 LA	1,7	8,80	0,33	5,4	10,0	9,0
	2,0	8,00	0,18	3,0	6,0	6,0		2,0	9,10	0,36	6,0	10,0	9,0
	2,5	8,60	0,20	3,6	6,0	5,0		2,5	9,50	0,41	6,6	10,0	9,0
	3,0	8,80	0,22	3,6	7,0	6,0		3,0	9,70	0,45	7,8	11,0	10,0
	3,5	8,80	0,24	4,2	7,0	6,0		3,5	9,90	0,49	8,4	11,0	10,0
	4,0	8,80	0,26	4,2	8,0	7,0		4,0	10,10	0,52	9,0	12,0	10,0
	4,5	8,80	0,27	4,8	8,0	7,0		4,5	10,10	0,56	9,0	13,0	11,0
1.5 LA	1,7	8,20	0,26	4,2	9,0	8,0	3.0 LA	1,7	8,80	0,51	8,4	15,0	13,0
	2,0	8,60	0,28	4,8	9,0	8,0		2,0	9,30	0,55	9,0	15,0	13,0
	2,5	9,20	0,32	5,4	9,0	8,0		2,5	10,10	0,62	10,2	14,0	12,0
	3,0	9,40	0,35	6,0	9,0	8,0		3,0	10,60	0,68	11,4	14,0	12,0
	3,5	9,40	0,38	6,6	10,0	9,0		3,5	10,80	0,74	12,6	15,0	13,0
	4,0	9,40	0,41	6,6	11,0	9,0		4,0	11,00	0,80	13,2	15,0	13,0
	4,5	9,40	0,44	7,2	11,0	10,0		4,5	11,00	0,84	13,8	16,0	14,0

▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.
 ■ Precipitation rates are for square spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.
 All performance specifications are based on the stated working pressure available at the base of the sprinkler.

T5 Series Nozzle Performance Data (English)											
Nozzle	psi	Radius	GPM	Prec Rate ▲ ■		Nozzle	psi	Radius	GPM	Prec Rate ▲ ■	
1.5	25	33	1.12	0.23	0.20	4.0	25	37	2.91	0.47	0.41
	35	34	1.35	0.26	0.22		35	40	3.50	0.49	0.42
	45	35	1.54	0.28	0.24		45	42	4.01	0.51	0.44
	55	35	1.71	0.31	0.27		55	42	4.44	0.56	0.48
	65	36	1.86	0.32	0.28		70	43	4.83	0.58	0.50
2.0	25	35	1.50	0.27	0.24	5.0	25	39	3.72	0.54	0.47
	35	36	1.81	0.31	0.27		35	41	4.47	0.59	0.51
	45	37	2.07	0.34	0.29		45	43	5.09	0.61	0.53
	55	37	2.30	0.37	0.32		55	45	5.66	0.62	0.54
	65	37	2.55	0.41	0.36		65	45	6.16	0.68	0.59
2.5	25	35	1.81	0.33	0.28	6.0	25	39	4.25	0.62	0.54
	35	36	2.26	0.39	0.34		35	43	5.23	0.63	0.54
	45	37	2.51	0.41	0.35		45	44	6.01	0.69	0.60
	55	37	2.76	0.45	0.39		55	47	6.63	0.67	0.58
	65	37	3.01	0.49	0.42		65	48	7.22	0.70	0.60
3.0	25	36	2.26	0.39	0.34	8.0	25	36	5.90	1.01	0.88
	35	38	2.71	0.42	0.36		35	43	7.06	0.85	0.74
	45	40	3.09	0.43	0.37		45	50	8.03	0.71	0.62
	55	40	2.47	0.48	0.42		55	50	8.86	0.79	0.68
	65	40	3.78	0.53	0.45		65	50	9.63	0.86	0.74

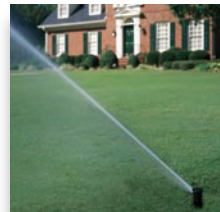
T5 Low Angle Nozzle Performance Data (English)											
Nozzle	psi	Radius	GPM	Prec Rate ▲ ■		Nozzle	psi	Radius	GPM	Prec Rate ▲ ■	
1.5LA	25	25	0.76	0.27	0.23	2.5LA	25	29	1.47	0.39	0.34
	35	28	0.92	0.26	0.23		35	31	2.77	0.41	0.35
	45	29	1.05	0.28	0.24		45	32	2.02	0.44	0.38
	55	29	1.17	0.31	0.27		55	33	2.24	0.46	0.40
	65	29	1.27	0.34	0.29		65	33	3.45	0.50	0.43
2.0LA	25	27	1.15	0.35	0.30	3.0LA	25	29	2.23	0.59	0.51
	35	30	1.38	0.34	0.30		35	33	2.68	0.55	0.47
	45	31	2.58	0.37	0.32		45	35	3.07	0.56	0.48
	55	31	2.76	0.41	0.35		60	36	2.41	0.58	0.51
	65	31	2.92	0.44	0.38		65	36	3.72	0.64	0.55

Super 800 Series Sprinklers

For everyday outstanding performance in a rotor, the Toro Super 800 Series provides for all your watering needs. Five inch pop-up, part and full-circle arcs, top arc indicator, SmartArc™ memory feature, and continuous unidirectional rotation are standard features in a Super 800 sprinkler.



The optional check valve eliminates low head drainage and keeps the laterals fully charged with water.



Key Features

- Five inch pop-up height clears tall grasses and allows for less frequent mowing.
- Top Arc indicator for easy adjustments from 40° to 360° - read the arc change off the scale as you make adjustments.
- Smart Arc™ memory returns sprinkler to previously set arc if vandalized without damage.
- Continuous unidirectional rotation provides uniform coverage when set at full circle.
- Part And Full Circle In One Sprinkler for installation convenience and reduced inventory requirements.

Specifications

- S800 5" Lawn Pop-up w/o Check Valve
- S800CK 5" Lawn Pop-up w/Check Valve
- S800E 5" Lawn Pop-up w/o Check Valve and Effluent Cover
- S800CKE 5" Lawn Pop-up w/Check Valve and Effluent Cover
- S800S Shrub
- S800SE Shrub w/Effluent Rubber Cover
- S800HP 12" High Pop with check valve
- S800HPE 12" High Pop w/Check Valve and Effluent Rubber Cover

Dimensions:

- Body Diameter:
Lawn Pop-up: 60mm (2 3/8")
High-pop: 57mm (2 1/4")
- Cap Diameter:
Lawn Pop-up: 67mm (2 5/8")
High-pop: 76mm (3")
- Height:
Lawn Pop-up: 194mm (7 5/8")
High-Pop: 432mm (17")
- Shrub: 197mm (7 3/4")

Operating Specifications

- Radius: 8,5 – 15,2m (28' – 50')
- Flow Rate: 1,9 – 37,8 LPM (0.5 – 10 GPM)
- Recommended Operating Pressure Range: 2,1-4,1 Bar (maximum: 4.8 psi) 30-60 Bar (maximum: 70 psi)
- Trajectory: 28°
- Pop-up to nozzle: 4 1/2" on Lawn Pop-up
- Lawn model comes factory installed with 2.5 nozzle set at 90 degrees
- Inlet: 20mm (3/4") NPT female-threaded

Additional Features

- Pressure activated seal and robust trip mechanism
- Standard rubber cover
- Selection of body styles: Lawn Pop-up, Shrub and High-pop
- Nozzle tree with 9 standard and 4 low-angle nozzles
- Stainless steel radius adjustment screw allows up to 25% radius reduction
- Two year warranty

Options Available

- 102-2024 – Adjustment Tool
- CK – Check Valve – maintains up to 6' elevation change
- Effluent water indicator

Super 800 Series Specifying Information

S800XXXXXCKE					
Description	Body	Nozzle		Optional	Optional
S800-Super 800 Rotor	S-Shrub P-5" Lawn Pop-up 12H-12" High-pop	50-0.50 75-0.75 10-1.0 20-2.0 25-2.5	30-3.0 40-4.0 60-6.0 80-8.0	CK-Check Valve	E-Effluent
For Example: When specifying a Super 800 Series Sprinkler with a 5" pop-up height and a 2.5 nozzle, you would specify: S800P25					

Super 800 Series Nozzle Performance Data (Metric)											
Nozzle	Pressure Bar	LPM	Radius	Precipitation Rate ▲ ■		Nozzle	Pressure Bar	LPM	Radius	Precipitation Rate ▲ ■	
.50	2,0	1,1	8,5	1.05	0.91	3.0	2,0	12,2	10,7	7.38	6.39
	3,0	1,5	8,8	1.34	1.16		3,0	14,1	11,0	8.07	6.99
	3,5	1,9	8,8	1.70	1.47		3,5	16,3	11,3	8.84	7.66
	4,0	2,3	9,1	1.92	1.67		4,0	18,2	11,6	9.70	8.40
.75	2,0	1,9	8,8	1.70	1.47	4.0	2,0	15,2	11,0	8.70	7.54
	3,0	2,3	9,1	1.92	1.67		3,0	18,6	11,3	10.09	8.74
	3,5	2,7	9,4	2.12	1.83		3,5	21,3	11,6	10.97	9.50
	4,0	3,0	9,8	2.16	1.87		4,0	23,6	11,9	11.55	10.00
1.0	2,0	4,9	9,8	3.54	3.06	6.0	2,0	20,5	11,3	11.12	9.63
	3,0	5,7	10,1	3.87	3.35		3,0	24,3	11,9	11.89	10.30
	3,5	6,5	10,4	4.16	3.61		3,5	27,7	12,5	12.28	10.64
	4,0	7,2	10,7	4.36	3.77		4,0	30,8	13,1	12.44	10.77
2.0	2,0	7,6	10,1	5.16	4.47	8.0	2,0	25,8	11,6	13.28	11.50
	3,0	9,1	10,4	5.83	5.05		3,0	31,2	12,2	14.52	12.58
	3,5	10,3	10,7	6.23	5.40		3,5	36,1	12,8	14.42	12.49
	4,0	11,4	11,0	6.53	5.65		4,0	40,3	13,4	15.55	13.47
2.5	2,0	7,6	10,1	5.16	4.47						
	3,0	9,1	10,4	5.83	5.05						
	3,5	10,3	10,7	6.23	5.40						
	4,0	11,4	11,0	6.53	5.65						

Radius shown in meters. Data based on 360°.

Super 800 Series Nozzle Performance Data (English)											
Nozzle	psi	GPM	Radius	Precipitation Rate ▲ ■		Nozzle	psi	GPM	Radius	Precipitation Rate ▲ ■	
.50	30	0.5	28	0.07	0.06	3.0	30	3.6	38	0.28	0.24
	40	0.6	29	0.08	0.07		40	4.2	39	0.31	0.27
	50	0.7	29	0.09	0.08		50	4.6	41	0.30	0.26
	60	0.8	30	0.10	0.09		60	5.0	42	0.32	0.27
.75	30	0.7	29	0.09	0.08	4.0	30	4.4	43	0.26	0.23
	40	0.8	30	0.10	0.09		40	5.1	44	0.29	0.25
	50	0.9	31	0.10	0.09		50	5.6	46	0.29	0.25
	60	1.0	32	0.11	0.09		60	5.9	49	0.27	0.24
1.0	30	1.3	32	0.14	0.12	6.0	40	5.9	45	0.32	0.28
	40	1.5	33	0.15	0.13		50	6.0	46	0.32	0.27
	50	1.6	34	0.15	0.13		60	6.3	48	0.30	0.26
	60	1.8	35	0.16	0.14		70	6.7	49	0.31	0.27
2.0	30	2.4	37	0.19	0.17	8.0	40	8.0	42	0.50	0.44
	40	2.5	40	0.17	0.15		50	8.5	45	0.47	0.40
	50	3.0	42	0.19	0.16		60	9.5	49	0.44	0.48
	60	3.3	43	0.20	0.17		70	10.0	50	0.44	0.49
2.5*	30	2.5	38	0.19	0.17						
	40	2.8	39	0.20	0.18						
	50	3.2	40	0.22	0.19						
	60	3.5	41	0.23	0.20						

Radius shown in feet. Data based on 360°.

*Factory installed nozzle.

Super 800 Low-angle Nozzle Performance Data (Metric)					
Nozzle	Bar	LPM	Radius	Prec Rate ▲ ■	
1.0	2,0	4,2	8,5	4.03	3.49
	3,0	4,9	8,8	4.38	3.80
	3,5	5,7	9,1	4.77	4.13
	4,0	6,5	9,4	5.10	4.41
3.0	2,0	8,7	9,1	7.28	6.30
	3,0	10,6	10,1	7.20	6.23
	3,5	11,8	10,7	7.14	6.18
	4,0	12,9	11,3	7.00	6.06
4.0	2,0	14,4	9,4	11.29	9.78
	3,0	17,1	10,4	10.95	9.49
	3,5	19,4	11,3	10.53	9.12
	4,0	21,3	11,9	10.42	9.02
6.0	2,0	18,6	9,8	13.42	11.62
	3,0	22,0	10,7	13.31	11.53
	3,5	24,7	11,9	12.09	10.47
	4,0	27,4	9,4	21.49	18.61

Radius shown in meters. Data based on 360°.

Super 800 Low-angle Nozzle Performance Data (English)					
Nozzle	psi	GPM	Radius	Precipitation Rate ▲ ■	
1.0	30	1.1	22	0.28	0.24
	40	1.3	24	0.33	0.28
	50	1.5	26	0.30	0.26
	60	1.7	28	0.28	0.25
3.0	30	2.3	29	0.40	0.34
	40	2.8	32	0.34	0.29
	50	3.1	35	0.32	0.28
	60	3.4	37	0.31	0.27
4.0	30	3.8	31	0.39	0.34
	40	4.5	34	0.37	0.32
	50	5.1	37	0.36	0.31
	60	5.6	38	0.36	0.31
6.0	30	4.9	38	0.50	0.43
	40	5.8	40	0.51	0.44
	50	6.5	42	0.50	0.44
	70	7.2	44	0.49	0.43

Radius shown in feet. Data based on 360°.

300 Series Stream Rotor® Sprinklers

4,6–9,2m (15'–30') Radius

Toro Multi-stream rotors are well known for their visually appealing, multi-stream distribution of water. Ideal for medium-to-large lawn and shrub areas.

Key Features

- Multiple rotating stream pattern allows water to soak into tight soils and slopes without runoff
- True matched precipitation rate nozzles and arc discs
- Choice of six nozzles and-nine interchangeable arc discs
- Planetary, water-lubricated, gear-drive design for longer-life
- Large basket filter screen
- Durable engineering plastic-and stainless-steel construction

Additional Features

Lawn and 300mm (12") Pop-up

- Lawn and 300mm (12") Pop-up
- Pop-up design
- Stainless-steel retraction spring
- Wiper seal
- Small surface diameter
- At-grade installation
- 300mm (12") body has side inlet
- Locking cap available

Specifications

- Recommended operating pressure: 2,4–3,5 Bar (35–50 PSI)
- Maximum operating pressure: 5,2 Bar (75 PSI)
- Flow rate: 2–28,5 LPM (0.57–7.51 GPM)
- Fixed-radius models: 5–9,2m (16'–30')
- Omni adjustable-radius models: 4,6–9,2m (15'–30')
- Trajectory: 27°

Lawn Pop-up

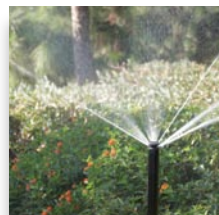
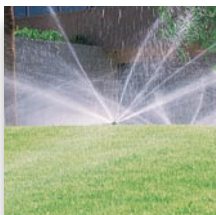
- Pop-up to nozzle: 70mm (2 3/4")
- 20mm (3/4") female-threaded inlet
- Dimensions:
 - Body diameter: 59mm (2 3/8")
 - Cap diameter: 75mm (3")
 - Height: 157mm (6 1/8")

Shrub

- 13mm (1/2") and 20mm (3/4") female-threaded inlets
- Dimensions:
 - Base diameter: 50mm (2")
 - Height: 150mm (6")
- Check valve maintains up-to 2,4m (8') elevation-change

High-pop

- Pop-up to nozzle: 290mm (11 3/4")
- 20mm (3/4") female-threaded bottom and side inlets
- Side inlet: 180mm (7") from top of sprinkler to center of side inlet
- Dimensions:
 - Body diameter: 59mm (2 3/8")
 - Cap diameter: 75mm (3")
 - Height: 405mm (16")



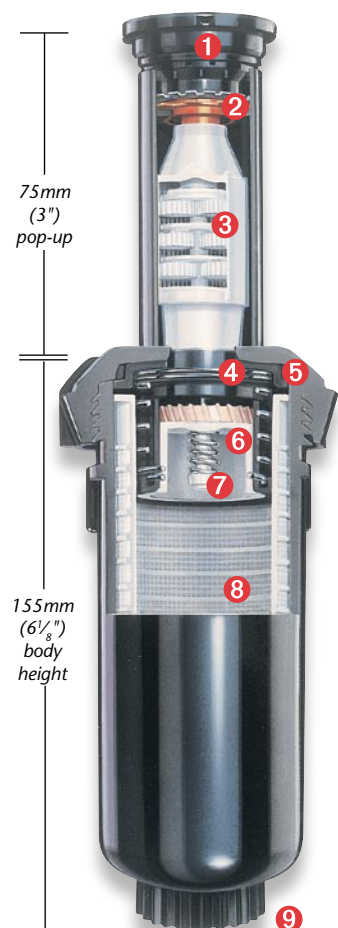
300 Series Stream Rotor® Specifying Information

3XX - XX - XX - COM - E

Arc	Body	Nozzle	Optional	Optional
00—without Arc Disc 04—90° 05—112° 06—135° 07—157.5° 08—180° 09—202.5° 10—225° 12—270° 16—360°	00—LawnPop-up 10—Shrub 12—High-pop	01—Small Radius, 12 Ports 02—Medium Radius, 12 Ports 03—Large Radius, 12 Ports 15—Adjustable Shrub and Lawn Pop-up 21—Small Radius, 12 Ports, High-pop 22—Medium Radius, 12 Ports, High-pop 23—Large Radius, 12 Ports, High-pop 25—Adjustable High-pop 63—Large Radius, 6 Ports, Low Flow 93—Large Radius, 9 Ports,	COM—Check-O-Matic*	E—Effluent

For Example: When specifying a 300 Series Shrub Sprinkler with a 90° arc and an adjustable nozzle, you would specify: **304-10-15**

*Available with shrub models only.



❶ Fixed or adjustable-radius nozzle:
4,6–9,2m (15'–30')

❷ Metal arc disc

❸ Gear-drive design

❹ Wiper seal

❺ 75mm (3") cap diameter

❻ Stainless-steel retraction spring

❼ Variable stator

❽ Large basket filter screen

❾ 3/4" (20mm) inlet

300 Series Lawn Pop-up Apex @ 3,5 Bar (50 PSI)

Nozzle	27°	
	Maximum Height of Spray Meters (Feet)	
01	1,47m	(4'10")
02	1,55m	(5'1")
03	1,8m	(5'11")
63	2,1m	(7')
93	1,9m	(6'3")

300 Series Fixed-Radius Nozzle Performance Data (Metric)

360° 270° 225° 202,5° 180° 157,7° 135° 112° 90°															
Nozzle	Bar	kPa	Kg/cm²	Radius (m)	Prec. Rate*  		Flow (at Designated Arcs) (LPM)								
01	2,5	250	2,6	4,9	25,4	22,0	8,8	6,6	5,5	4,9	4,4	3,9	3,3	2,8	2,2
	3,5	350	3,6	5,5	25,2	21,8	11,0	8,3	6,9	6,2	5,5	4,8	4,1	3,4	2,8
02	2,5	250	2,6	6,5	18,2	15,7	11,1	8,3	6,9	6,2	5,5	4,8	4,2	3,5	2,8
	3,5	350	3,6	7,4	16,4	14,2	13,0	9,8	8,1	7,3	6,5	5,7	4,9	4,1	3,3
03	2,5	250	2,6	8,6	19,5	16,9	20,9	15,7	13,1	11,7	10,4	9,1	7,8	6,5	5,2
	3,5	350	3,6	9,2	20,1	17,4	24,6	18,5	15,4	13,8	12,3	10,8	9,2	7,7	6,2
63§	2,5	250	2,6	8,6	9,8	8,5	10,5	7,8	6,5	5,9	5,2	4,6	3,9	3,3	2,6
	3,5	350	3,6	9,2	10,1	8,7	12,3	9,2	7,7	6,9	6,2	5,4	4,6	3,9	3,9
93§	2,5	250	2,6	8,6	14,7	12,7	15,7	11,7	9,8	8,8	7,8	6,9	5,7	4,9	3,9
	3,5	350	3,6	9,2	15,1	13,1	18,5	13,9	11,5	10,4	9,2	8,1	6,9	5,8	4,6

300 Series Fixed-Radius Nozzle Performance Data (English)

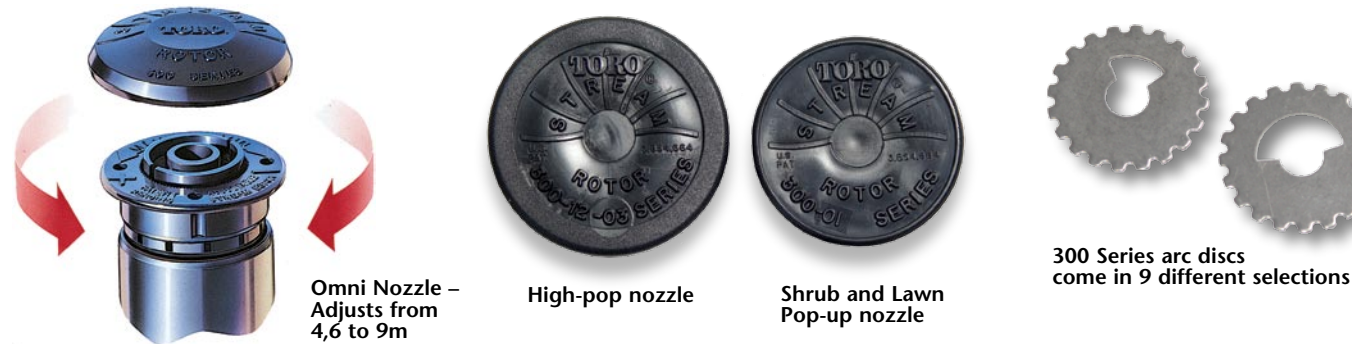
360° 														270° 	225° 	202,5° 	180° 	157,5° 	135° 	112° 	90° 
Nozzle	PSI	Radius (ft)	Prec. Rate*  		Flow (at Designated Arcs) (GPM)																
01	35	16'	0.99	0.86	2.28	1.71	1.43	1.28	1.14	1.00	0.86	0.71	0.57								
	50	18'	0.99	0.86	2.88	2.16	1.80	1.62	1.44	1.26	1.08	0.90	0.72								
02	35	21'	0.73	0.63	2.88	2.16	1.80	1.62	1.44	1.26	1.08	0.90	0.72								
	50	24'	0.66	0.57	3.41	2.56	2.13	1.92	1.71	1.49	1.28	1.06	0.85								
03	35	28'	0.77	0.67	5.43	4.07	3.39	3.05	2.72	2.38	2.04	1.69	1.36								
	50	30'	0.80	0.69	6.45	4.84	4.03	3.63	3.23	2.82	2.42	2.01	1.61								
63§	35	28'	0.39	0.33	2.72	2.04	1.70	1.53	1.36	1.19	1.02	0.85	0.68								
	50	30'	0.40	0.35	3.23	2.42	2.02	1.82	1.62	1.41	1.21	1.00	0.81								
93§	35	28'	0.58	0.50	4.07	3.05	2.54	2.29	2.04	1.78	1.53	1.27	1.02								
	50	30'	0.60	0.52	4.84	3.63	3.03	2.72	2.42	2.12	1.82	1.51	1.21								

▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

■ Precipitation rates are for square spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

All performance specifications are based on the stated working pressure available at the base of the sprinkler.

300 Series Stream Rotor® Sprinklers



300 Series: Shrub w/COM (360° Arc Disc) Performance Data (Metric)
(Model Nos. 300-10-00COM)

Nozzle	Bar	LPM	Radius
05	3,5	12,5	8,6
	5,0	18,8	10,5
07	3,5	19,2	10,7
	5,0	26,3	12,6
09	3,5	22,2	11,0
	5,0	33,3	13,2
10	3,5	25,6	11,4
	5,0	38,3	14,0

300 Series: Shrub w/COM (360° Arc Disc) Performance Data (English)
(Model Nos. 300-10-00COM)

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

Omni™ Adjustable Radius Nozzle Performance Data Standard (Metric)															
			360° 270° 225° 202,5° 180° 157,5° 135° 112° 90°												
Pressure			Radius (m)	Prec. Rate*		Flow (at Designated Arcs) (LPM)									
Bar	(kPa)	(Kg/cm²)		▲	■										
2,5	250	2,55	4,5	44,1	38,2	12,9	9,7	8,1	7,3	6,5	5,7	4,9	4,0	3,2	
			5,0	39,0	33,8	14,1	10,6	8,8	8,0	7,1	6,2	5,3	4,4	3,5	
			6,0	31,9	27,6	16,6	12,5	10,4	9,3	8,3	7,3	6,2	5,2	4,2	
			7,0	27,0	23,3	19,1	14,3	11,9	10,7	9,6	8,4	7,2	5,9	4,8	
			8,0	24,0	20,8	22,2	16,7	13,9	12,5	11,1	9,7	8,3	6,9	5,6	
3,5	350	3,57	6,0	36,9	31,9	19,2	14,4	12,0	10,8	9,6	8,4	7,2	6,0	4,8	
			7,0	31,3	27,1	22,2	16,7	13,9	12,5	11,1	9,7	8,3	6,9	5,6	
			8,0	27,2	23,6	25,2	18,9	15,7	14,2	12,6	11,0	9,4	7,8	6,3	
			9,0	24,1	20,9	28,2	21,1	17,6	15,8	14,1	12,3	10,6	8,8	7,0	
			10,0	21,6	18,7	31,2	23,4	19,5	17,5	15,6	13,6	11,7	9,7	7,8	

Omni™ Adjustable Radius Nozzle Performance Chart Standard – English													
				360° 	270° 	225° 	202,5° 	180° 	157,5° 	135° 	112° 	90° 	
Pressure PSI	Radius (ft)	Prec. Rate* ▲ ■		Flow (at Designated Arcs) (GPM)									
35	15	1.69	1.46	3.41	2.55	2.13	1.91	1.70	1.49	1.28	1.06	0.85	
	18	1.37	1.19	4.00	3.00	2.50	2.25	2.00	1.75	1.50	1.24	1.00	
	21	1.15	1.00	4.58	3.44	2.86	2.29	2.58	2.01	1.72	1.42	1.15	
	24	1.00	0.86	5.17	3.88	3.23	2.58	2.91	2.26	1.94	1.60	1.29	
	26	0.95	0.82	5.76	4.32	3.60	2.88	3.24	2.52	2.16	1.79	1.44	
50	18	1.60	1.38	4.65	3.49	2.91	2.62	2.33	2.04	1.74	1.44	1.16	
	21	1.35	1.17	5.36	4.02	3.35	3.02	2.68	2.35	2.01	1.66	1.34	
	24	1.17	1.02	6.08	4.56	3.80	3.42	3.04	2.66	2.28	1.88	1.52	
	27	1.04	0.90	6.79	5.09	4.24	3.82	3.40	2.97	2.55	2.10	1.70	
	30	0.93	0.80	7.51	5.63	4.69	4.23	3.75	3.29	2.82	2.33	1.88	

▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

■ Precipitation rates are for square spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

All performance specifications are based on the stated working pressure available at the base of the sprinkler.



TR50 Series Sprinklers

10–15,2m (33’–50’) Radius

TR50 Series rotors are simple to adjust and easy to fine tune. By using Toro’s TruArc adjustment band on the side of the riser you can quickly adjust from the factory pre-set 180 degrees. Additionally, if vandalized, the SmartArc memory feature automatically returns the rotor to the previous pattern. And the rugged slip clutch ensures gears are not damaged.

Key Features

- Fast, simple to set watering pattern with ratcheting arc adjustment
- 127mm (5”) pop-up to clear tall turf
- Continuous, unidirectional rotation provides uniform water coverage when set at 360°
- Smart Arc™ memory returns sprinkler to previously set arc if vandalized
- Slip clutch assures no damage to gears if vandalized
- Left arc indicator on cap (arrow), body (hash mark) and riser (arc band), or alternatively ratchet fixed left stop
- Stainless steel riser for harsh environments and added durability

Additional Features

- Dry mode pull-up slot
- Arc adjustment from 30° to 360°
- Laser-etched indications on cap
- Unique, over-molded wiper seal for greater debris resistance and below-grade installation
- Factory-installed with a #3.0 nozzle
- Stainless-steel radius adjustment screw allows up to 25% radius reduction
- Large filter screen to prevent clogging
- Nozzle indicators available
- 3-year warranty

Specifications

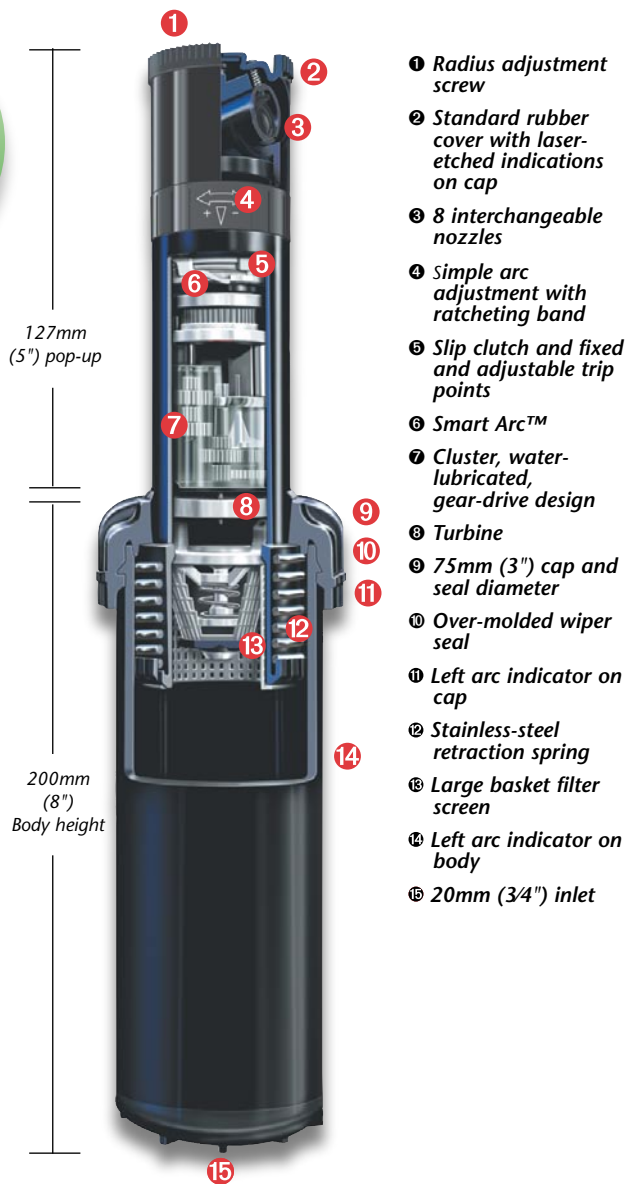
- Radius: 10–15,2m (33’–50’)
- Flow rate: 3,1–39,5 LPM (0.9–10.2 GPM)
- Recommended operating pressure range: 2,1– 4,8 Bar (30–70 PSI)
- Optimum operating pressure: 3,6 Bar (55 PSI)
- 20mm (3/4”) female-threaded inlet
- 20mm (3/4”) and 13mm (1/2”) female-threaded inlet (shrub models)
- Check valve maintains up to 3,0m (10’) elevation change on all models (optional)
- 13mm (1/2”) below-grade installation
- Dimensions for lawn pop-up:
 - Pop-up to center of nozzle: 120mm (43/4”)
 - Base diameter: 60mm (23/8”)
 - Height: 200mm (8”)
- Models:
 - Lawn-pop—127mm (5”)
 - Shrub
 - High-pop—305mm (12”)



TR50 Series Specifying Information

TR50 XXX - XX - E				
Description	Body	Nozzle		Optional
TR50—TR50 Series Rotor	P—127mm (5") Lawn Pop-Up	10–1.0	45–4.5	E—Effluent
	S—Shrub	15–1.5	60–6.0	
	HP—305mm (12") High Pop-Up	20–2.0	75–7.5	
	PSS—Stainless Steel Riser	30–3.0	90–9.0	
For Example: When specifying a 127mm (5") lawn pop-up TR50 Series Sprinkler with a #3.0 nozzle, you would specify: TR50P-30				

TR50 Series Sprinklers (continued)



TR50 Series Nozzle Performance Data △25° Trajectory (Metric)						
Nozzle	Bar	kPa	Kg/cm ²	Rad. (m)	Flow (LPM)	Prec. Rate* ▲ ■
1.0	1,5	150	1,53	9,3	3,1	2,5
	2,0	200	2,04	10,0	3,6	2,5
	2,5	250	2,55	10,6	3,7	2,3
	3,0	300	3,06	11,1	4,0	2,3
	3,5	350	3,57	11,3	4,6	2,5
	4,0	400	4,08	11,5	4,8	2,5
	4,5	450	4,59	11,6	5,3	2,7
1.5	5,0	500	5,10	11,7	5,8	3,0
	1,5	150	1,53	10,0	4,2	2,9
	2,0	200	2,04	10,8	4,5	2,6
	2,5	250	2,55	11,4	5,3	2,8
	3,0	300	3,06	11,8	5,8	2,9
	3,5	350	3,57	12,2	6,1	2,8
	4,0	400	4,08	12,4	6,7	3,0
2.0	4,5	450	4,59	12,5	7,2	3,2
	5,0	500	5,10	12,5	7,7	3,4
	1,5	150	1,53	10,0	5,2	3,6
	2,0	200	2,04	10,1	6,1	3,6
	2,5	250	2,55	11,5	7,0	3,6
	3,0	300	3,06	12,0	7,6	3,6
	3,5	350	3,57	12,2	8,0	3,7
3.0*	4,0	400	4,08	12,7	8,6	3,7
	4,5	450	4,59	12,8	9,5	4,0
	5,0	500	5,10	12,8	10,4	4,4
	1,5	150	1,53	10,4	6,4	4,1
	2,0	200	2,04	11,7	7,8	3,9
	2,5	250	2,55	12,3	8,9	4,1
	3,0	300	3,06	12,6	9,9	4,3
4.5	3,5	350	3,57	12,8	10,7	4,5
	4,0	400	4,08	13,0	11,8	4,8
	4,5	450	4,59	13,1	12,5	5,0
	5,0	500	5,10	13,1	13,2	5,3
	1,5	150	1,53	9,8	10,0	7,2
	2,0	200	2,04	11,4	12,2	6,5
	2,5	250	2,55	12,0	14,2	6,8
6.0	3,0	300	3,06	12,5	15,9	7,0
	3,5	350	3,57	13,1	17,4	7,0
	4,0	400	4,08	13,1	18,9	7,6
	4,5	450	4,59	13,3	20,3	8,0
	5,0	500	5,10	13,5	21,6	8,2
	1,5	150	1,53	9,9	12,8	9,1
	2,0	200	2,04	11,6	15,7	8,0
7.5	2,5	250	2,55	12,5	17,9	8,0
	3,0	300	3,06	13,2	19,8	7,8
	3,5	350	3,57	14,1	21,6	7,5
	4,0	400	4,08	14,5	23,3	7,7
	4,5	450	4,59	14,6	24,8	8,0
	5,0	500	5,10	14,6	26,3	8,5
	1,5	150	1,53	10,2	16,0	10,7
9.0	2,0	200	2,04	11,9	19,2	9,3
	2,5	250	2,55	13,0	22,0	9,1
	3,0	300	3,06	13,7	24,7	9,0
	3,5	350	3,57	14,4	27,1	9,1
	4,0	400	4,08	14,8	29,3	9,2
	4,5	450	4,59	14,9	31,1	9,6
	5,0	500	5,10	14,9	32,8	10,2
9.0	1,5	150	1,53	10,2	19,2	12,8
	2,0	200	2,04	11,9	23,2	11,3
	2,5	250	2,55	13,1	26,7	10,7
	3,0	300	3,06	14,0	29,8	10,5
	3,5	350	3,57	14,7	32,8	10,6
	4,0	400	4,08	14,9	35,6	11,1
	4,5	450	4,59	15,1	37,5	11,4
	5,0	500	5,10	15,2	39,5	11,7

TR50 Nozzle Performance Data △25° Trajectory (English)					
Nozzle	PSI	Rad. (ft)	Flow (GPM)	Prec. Rate* ▲ ■	
1.0	20	30	0.8	0.10	0.08
	30	33	0.9	0.09	0.08
	40	36	1.0	0.09	0.07
	50	37	1.2	0.10	0.08
	60	38	1.3	0.10	0.09
	70	38	1.5	0.12	0.10
1.5	20	32	1.1	0.12	0.10
	30	36	1.2	0.10	0.09
	40	38	1.5	0.12	0.10
	50	40	1.6	0.11	0.10
	60	41	1.8	0.12	0.10
	70	41	2.0	0.13	0.11
2.0	20	32	1.3	0.14	0.12
	30	36	1.6	0.14	0.12
	40	39	1.9	0.14	0.12
	50	40	2.1	0.15	0.13
	60	42	2.3	0.14	0.13
	70	42	2.7	0.17	0.15
3.0*	20	33	1.6	0.16	0.14
	30	39	2.1	0.15	0.13
	40	41	2.5	0.17	0.14
	50	42	2.8	0.18	0.15
	60	43	3.2	0.19	0.17
	70	43	3.4	0.20	0.18
4.5	20	31	2.5	0.29	0.25
	30	38	3.3	0.25	0.22
	40	40	4.0	0.28	0.24
	50	43	4.6	0.27	0.24
	60	43	5.1	0.31	0.27
	70	44	5.6	0.32	0.28
6.0	20	31	3.2	0.37	0.32
	30	39	4.2	0.31	0.27
	40	42	5.0	0.32	0.27
	50	46	5.7	0.30	0.26
	60	48	6.3	0.30	0.26
	70	48	6.8	0.35	0.31
7.5	20	32	4.0	0.44	0.38
	30	40	5.2	0.36	0.31
	40	44	6.2	0.36	0.31
	50	47	7.1	0.36	0.31
	60	49	7.9	0.37	0.32
	70	49	8.5	0.39	0.34
9.0	20	32	4.8	0.52	0.45
	30	40	6.3	0.44	0.38
	40	45	7.5	0.41	0.36
	50	48	8.6	0.42	0.36
	60	49	9.6	0.44	0.39
	70	50	10.2	0.45	0.39

▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

■ Precipitation rates are for square spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

All performance specifications are based on the stated working pressure available at the base of the sprinkler.

* Indicates pre-installed nozzle

TR50 Series TMPR Nozzles

TMPR nozzles make design and installation easier than ever. Just pick your spacing and chose your arc. The nozzle insert does everything else automatically delivering exacting radius and precipitation rate performance.

Key Features

- TMPR nozzles control precipitation rate, radius and flow to prevent run-off, erosion and over watering.
- When properly installed per radius, each nozzle delivers about 15,0 mm/hr (0.6"/hr) per arc on square spacing plans and 17,0mm/hr (0.7"/hr) for triangular spacing.
- Each nozzle tree contains a 90°, 120°, 180° and 360° nozzle. Each radius size is color-coded in 3 common radius lengths: 7,6m (25'- tan); 9,1m (30'- gray); and 10.7m (35'- red).



TR Series TMPR Nozzle - Specifying Information

TMPR XX - XXXX			
Description	Radius	Arc	
TMPR—TR50 Matched Precipitation Rate Nozzle	25—25 foot radius 30—30 foot radius 35—35 foot radius	1/4—90° arc 1/3—120° arc	1/2—180° arc Full—Full circle
Example: A TMPR nozzle for a 90° arc and 30' radius would be specified as: TMPR30-1/4			



Additional Features

- Compatible with all TR50 products and all body styles (including shrub, pop and high pop)
- TMPR nozzles are used to control spacing and precipitation rate to exacting requirements
- High efficiency nozzles deliver excellent CU (coefficient of uniformity), DU (distribution uniformity) and SC (scheduling coefficient) values
- Three radius sizes available— 7,6m; 9,1m; and 10,7m (25', 30' and 35')
- Color-coded per radius: 25'-tan, 30'-gray, 35'-red
- Matching precipitation rates between arcs 15,0mm/hr (0.60"/hr); 17,5mm/hr (0.70"/hr)
- Nozzles easily interchangeable
- Triangulation possible from 7,6m to 10,7m (25'-35') while maintaining precipitation rate

TMPR Nozzles Performance Data* (Metric)

Model	Arc	Flow LPM	Radius m	Precip. Data	
				▲	■
TMPR 25	1/4	3,6	7,62	17,0	14,7
	1/3	5,0	7,62	18,0	15,6
	1/2	6,4	7,62	15,3	13,2
	1	13,6	7,62	16,2	14,0
TMPR 30	1/4	4,9	9,14	16,3	14,1
	1/3	6,7	9,14	16,7	14,5
	1/2	9,9	9,14	16,4	14,2
	1	20,1	9,14	16,7	14,4
TMPR 35	1/4	7,0	10,67	17,1	14,8
	1/3	9,3	10,67	17,1	14,8
	1/2	14,0	10,67	17,1	14,8
	1	26,2	10,67	15,9	13,8

TMPR Nozzles Performance Data* (English)

Model	Arc	Flow GPM	Radius ft	Precip. Data	
				▲	■
TMPR 25	1/4	0.94	25	0.67	0.58
	1/3	1.33	25	0.71	0.61
	1/2	1.69	25	0.6	0.52
	1	3.58	25	0.64	0.55
TMPR 30	1/4	1.3	30	0.64	0.56
	1/3	1.78	30	0.66	0.57
	1/2	2.62	30	0.65	0.56
	1	5.31	30	0.66	0.57
TMPR 35	1/4	1.85	35	0.67	0.58
	1/3	2.47	35	0.67	0.58
	1/2	3.71	35	0.67	0.58
	1	6.91	35	0.63	0.54

* Performance data shown is for 3 Bar (45 psi).

TR70 Series Sprinklers

9,8 – 21,7m (32'–71') Radius

With the use of the simple adjustment band technology of the TR50, the TR70 is just as convenient but made to withstand higher pressure and throw further distances.

Key Features

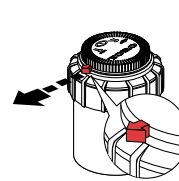
- Safe rubber cover
- 127mm (5") pop-up to clear tall turf
- Continuous unidirectional rotation provides uniform water coverage when set at 360°
- Smart Arc™ memory returns sprinkler to previous setting (even if arc is turned beyond setting)
- Slip clutch assures no damage to gears if vandalized
- Stainless-steel riser for harsh environments and added durability

Additional Features

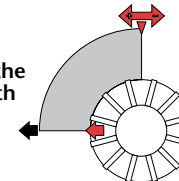
- Adjusting band for visual verification of arc setting
- Color-coded nozzle tree for quick and easy identification and installation
- Seven interchangeable nozzles
- Factory-installed with a #12 nozzle
- Left arc indicator on cap (arrow) and body (hash mark)
- Right stop indicator (white arrow on black band)
- Cluster, water-lubricated, gear-drive design
- Dry mode pull-up slot
- Arc adjustment from 30°–360°
- Standard, reversible check valve prevents low-head drainage, keeping laterals charged with water
- Unique, over-molded wiper seal for greater debris resistance and 1/2" below-grade installation
- Stainless-steel radius adjustment screw allows up to 25% radius reduction
- Large filter screen to prevent clogging
- Three year warranty

Specifications

- Radius: 9,8 – 21,7m (32'–71')
- Flow rate: 26,5–113 LPM (7.0–29.6 GPM)
- Trajectory: 25°
- Recommended operating pressure range: 1,7–7 Bar (25–100 PSI)
- Optimum operating pressure: 4,5 Bar (65 PSI)
- 25mm (1") female-threaded inlet, NPT or BSP
- Check valve maintains up to 3m (10') elevation change on all models
- 13mm (1/2") below-grade installation
- Dimensions:
 - Pop-up to center of nozzle (lawn pop-up): 120mm (4 3/4")
 - Surface diameter: 60mm (2 3/8")
 - Height: 200mm (8")



Align the fixed left stop by positioning the arrow on the cap with the reverse point on the left.



Adjust the right arc by positioning the down arrow on the black band with the desired reverse point on the right.

TR70 Series Specifying Information

TR70 XXX - XX - XX - E

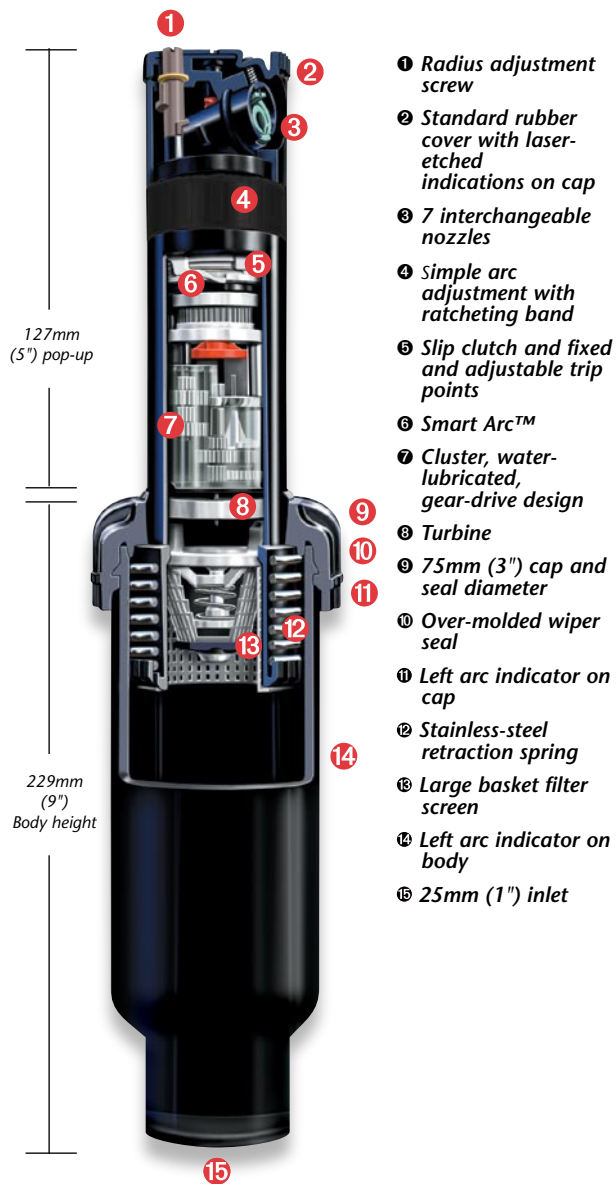
Description	Body	Thread	Nozzle	Optional
TR70—TR70 Series Rotor	P—127mm (5") Lawn Pop-Up PSS—Stainless Steel Riser	02 - NPT 52 - BSP	7–7.0 9–9.0 12–12.0 16–16.0	E—Effluent

For Example:

When specifying a 127mm (5") lawn pop-up TR70P Series Sprinkler with BSP threads and a #12.0 nozzle, you would specify:

TR70P-52-12-E

Optional Adjustment Tool
102-1303



TR70 Series Performance Data △25° Trajectory (Metric)							
Nozzle	Bar	kPa	Kg/cm ²	Rad. (m)	Flow (LPM)	Prec. Rate ▲ ■	
7.0 Orange	3,0	300	3,06	13,0	27,2	11,1	9,6
	3,5	350	3,57	13,2	28,6	11,4	9,9
	4,0	400	4,08	13,6	30,5	11,4	9,9
	4,5	450	4,59	13,7	32,4	11,9	10,3
	5,0	500	5,10	13,6	34,3	12,8	11,1
	5,5	550	5,61	13,4	36,3	13,9	12,1
	6,0	600	6,12	13,4	37,7	14,5	12,5
	6,5	650	6,63	13,7	39,8	14,7	12,8
9.0 Red	7,0	700	7,14	14,0	42,5	14,9	12,9
	3,0	300	3,06	13,8	31,1	11,2	9,7
	3,5	350	3,57	14,1	31,9	11,2	9,7
	4,0	400	4,08	14,5	33,0	10,8	9,4
	4,5	450	4,59	14,8	34,5	10,9	9,4
	5,0	500	5,10	15,1	36,1	11,0	9,5
	5,5	550	5,61	15,5	37,8	10,8	9,4
	6,0	600	6,12	15,8	38,1	10,6	9,2
12.0* Black	6,5	650	6,63	16,0	40,6	11,0	9,5
	7,0	700	7,14	16,2	44,4	11,7	10,1
	3,0	300	3,06	15,8	37,0	10,3	8,9
	3,5	350	3,57	16,2	40,0	10,6	9,1
	4,0	400	4,08	16,6	43,1	10,8	9,3
	4,5	450	4,59	16,9	45,9	11,1	9,6
	5,0	500	5,10	17,1	48,3	11,4	9,9
	5,5	550	5,61	17,4	51,0	11,7	10,1
16.0 Blue	6,0	600	6,12	17,6	53,5	12,0	10,4
	6,5	650	6,63	17,9	55,9	12,0	10,4
	7,0	700	7,14	18,3	58,6	12,1	10,4
	3,0	300	3,06	16,4	55,2	14,3	12,3
	3,5	350	3,57	16,9	58,2	14,2	12,3
	4,0	400	4,08	17,7	60,9	13,4	11,6
	4,5	450	4,59	18,3	63,9	13,2	11,4
	5,0	500	5,10	18,6	66,9	13,4	11,6
20.0 Green	5,5	550	5,61	18,6	69,9	14,0	12,1
	6,0	600	6,12	19,7	73,2	13,1	11,4
	6,5	650	6,63	20,2	76,3	12,9	11,2
	7,0	700	7,14	20,5	79,3	13,1	11,3
	3,0	300	3,06	16,4	67,4	17,4	15,1
	3,5	350	3,57	16,9	70,8	17,2	14,9
	4,0	400	4,08	17,7	74,3	16,3	14,2
	4,5	450	4,59	18,3	77,5	16,0	13,9
24.0 Brown	5,0	500	5,10	18,7	80,8	15,9	13,8
	5,5	550	5,61	19,2	84,6	15,9	13,8
	6,0	600	6,12	19,8	85,8	15,1	13,1
	6,5	650	6,63	20,4	90,0	15,0	13,0
	7,0	700	7,14	20,8	95,7	15,3	13,3
	3,0	300	3,06	17,0	67,8	16,3	14,1
	3,5	350	3,57	17,5	71,1	16,1	14,0
	4,0	400	4,08	18,3	74,1	15,2	13,2
27.0 Gray	4,5	450	4,59	18,9	78,3	15,1	13,1
	5,0	500	5,10	19,4	82,9	15,2	13,2
	5,5	550	5,61	20,1	87,3	15,0	13,0
	6,0	600	6,12	20,3	91,1	15,3	13,2
	6,5	650	6,63	20,8	95,0	15,2	13,1
	7,0	700	7,14	21,4	98,6	14,9	12,9
	3,0	300	3,06	17,4	75,2	17,2	14,9
	3,5	350	3,57	18,1	80,6	17,0	14,7

TR70 Series Performance Data △25° Trajectory (English)					
Nozzle	PSI	Rad. (ft)	Flow (GPM)	Prec. Rate ▲ ■	
7.0 Orange	50	43	7.5	0.39	0.34
	60	45	8.2	0.39	0.34
	70	45	8.9	0.45	0.34
	80	44	9.6	0.48	0.41
	90	44	10.1	0.50	0.44
	100	46	11.1	0.51	0.44
9.0 Red	50	46	8.4	0.38	0.33
	60	48	8.8	0.37	0.32
	70	49	9.4	0.38	0.33
	80	51	10.0	0.37	0.32
	90	52	10.1	0.36	0.31
	100	53	11.6	0.40	0.34
12.0* Black	50	53	10.5	0.36	0.31
	60	55	11.6	0.37	0.32
	70	56	12.6	0.39	0.34
	80	57	13.5	0.40	0.35
	90	58	14.4	0.41	0.36
	100	60	15.3	0.41	0.35
16.0 Blue	50	55	15.3	0.49	0.42
	60	59	16.3	0.45	0.39
	70	61	17.4	0.45	0.39
	80	61	18.5	0.48	0.41
	90	66	19.7	0.44	0.38
	100	67	20.8	0.45	0.39
20.0 Green	50	55	18.6	0.59	0.51
	60	59	19.9	0.55	0.48
	70	61	21.0	0.54	0.47
	80	63	22.4	0.54	0.47
	90	66	22.8	0.56	0.45
	100	68	25.1	0.52	0.45
24.0 Brown	50	57	18.7	0.55	0.48
	60	61	19.8	0.51	0.44
	70	63	21.5	0.52	0.45
	80	66	23.1	0.51	0.44
	90	67	24.5	0.53	0.46
	100	70	25.9	0.51	0.44
27.0 Gray	50	59	21.1	0.58	0.51
	60	64	23.7	0.56	0.48
	70	67	25.6	0.55	0.48
	80	68	26.8	0.56	0.48
	90	69	28.2	0.57	0.49
	100	71	29.6	0.57	0.49

▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

■ Precipitation rates are for square spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

All performance specifications are based on the stated working pressure available at the base of the sprinkler.

*Indicates pre-installed nozzle.

Commercial and Sport Sprinklers

Toro products are used on the world's most prestigious athletic fields.

They help beautify landscapes for municipalities and local councils.

Whatever the application, you can count on Toro sprinklers to save you time, water and money.



		TR50XT Series	TR70XT Series	2001 Series	640 Series	TS90 Series	DT Series	855S Series	690 Series	TG101
	Radius	6-14m (20'-47')	10,1-21m (33'-71')	15-21,7m (48'-71')	14-20m (47'-67')	16-29m (53'-95')	15,8-30,2m (52'-99')	18-30m (61'-97')	26-33m (87'-108')	27-54m (91'-178')
	Inlet Size	20mm (¾")	25mm (1")	25mm (1")	25mm (1")	25mm (1")	40mm (1½")	40mm (1½")	40mm (1½")	50mm (2")
	Flow Range	3,8-37,0 LPM (1.0-9.8 GPM)	25,4-102 LPM (6.7-27 GPM)	21,2-118 LPM (5.6-31.3 GPM)	22,7-94,6 LPM (6.0-25.0 GPM)	53-233 LPM (14.0-65.0 GPM)	50-234 LPM (13.2-61.8 GPM)	23-95 LPM (6.0-25.0 GPM)	193-311 LPM (51.0-82.2 GPM)	158-938 LPM (42-248 GPM)
	Operating Pressure	2,0 – 4,8 Bar (30-70 PSI)	2,0 – 7,0 Bar (30-100 PSI)	2,8 – 7,0 Bar (40-100 PSI)	2,8 – 7,0 Bar (40-100 PSI)	4,5-7,0 Bar (65-100 PSI)	4,5-7,0 Bar (65-100 PSI)	3,4-7,0 Bar (50-100 PSI)	Up to 10,3 Bar (150 PSI)	2,5-6,5 Bar (40-95 PSI)
Applications	3,0 – 4,5 Bar (40–65 PSI) Systems	X	X	X	X	X	X	X		X
	4,5 – 7,0 Bar (65–100 PSI) Systems		X		X	X	X	X	X	X
	High Traffic, Vandal Prone Areas	X	X		X					
	Rubber Cover for Sport Fields	X	X	X	X	X			X	
	High Wind	X	X		X	X	X	X	X	
	N.O., VIH Hydraulic System				X		X	X	X	
Features	Full Circle	X	X	X	X	X	X	X	X	
	Part-Circle-Adjustable	X	X	X		X	X	X		
	Part-Circle-Fixed				X				X	
	Part/Full Circle in One	X	X			X				X
	Stainless Steel Riser Option	X	X	X	X					
	Check Valve	X	X	X	X	X	X	X	X	
	Effluent Water Option	X	X	X	X	X	X	X		
	Smart Arc™ Memory	X	X	X						
	Adjustable Rotation Speed				X				X	
	Small Exposed Surface Diameter	X	X		X	X				
	X-Flow® Water Shutoff	X	X							
	Trujectory™ Adjustment	X	X			X		X		

TR50XT Series Sprinklers

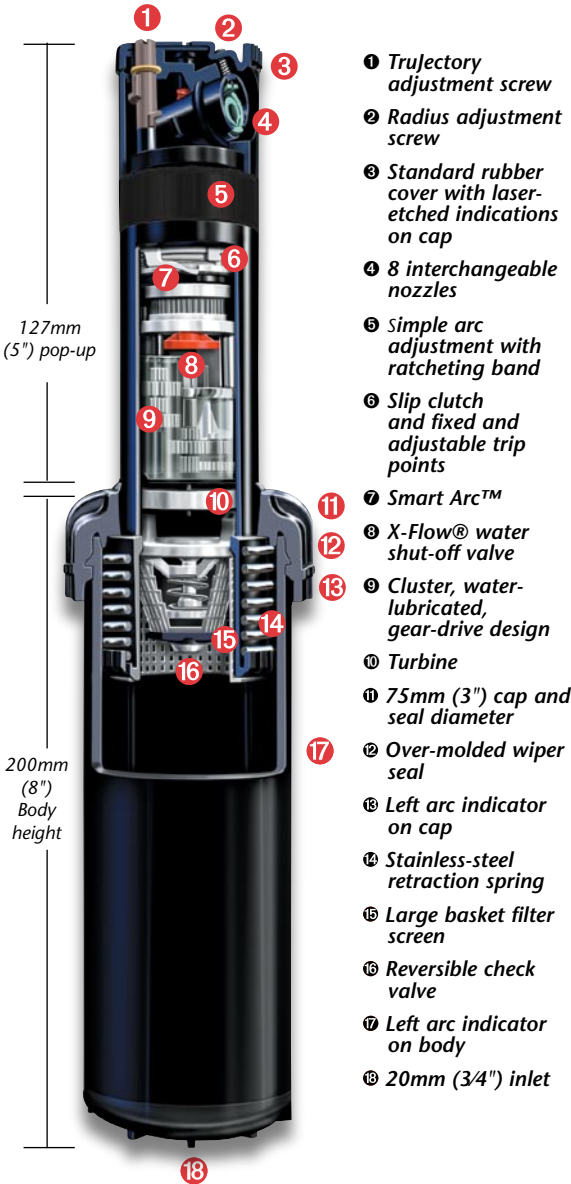
4,6–14,3m (15'–47') Radius

Key Features

- Fast, simple to set watering pattern with ratcheting arc adjustment
- 127mm (5") pop-up to clear tall turf
- Continuous, unidirectional rotation provides uniform water coverage when set at 360°
- Smart Arc™ memory returns sprinkler to previously set arc if vandalized
- Slip clutch assures no damage to gears if vandalized
- Left arc indicator on cap (arrow), body (hash mark) and riser (arc band), or alternatively ratchet fixed left stop
- Stainless steel riser for harsh environments and added durability
- TruJectory™ adjustment from 5° to 25° for fine-tuning radius and nozzle spray trajectory
- X-Flow® water shut-off for changing nozzle and arc setting without getting wet

Additional Features

- Color-coded nozzle tree for quick and easy identification and installation
- Standard reversible check valve prevents low-head drainage, keeping laterals charged with water
- Dry mode pull-up slot
- Arc adjustment from 30° to 360°
- Laser-etched indications on cap
- Unique, over-molded wiper seal for greater debris resistance and below-grade installation
- Stainless-steel radius adjustment screw allows up to 25% radius reduction
- Large filter screen to prevent clogging
- Nozzle indicators available
- Extended 5-year warranty



Specifications

- Radius: 6,0–14,3m (20'–47')
- Flow rate: 3,8–37,0 LPM (1.0–9.8 GPM)
- Trajectory: 5° to 25°
- Recommended operating pressure range: 2,0– 4,8 Bar (30–70 PSI)
- Optimum operating pressure: 3,6 Bar (55 PSI)
- 20mm (3/4") female-threaded inlet
- 20mm (3/4") and 13mm (1/2") female-threaded inlet (shrub models)
- Check valve maintains up to 3,0m (10') elevation change on all models
- 13mm (1/2") below-grade installation
- Dimensions for lawn pop-up: Pop-up to center of nozzle: 120mm (4 3/4")
- Base diameter: 60mm (2 3/8")
- Height: 200mm (8")
- Models: Lawn-pop—127mm (5") Shrub High-pop—305mm (12")



TR50XT Series Specifying Information

TR50XT XX - XX - E				
Description	Body	Nozzle		Optional
TR50XT—TR50XT Series Rotor	P—127mm (5") Lawn Pop-Up	10–1.0	45–4.5	E—Effluent
	S—Shrub	15–1.5	60–6.0	
	HP—305mm (12") High Pop-Up	20–2.0	75–7.5	
	PSS—Stainless Steel Riser	30–3.0*	90–9.0	
For Example: When specifying a 127mm (5") lawn pop-up TR50XT Series Sprinkler with a #3.0 nozzle, you would specify: TR50XT-30				

*Pre-installed #3.0 nozzle

TR Rotor Family Comparison *An easier, faster way to install*

Toro has produced many superior rotors for commercial and residential irrigation, but nothing like these latest models. Thanks to a number of exciting Toro innovations, the TR rotors let you fine-tune your spray arcs, angles and radii to fit any particular situation. We've made them easier for you to adjust—both physically and visually.



TR Rotor Family			
TR50 and TR70	TR50XT and TR50XTSS	TR70XTP and TR70XTPSS	TS90
 Fast, visible adjustment requires no tools.	 Fast, visible adjustment requires no tools.	 Fast, visible adjustment requires no tools.	 Fast, visible adjustment requires no tools.
	  Patented Trujectory™ height of spray adjustment	  Patented Trujectory™ height of spray adjustment	  Patented Trujectory™ height of spray adjustment
	 Patented X-Flow™ water shut-off valve	 Patented X-Flow™ water shut-off valve	
 Safe rubber cover and below grade installation	 Safe rubber cover and below grade installation	 Safe rubber cover and below grade installation	 Safe rubber cover and below grade installation
  TR50 TR70	  TR50XT TR50XTSS	  TR70XTP TR70XTPSS	 TS90

TR50XT Series Sprinklers (continued)

TR50XT Series Nozzle Performance Data (Metric)													
					5°			15			25°		
Nozzle	Bar	kPa	Kg/cm2	Flow (LPM)	Rad. (m)	Prec. Rate* ▲ ■		Rad. (m)	Prec. Rate* ▲ ■		Rad. (m)	Prec. Rate* ▲ ■	
1.0	2,0	200	2,04	3,8	6,1	7,0	6,1	7,9	4,2	3,6	9,1	3,1	2,7
	2,5	250	2,55	4,1	6,3	7,1	6,2	8,0	4,4	3,8	9,1	3,4	2,9
	3,0	300	3,06	4,5	6,5	7,3	6,3	8,1	4,7	4,0	9,2	3,6	3,2
	3,5	350	3,57	4,9	6,8	7,4	6,4	8,3	5,0	4,3	9,3	3,9	3,4
	4,0	400	4,08	5,3	7,3	6,8	5,9	8,5	5,1	4,4	9,3	4,2	3,7
	4,5	450	4,59	5,6	7,5	7,0	6,0	8,5	5,3	4,6	9,3	4,5	3,9
	5,0	500	5,10	6,0	7,5	7,3	6,3	8,6	5,6	4,9	9,3	4,7	4,1
1.5	2,0	200	2,04	4,7	8,5	4,5	3,9	9,1	3,9	3,4	10,4	3,0	2,6
	2,5	250	2,55	5,1	8,6	4,7	4,1	9,3	4,0	3,5	10,6	3,2	2,7
	3,0	300	3,06	5,5	8,7	5,0	4,4	9,5	4,3	3,7	10,7	3,3	2,9
	3,5	350	3,57	6,0	8,9	5,3	4,6	9,6	4,5	3,9	10,8	3,5	3,1
	4,0	400	4,08	6,5	9,2	5,3	4,6	9,7	4,7	4,1	10,8	3,8	3,3
	4,5	450	4,59	6,9	9,4	5,4	4,7	9,8	5,0	4,3	10,7	4,1	3,6
	5,0	500	5,10	7,3	9,5	5,6	4,8	9,8	5,3	4,6	10,7	4,4	3,8
2.0	2,0	200	2,04	6,3	9,4	4,9	4,2	9,8	4,6	4,0	11,0	3,6	3,1
	2,5	250	2,55	6,8	9,4	5,3	4,6	10,1	4,6	4,0	11,3	3,7	3,2
	3,0	300	3,06	7,5	9,5	5,7	5,0	10,5	4,7	4,1	11,5	3,9	3,4
	3,5	350	3,57	8,2	9,6	6,1	5,3	10,7	5,0	4,3	11,6	4,2	3,7
	4,0	400	4,08	8,9	9,8	6,3	5,5	10,9	5,1	4,5	11,7	4,5	3,9
	4,5	450	4,59	9,5	10,0	6,6	5,7	11,0	5,4	4,7	11,7	4,8	4,1
	5,0	500	5,10	10,0	10,1	6,8	5,9	11,0	5,7	4,9	11,8	5,0	4,3
3.0*	2,0	200	2,04	8,9	9,4	6,9	5,9	10,4	5,7	4,9	11,6	4,6	4,0
	2,5	250	2,55	9,6	9,4	7,4	6,4	10,5	6,0	5,2	11,9	4,7	4,1
	3,0	300	3,06	10,5	9,7	7,7	6,7	10,7	6,3	5,5	12,2	4,9	4,2
	3,5	350	3,57	11,4	10,1	7,7	6,7	11,0	6,5	5,6	12,5	5,0	4,4
	4,0	400	4,08	12,3	10,4	7,8	6,8	11,3	6,6	5,7	12,6	5,3	4,6
	4,5	450	4,59	13,0	10,6	8,0	7,0	11,6	6,7	5,8	13,0	5,4	4,6
	5,0	500	5,10	13,8	10,7	8,3	7,2	11,8	6,9	5,9	13,3	5,4	4,7
4.5	2,0	200	2,04	13,6	9,4	10,5	9,1	10,4	8,8	7,6	11,9	6,7	5,8
	2,5	250	2,55	14,7	9,6	11,0	9,5	10,5	9,3	8,1	12,1	7,0	6,0
	3,0	300	3,06	16,1	10,0	11,2	9,7	10,7	9,7	8,4	12,3	7,4	6,4
	3,5	350	3,57	17,7	10,4	11,4	9,8	11,2	9,8	8,5	12,5	7,8	6,8
	4,0	400	4,08	19,0	10,5	12,0	10,4	11,5	10,0	8,6	12,7	8,1	7,0
	4,5	450	4,59	20,3	10,8	12,1	10,5	11,7	10,2	8,8	12,8	8,6	7,4
	5,0	500	5,10	21,4	11,0	12,2	10,6	11,9	10,4	9,0	12,8	9,0	7,8
6.0	2,0	200	2,04	16,7	9,4	12,9	11,2	10,7	10,1	8,8	12,5	7,4	6,4
	2,5	250	2,55	18,0	9,5	13,7	11,9	11,0	10,4	9,0	12,6	7,9	6,8
	3,0	300	3,06	19,8	9,9	13,9	12,0	11,5	10,3	9,0	12,8	8,3	7,2
	3,5	350	3,57	21,6	10,6	13,4	11,6	12,2	10,1	8,7	13,1	8,7	7,5
	4,0	400	4,08	23,3	11,1	13,0	11,3	12,2	10,8	9,4	13,1	9,4	8,1
	4,5	450	4,59	24,8	11,4	13,3	11,5	12,4	11,3	9,8	13,3	9,6	8,4
	5,0	500	5,10	26,1	11,5	13,7	11,8	12,5	11,5	10,0	13,6	9,8	8,5
7.5	2,0	200	2,04	18,6	10,4	12,0	10,4	10,7	11,3	9,8	12,5	8,2	7,1
	2,5	250	2,55	20,1	10,6	12,3	10,6	10,9	11,8	10,2	12,5	8,9	7,7
	3,0	300	3,06	21,9	10,8	13,0	11,2	11,0	12,5	10,8	12,5	9,6	8,3
	3,5	350	3,57	23,8	10,8	14,1	12,2	11,1	13,3	11,5	12,7	10,3	8,9
	4,0	400	4,08	25,7	10,9	14,9	12,9	11,4	13,8	11,9	12,8	10,9	9,4
	4,5	450	4,59	27,4	11,1	15,5	13,5	11,5	14,3	12,4	13,0	11,3	9,8
	5,0	500	5,10	28,9	11,2	16,0	13,9	11,6	14,8	12,8	13,1	11,6	10,0
9.0	2,0	200	2,04	23,1	10,4	14,8	12,9	10,4	14,8	12,9	12,8	9,7	8,4
	2,5	250	2,55	25,2	10,6	15,7	13,6	10,5	15,9	13,8	12,8	10,6	9,2
	3,0	300	3,06	27,8	10,7	16,9	14,6	10,8	16,6	14,3	13,0	11,4	9,8
	3,5	350	3,57	30,5	10,7	18,5	16,1	11,3	16,5	14,3	13,4	11,7	10,1
	4,0	400	4,08	32,9	10,7	20,0	17,3	11,6	16,8	14,5	13,5	12,4	10,8
	4,5	450	4,59	35,4	10,9	20,6	17,8	12,0	17,1	14,8	13,9	12,7	11,0
	5,0	500	5,10	37,5	11,2	20,8	18,0	12,2	17,4	15,0	14,2	12,9	11,1

TR50XT Nozzle Performance Data (English)											
			5°			15			25°		
Nozzle	PSI	Flow (GPM)	Rad. (ft)	Prec. Rate* ▲ ■		Rad. (ft) 15°	Prec. Rate* ▲ ■		Rad. (ft)	Prec. Rate* ▲ ■	
1.0	30	1.0	20	0.28	0.24	26	0.16	0.14	30	0.12	0.11
	40	1.1	21	0.28	0.24	27	0.18	0.15	30	0.14	0.12
	50	1.3	22	0.30	0.26	27	0.20	0.17	31	0.15	0.13
	60	1.4	25	0.26	0.23	28	0.20	0.17	31	0.17	0.15
	70	1.5	25	0.29	0.25	28	0.22	0.19	31	0.18	0.16
1.5	30	1.2	28	0.18	0.15	30	0.15	0.13	34	0.12	0.10
	40	1.4	29	0.19	0.17	31	0.16	0.14	35	0.13	0.11
	50	1.6	29	0.21	0.18	32	0.18	0.15	36	0.14	0.12
	60	1.7	31	0.21	0.18	32	0.19	0.16	36	0.15	0.13
	70	1.9	31	0.22	0.19	32	0.21	0.18	35	0.18	0.15
2.0	30	1.7	31	0.19	0.17	32	0.18	0.16	36	0.14	0.12
	40	1.9	31	0.22	0.19	34	0.18	0.16	38	0.15	0.13
	50	2.2	32	0.24	0.21	35	0.20	0.17	38	0.17	0.14
	60	2.4	33	0.25	0.22	36	0.20	0.18	39	0.18	0.15
	70	2.6	33	0.27	0.23	36	0.22	0.19	39	0.20	0.17
3.0*	30	2.3	31	0.27	0.23	34	0.23	0.20	38	0.18	0.16
	40	2.6	31	0.31	0.26	35	0.25	0.21	40	0.19	0.16
	50	3.0	33	0.30	0.26	36	0.26	0.22	41	0.20	0.17
	60	3.3	35	0.31	0.27	38	0.26	0.23	42	0.21	0.18
	70	3.6	35	0.32	0.28	39	0.27	0.23	44	0.21	0.18
4.5	30	3.6	31	0.42	0.36	34	0.35	0.30	39	0.26	0.23
	40	4.1	32	0.44	0.38	35	0.38	0.33	40	0.28	0.24
	50	4.6	34	0.45	0.39	37	0.39	0.33	41	0.31	0.27
	60	5.1	35	0.48	0.41	38	0.39	0.34	42	0.32	0.28
	70	5.6	36	0.48	0.42	39	0.41	0.35	42	0.35	0.31
6.0	30	4.4	31	0.51	0.44	35	0.40	0.35	41	0.29	0.25
	40	5.0	32	0.56	0.48	37	0.42	0.36	42	0.32	0.28
	50	5.7	35	0.53	0.46	40	0.39	0.34	43	0.34	0.30
	60	6.3	37	0.51	0.44	40	0.45	0.39	43	0.39	0.33
	70	6.8	38	0.54	0.47	41	0.45	0.39	45	0.38	0.33
7.5	30	4.9	34	0.47	0.41	35	0.45	0.39	41	0.32	0.28
	40	5.6	36	0.49	0.42	36	0.48	0.41	41	0.38	0.33
	50	6.3	36	0.57	0.49	37	0.52	0.45	42	0.40	0.35
	60	6.9	36	0.61	0.53	38	0.55	0.47	42	0.44	0.38
	70	7.5	37	0.63	0.54	38	0.58	0.50	43	0.45	0.39
9.0	30	6.1	34	0.59	0.51	34	0.59	0.51	42	0.38	0.33
	40	7.0	35	0.64	0.55	35	0.65	0.57	42	0.44	0.38
	50	8.0	35	0.73	0.63	37	0.65	0.56	44	0.46	0.40
	60	8.9	35	0.80	0.70	39	0.66	0.58	45	0.50	0.43
	70	9.8	37	0.82	0.71	40	0.68	0.59	47	0.50	0.44

▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.
 ■ Precipitation rates are for square spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.
 All performance specifications are based on the stated working pressure available at the base of the sprinkler.
 * Indicates pre-installed nozzle



TR70XT Series Sprinklers

7,5 –21,7m (25'–71') Radius

With the use of the simple adjustment band technology of the TR50XT, the TR70XT is just as convenient but made to withstand the pressure of commercial applications, such as sport fields. All features, including the exclusive, patented X-Flow® water shut-off and trajectory adjustment, are located beneath a safe, rubber cover.

Key Features

- All adjustments located beneath rubber cover
- Patented X-Flow shut-off device built into the riser
 - Restricts water loss if the nozzle is removed or damaged
 - Allows for dry nozzle replacement or maintenance while the system is running
- 127mm (5") pop-up to clear tall turf
- TruJectory™ adjustment from 5° to 25° for fine-tuning nozzle spray trajectory (positioned below rotor cover)
- Smart Arc™ memory returns arc to previous setting (even if nozzle is turned beyond setting)
- Slip clutch assures no damage to gears if vandalized
- Stainless steel riser available, ideal for sandy applications

Additional Features

- Fast, simple to set watering pattern with ratcheting arc adjustment
- Color-coded nozzle tree for quick and easy identification and installation
- Seven interchangeable nozzles
- Factory-installed with a #12 nozzle
- Left arc indicator on cap (arrow) and body (hash mark)
- Right stop indicator (white arrow on black band)
- Cluster, water-lubricated, gear-drive design
- Dry mode pull-up slot
- Arc adjustment from 30°- 360°
- Continuous unidirectional rotation provides uniform water coverage when set at 360°
- Standard, reversible check valve prevents low-head drainage, keeping laterals charged with water
- Unique, over-molded wiper seal for greater debris resistance and 1/2" below-grade installation
- Stainless-steel radius adjustment screw allows up to 25% radius reduction
- Large filter screen to prevent clogging
- Extended five-year warranty

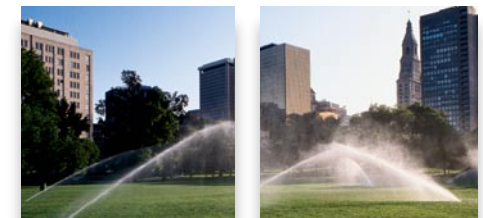
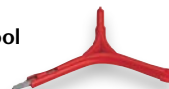
Specifications

- Radius: 10,1 –21,7m (33'–71')
- Flow rate: 25,4–102 LPM (6.7–27.0 GPM)
- Trajectory: 5° to 25°
- Recommended operating pressure range: 1,7–7 Bar (25–100 PSI)
- Optimum operating pressure: 4,5 Bar (65 PSI)
- 25mm (1") female-threaded inlet (NPT or BSP)
- Check valve maintains up to 3m (10') elevation change on all models
- 13mm (1/2") below-grade installation
- Dimensions:
 - Pop-up to center of nozzle: 120mm (4 3/4")
 - Surface diameter: 60mm (2 3/8")
 - Height: 229mm (9")



TruJectory™ makes trajectory adjustments from 5° to 25° to compensate for wind, low-hanging branches or throwing water onto slopes.

Optional Adjustment Tool 102-1303

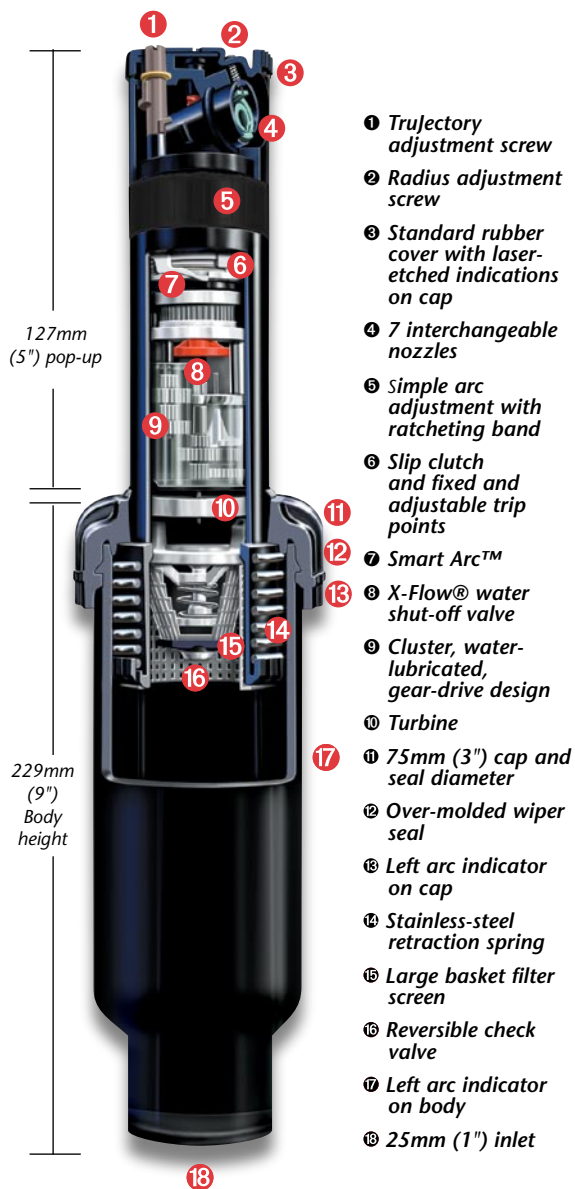


TR70XTP Specifying Information

TR70XT PXX - XX - XX					
Description		Thread	Nozzle		Optional
TR70XTP—TR70XTP Series Rotor	P—Pop Up PSS—Stainless Steel Riser	02 - NPT 52 - BSP	7–7.0 9–9.0 12–12.0* 16–16.0	20–20.0 24–24.0 27–27.0	E—Effluent
For Example: When specifying a 127mm (5") lawn pop-up TR70XTP Series Sprinkler with BSP threads and a #12.0 nozzle, you would specify:					
TR70XTP-52-12					

*Pre-installed #12 nozzle

TR70XT Series Sprinklers

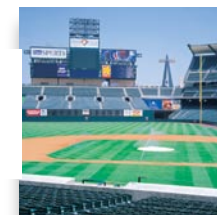


TR70XT Series Performance Data (Metric)							
Nozzle	Bar	kPa	Kg/cm2	Flow (LPM)	5°	15°	25°
					Rad. (m)	Rad. (m)	Rad. (m)
7.0	3,0	300	3,06	25,9	10,5	12,2	13,6
	3,5	350	3,57	27,1	11,3	12,8	14,0
	4,0	400	4,08	29,0	11,5	13,0	14,3
	4,5	450	4,59	30,7	11,9	13,3	14,5
	5,0	500	5,10	32,5	12,3	13,5	14,7
	5,5	550	5,61	34,4	12,5	13,7	14,9
	6,0	600	6,12	35,5	12,7	13,3	15,1
9.0	6,5	650	6,63	37,7	12,9	13,6	15,4
	7,0	700	7,14	40,4	13,2	14,4	15,6
	3,0	300	3,06	28,1	10,5	12,2	13,9
	3,5	350	3,57	30,5	11,3	12,8	14,3
	4,0	400	4,08	32,4	11,5	13,0	14,6
	4,5	450	4,59	34,1	11,6	13,3	14,8
	5,0	500	5,10	35,6	11,7	13,5	15,0
12.0*	5,5	550	5,61	36,7	12,2	13,7	15,2
	6,0	600	6,12	39,9	12,6	14,1	15,5
	6,5	650	6,63	42,4	12,9	14,3	15,5
	7,0	700	7,14	44,2	13,2	14,4	15,6
	3,0	300	3,06	39,0	10,5	12,3	14,0
	3,5	350	3,57	43,4	11,3	13,1	14,7
	4,0	400	4,08	46,2	11,5	13,3	15,1
16.0	4,5	450	4,59	48,9	11,7	13,6	15,4
	5,0	500	5,10	51,5	12,0	13,8	15,6
	5,5	550	5,61	53,7	12,2	14,0	15,8
	6,0	600	6,12	56,4	12,6	14,4	16,1
	6,5	650	6,63	58,8	12,9	14,6	16,2
	7,0	700	7,14	60,8	13,2	14,7	16,5
	3,0	300	3,06	50,4	10,8	12,7	14,7
20.0	3,5	350	3,57	55,3	11,7	13,8	15,9
	4,0	400	4,08	59,4	12,6	14,7	16,6
	4,5	450	4,59	63,3	13,1	15,3	17,2
	5,0	500	5,10	66,7	13,6	15,7	17,7
	5,5	550	5,61	69,2	14,3	16,1	17,7
	6,0	600	6,12	72,7	14,5	16,4	17,9
	6,5	650	6,63	75,6	14,9	16,6	18,1
24.0	7,0	700	7,14	77,9	15,3	16,8	18,3
	3,0	300	3,06	55,9	10,8	13,0	15,0
	3,5	350	3,57	61,8	11,7	14,1	16,3
	4,0	400	4,08	66,5	12,6	15,0	17,4
	4,5	450	4,59	70,5	13,8	16,0	18,2
	5,0	500	5,10	74,4	14,7	16,8	18,7
	5,5	550	5,61	78,2	14,9	17,1	19,2
27.0	6,0	600	6,12	81,5	15,4	17,1	19,4
	6,5	650	6,63	84,5	15,5	17,3	19,6
	7,0	700	7,14	87,1	15,6	18,2	19,9
	3,0	300	3,06	57,9	11,3	13,2	15,2
	3,5	350	3,57	62,4	12,6	14,7	16,8
	4,0	400	4,08	66,0	13,7	15,6	17,5
	4,5	450	4,59	69,4	14,5	16,3	18,2
27.0	5,0	500	5,10	72,8	15,0	16,8	18,7
	5,5	550	5,61	76,7	15,2	17,1	18,9
	6,0	600	6,12	80,3	16,1	17,9	19,5
	6,5	650	6,63	83,7	16,7	18,5	20,1
	7,0	700	7,14	86,7	17,1	19,0	20,5
	3,0	300	3,06	66,2	10,8	13,1	15,5
	3,5	350	3,57	72,4	11,7	14,4	17,2
27.0	4,0	400	4,08	77,7	12,8	15,5	18,0
	4,5	450	4,59	82,7	14,1	16,5	18,8
	5,0	500	5,10	87,3	15,2	17,3	19,4
	5,5	550	5,61	91,4	15,8	18,0	19,8
	6,0	600	6,12	95,3	16,5	18,6	20,7
	6,5	650	6,63	99,1	17,0	19,2	21,3
	7,0	700	7,14	102,9	17,4	19,6	21,7

TR70XT Series Performance Data (English)					
Nozzle	PSI	Flow (GPM)	5°	15°	25°
			Rad. (ft)	Rad. (ft)	Rad. (ft)
7.0	40	6.7	33	39	44
	50	7.1	37	42	46
	60	7.8	38	43	47
	70	8.4	40	44	48
	80	9.1	41	45	49
	90	9.5	42	46	50
	100	10.6	43	47	51
9.0	40	7.1	33	39	45
	50	8.0	37	42	47
	60	8.7	38	43	48
	70	9.3	38	44	49
	80	9.7	40	45	50
	90	10.9	42	47	51
	100	11.6	43	47	51
12.0*	40	9.7	33	39	45
	50	11.4	37	43	48
	60	12.4	38	44	50
	70	13.4	39	45	51
	80	14.2	40	46	52
	90	15.2	42	48	53
	100	16.0	43	48	53
16.0	40	12.7	34	40	46
	50	14.5	38	45	52
	60	16.0	42	49	55
	70	17.4	44	51	58
	80	18.3	47	53	58
	90	19.6	48	54	59
	100	20.5	50	55	60
20.0	40	14.0	34	41	47
	50	16.2	38	46	53
	60	17.9	42	50	58
	70	19.3	48	55	61
	80	20.7	49	56	63
	90	21.9	51	56	61
	100	22.9	51	58	65
24.0	40	14.7	35	41	47
	50	16.4	41	48	55
	60	17.7	46	52	58
	70	18.9	49	55	61
	80	20.3	50	56	62
	90	21.6	54	60	65
	100	22.8	56	62	67
27.0	40	16.7	34	41	48
	50	19.0	38	47	56
	60	20.9	43	52	60
	70	22.7	49	56	63
	80	24.2	52	59	65
	90	25.6	55	62	69
	100	27.0	57	64	71

All performance specifications are based on the stated working pressure available at the base of the sprinkler.

*Indicates pre-installed nozzle.



2001® Series Sprinklers

15-21,7m (48'-71') Radius

With an adjustable arc and complete selection of color-coded nozzles, the 2001 Series sprinkler takes you to a new level of convenience in design, installation and maintenance.

Key Features

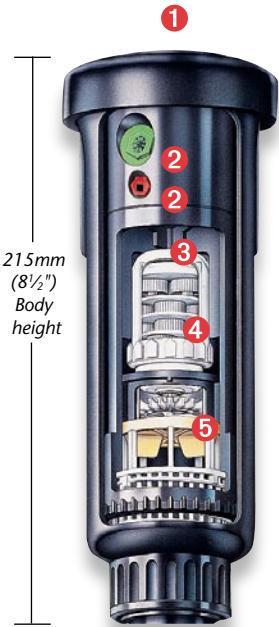
- All adjustments located beneath rubber cover
- 6 main nozzles and 2 inner nozzles for optimum coverage
- Smart Arc™ memory feature returns arc to previous setting (even if nozzle is turned beyond setting)
- Bi-directional planetary water-lubricated gear drive provides extended life
- Stainless-steel riser available, ideal for sandy applications

Additional Features

- Arc adjustable from the top (30°-360°)
- Screw-in nozzles — no adjustment screw required for retention
- Color-coded nozzle tree, supplied with each sprinkler provides easy identification and installation
- Full 100mm (4") pop-up
- Standard Check-O-Matic eliminates low-head drainage, keeping laterals charged with water
- Snap ring designed for ease of maintenance
- Unique, over-molded wiper seal for greater debris resistance

Specifications

- Radius: 15-21,7m (48'-71')
- Flow rate: 21-118 LPM (5.6-31.3 GPM)
- Operating pressure range: 2,8-7,0 Bar (40-100 PSI)
- Recommended operating pressure: 4 Bar (60 PSI)
- 25mm (1") female-threaded inlet (NPT or BSP)
- Nozzle trajectory: 25°
- Pop-up to main nozzle: 95mm (33/4")
- Precipitation rate: 7-18mm/hr (0.23-0.72 in/hr)
- Check-O-Matic maintains 3m (10') elevation change
- Dimensions:
 - Height: 215mm (8 1/2")
 - Exposed surface: 85mm (3 3/8")
 - Body diameter: 63,5mm (2 1/2")



- ❶ Standard rubber cover with laser-etched indications on cap
- ❷ Screw-in, color-coded nozzles
- ❸ Arc memory
- ❹ Bi-directional planetary water-lubricated gear drive
- ❺ Variable/reversing stator



89-4717
2001® Adjustment Tool



2001® Series Specifying Information

[X] 2001 [X] - [XXX] - [XX] - [E]

Optional	Arc	Body Thread	Nozzle	Optional
S—Stainless steel	Blank—Adjustable Arc, 30°-360° F—Full-Circle, 360°	Blank—NPT BSP—BSP	6 15 9 18 12 24	E—Effluent Indicator Cap
For Example: When specifying a stainless-steel 2001 Series Sprinkler with an adjustable arc, an effluent indicator cap and BSP threads, you would specify: S-2001-BSP-E				

2001® Series Sprinklers

2001 Series Performance Data (Metric)																										
Base Pressure			Nozzle Sets																							
			6 				9 				12 				15 				18 				24 			
Bar	kPa	Kg/cm²	Radius (m)	Flow (LPM)	Prec. Rate* ▲ ■		Radius (m)	Flow (LPM)	Prec. Rate* ▲ ■		Radius (m)	Flow (LPM)	Prec. Rate* ▲ ■		Radius (m)	Flow (LPM)	Prec. Rate* ▲ ■		Radius (m)	Flow (LPM)	Prec. Rate* ▲ ■		Radius (m)	Flow (LPM)	Prec. Rate* ▲ ■	
2,75	275	2,80	14,6	21,2	6,9	6,0	14,9	30,7	9,6	8,3	15,2	38,6	11,6	10,0	15,8	47,7	13,2	11,4	16,5	55,6	14,1	12,2	17,4	69,3	15,8	13,7
3,0	300	3,06	14,8	22,4	7,1	6,1	15,1	32,1	9,7	8,4	15,2	40,6	12,2	10,5	16,2	50,2	13,2	11,5	16,9	58,4	14,1	12,2	17,6	73,0	16,3	14,1
3,5	350	3,57	15,3	24,8	7,3	6,3	15,6	39,9	11,3	9,8	15,6	44,6	12,7	11,0	16,8	55,3	13,6	11,7	17,1	64,2	15,2	13,2	18,0	80,5	17,2	14,9
4,0	400	4,08	15,5	26,4	7,6	6,6	15,8	37,8	10,5	9,1	16,1	48,2	12,9	11,1	17,0	59,7	14,1	12,2	17,3	70,8	16,4	14,2	18,2	86,5	18,1	15,6
4,5	450	4,59	15,7	28,1	7,9	6,8	16,0	40,4	10,9	9,5	16,3	51,6	13,4	11,6	17,9	63,9	16,4	14,2	18,3	74,9	15,5	13,4	19,1	92,3	17,5	15,2
5,0	500	5,10	16,0	29,7	8,0	6,9	16,3	42,9	11,2	9,7	16,8	54,7	13,4	11,6	18,4	68,0	13,9	12,0	18,9	79,7	15,4	13,4	20,0	98,3	16,7	14,4
5,5	550	5,61	16,4	31,4	8,1	7,0	16,7	45,3	11,2	9,7	17,6	57,4	12,8	11,1	18,9	72,1	14,0	12,1	19,8	84,6	14,9	12,9	20,7	105	16,9	14,7
6,0	600	6,12	16,7	33,0	8,2	7,1	17,4	47,3	10,8	9,4	17,9	60,4	13,0	11,3	19,1	75,5	14,3	12,4	20,2	88,7	15,0	13,0	21,2	109	16,8	14,5

2001 Series Performance Data (English)																							
Base Pressure	Nozzle Sets																						
	6 				9 				12 				15 				18 				24 		
PSI	Radius (ft)	Flow (GPM)	Prec. Rate* ▲ ■		Radius (ft)	Flow (GPM)	Prec. Rate* ▲ ■		Radius (ft)	Flow (GPM)	Prec. Rate* ▲ ■		Radius (ft)	Flow (GPM)	Prec. Rate* ▲ ■		Radius (ft)	Flow (GPM)	Prec. Rate* ▲ ■				
40	48	5.6	0.27	0.23	49	8.1	0.38	0.32	50	10.2	0.45	0.39	52	12.6	0.52	0.45	54	14.7	0.56	0.48			
50	50	6.5	0.29	0.25	51	9.3	0.39	0.34	51	11.7	0.48	0.42	55	14.5	0.53	0.46	56	16.8	0.55	0.48			
60	51	7.1	0.30	0.26	52	10.2	0.42	0.36	53	13.0	0.51	0.44	56	16.1	0.55	0.48	57	19.1	0.60	0.52			
70	52	7.7	0.32	0.27	53	11.1	0.44	0.38	54	14.2	0.54	0.47	60	17.6	0.54	0.47	61	20.6	0.62	0.53			
80	54	8.3	0.32	0.27	55	12.0	0.44	0.38	58	15.2	0.50	0.44	62	19.1	0.55	0.48	65	22.4	0.59	0.51			

▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.
 ■ Precipitation rates are for square spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.
 All performance specifications are based on the stated working pressure available at the base of the sprinkler.

2001 Series Pop-up Apex at 4,1 Bar (60 PSI)		
Nozzle	25°	
	Maximum Height of Spray Meters (Feet)	
6	3,5m	(11'6")
9	4,2m	(13'10")
12	4,1m	(13'5")
15	4,3m	(14'0")
18	4,3m	(14'2")
24	4,6m	(15')

- Gray spreader nozzles used with the 6 and 9 GPM main nozzle.
- Red spreader nozzles used with all other main nozzles.



640 Series Sprinklers

Toro 640 Series Sprinklers

14-20m (47'-67') Radius

Considered the most durable, heavy-duty commercial sprinkler available, the 640 Series is the traditional, proven 35 year veteran for athletic fields and other large commercial applications. It is equipped with a standard rubber cover, five nozzles, 12 arcs and a check valve. A variety of models are available including Valve-In-Head and effluent.

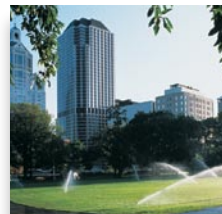


Key Features

- Standard rubber cover minimizes impact-damage
- Small exposed surface diameter
- Stainless-steel-encased nozzle and drive assembly
- Durable engineering plastic, brass and stainless-steel construction
- Capable of faster rotation – fast speed performance data available

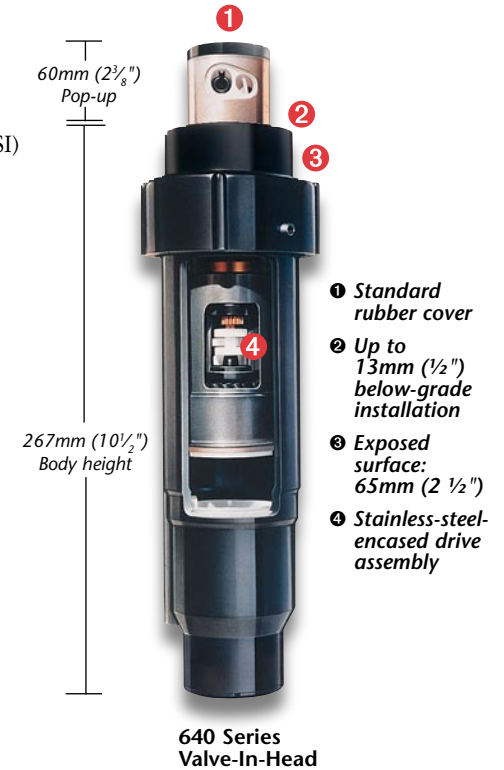
Additional Features

- Selection of 5 nozzles and 12 arcs
- Valve-in-head (normally open hydraulic models)
- Adjustment screw allows up to 25% radius reduction
- Standard check valve prevents low-head drainage, keeping laterals charged with water
- Up to 13mm (1/2") below-grade installation
- Vandal-resistant cap with locking set screw
- Stainless-steel retraction spring
- Gear-drive design for longer life
- Basket filter screen to prevent clogging
- Extended 5 year warranty



Specifications

- Radius: 14-20m (47'-67')
- Flow rate: 23-95 LPM (6.0-25.0 GPM)
- Recommended operating pressure: 2,8-6,2 Bar (40-90 PSI)
- Maximum operating pressure: 7 Bar (100 PSI)
- Pop-up to nozzle: 60mm (238")
- 25mm (1") female-threaded inlet (NPT or BSP)
- Trajectory: 27°
- Dimensions:
 - Exposed surface diameter when buried 13mm (1/2") below grade: 65mm (21/2")
 - Body diameter: 65mm (21/2")
 - Cap diameter: 83mm (31/4")
 - Body height: Check-O-Matic: 230mm (9") Valve-in-head: 267mm (101/2")
- Check-O-Matic maintains 4,6m (15') elevation change



640 Series Specifying Information

64X - X - X - XX - XXX

Arc	Body Thread	Valve Type	Nozzle	Special Arc	Optional
0-Special Arc	0-NPT	1-NO Valve-In-Head	40	045° 148°	E-Effluent Model
1-90°	5-BSP		41	060° 173°	
2-180°		2-Check-O-Matic	42	108° 192°	
3-270°			43	127° 238°	
4-360			44		

For Example:
When specifying a 640 Series Sprinkler with a 180° arc, a #42 nozzle, BSP, and a check valve, you would specify: **642-52-42**

640 Series Sprinklers

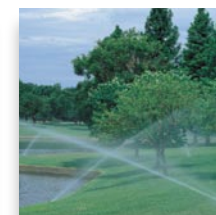
640 Series Performance Data (Metric)							
Nozzle	Bar	kPa	Kg/cm2	Flow (LPM)	Radius (m)	360° ●	
						▲ Prec.	■ Rate*
40	3,0	300	3,06	23,6	14,6	7,7	6,6
	3,5	350	3,57	25,5	15,3	7,5	6,5
	4,0	400	4,08	27,2	15,7	7,6	6,6
	4,5	450	4,59	29,0	16,0	7,8	6,8
	5,0	500	5,10	30,9	16,2	8,1	7,1
	5,5	550	5,61	32,5	16,5	8,3	7,2
	6,0	600	6,12	34,1	16,7	8,5	7,3
41	3,0	300	3,06	36,9	15,2	11,0	9,6
	3,5	350	3,57	38,8	16,2	10,2	8,9
	4,0	400	4,08	41,0	16,4	10,5	9,1
	4,5	450	4,59	43,4	16,6	10,9	9,4
	5,0	500	5,10	45,8	16,8	11,2	9,7
	5,5	550	5,61	48,0	17,1	11,4	9,8
	6,0	600	6,12	49,9	17,3	11,5	10,0
42	3,0	300	3,06	46,6	16,2	12,3	10,6
	3,5	350	3,57	49,1	16,8	12,0	10,4
	4,0	400	4,08	52,2	17,0	12,5	10,8
	4,5	450	4,59	54,4	17,2	12,7	11,0
	5,0	500	5,10	56,7	17,5	12,8	11,1
	5,5	550	5,61	59,7	17,7	13,2	11,4
	6,0	600	6,12	62,5	17,7	13,8	11,9
43	3,0	300	3,06	51,7	17,4	11,8	10,2
	3,5	350	3,57	55,2	18,0	11,8	10,2
	4,0	400	4,08	58,5	18,0	12,5	10,8
	4,5	450	4,59	62,0	18,3	12,8	11,1
	5,0	500	5,10	65,6	18,7	13,0	11,2
	5,5	550	5,61	69,1	19,2	13,0	11,2
	6,0	600	6,12	72,2	19,4	13,3	11,5
44	3,0	300	3,06	65,7	17,3	15,2	13,1
	3,5	350	3,57	70,8	18,3	14,6	12,7
	4,0	400	4,08	74,3	18,5	15,0	13,0
	4,5	450	4,59	79,3	18,9	15,4	13,3
	5,0	500	5,10	84,3	19,4	15,5	13,4
	5,5	550	5,61	88,4	19,8	15,6	13,5
	6,0	600	6,12	92,8	20,2	15,7	13,6

640 Series Performance Data (English)					
Nozzle	PSI	Flow (GPM)	Radius (ft)	360° ●	
				▲ Prec.	■ Rate*
40	40	6.0	47	0.30	0.26
	50	6.7	50	0.30	0.26
	60	7.3	52	0.30	0.26
	70	8.0	53	0.32	0.27
	80	8.6	54	0.33	0.28
	90	9.2	55	0.34	0.29
41	40	9.5	48	0.46	0.40
	50	10.2	53	0.40	0.35
	60	11.0	54	0.42	0.36
	70	11.9	55	0.44	0.38
	80	12.7	56	0.45	0.39
	90	13.4	57	0.46	0.40
42	40	12.0	52	0.49	0.43
	50	12.9	55	0.47	0.41
	60	14.0	56	0.50	0.43
	70	14.7	57	0.50	0.44
	80	15.8	58	0.52	0.45
	90	16.8	58	0.56	0.48
43	40	13.2	56	0.47	0.41
	50	14.5	59	0.46	0.40
	60	15.7	59	0.50	0.43
	70	17.0	61	0.51	0.44
	80	18.3	63	0.51	0.44
	90	19.4	64	0.53	0.46
44	40	16.7	55	0.61	0.53
	50	18.6	60	0.57	0.50
	60	19.9	61	0.59	0.52
	70	21.9	63	0.61	0.53
	80	23.4	65	0.62	0.53
	90	25.0	67	0.62	0.54

640 Series Performance Data Apex at 3,5 Bar (50 PSI)		
Nozzle	27°	
	Maximum Height of Spray Meters (feet)	
40	3,5m	(11'6")
41	4,2m	(13'10")
42	4,1m	(13'5")
43	5,7m @ 4 Bar	(18'8" @ 60 PSI)
44	6,0m @ 5 Bar	(19'8" @ 75 PSI)



▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.
 ■ Precipitation rates are for square spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.
 All performance specifications are based on the stated working pressure available at the base of the sprinkler.



TS90 Series Sprinklers

The new TS90 long throw rotor brings Toro patented, exclusive innovations like Trujectory and ratcheting riser to large turf areas, making an ideal Sports Turf rotor.



Key Features

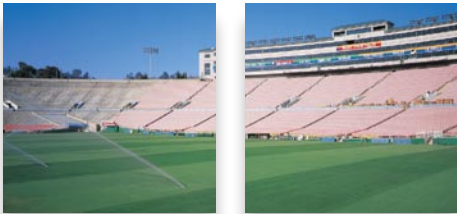
- Trujectory™ adjustment from 7° to 30° fine-tunes nozzle spray height, helps provide true head-to-head coverage, and compensates for windy conditions
- Part- and full-circle in one sprinkler. No need to stock multiple models or service parts
- Back nozzle capable. Perfect for perimeter of sports fields. Provides the flexibility for fine-tuning any watering requirement.
- Ratcheting riser allows you to adjust the riser position in the body with no disassembly. Simply pull up the riser and ratchet it to the precise position you want to water

Additional Features

- Three-nozzle configuration provides better distribution uniformity, nozzle flexibility and system efficiency
- Constant-velocity drive provides reliable rotation speed - from sprinkler to sprinkler
- Full set of color-coded nozzles that thread directly into the front.
- Removable rock screen from the top of the sprinkler allows you to flush the system quickly.
- Safe rubber cover and below grade installation

Specifications

- Radius: 16,2-29,0 (53'-95')
- Flow Rate: 53-233 LPM (14.0-61.5 GPM)
- Arc:
 - Full- and part-circle in one
 - Full-circle: 360° unidirectional clockwise rotation
 - Part-circle: 40°-330°
- 25mm (1") female-threaded inlet (NPT or BSP)
- Recommended operating pressure range:
 - 4,5-6,9 bar (65-100 psi)
- Maximum Pressure: 10,3 bar (150 psi)
- Minimum Pressure: 2,8 bar (40 psi)
- Body Height: 254mm (10")
- Body Diameter: 165mm (6.5")
- Pop-up Height to nozzle: 83mm (3.25")
- Exposed Cap Diameter: 55.9mm (2.2")
- Check Valve Standard
- Effluent Option available



TS90 Series Specifying Information

TS90T - XX - XX - X				
Body	Threads	Nozzle		Optional
TS90T—TS90T 25mm-1" Trujectory	02—NPT 52—BSP	15	40	E—Effluent Model
		20	45	
		25	50	
		30	55	
		35		
For Example: When specifying a TS90 Series sprinkler with Trujectory, an effluent indicator and BSP threads, you would specify: TS90T-52-E				

TS90 Series *Sprinklers*

TS90 Series Performance Data (Metric)

Nozzle	3.4 bar		4.1 bar		4.8 bar		5.5 bar		6.2 bar		6.9 bar	
	Radius (m)	LPM	Radius (m)	LPM	Radius (m)	LPM	Radius (m)	LPM	Radius (m)	LPM	Radius (m)	LPM
15	16,2	53	16,5	58	16,8	62	16,8	66	16,5	70	17,1	74
20	16,8	71	18,0	77	18,6	84	18,0	89	18,0	95	18,9	99
25	16,5	78	17,4	86	18,3	93	18,6	99	19,2	105	20,7	110
30	21,0	105	21,9	114	22,6	124	24,4	133	24,7	140	25,0	147
35	21,0	112	22,3	123	23,8	133	24,1	143	25,0	151	25,6	158
40	21,9	118	23,2	130	24,7	140	25,0	150	26,2	159	26,5	167
45	21,6	132	23,8	144	24,1	156	24,4	165	26,5	175	25,6	184
50	22,3	145	23,8	159	25,3	171	26,2	184	26,8	195	26,8	205
55	22,9	165	24,7	180	25,3	195	25,9	208	27,7	221	29,0	233

TS90 Series Performance Data (English)

Nozzle	50 psi		60 psi		70 psi		80 psi		90 psi		100 psi	
	Radius (ft)	GPM	Radius (ft)	GPM	Radius (ft)	GPM	Radius (ft)	GPM	Radius (ft)	GPM	Radius (ft)	GPM
15	53	13.9	54	15.2	55	16.42	55	17.4	54	18.5	56	19.4
20	55	18.7	59	20.5	61	22.1	59	23.6	59	25.0	62	26.3
25	54	20.7	57	22.7	60	24.5	61	26.1	63	27.6	68	29.1
30	69	27.7	72	30.2	74	32.7	80	35.1	81	36.9	82	38.9
35	69	29.7	73	32.6	78	35.2	79	37.7	82	39.9	84	41.8
40	72	31.1	76	34.3	81	36.9	82	39.6	86	41.9	87	44.1
45	71	34.8	78	38.1	79	41.1	80	43.6	87	46.2	84	48.6
50	73	38.4	78	42.0	83	45.3	86	48.5	88	51.4	88	54.1
55	75	43.5	81	47.6	83	51.4	85	55.1	91	58.3	95	61.6



DT Series Sprinklers

The most advanced, durable and flexible golf sprinkler built for today's golf courses. The Toro DT Series Sprinkler brings together over 40 years of Golf Irrigation knowledge with the most recent advances in technology and water management.

Key Features

- Dual trajectory adjustment of the main nozzle—25° or 15°
- Full Circle and Part Circle in one (DT35/DT55 models)
- Indestructible stainless steel valve seat
- Slow closing piston valve
- Selectable pilot valve (50, 65, 80, and 100 psi)
- Removable rock screen from the top of the sprinkler
- Fewer and more economical service parts
- 47 different nozzle combinations with wide assortment of back nozzles
- All nozzles color coded for easy identification
- Optional radius reduction screw allows for fine tuning the radius
- Without Main Nozzle option provides close-in watering
- Constant velocity full-circle drive maintains a constant speed of rotation for even water applications (DT34/DT54 models)



DT Series Specifications		
	DT54	DT55
Pattern Type	Full-circle	Full & Part-circle
Arc	360°	40°-330°
Inlet Size	40mm (1 1/2")	
Radius	15,9m – 30,2m (52'-99")	
Flow Rate	50,0 – 233,9 LPM (13.2-61.8 GPM)	
Operating Pressure	4,5 – 6,9 bar (65-100 psi)	
	Pilot valve adjustable at 3,4; 4,5; 5,5; and 6,9 bar (50, 65, 80 and 100 psi)	
Nozzle variations	Nine (51, 52, 53, 54, 55, 56, 57, 58, 59)	
Precipitation Rates	12,7mm/hr - 18,3mm/hr (0.5"/hr – 0.72"/hr)	
Stator Variations	3	
Body Height	29cm (11 3/8")	
Body Diameter	19cm (7 1/2")	
Weight	1,70Kg (3.7 lbs)	
Adjustable Trajectory	15° and 25°	
Pressure Tolerances	2,8 bar (40 psi) minimum; 10,3 bar (150 psi) maximum	
Activation options	Electric Valve-In-Head Normally Open Valve-In-Head Check-O-Matic - maintains 11,2m (37') of elevation	
Pop-Up Height	100mm (4") - 83mm (3 1/4") to nozzle	
Thread Types	NPT, BSP and ACME	
Valve Friction Loss	< 0,34 bar (< 5 psi)	
Electric Valve-In-Head Solenoid	24V ac, 50/60 Hz Inrush: 60 Hz, 0.30 Amps; Holding: 60 Hz, 0.2 Amps	

DT Series Sprinklers — Ordering Information

DTXX [X] [X] [XX] [X] [X]						
Body Inlet	Arc	Body Threads	Valve Type	Nozzle	Pressure Regulation*	Optional
5- 1 1/2" (40mm)	4- Full-circle 5- Part-circle Model and Full Circle in one	0- NPT 4- ACME 5- BSP	1- Normally Open Hydraulic 2- Check-O-Matic 6- Electric	DT54/DT55 51 52 53 54 55 56 57 58 59	6- 65 psi (4,5 bar) 8- 80 psi (5,5 bar) 1- 100 psi (6,9 bar)	E- Effluent Model DL- GDC Solenoid N- Nickel-plated solenoid
For Example: When specifying a DT55 Series Sprinkler with BSP threads, #34 nozzle, an electric valve and pressure regulation at 4.5 Bar (65 psi), you would order: DT55-56-346						

* Electric models only. All sprinklers are equipped with the selectable pilot valve that allows settings at 3.5, 4.5, 5.5 and 6.9 Bar (50, 65, 80 and 100 psi). Note: Check current price list for specific model availability.

855S Series Sprinklers

15.9–30.5m (52'–100') Radius

Key Features

- TruJectory™ adjustment from 7° to 30° fine-tunes nozzle spray height, helps provide true head-to-head coverage, and compensates for windy conditions
- Part- and full-circle in one sprinkler. No need to stock service parts for two different sprinklers.
- Back nozzle capable. Provides the flexibility for fine-tuning any watering requirement. Perfect for perimeter of sports fields.
- Selectable pilot valve requires less service components, and accommodates multiple pressures on any given site.

Additional Features

- Performance—Superior coverage
 - Three-nozzle configuration provides better distribution uniformity, nozzle flexibility and system efficiency
 - Constant-velocity drive provides reliable rotation speed—from sprinkler to sprinkler
 - Less than half the amperage—run more sprinklers or reduce wiring costs
- Reliable—Works every time
 - Nearly three times the surge protection, with Spike-Guard™ solenoid
 - Closed case design uniquely defends against impact and debris contamination
 - Steady piston valve opening and closing reduces pressure shock
- Lowest cost of ownership—Improves your bottom line
 - Fewer parts save time and money
 - Removable rock screen
 - Indestructible stainless steel valve seat and communication tube never need replacing
 - DebrisBuster™ traps sediment before damage to the valve or seat occurs

Specifications

- Radius: 15.9–30.5m (52'–100')
- Flow rate: 52,6–231,3 LPM (13.9–61.1 GPM)

- Arc: Full- and part-circle in one
 - Full-circle: 360° unidirectional clockwise
 - Part-circle: 40°–330°
- TruJectory: adjustable from 7°–30°
- Pilot valve: selectable at 3.5, 4.5, 5.5 and 6.9 Bar (50, 65, 80 and 100 PSI)
- Recommended operating pressure-range: 4.5–6.9 Bar (65–100 PSI)
- Maximum pressure: 10,3 Bar (150 PSI)
- Minimum pressure: 2.8 Bar (40 PSI)
- Activation options:
 - Electric Valve-In-Head
 - Normally Open Valve-In-Head
 - Check-O-Matic (maintains 11.2m [37'] of elevation change)
- Optional back nozzle
- Precipitation rates:
 - Minimum: 11mm/hr (.46"/hr)
 - Maximum: 16mm/hr (.63"/hr)
- Inlet size: 40mm (1½") NPT, BSP or ACME

855S Series Specifying Information

8XXS - X X - XX X - X							
Body Inlet	Arc	Body Threads	Valve Type	Nozzle	Pressure Regulation*	Optional	
855S	5—Part-circle and full circle in one	0—NPT	1—Normally Open	52 56	5—3.5 Bar (50 PSI)	E—Effluent Model D—Decoder	
5—40mm		4—ACME	Hydraulic	53 57	6—4.5 Bar (65 PSI)		
(1½")		5—BSP	2—Check-O-Matic	54 58	8—5.5 Bar (80 PSI)		
			6—Electric	55 59	1—6.9 Bar (100 PSI)		
For Example: When specifying a 855S Series Sprinkler with NPT threads, #54 nozzle, an electric valve and pressure regulation at 4.5 Bar (65 PSI), you would order: 855S-06-546							

*Electric only. Spike-Guard and DuraSeal are trademarks of The Toro Company
Note: Decoder solenoids are not available on all model configurations.

855S Series Performance Data (Metric)

Base Pressure			Nozzle Set 52 ● (Blue)		Nozzle Set 53 ● (Brown)		Nozzle Set 54 ● (Orange)		Nozzle Set 55 ● (Green)		Nozzle Set 56 ● (Gray)		Nozzle Set 57 ● (Black)		Nozzle Set 58 ● (Red)		Nozzle Set 59 ● (Beige)	
			RED	GRAY	ORANGE	GRAY	ORANGE	GRAY	BLUE	GRAY	BLUE	GRAY	ORANGE	GRAY	BLUE	GRAY	BLUE	GRAY
Bar	kPa	kg/cm ²	Radius	LPM	Radius	LPM	Radius	LPM	Radius	LPM	Radius	LPM	Radius	LPM	Radius	LPM	Radius	LPM
4,5	450	4,59	19,5	79	20,7	89	22,6	118	23,2	128	24,7	135	—	—	—	—	—	—
6,9	690	7,04	22,3	97	23,2	109	24,4	145	25,6	156	27,1	165	28,7	184	29,0	195	30,5	231
Low-flow Stator									Medium-flow Stator						High-flow Stator			

Radius shown in meters.

855S Series Performance Data (English)

Base Pressure			Nozzle Set 52 ● (Blue)		Nozzle Set 53 ● (Brown)		Nozzle Set 54 ● (Orange)		Nozzle Set 55 ● (Green)		Nozzle Set 56 ● (Gray)		Nozzle Set 57 ● (Black)		Nozzle Set 58 ● (Red)		Nozzle Set 59 ● (Beige)	
			RED	GRAY	ORANGE	GRAY	ORANGE	GRAY	BLUE	GRAY	BLUE	GRAY	ORANGE	GRAY	BLUE	GRAY	BLUE	GRAY
PSI	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
65	64	20.8	68	23.4	74	31.2	76	33.8	81	35.7	—	—	—	—	—	—	—	—
100	73	25.5	76	28.7	80	38.2	84	41.3	89	43.7	94	48.5	95	51.5	100	61.1		
Low-flow Stator									Medium-flow Stator						High-flow Stator			

Radius shown in feet.

Toro recommends the use of a 30mm (1¼") swing joint at flows over 95 LPM (25 GPM). Sprinkler radius of throw per ASAE standard S398.1

● = Main Nozzle ● = Intermediate Nozzle ■ = Inner Nozzle



690 Series Sprinklers

26,5–33m (87'–108') Radius

Key Features

- Three body styles/activation types available to fit every application:
 - Normally Open Hydraulic
 - Valve-In-Head
- Manual control at the sprinkler, On-Off-Auto (electric)
- All internal components serviceable from the top of the-sprinkler
- Two-speed designs offer an economical alternative in non-over-lapping areas while providing balanced water application



Additional Features

- Two standard pressure-regulation settings available to ensure consistently accurate nozzle performance, regardless of elevation:
 - 5,5 Bar and 6,9 Bar (80 PSI and 100 PSI) (electric)
- Check-O-Matic eliminates low-head drainage, keeping laterals charged with water
- Bowl-vented discharge (atmospheric) minimizes the differential pressure required for regulation and ensures positive valve closure (electric)

- Time-proven, gear-drive design
- Large selection of nozzles available
- Durable engineering plastic and stainless steel construction

Specifications

- Radius: 26,5–33,0m (87'–108')
- Flow rate: 193–311 LPM (51.0–82.2 GPM)
- Dimensions:
 - Height: 405mm (16")
- 40mm (1 1/2") NPT female-threaded inlet 9 arc selections:
 - 90°, 150°, 165°, 180°, 195°, 210°, 360° fixed arcs
 - 60°/120° full-circle, two-speed
 - 180°/180° full-circle, two-speed (Two speed models run half speed in non-overlap areas to provide balanced water application)
- Rubber cover kit option: Part No. 690-01

690 Series Performance Data (Metric)

Base Pressure			Nozzle Set 90			Nozzle Set 91			Nozzle Set 92		
Bar	kPa	Kg/cm ²	Rad.	LPM	Prec. Rate* ▲ ■	Rad.	LPM	Prec. Rate* ▲ ■	Rad.	LPM	Prec. Rate* ▲ ■
5,5	550	5,61	26,5	193	19,0 16,5	29,3	232	18,7 16,2	30,5	280	20,8 18,0
6,9	690	7,04	27,4	216	19,9 17,2	30,5	278	20,7 17,9	32,9	311	19,9 17,2

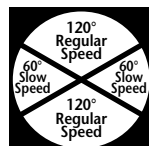
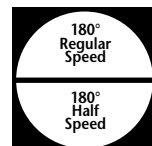
690 Series Performance Data (English)

Base Pressure	Nozzle Set 90				Nozzle Set 91				Nozzle Set 92			
PSI	Rad.	GPM	Prec. Rate* ▲ ■		Rad.	GPM	Prec. Rate* ▲ ■		Rad.	GPM	Prec. Rate* ▲ ■	
80	87	51.0	0.75	0.65	96	61.2	0.74	0.64	100	74.0	0.82	0.71
100	90	57.1	0.78	0.68	100	73.5	0.82	0.71	108	82.2	0.78	0.68

▲ Precipitation rates are for triangular spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

■ Precipitation rates are for square spacing, shown in millimeters (Metric) or inches (English) per hour, calculated at 50% of diameter.

All performance specifications are based on the stated working pressure available at the base of the sprinkler.
Radius shown in meters. Sprinkler radius of throw per ASAE standard S398.1



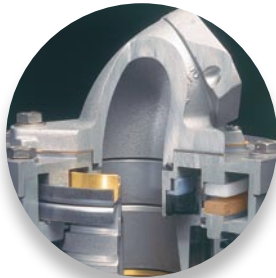
690 Series Specifying Information

69X - 0X - XX X				
Arc	Valve Type	Nozzle	Optional	
1—90° 2—180° 4—Full-Circle 6—Full-Circle, 2-speed (60°-120°) 8—Full-Circle, 2-speed (180°-180°)	A—150° B—165° C—195° D—210°	1—Normally Open Hydraulic 2—Check-O-Matic 6—Electric	90 91 92	8—5,5 Bar (80 PSI) 1—6,9 Bar (100 PSI)
For Example: When specifying a 690 Series Sprinkler with a 180° arc, an electric valve-in-head, #91 nozzle and pressure regulation at 5,5 Bar (80 PSI), you would order: 692-06-918				

*Electric models only.

TG101 Large Radius Sprinkler

The Toro TG101 large-radius sprinkler is ideal for applications that require long distance throw, such as irrigation solely from the perimeter of sports fields, or for cleaning and cooling artificial turf.



Key Features

- Innovative drive system adjusts automatically, ensuring steady rotation and uniform coverage at varying pressures.
- Excellent uniformity using a single nozzle design (spreader nozzles not required).
- Dispersed jet upon start-up reduces run-off and over-watering.
- Self-adjusting jet breaker device to vary distribution at lower pressures or to increase close-in watering.
- The TG101 is maintenance-free.

Adjustable Brake Force

The self-adjusting system adapts its brake force to the existing system pressure. The gun therefore achieves a steady rotation speed over its whole nozzle-pressure range. This is essential for uniform water application. The automatic adjusting brake system contributes significantly to the gun's excellent performance over the entire operating range.

Additional Features

- Powerful and efficient stream diffusion
- Standard 50mm (2") thread connection - BSP or NPT
- High-quality, durable construction
- Full or part-circle operation in one unit
- Adjustable rotation speed
- Two year warranty

Distribution

The unique drive system allows a better stream diffusion. An additional advantage of this drive system is that at the start-up procedure of the gun, the normally compact stream is dispersed into a spray before the gun is set in motion. This greatly reduces furrows and run-off.

Specifications

- Radius: 27-54m (91-178 feet)
- Flow Rate: 190-1127 LPM (42-248 GPM)
- Recommended Operating Pressure Range: 2.5-6.5 BAR (40-95 PSI)
- Trajectory: 24°
- Two standard nozzle options: 16mm and 22mm (0.63" and .87") (additional range of nozzles available for specialty applications)



TG101 Performance – Taper Bore Nozzle and Trajectory 24° (Metric)						
Pressure	Nozzle 16mm - 0.63"			Nozzle 22mm - 0.87"		
	Flow		Radius	Flow		Radius
bar	m³/h	l/s	m	m³/h	l/s	m
2,0	13,9	3,86	27,9	26,3	7,30	33,1
4,5	20,9	5,80	38,0	39,4	10,96	45,1
6,5	25,1	6,96	43,6	47,4	13,17	51,9

TG101 Performance – Taper Bore Nozzle and Trajectory 24° (English)						
Pressure	Nozzle 16mm - 0.63"			Nozzle 22mm - 0.87"		
	Flow		Radius	Flow		Radius
psi	GPM	ft³/h	ft	GPM	ft³/h	ft
30	61.2	490.5	91.5	115.8	927.6	108.6
65	92.0	737.0	124.7	173.4	1392.6	148.0
95	110.5	850.1	143.0	208.7	1673.4	170.3

TG101 Specifying Information

TG101 X XX		
Description	Arc	Nozzle
TG101—TG101 Sprinkler	P—Part Circle	16–16.0 24–24.0
	F—Full Circle	20–20.0 26–26.0
		22–22.0 28–28.0
For Example: When specifying a TG101 sprinkler, part-circle with a #16.0 nozzle, you would specify: TG101-P-16		

Rotor Adapters and Accessories

Effluent Water Indicators

300 & 340 Series 89-7853

- Lavender cover for 300 and 340 Series Omni nozzle
- Use with part no. 300-15 (Omni Nozzle)



89-7854

- Lavender cover for 300 and 340 Series Omni nozzle high-pop models
- Use with part no. 300-25 (Omni Nozzle)



89-7889

- Lavender plug for 300 and 340 Series with fixed-radius nozzles



Super 700 Series 89-3816

- Lavender tab for use with Super 700 Series nozzles



Installation/Adjustment Tools

1/16" Hex Driver Tool Model 995-33

- 1/16" hex driver for timing adjustments on controllers and radius adjustments on XP-300, S600 and S700 Series sprinklers.



Adjustment Key Model 89-7350

- For V-1550 Series sprinklers and 570 nozzles.

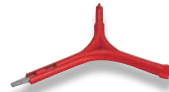


S700 Nozzle Tool and Wrench Model 89-1375



TR Family Optional Adjustment Tool Model 102-1303

- For TR50/TR50XT and TR70/TR70XT Rotors



Super 700 Series Rubber Cover Kit Model 700-10

- Fits all S700 Series sprinklers.



2001 Adjustment Tool Model 89-4717



Riser Hold-up Tool

- A convenient tool to hold up the risers of gear drive rotors under pressure



Nozzle Indicators

- TR50/TR70 (standard and effluent)
- V-1550 series (standard and effluent)



Mini 8 & S800 Series 102-2024

- Adjustment tool for Mini 8 and Super 800 Series models



102-7715

- Adjustment tool for T5 Series models



Model 995-07

- VIH pliers for 640 Series models



Valve Removal Tool Model 995-08

- Valve removal tool for 640 Series models
- Designed for quick removal of valve assembly from body



Model 995-42

- Canister removal tool for 640 Series models



Model 996-51

- Cap removal tool for 640 Series models



Model 995-37

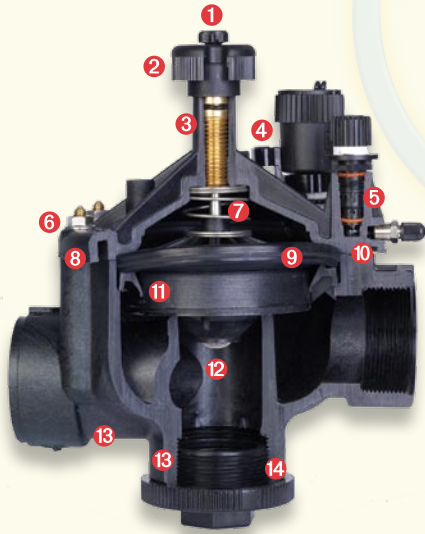
- Seal installation tool for 640 Series models

Valve Insertion Tool Model 995-35

- Valve insertion tool for 640 Series models
- Designed for accurate one-step insertion of valve assembly and snap ring



Valves



Commercial Applications



Residential Applications



Residential and Commercial Valves *Designed and Built to Perform*

Toro makes the right valve for every application. From light residential use to heavy-duty industrial needs, we've got you covered. Toro valves are designed for rugged reliability, even under demanding dirty water conditions.

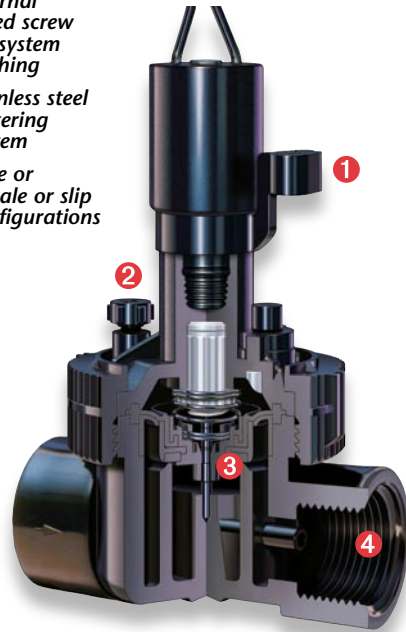


		EZ Flo® Plus	TPV Valves	252 Series	P-150 Series	P-220 Series	220 Series	Quick Coupler
Flow Range		1-114 LPM (0.25-30 GPM)	1-151 LPM (0.1-40 GPM)	19-340 LPM (5-90 GPM)	19-568 LPM (5-150 GPM)	19-852 LPM (5-225 GPM)	19-681 LPM (5-180 GPM)	
Operating Pressure		0,7-10 Bar (10-150 PSI max)	0,7-12 Bar (10-175 PSI max)	1,4-10 Bar (20-150 PSI max)	1,4-10 Bar (20-150 PSI max)	0,7-15 Bar (10-220 PSI max)	1,4-15 Bar (20-220 PSI max)	
Conditions	Electrically Activated Systems	X	X	X	X	X	X	
	Hydraulically Activated Systems			X			X	
Sizes	Effluent Water	X	X	X	X	X	X	X
	20mm (¾")							X
	25mm (1")	X	X	X		X	X	X
	40mm (1½")			X	X	X	X	
	50mm (2")			X	X	X	X	
	75mm (3")					X	X	
Configuration	Angle			X	X	X	X	
	In-line Globe	X	X	X	X	X	X	
Inlet/Outlet	Threaded (Female)	X	X	X	X	X	X	
	Slip	X	X					
	Male x Male	X	X					
	Male x Barb	X	X					
Features	Manual Flow Control	X	X	X	X	X	X	
	Pressure Regulation				X	X	X	
	Internal Bleed	X	X		X	X	X	
	External Bleed (Flush)	X		X	X	X	X	
	Optional DC Latching Solenoid	X	X		X	X	X	
	Optional Spike Guard Solenoid					X	X	
Body Construction	ABS		X	X				
	PVC	X	X					
	Glass-filled Nylon				X	X		
	Glass-filled Polypropylene	X						
	Brass						X	X

EZ-Flo® Plus Jar-Top Series Plastic Residential Valves

25mm (1") Electric Model

- ❶ Manual On/Off
- ❷ External bleed screw for system flushing
- ❸ Stainless steel metering system
- ❹ Male or female or slip configurations



Key Features

- Threaded jar-top bonnet system with heavy-duty cap ring (no screws) for fast and easy servicing without removal from the system
- Heavy-duty PVC, glass-filled polypropylene and stainless-steel construction (corrosion and UV-resistant)
- Slow, anti-water hammer closing
- Floating bleed tube allows thermal expansion without affecting performance

Additional Features

- Tough, double-beaded Santoprene® diaphragm for a longer life and to prevent leaking
- Resilient Buna-N diaphragm seat seal
- Manual internal bleed
- Manual external bleed (flush mode)
- Full stainless-steel metering system
- Encapsulated solenoid with captured hex plunger and spring
- Optional flow control (FC)
- Extended 3 year warranty

Specifications

- Flow range:
25mm (1"): 1-114 LPM (0.25-30.0 GPM)
- Operating pressure:
0,7-10 Bar (10-150 PSI)
- Globe valve body style
- Male and female models available
 - 25mm (1")
 - NPT/BSP
- Solenoid: 60 Hz (24 VAC)
Inrush: 0.4 Amps, 11,50 VA
Holding: 0.2 Amps, 5,75 VA
- Solenoid: 50 Hz (24 VAC)
Inrush: 0.34 Amps, 11,50 VA
Holding: 0.2 Amps, 5,75 VA
- Dimensions:
 - Female globe:
130 x 75 x 101mm (H x W x L)
(5 1/8" x 3" x 4") (H x W x L)
 - Male globe:
130 x 75 x 140mm (H x W x L)
(5 1/8" x 3" x 5 1/2") (H x W x L)

Options Available

- Reclaimed water purple solenoid assembly and tag
- DC latching solenoid* assembly

*The maximum pressure for a valve that utilizes a DC latching solenoid is 8 bar (120 PSI).

Jar-Top for Ease of Use

The jar-top design of the EZ-Flo continues to make valve installations easier. No screws mean less time flushing out the system on start-up. Cleaning the diaphragm area is uncomplicated as it requires no tools. And putting the diaphragm back in the valve is even easier since it only fits in one way.



DCLS-P latching solenoid assembly

EZ-Flo Plus Valves – Specifying Information

EZX - XX - X4

Threads	Flow Control	Body Threads		Solenoid	Size
F-NPT P-BSP	0-w/o F.C. 2-with F.C.	0-Slip 1-M x M, NPT 2-M x M, BSP	3-Female, BSP 5-Male x Barb 6-Female, NPT	0-60Hz 5-50Hz 6-None 9-DC Latching Solenoid	4-25mm (1")
For Example: When ordering a Male x Male, BSP thread, 25mm (1") EZ-Flo Plus Valve with flow control and a 50Hz solenoid, you would order: EZP-22-54					

Note: Some model combinations are not available. Consult your local Toro distributor for availability in select markets.



EZ-Flo Plus Series Friction Loss Data (Metric)

LPM Flow	1	19	38	57	76	114
Friction Loss (Bar)	,14	,24	,28	,21	,23	,43

EZ-Flo Plus Series Friction Loss Data (English)

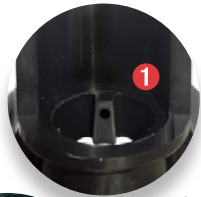
GPM Flow	.25	5	10	15	20	30
Friction Loss (PSI)	2.0	3.5	4.0	3.0	3.3	4.3

Note: For optimum sprinkler performance when designing a system, calculate total friction loss to ensure sufficient downstream pressure. Flow rates are recommended not to exceed 0,35 Bar (5 PSI) loss.

TPV Plastic Residential and Commercial Valves

25mm (1") Electric Models

The search for a full featured, yet economically priced, residential and commercial valve is over thanks to Toro's newest 1" valve offering, the TPV Series.



1 Glue Stop



2 Double Beaded Ozone and Chloramine Resistant Santoprene Diaphragm

3 Debris Bypass System Patented Vibrating Metering Pin

Key Features

- DBS Technology™ (Debris Bypass System) patented vibrating metering pin and diaphragm assembly allows for small particles to pass through valve without clogging
- Double Beaded Ozone and Chloramine Resistant Santoprene Diaphragm ensures a smooth and positive sealing
- Ozone resistance means the durability of the diaphragm is not compromised when water is treated by ozone
- Chloramine resistant for systems with heavy salt content
- Easy-fit diaphragm allows for simple servicing, should the need ever arise
- Designed to meet all demanding needs of drip, residential, light commercial, and high-pressure zones
- Perfect valve for systems with dirty water or water with debris, silt, or sand
- Glue Stop™, a patented feature on the TPV Slip-by-Slip models, ensures the installer can not block the downstream port of the valve

Additional Features

- High pressure and burst rating outperforms the competition in all areas
- Manual Operation without the use of a controller--Internal and External Bleed
- Captured hex/Phillips screws
- Large directional flow arrows
- Self aligning bonnet permits fast and easy servicing
- Optional flow control allows precise zone adjustment and manual shutoff
- Encapsulated injection-molded solenoid with a captured plunger
- Removable flow control handle to ensure vandal resistance
- Five year warranty
- Optional CD latching solenoid configuration available

Specifications

- Flow Range: ,38 to 151 LPM (0.1 to 40 GPM)
- Dimensions: 13cm H x 7cm W x 12.7 cm L (51/8" H, 23/4" W, 5" L)
- Operating Pressure: Electric – ,69 to 12 Bar (10 to 175 psi)
- Burst pressure safety rating: 68.9 Bar (1000 psi)
- Solenoid: 24 VAC (50/60 Hz) Standard
 - Inrush: 0.4 amps
 - Holding: 0.2 amps



DCLS-P latching solenoid assembly

TPV Series Friction Loss Data (Metric)

LPM Flow	,38	,95	19	38	57	76	114	151
Bar Loss	,14	,14	,24	,29	,21	,23	,48	,90

TPV Series Friction Loss Data (English)

GPM Flow	.10	.25	5	10	15	20	30	40
PSI Loss	2.0	2.0	3.5	3.9	3.0	3.3	7.0	13

TPV Series – Specifying Information

TPV X 100 XX XXX XX					
Description	Flow Control	Size	Body Style	Threads	Solenoid
TPV—TPV Valve	F— With Flow Control	100— 1"	(blank)— Threaded Female MM— Male x Male S— Slip MB— Male x Barb	(blank)— NPT BSP—BSP	DC— DCLS-P Latching Solenoid
For Example: When ordering a 1" TPV Valve with slip configuration and flow control, you would specify: TPVF100S					

Note: Some model configurations may not be available. Consult your Toro Distributor for availability in select markets.

NEW



TPVF100BSP



TPV100BSP



TPVF100MMBSP

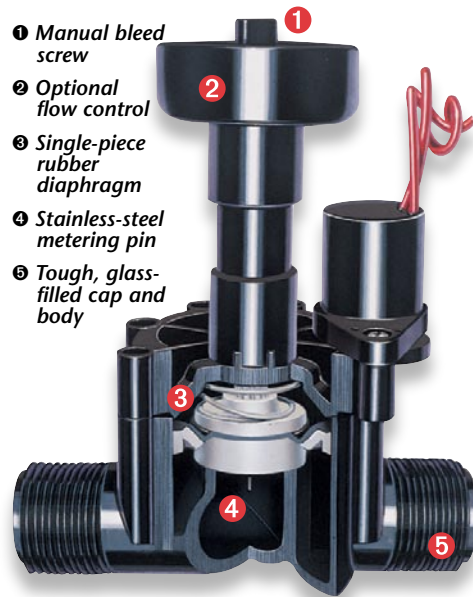


TPV100MMBSP

252 Series Plastic Valves

25mm, 38mm, and 50mm
(1", 1.5" and 2") globe and angle

Extremely rugged residential/
commercial valves designed for reliable
performance and ready to withstand
the harshest conditions in any
commercial application.



Key Features

- Heavy-Duty Toro Solenoid provides dependable operation and long life
- High-Grade Construction made of durable materials to resist wear
- Globe and Angle Configurations are easy to use in any application
- Fabric-Reinforced Rubber Diaphragm provides long-term tear and stretch tolerance
- Water Flow Control Handle adjusts the flow of each zone on a system
- Robust ABS Material ensures the valve will resist heavy pressure and high flows without damage

Additional Features

- Globe and globe/angle built into one valve
- Manual flow control
- External manual bleed
- 24" lead wires (1 1/2" and 2" electric) or 18" lead wires (1" electric)
- Self-cleaning, stainless steel metering pin (electric)
- Tough, glass-filled bonnet
- Single-piece diaphragm

Specifications

- Recommended Flow Range:
 - 1" – 19 to 76 LPM (5.0 to 20 GPM)
 - 1 1/2" – 114 to 303 LPM (25 to 70 GPM)
 - 2" – 227 to 568 LPM (60 to 90 GPM)
- Operating Pressure: 1,4-10 Bar (20 to 150 psi)
- Solenoid: 24 VAC, 50/60 Hz
 - Inrush: 0.30 amps, 7.20 VA
 - Holding: 0.20 amps, 4.80 VA
- Burst pressure safety rating: 51 Bar (750 psi)
- Dimensions:
 - 1" – 171 x 114mm (6 3/4" H x 4 1/2" W)
 - 1 1/2" – 197 x 152mm (7 3/4" H x 6" W)
 - 2" – 241 x 178mm (9 1/2" H x 7" W)

Options Available

- 89-7855 – Effluent Water Indicator Valve Flow Control Knob



252 Series Friction Loss Data (Metric)

Size	Type	Config.	LPM Flow													
			25	50	75	100	125	150	175	200	250	300	400	500	600	700
25mm (1")	Electric	Globe	0,2	0,30	0,34	0,42	0,53	0,65								
			0,2	0,26	0,31	0,32	0,40	0,51								
40mm (1 1/2")	Electric	Globe				0,10	0,11	0,14	0,18	0,23	0,32	0,47	0,84	1,20		
						0,09	0,08	0,10	0,12	0,16	0,21	0,33	0,52	0,70		
50mm (2")	Electric	Globe									0,14	0,17	0,28	0,45	0,61	0,79
											0,07	0,13	0,23	0,30	0,37	0,52

252 Series Friction Loss Data (English)

Size	Type	Config.	GPM Flow													
			5	10	20	25	30	40	50	60	70	80	100	120	150	
25mm (1")	Electric	Globe Angle	3.0 2.0	4.0 3.5	5.0 4.5	6.0 4.5	7.0 5.0	9.5 7.5								
40mm" (1½")	Electric	Globe Angle				1.5 1.5	1.0 1.0	2.0 1.5	3.0 2.0	4.0 3.0	5.0 3.0	7.0 5.0				
50mm (2")	Electric	Globe Angle								2.0 1.0	2.0 1.0	2.5 2.0	3.5 3.0	5.5 4.0	8.0 5.0	

■ = Debris-resistant models

Note: For optimum performance when designing a system, be sure to calculate total friction 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 (0,3 bar) loss. U.S. values shown in psi. Metric values shown in bar. For kPa values, multiply tabular values by 100. For Kg/cm² values, multiply tabular values by 1,02.

252 Series Plastic Valves – Specifying Information

252 - XX - XX			
Model	Activation Type	Threads	Size
252-252 Series Valve	06-25mm (1") Electric 21-Normally Open Hydraulic 26-38mm or 50mm (1 1/2" or 2") Electric	0 – NPT 5 – BSP	4-25mm (1") 6-38mm (1 1/2") 8-50mm (2")
For Example: When specifying a 38mm (1 1/2") electric 252 Series valve, you would specify: 252-26-06			

P-150 Series Plastic Valves

40 and 50mm

(1½" and 2") Electric Models

1½" and 2" in-line globe/angle valves

for light commercial applications. The P-150 Series valves are the "value" work horses of plastic valves.



Key Features:

- Heavy-duty glass-filled nylon (GFN) and stainless-steel construction
- Globe/Angle configuration
- Rated at 10 Bar (150 psi) with flows from 20 to 568 LPM (5 to 150 GPM)
- Water is filter-controlled to resist contamination of solenoid port. Filter serviceable from top of valve.
- Slow closing design reduce water hammer
- Precise pressure control option with compact EZReg® dial-design (serviceable under pressure— no need to shut down system)
- Pressure regulates in electric and manual modes, serviceable under pressure

Additional Features:

- Non-rising, manual flow control handle; adjustable to zero flow
- Manual internal bleed
- Rugged Santoprene, double beaded diaphragm
- Encapsulated injection molded solenoid with a captive hex plunger
- Forward flow design for precise pressure regulation

- No external tubing for either electric or pressure regulating models
- Proven, encapsulated, injection-molded solenoid with captured hex plunger and spring
- Purple solenoid models available for effluent applications
- Positive O-ring seal on inlet plug
- Unique 3-way SS bonnet screws accept Phillips or hex driver tools

Specifications:

- Solenoid: 50Hz (24 VAC)
 - Inrush volt-amp: 50Hz (24 VAC) – 7.2 VA
 - Inrush current: .3A
 - Holding volt-amps: 50Hz (24 VAC) – 4.8 VA
 - Holding current: .2A
- Flow range: 19-568 LPM (5-150 GPM)
- Pressure range: 1.4-10 Bar (20-150 PSI)
- Body styles:
 - Globe/angle valve — 40 and 50mm (1½" and 2") BSP female threads
- Dimensions:
 - 40mm—184mm x 92mm (1½" — 7¼" H x 3½" W)
 - 50mm—241mm x 156mm (2" — 9½" H x 6¼" W)

Optional Accessories:

- DC latching solenoid assembly
- 24 V DC solenoid
- Reclaimed water purple solenoid assembly and tag
- 24 VAC potted solenoid
- 60cm (24") wire leads
 - 50/60Hz
 - Inrush: 0.37A, 8.8 VA
 - Holding: 0.3A, 7.2 VA
- EZR-30: 0.3-2 Bar (5-30 psi) pressure regulation module
- EZR-100: 0.3-7 Bar (5-100 psi) pressure regulation module



P-150 Series Valves – Specifying Information

Type	Configuration	Solenoid	Size
P150	- 23	- X X	
P150—P-150 Series Plastic Valve	23—BSP, Electric.	5—50 Hz Solenoid 6—Less Solenoid	6—40 mm (1½") 8—50 mm (2")
For Example: When specifying a 50 mm (2") P-150 Series Plastic Valve with BSP threads and 50 Hz solenoid, you would specify: P150-23-58			

P-150 Series Friction Loss Data (Metric – LPM Flow)

P-150 Series Friction Loss Data (English – GPM Flow)											
Size	Configuration	20	30	40	50	60	70	80	100	120	150
1½"	Globe Angle	3.14 3.10	3.11 3.36	2.59 2.37	2.67 1.72	3.77 2.22	5.09 3.10	6.40 3.98			
2"	Globe Angle			3.20 2.63	3.33 2.62	2.86 2.24	2.81 1.88	2.87 1.97	4.39 2.67	6.20 3.82	9.68 5.67

Note: For optimum performance when designing a system, be sure to calculate total friction 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. Values shown in PSI.

P-220 Series Plastic Valves

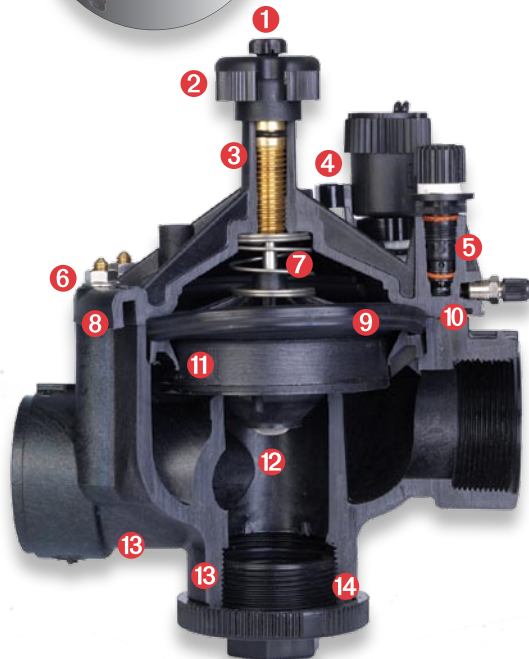
25, 40, 50 and 75mm (1", 1½", 2" and 3") Electric Models

With superior regulation and a 15 Bar (220 PSI) rating, the P-220 Series gives you brass strength at a value price.



New P220 Scrubber Valves

The new scrubber assembly resists clogging and features a patent-pending internal mechanism to actively fight other particles from blocking flow – a true reclaimed water valve.



Key Features

- 15 Bar (220 PSI) maximum operating pressure
- Globe/Angle configuration (P-220 Plastic models only)
- Precise pressure control option with compact EZReg® dial-design (serviceable under pressure—no need to shut down system)
- Pressure regulates in electric and manual modes, serviceable under pressure
- Tough, double-beaded, fabric-reinforced rubber diaphragm rated at 52 Bar (750 PSI) burst pressure
- Self-cleaning, stainless-steel metering rod
- Extended 5-year warranty

- 1 Combined internal and external (flush) manual bleed screw
- 2 Ergonomic manual flow control handle
- 3 Brass flow control on 55mm (2") and 75mm (3")
- 4 Internal manual bleed
- 5 EZReg® pressure-regulating module or port plug
- 6 Anchored studs and nut design
- 7 Self-cleaning stainless-steel metering rod
- 8 Tough GPN bonnet for 15 bar (220-psi) rating
- 9 Fabric reinforced 52 bar (750 psi) rated, double-beaded diaphragm
- 10 Standard Schrader valve for operating pressure readings
- 11 Debris skirt
- 12 Aerospace locknut
- 13 Globe and Globe/Angle for 25mm (1") to 75mm (3") sizes
- 14 O-ring seal cap plug

Additional Features

- Tough plastic construction: 33% glass-filled (GFN) and stainless steel
- Rugged, reinforced bonnet design withstands tough and high-pressure applications
- Forward-flow design for more precise regulation
- Standard, built-in Schrader-type valve for downstream pressure verification
- No external tubing for either-electric or pressure-regulating models
- Internal downstream manual bleed keeps valve box dry and allows for manually setting pressure regulation
- External manual bleed for system flushing
- Manual flow control: adjustable to zero-flow
- Flow control independent of solenoid
- Self-aligning bonnet to ensure correct installation
- Positive O-ring seal on inlet plug prevents leaks
- Low-flow capability down to 20 LPM (5 GPM) with EZReg® module
- Easily serviced without system removal
- Proven, encapsulated, injection-molded solenoid with captured hex plunger and spring
- Low-power requirement for longer wire runs
- 45cm (18") lead wires for easy installation



Pressure Regulator

The P-220 Series with the EZReg® module regulates with precision. The pressure regulator can be easily and quickly installed—even under pressure, with no danger of water geysers from the removed solenoid area or opening of the valve.



P-220 Series Valves – Specifying Information

P220 - X - XX X X				
Type	Scrubber	Configuration	Solenoid	Size
P-220—P-220 Series Plastic Valve	(blank)—No scrubber S — Scrubber	23—BSP, Electric 26—NPT, Electric 27—NPT Pressure regulated EZR-100	0—60 Hz Solenoid 5—50 Hz Solenoid 6—Less Solenoid 9—DC Latching Solenoid	4—25mm (1") 6—40mm (1½") 8—50mm (2") 0—75mm (3")
For Example: When specifying a 25mm (1") P-220 Series plastic electric valve with a 50 Hz solenoid BSP threads, and pressure regulation, you would specify: P220-23-54 and EZR-100				

Note: Some model configurations are not available, consult your local Toro Distributor for availability in select markets.

P-220 Series Plastic Valves (continued)

Specifications

- Recommended flow range:
 - 25mm—19–114 LPM (1" — 5–30 GPM)
 - 40mm—114–265 LPM (1½" — 30–70 GPM)
 - 50mm—300–530 LPM (2" — 80–140 GPM)
 - 75mm—568–852 LPM (3" — 150–225 GPM)
- Operating pressure:
 - Electric — 0,7–15 Bar (10–220 PSI)
- Outlet: EZR-30
0,3–2,0 Bar, ± 0,2 Bar (5–30 PSI, ± 3 PSI)
- Outlet: EZR-100
0,3–7,0 Bar, ± 0,2 Bar (5–100 PSI, ± 3 PSI)
 - Inlet: 1,0–15 Bar (15–220 PSI)
 - Minimum pressure differential (between inlet and outlet): 0,7 Bar (10 PSI)
- Burst pressure safety rating: 52 Bar (750 PSI)
- Body styles: Globe/angle valve, female-threads
- SpikeGuard™ Solenoid: 24 VAC (50/60 Hz)
 - Inrush: 60 Hz, 12 amps
 - Holding: 60 Hz, 0.1 amps
- Solenoid: 24 VAC (50 Hz)
 - Inrush: 0,30 amps, 7,2 VA
 - Holding: 0,20 amps, 4,8 VA
- Dimensions:
 - 25mm—171mm x-92mm (1" — 6¾" H x 3½" W)
 - 40mm—184mm x-92mm (1½" — 7¼" H x 3½" W)
 - 50mm—241mm x-156mm (2" — 9½" H x 6¼" W)
 - 75mm—273mm x-156mm (3" — 10¾" H x 6¼" W)

Options Available

- DC Latching solenoid assemblies
- 24 V DC solenoid assembly
- Reclaimed water purple solenoid assembly and tag
- 24 VAC potted solenoid assembly
 - 50–60 Hz, 60cm (24") leads
 - Inrush: 0,37 amps, 8,80 VA
 - Holding: 0,30 amps, 7,20 VA
- EZR-30 — 0,3–2,0 Bar (5–30 PSI) pressure-regulation module
- EZR-100 — 0,3–7,0 Bar (5–100 PSI) pressure-regulation module
- NPT/BSP threads

P-220 Series Friction Loss Data (Metric – LPM Flow)

Size	Configuration	40	60	80	100	120	140	160	180	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100
25mm (1")	Globe Angle	0,29 0,29	0,25 0,25	0,25 0,21	0,26 0,20	0,32 0,21	0,43 0,29	0,55 0,38	0,69 0,49	0,82 0,61													
40mm (1½")	Globe Angle					0,12 0,09	0,14 0,10	0,18 0,13	0,23 0,17	0,28 0,22	0,43 0,34	0,62 0,48	0,85 0,65	1,11 0,85									
50mm (2")	Globe Angle											0,14 0,08	0,20 0,12	0,25 0,15	0,32 0,19	0,40 0,24	0,48 0,29	0,54 0,32					
75mm (3")	Globe Angle																	0,18 0,14	0,24 0,19	0,32 0,26	0,41 0,34	0,52 0,43	0,65 0,54

■Flow rates are recommended not to exceed 0,35 Bar loss.

Values shown in Bar. For kPa values, multiply tabular values by 100. For Kg/cm2 values, multiply tabular values by 1,02.

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

P-220 Series Friction Loss Data (English – GPM Flow)

Size	Config-uration	5	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	180	200	225	250	275	300
1" (25mm)	Globe Angle	4.00 4.00	4.20 4.20	3.20 3.10	4.10 2.70	7.20 4.80	10.90 7.90																
1½" (40mm)	Globe Angle				1.60 1.30	2.30 1.60	3.60 2.80	5.20 4.00	7.00 5.50	9.20 7.10	11.70 9.00	14.40 11.00	17.50 13.30										
2" (50mm)	Globe Angle									2.10 1.20	2.70 1.60	3.30 2.00	4.00 2.40	4.80 2.80	5.60 3.30	6.50 3.90	7.50 4.40	8.05 5.10					
3" (75mm)	Globe Angle																2.50 1.90	3.00 2.40	4.10 3.30	5.30 4.30	6.70 5.50	8.30 6.90	10.10 8.50

■Flow rates are recommended not to exceed 5 PSI loss. Values shown in PSI.

Valve Wire Sizing (Metric)

Maximum One-way Distance (in meters) Between Controller and Valve Using Spike-Guard™ Solenoid*							
Ground Wire (mm)	Control Wire (mm)						
	1.02	1.29	1.63	2.05	2.59	3.26	4.11
1.02	621.79	768.10	896.11	999.74	1,078.99	1,133.86	1,176.53
1.29	768.10	993.65	1,219.20	1,420.37	1,772.24	1,712.98	1,804.42
1.63	896.11	1,219.20	1,578.86	1,938.53	2,261.62	2,529.84	2,731.01
2.05	999.74	1,420.37	1,938.53	2,511.55	3,078.48	3,596.64	4,017.26
2.59	1,078.99	1,591.06	2,261.62	3,078.48	4,017.26	4,895.09	5,721.10
3.26	1,133.86	1,603.25	2,529.84	3,596.64	4,895.09	6,339.84	7,784.59
4.11	1,176.53	1,816.61	2,731.01	4,017.26	5,699.76	7,784.59	10,082.78

Valve Wire Sizing (English)

Maximum One-way Distance (in ft.) Between Controller and Valve Using Spike-Guard™ Solenoid*							
Ground Wire (AWG)	Control Wire (AWG)						
	18	16	14	12	10	8	6
18	2040	2520	2940	3280	3540	3720	3860
16	2520	3260	4000	4660	5220	5620	5920
14	2940	4000	5180	6360	7420	8300	8960
12	3280	4660	6360	8240	10100	11800	13180
10	3540	5220	7420	10100	13180	16060	18770
8	3720	5260	8300	11800	16060	20800	25540
6	3860	5960	8960	13180	18700	25540	33080

220 Series Brass Valves

25–75mm (1"–3")

Electric and Pressure-Regulating Models

The 220 Series brass valve from Toro, the name says it all...15 Bar (220 PSI) toughness.

NEW FEATURE



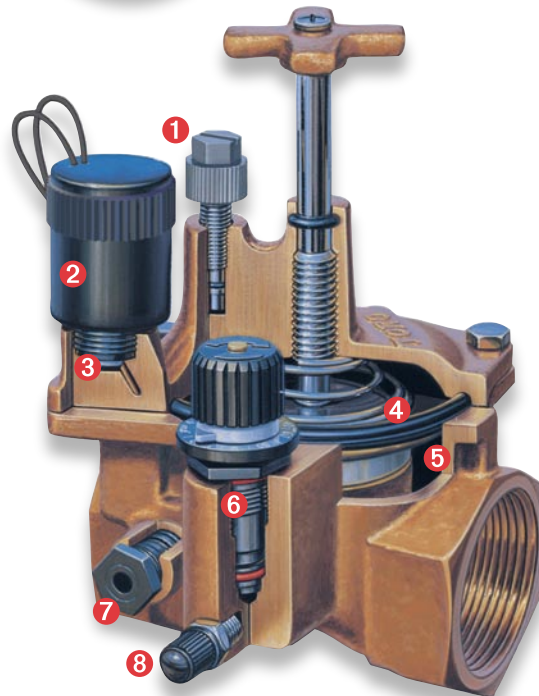
Spike Guard™ Solenoid

Operates on half the amperage of standard solenoid (0.1A) which allows for longer wire runs and more simultaneous valves in operation.



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 and valve closure failure.



- ❶ Combined internal and external (flush) manual bleed screw
- ❷ Spike-Guard™ solenoid with captured hex plunger and spring
- ❸ Stainless steel solenoid seat
- ❹ Fabric-reinforced, double-beaded diaphragm
- ❺ Stainless steel diaphragm support ring
- ❻ EZReg® pressure-regulating module or port plug
- ❼ Externally removable self-flushing, 120-mesh filter screen
- ❽ Standard Schrader valve for operating pressure readings

Key Features

- 15 Bar (220 PSI) maximum operating pressure
- Precise pressure control option with compact EZReg® dial-design (serviceable under pressure—no need to shut down system)
- Tough, double-beaded, fabric-reinforced rubber diaphragm rated at 52 Bar (750 PSI) burst pressure
- Self-cleaning, stainless-steel metering rod

Additional Features

- Brass and Stainless Steel Construction
- Rugged, reinforced bonnet design withstands tough and high-pressure applications
- Forward-flow design for more precise regulation
- Pressure regulates in electric and manual modes, serviceable under pressure
- Standard, built-in Schrader-type valve for downstream pressure verification
- No external tubing for either-electric or pressure-regulating models
- Internal downstream manual bleed keeps valve box dry and allows for manually setting pressure regulation.
- External manual bleed for system flushing
- Manual flow control: adjustable to zero-flow
- Flow control independent of solenoid
- Self-aligning bonnet to ensure correct installation
- Brass flow control stem — 50mm and 75mm (2" and 3") models



EZReg®
Pressure-regulation module



- Positive O-ring seal on inlet plug prevents leaks
- Low-flow capability down to 20 LPM (5 GPM) with EZReg® module
- Easily serviced without system removal
- Proven, encapsulated, injection-molded solenoid with captured hex plunger and spring
- Low-power requirement for longer wire runs
- 45cm (18") lead wires for easy installation

220 Brass Series Valves – Specifying Information

220 XX X X			
Type	Configuration	Solenoid	Size
220— 220 Series Brass Valve	21— Hydraulic (Brass models only) 23— BSP, Electric 26— NPT, Electric	0—60 Hz Solenoid 5—50 Hz Solenoid 6—Less Solenoid	4—25mm (1") 6—40mm (1½") 8—50mm (2") 0—75mm (3")
For Example: When specifying a 25mm (1") 220 Series brass electric valve with a 50 Hz solenoid BSP threads, and pressure regulation, you would specify: 220-23-54 and EZR-100			

220 Series Brass Valves (continued)

Specifications

- Recommended flow range:
 - 25mm — 19–95 LPM (1" — 5–25 GPM)
 - 40mm — 75–227 LPM (1 1/2" — 20–60 GPM)
 - 50mm — 150–303 LPM (2" — 40–80 GPM)
 - 75mm — 303–681 LPM (3" — 80–180 GPM)
- Operating pressure:
 - Electric — 0,7–15 Bar (10–220 PSI)
- Pressure regulating models:
 - Outlet: EZR–30
0,3–2,0 Bar, $\pm$ 0,2 Bar (5–30 PSI, $\pm$ 3 PSI)
 - Outlet: EZR–100
0,3–7,0 Bar, $\pm$ 0,2 Bar (5–100 PSI, $\pm$ 3 PSI)
Inlet: 1,0–15 Bar (15–220 PSI)
- Minimum pressure differential (between inlet and outlet): 0,7 Bar (10 PSI)
- Burst pressure safety rating: 52 Bar (750 PSI)
- Body styles: Globe valve, female threads (except 75mm (3") model–angle)
- SpikeGuard™ Solenoid: 24 VAC (50/60 Hz)
- Inrush: 60 Hz, 12 amps
- Holding: 60 Hz, 0.1 amps
- Solenoid: 50 Hz 24 VAC
 - Inrush: 0,30 amps, 7,2 VA
 - Holding: 0,20 amps, 4,8 VA
- Dimensions:
 - 25mm — 146 x 127mm (1" — 5 3/4" H x 5" W)
 - 40mm — 165 x 152mm (1 1/2" — 6 1/2" H x 6" W)
 - 50mm — 191 x 178mm (2" — 7 1/2" H x 7" W)
 - 75mm — 223 x 216mm (3" — 8 3/4" H x 8 1/2" W)

Options Available

- DC Latching solenoid assembly
- 24 V DC solenoid assembly
- Reclaimed water purple solenoid assembly and tag (RW60–Kit)
- 24 VAC potted solenoid assembly
 - 50–60 Hz, 60cm (24") leads
 - Inrush: 0,37 amps, 8,80 VA
 - Holding: 0,30 amps, 7,20 VA
- EZR–30 — 0,3–2,0 Bar (5–30 PSI) pressure-regulation module
- EZR–100 — 0,3–7,0 Bar (5–100 PSI) pressure-regulation module
- NPT/BSP threads

220 Series Friction Loss Data (Metric – LPM)

Model - Electric	19	38	57	76	114	151	189	227	265	303	378	454	568	644	681	757	946	1136	1325
25mm (1")	0,14	0,17	0,10	0,17	0,38	0,61													
40mm (1 1/2")				0,27	0,29	0,32	0,34	0,36	0,38	0,50									
50mm (2")					0,07	0,14	0,14	0,17	0,21	0,24	0,41	0,52	0,69	0,83	0,97				
75mm (3")										0,15	0,17	0,17	0,21	0,22	0,24	0,26	0,28	0,31	0,34
Model - Hydraulic																			
25mm (1")	0,01	0,07	0,10	0,17	0,38	0,48													
40mm (1 1/2")				0,07	0,10	0,17	0,21	0,31	0,41	0,55									
50mm (2")					0,03	0,07	0,08	0,10	0,17	0,21	0,38	0,48	0,69	0,79	1,00				

■ Flow rates are recommended not to exceed 0,3 bar loss. Values shown in Bar.

Notes: For optimum performance when designing a system, calculate total friction loss to ensure sufficient downstream pressure. For optimum regulation performance, size regulating valves toward the higher flow ranges.

220 Series Friction Loss Data (English – GPM)

Model - Electric	5	10	15	20	30	40	50	60	70	80	100	120	150	170	180	200	250	300	350
1" (25mm)	2.0	2.5	1.5	2.5	5.5	8.9													
1 1/2" (40mm)				3.9	4.2	4.6	4.9	5.2	5.5	7.2									
2" (50mm)					1.0	2.0	2.0	2.5	3.0	3.5	6.0	7.5	10.0	12.0	14.0				
3" (75mm)										2.2	2.4	2.5	3.0	3.2	3.5	3.7	4.0	4.5	5.0
Model - Hydraulic																			
1" (25mm)	<1.0	<1.0	1.5	2.5	5.5	7													
1 1/2" (40mm)				<1.0	1.5	2.5	3	4.5	6.0	8.0									
2" (50mm)					<1.0	1.0	1.1	1.5	2.5	3.0	5.5	7.0	10.0	11.5	14.5				

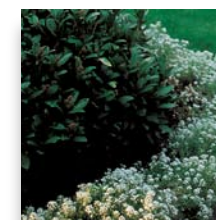
■ Flow rates are recommended not to exceed 5 PSI loss. Values shown in PSI.

Notes: For optimum performance when designing a system, calculate total friction loss to ensure sufficient downstream pressure. For optimum regulation performance, size regulating valves toward the higher flow ranges.



Effluent Labels Included

New in 2008, all 220 Brass valves include reclaimed label and warning tag.



Quick Coupler Valves

Quick Coupling Valves provide frequently watered areas with localized access to the mainline water supply.

Features

- Provides a range of flows to meet all performance requirements
- One or two-piece valves with heavy-duty brass construction
- Single-lug and ACME thread key connections
- Metal and vinyl locking and non-locking covers
- Locking effluent cover
- Hose swivel provides 360° movement without hose tangling



Quick Coupler Valves—Specifying Information

XXX XX XX		
Size	Pieces/Connection	Cover
075—20mm (¾") 100—25mm (1")	SL—One-piece, Single Lug 2SL—Two-piece, Single Lug AT—ACME Thread	SC—Standard Cover VC—Vinyl Cover LVC—Lavender Vinyl Cover VLC—Vinyl Locking Cover
For Example: When ordering a 1" (25mm) one-piece, single lug Quick Coupler Valve with a vinyl locking cover, you would order: 100-SLVLC		

Friction Loss Chart – Metric Data (Bar)

Flow (LPM)	35	50	75	100	125	150	175
Model 100-2SLLC	0,1	0,2	0,4	0,6			
Model 075-SLSC			0,1	0,2	0,3	0,5	

For kPa values, multiply tabular values by 100
For Kg/cm² values, multiply tabular values by 1,02

Friction Loss Chart – English Data (PSI)

Flow (GPM)	10	15	20	25	30	35	40	50
Model 100-2SLLC	1.5	3.1	5.3	8.5				
Model 075-SLSC			1.1	2.2	3.6	5.7	8.0	

Note: For optimum sprinkler performance when designing a system, be sure to calculate total friction loss to ensure sufficient downstream pressure.

Ordering Information Quick Coupler Keys and Accessories

Valves	
Model	Description
075-SLSC	20mm (¾"), One-piece, Single lug, Quick Coupler w/Standard Cover
100-SLSC	25mm (1"), One-piece, Single lug, Quick Coupler w/Standard Cover
100-SLVC	25mm (1"), One-piece, Single lug, Quick Coupler w/Vinyl Cover
100-SLVLC	25mm (1"), One-piece, Single lug, Quick Coupler w/Vinyl Locking Cover
100-SLLVC	25mm (1"), One-piece, Single lug, Quick Coupler w/Lavender Vinyl Cover (Effluent)
100-2SLVC	25mm (1"), Two-piece, Single lug, Quick Coupler w/Vinyl Cover
100-2SLLVC	25mm (1"), Two-piece, Single lug, Quick Coupler w/Lavender Vinyl Cover (Effluent)
100-ATLVC	25mm (1"), One-piece, ACME Thread Quick Coupler w/Lavender Vinyl Cover (Effluent)
Accessories	
Model	Description
075-SLK	13mm (½") Female, 20mm (¾") Male, Single Lug Coupler Key
100-SLK	20mm (¾") Female, 25mm (1") Male, Single Lug Coupler Key
100-AK	25mm (1") ACME Thread Coupler Key
075-75-MHS	20mm (¾") NPT x 20mm (¾") MHT Hose-Swivel
075-MHS	25mm (1") NPT x 20mm (¾") MHT Hose-Swivel
100-MHS	25mm (1") NPT x 25mm (1") MHT Hose-Swivel
LK	Key for Locking Cover

Valve Accessories

Effluent Water Indicator

89-7855

- Effluent flow-control knob for 254/264, 250/260 and 252 Series valves



EFF-KIT-50HZ

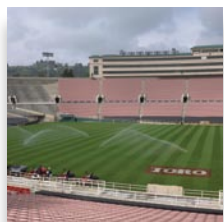
EFF-KIT-60HZ

- Effluent solenoid with warning tag
- EZ-Flo® Plus, P-150, P-220 or 220 Series valves
- Captive hex plunger features
- Contains either 102-7053 solenoid (60 Hz) or 102-7054 solenoid (50 Hz)



RWSG-Kit

- Effluent sticker and tag for P-220 valves with Spike Guard solenoids



Solenoids

DCLS-P

- DC latching solenoid for Toro valves (TPV, EZ-Flo® Plus, P-150, P-220 or 220 Series valves)



Spike Guard SGS (Available 2009)

- Solenoid assembly for TPV Series, EZ-Flo® Plus, P-150, P-220 and 220 Series valves
- Inrush 0.2A
- Holding: 0.1A



89-9580

- Potted solenoid assembly for P-150, P-220 and 220 Series valves
- 24 VAC, 0.37 amp, 8.80-VA inrush, 0.30 amp, 7.20 VA holding
- 50–60 Hz, 60cm (24") leads



R576804

- 24 VDC solenoid assembly



102-7053 (60Hz)

- Solenoid assembly for TPV Series, EZ-Flo® Plus, P-150, P-220 and 220 Series valves
- Captive hex plunger features
- 24 VAC, 60 Hz
- 45cm (18") leads



102-7054 (50Hz)

- Solenoid assembly for TPV, EZ-Flo® Plus, P-150, P-220 and 220 Series valves
- Captive hex plunger features
- 24 VAC 50 Hz
- 45cm (18") leads



Actuators

2-Way Conversion Actuator

Model 284-60-00

- Operates pin-type hydraulic valves with electric controllers.



3-Way Conversion Actuator

Model 286-66-01

- Operates normally open hydraulic valves with electric controllers.
- Inrush current: 0.37 amps at 24 VAC, 50/60 Hz
- Holding current: 0.30 amps at 24 VAC, 50/60 Hz

3-Way Manual Actuator

Model 286-61-01

- Provides manual operation of normally open hydraulic valves.

EZReg™ Pressure-regulation Options

EZR-30 and EZR-100

- Pressure-regulator module for use with P-150, P-220 and 220 Series valves
- Precise pressure control with dial design
- EZR-30: 0,3–2,0 Bar (5–30 PSI)
- EZR-100: 0,3–7,0 Bar (5–100 PSI)



Valve Accessories

VModel 850-00

- Use with 102mm (4") PVC pipe sleeve for access to manual, automatic and 3-way conversion actuator (Model 286-66-01) valves.
- Suited for locating and accessing manual drain valves.



Manifold Tees

Model 850-70 Female

- Allows for easy manifolding of all Toro 25mm (1") male-threaded valves.

Model 850-71

- Allows for easy manifolding of all Toro 25mm (1") female-threaded valves.

Drain Valve

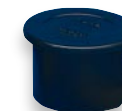
Model 290-02

- For use in areas where 25mm (1") lateral lines are drained after each watering-cycle.

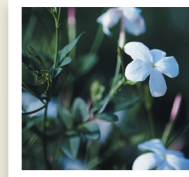
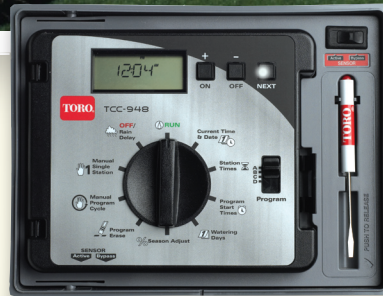
Covers

Manual Actuator Model 850-02

- Allows mounting of 3-way manual actuators (Model 286-61-01).
- When mounted onto a 102mm (4") PVC sleeve, provides easy access for manual operation of pin-type and normally open valves



Turf Controllers



Turf Controllers



Sensors and
Controller Accessories



Turf Controllers Flexibility and Ease of Use

Toro's turf controller family continues to grow, with innovative features and accessories that make installations and programming easier... such as modular station counts, remote control operation, and wireless rainsensors.



		Electronic Tap Timer	TBCWP	DDC™ WP	DDC™	TMC-212 Modular	TMC-424E Modular	Custom Command	TDC
Operation	Battery Requirements	1 x 9V	2 x 9V	2 x 9V					
	Modular					X	X		X
Features	Stations	1	1, 2, 4, 6	2, 4, 6, 8	4, 6, 8	2, 4, 6, 8, 10, 12	4, 8, 12, 16, 20, 24	12, 15, 18, 24, 36, 48	Up to 200
	Independent Programs	1	4	3	3	3	4	4	10
	Start Times	8	10	3	3	4	16	16	6
	Outdoor/Indoor	OD	OD	OD/ID	OD/ID	OD/ID	OD/ID	OD/ID	OD/ID
	Waterproof		X	X					
	Water Budgeting		X	X	X	X	X	X	X
	Electric Circuit Breaker				X	X	X	X	X
	Remote Ready		X			X	X	X	X
	Simultaneous Program Operation						X	X	X
	Days of the Week Programing	X	X	X	X	X	X	X	X
	Odd and Even Programming		X	X	X	X	X	X	X
	Valves per Station		1	1	1	2	2	2	2
	RainSensor Compatible		X	X	X	X	X	X	X
	Maximum Runtime	3 hours	12 hours	4 hours	4 hours	4 hours	8 hours	10 hours	18 hours
Optional	High Surge Protection					X	X		X

Electronic Tap Timer *Simple Multi-Programming*

A convenient battery-operated timer for control of hose-end irrigation applications.

Key Features

- Battery-operated, weather-resistant controller, with built-in valve
- Removable faceplate for simple programming while unit is installed
- Large, easy-to-read LCD display
- Seven-day “Select-A-Day” calendar
- 2-minute program back-up when batteries are temporarily removed
- RoHS compliant

Additional Features

- Connects directly to an outdoor water tap or filter
- 5-key touchpad operation
- Convenient 24-hour clock
- Up to 8 start times per day
- Automatic or manual functions
- Manual count-down mode (from 8 hours to 5 minutes)
- External ON/OFF button
- Summer/Winter key used for “daylight savings” adjustment

Specifications

- One 9V Alkaline battery (not included)
- Typical flow rate at 2 Bar (30 PSI); 15 LPM (4 GPM)
- Operating pressure: 1,4 – 8,0 Bar (20 – 116 PSI)



Electronic Tap Timer
Model #TTT-9V

Tap Timer Specifying Information	
TTT - 9V	
Model	Description
TTT — Toro Tap Timer	9V — 9VDC, ROHS
Example: A Toro Tap Timer remote would be specified as:	
TTT-9V	



TBCWP Waterproof Battery Controller

1, 2, 4, and 6 Stations

The Toro Waterproof Battery Controller: A battery-powered controller that is vandal resistant and perfect for use in areas without standard electrical power.

The advanced features of the TBCWP, such as the monthly water budget and calendar options, are easy to activate using the hand held programmer.



**WATERPROOF
IP68
SUBMERSION
STANDARD**

TBC Handheld Programmer

- The TBC Handheld Programmer offers users a simplified platform to program TBCWP
- Wireless or infrared communication, and the ability to store up to 100 unique programs makes programming straightforward
- Compatibility with (Controller and Handheld Programmer):
 - Toro RainSensors™ normally closed
 - Toro valves accepting DC latching solenoids (model DCLS-P or equivalent) and select competitive valve models/DC latching solenoids
- 3 year warranty

TBC Remote Series Specifying Information

TBC - HH	
Description	Remote
TBC — Toro Battery Controller	HH — Hand Held
Example: A TBC remote would be specified as: TBC-HH	

TBC Series Specifying Information

TBCWP - X - X		
Description	Communications	Stations
TBCWP — Toro Battery Controller, Waterproof	(blank) — Infrared Port Only R — Built-in Radio with Infrared Port	1 — 1 station 2 — 2 station* 4 — 4 station 6 — 6 station
Example: A four station TBCWP controller without a built-in radio would be specified as: TBCWP-4 A four station TBCWP controller with a built-in radio would be specified as: TBCWP-R-4		

TBCWP Key Features:

- Two 9-volt alkaline batteries (not included) provide sufficient power to last the entire irrigation season
- Fully waterproof and submersible to 2 meters (6 feet) meeting IP68 standard
- Water Budget
 - 0 to 300% setting in 10% increments, by program
 - Monthly pre-set option - ideal for system start-up or shut-down in advance
- Four independent programs and 10 start times
- 1 minute to 12 hour station run times
- Multiple watering day options
 - 7 day calendar with leap year
 - Odd/Even 365 day watering, with 31st day exclusion
 - 1- 31 day interval
 - All with weekday exclusion capability
- Unique power verification feature confirms there is sufficient battery voltage level to turn off all stations before initiating cycle
- Convenient mounting bracket included for easy installation in valve boxes or other tight spaces
- Non-volatile memory requires no batteries to retain stored programming
- 12/24 hour real-time clock for programming accuracy
- Rain sensor by program
- Built-in rain delay, up to 14 days
- Station delay from 1 minute to 30 minutes

TBC-HH Key Features:

- For TBCWP controllers without a radio, the TBC-HH has a built-in infrared cable that connects directly the controller for programming
- Large, easy-to-read, backlit LCD display
- Low battery indicator visible in LCD screen provides feedback of the power level for the TBCWP controller as well as the Hand Held Programmer
- Easy-to-read icons and simple English text
- Station output short detection for faster troubleshooting
- Manual operation by station and by program
- 12/24 hour real-time clock for programming accuracy

Specifications

- TBCWP Product Dimensions: 98 x 85 x 132 mm (3.85" x 3.35" x 5.20") (W x H x D)
- TBCWP Product weight: 0.75 kg (1.65 lbs)
- TBC-HH Product Dimensions: 76 x 51 x 159 mm (3.00" x 2.00" x 6.25") (W x H x D)
- TBC-HH Product weight: 0.23 kg (0.50 lbs)
- Electrical Specifications
 - TBCWP Input Power: 9-volt DC (two 9V alkaline batteries; not supplied)
 - TBCWP Station Output Power: will operate one 9V DC latching solenoid per station
 - TBC-HH Input Power: one 9-volt DC alkaline battery (not supplied)
- Operating temperature: 0°C - 60°C (32°F to 140°F)
- Storage temperature (excluding battery): -30°C to 65°C (-22°F to 149°F)
- CE, FCC, and C-Tick
- Maximum distance between TBCWP controller and a DC latching solenoid using AWG #18 sized wire: 61m (200')

DDC™WP Series Waterproof, Battery Controller

2, 4, 6 and 8 stations

Using latching solenoids and battery-power, the DDCWP is 100% waterproof to IP68 standards, making it ideal for mounting in valve boxes or outside.

The DDCWP waterproof controller features an exclusive, patent-pending virtual dial interface that guides users through simple programming functions. A convenient mounting bracket and waterproof connectors are included with each model.



RainSensor
Compatible

WATERPROOF
IP68
SUBMERSION
STANDARD

Key Features

- Fully waterproof and submersible to 2m (6'), per IP68 standard
- Convenient mounting bracket included for easy installation in valve boxes or other tight spaces
- Water Budgeting
 - 0 to 200% setting in 10% increments, by program
- Monthly pre-set option—ideal for system start-up or shut-down in advance
- Compatible with Toro and other wired rain sensors
- 2 x 9V alkaline batteries provide sufficient power to last entire irrigation season
- Unique power feature verifies sufficient voltage level for turning stations off before turning any stations on
- Low battery indicator visible in large LCD screen

Shared Features of DDC and DDCWP

- Toro exclusive “digital dial” technology simulates the simplicity of a mechanical dial
- 3 independent, stacking programs, easily identified within “digital dial” interface
- 3 Start Times per Program
- 1 to 240 minute run times
- Multiple watering days options
 - 365 day calendar
 - 1 to 7 day interval
 - 7 day calendar, 14 day interval
 - Odd/Even day watering, with 31st day exclusion
- 12 or 24 hour real-time clock for programming accuracy
- Built-in Rain delay
- Programmable Master Valve
- Convenient program review feature
- 5 Year program retention, with on board coin battery
- Default program if loss of power occurs
- Manual operation by program or station

- Program review feature

Electrical Specifications

- Operates using 2 x 9V alkaline batteries (not supplied).
- Operates one Toro latching solenoid per station and one latching solenoid equipped master valve
- Maximum distance between controller and a latching solenoid using 1.0 mm² (AWG #18) sized wire: 60 m (197')
- Controller is compatible with all Toro valves accepting latching solenoids (EZ Flo Plus, TPV, P220) and select competitive valve models/latching solenoids
- Conforms to electromagnetic compatibility directives (CEE, FCC and C-Tick)

Mechanical Specifications

- Weight without 9-volt batteries: 672 grams (23.3 ounces)
- Dimensions: 12.6 x 14.5 x 4.9cm 5" x 5 3/4" x 1 15/16" (H x W x D)
- Operating temperature: 0° - 60°C (32° - 140° F)

Monthly % Adjust

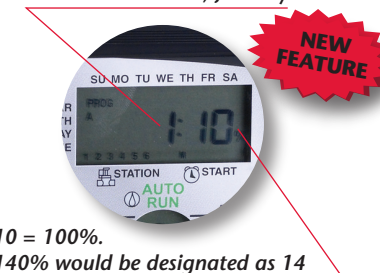
DDCWP adjusts annual irrigation run time the first time the controller is set up. Options include from 0-200% and January to December scheduling. With easy adjusting for seasonal watering, water savings is enhanced for all-around intelligent programming.

Wire Run Lengths for DDCWP

With battery voltage at 9 VDC, maximum recommended wire runs for an 8-station DDCWP are:

Multi-strand Wire	Distance	
	Meters	Feet
18 AWG	60	197
16 AWG	93	305
14 AWG	150	493
12 AWG	250	820

1 = The first month, January



10 = 100%.
140% would be designated as 14

DDC™/DDC™WP Series Specifying Information

DDCXX - X - XXX - XX

Description	Optional	Stations	Power Supply	Cabinet
DDC- Digital Dial Controller	WP- Waterproof	2 - 2 Station** 4 - 4 Station 6 - 6 Station 8 - 8 Station	120 - 120 V a.c 220 - 220 V a.c 240 - 240 V a.c 9V - 9V Batteries*	(blank)- Indoor OD - Outdoor AC Model

For Example: When specifying a 4 station DDCWP controller with 9-volt power supply, you would specify:

DDCWP-4-9V and 4 x DCLS-P

* In average conditions

** Available with DDCWP models only

DDC™ Series Residential Controller

4, 6 and 8 stations

The DDC features an exclusive, patent-pending virtual dial interface that guides a user through simple programming functions.

Although compact in size, several large features are packed into the DDC – making it extremely affordable for any residential application.

Key Features

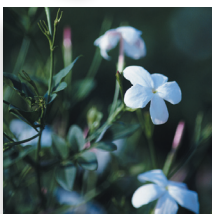
- Toro exclusive “digital dial” technology simulates the simplicity of a mechanical dial
- 3 independent programs, easily identified within “digital dial” interface
- Water Budget: 0 to 200% in 10% increments
- Monthly preset option — ideal for system start-up or shutdown in advance
- Self-diagnostic circuit breaker identifies irrigation faults
- Display with multi-language overlays (user selectable)

Additional Features

- Large LCD display
- 3 Start Times per Program
- Key locking outdoor cabinet provides vandal resistance
- 1 to 240 minute run times with delay between stations
- Multiple watering days options
- 365 day calendar
- 7 day calendar, 14 day interval
- Odd/Even day watering, with 31st day exclusion
- Manual programs feature to manually start programs stored in controller memory
- Built-in Rain delay with sensor terminal hookups
- “Arm Chair” programming with 9-volt battery power source
- Programmable Master Valve
- Convenient program review feature
- Program retention with on board coin battery
- Default program if loss of power occurs
- Quick reference card for programming assistance
- CE, EMC, C-Tick, UL and cUL approved
- Accepts Toro TWRS or TWRF5 wireless rain/freeze sensor
- Program review feature
- Self diagnostic circuit breaker

Specifications

- Indoor:
- Weight without 9-volt battery: 280 grams (9 ounces)
 - Dimensions: 127,5 x 145 x 40mm 5” x 5¾” x 1½” (H x W x D)
 - 500mA class 2 transformer
- Outdoor:
- Weight without 9-volt battery: 1,14 kilos (2.5 lbs.)
 - Dimensions: 220 x 178 x 89mm 8 5/8” x 7” x 3 1/2” (H x W x D)
- Input power:
- 120 VAC, 50/60 Hz (Plug-in transformer, UL/cUL approved)
 - 230 VAC, 50/60 Hz (Plug-in transformer, CE Mark)
 - 240 VAC, 50/60 Hz (Plug-in transformer, SAA)
 - 60 W (0.50 amps) maximum
- Station Output Power:
- 24 VAC
 - 6 VA (0.25 amps) per station maximum
 - 6 VA (0.25 amps) pump start/master valve
 - 12 VA (0.50 amps) total load



RainSensor
Compatible

DDC™/DDC™WP Series Specifying Information

DDCXX - X - XXX - XX				
Description	Optional	Stations	Power Supply	Cabinet
DDC — Digital Dial Controller	WP — Waterproof	2 — 2 Station* 4 — 4 Station 6 — 6 Station 8 — 8 Station	120 — 120 V a.c 220 — 220 V a.c 240 — 240 V a.c 9V — 9V Batteries*	(blank) — Indoor AC Model OD — Outdoor AC Model
For Example: When specifying an 8- station DDC controller with 220 Va.c. plug-in transformer, you would specify: DDC-8-220				

* Available with DDCWP models only

TMC-212 Modular Controller

2, 4, 6, 8, 10 or 12 Stations- Electric

The TMC-212 Modular Controller offers the ultimate in flexibility and a variety of enhancements based on customer feed back. Modular controller design means that Toro meets more of your customers' expanding needs with fewer, more productive and more flexible products.

Key Features

- Station-count modularity (2 to 12 stations) expandable with 2 station modules (base model offered with 4 stations)
- Standard or High-Surge (outdoor only) options to guard against lightning damage and power surges
- Programmable pump start, by program
- Programmable well recovery (station delay) by program
- Programmable master valve
- Electronic short detection for easier troubleshooting
- Remote Ready and RainSensor™ compatible
- Non-volatile memory (no battery backup required)



High Surge TSM-02
TSM-02-H



TMR-1 Compatible



RainSensor Compatible

Additional Features

- 3 fully independent, stacking irrigation programs; any station can be assigned to any program
- 4 start times per program (master on/off for extended shutdowns)
- Station run times from 1 minute to 4 hours
- 365 day calendar with true odd or even day watering schedule
- 12/24-hour real time clock
- Independent Water Budget setting by program from 10% to 200% in 10% increments
- Automatic split-cycle mode when Season Adjust is greater than 100%, prevents runoff
- Screwless wire terminals for easy installation
- Rain delay setting from 1-7 days prevents water waste
- Selectable 15 second station delay
- Day exclusion (remove a day from standard program)
- Clear Memory feature resets defaults or clears values (by program) for simple operation
- Automatic Backup Program
- Professional, UV-resistant cabinet
- Integrated Pump Start/Master Valve output
- Vandal-resistant, lockable outdoor model available
- Extended 3 year warranty

Expansion Module Features

- Ability to power two valves simultaneously
- Hot-swappable
- Increased design flexibility
- Increased post-installation flexibility

Electrical Specifications

- Input power: 120 or 220/240 V.a.c., 50/60 Hz (plug-in transformer) for indoor models
- Station output power: 24 V.a.c., (50/60 Hz)
 - 0,50 Amps (12 VA) per station maximum
 - 0,50 Amps (12 VA) Pump/Master Valve
 - 0,70 Amps (17 VA) total load
- UL listed, cUL, CE and C-Tick certified
- Surge protection models

Mechanical Specifications

- Dimensions: (Indoor Model)
210 x 195 x 57mm (8¼" x 7⅝" x 2¼") (H x W x D)
- Valve Power Out:
19mm (¾") conduit access (part of mounting plate)
- Dimensions: (Outdoor Model)
229 x 315 x 100mm (9" x 12½" x 4") (H x W x D)



TMC-212 Modular Specifying Information			
TMC 212 XX X XXX			
Description	Configuration	Optional	Voltage
TMC – TMC-212 Modular Controller	OD – outdoor cabinet ID – indoor cabinet	H – High-Surge*	(blank) – 120V Transformer 220 – 220V Plug in Transformer 50H – 220/240 V a.c. Transformer
For Example: When specifying a TMC-212 Modular controller with 4 stations, a 220V plug-in transformer and an indoor cabinet, you would specify: TMC-212-ID-220			

*High-Surge protection available with outdoor model only

TMC-424E Enhanced Modular Controller

4, 8, 12, 16, 20 or 24 Stations Electric

The TMC-424E offers enhanced features, ease of use and advanced modular technology to provide industry-leading flexibility, performance, and convenience.

Key Features

- Modular station count from 4 to 24 stations with 4- or 8- station modules
- Station and total run times in seconds or minutes, and accumulated run time is displayed by program
- Modular indoor/outdoor power supply and high surge and/or flow monitoring options—mix and match according to your needs.
- Program stacking with the ability to operate up to 3 programs simultaneously
- Large control dial and LCD display with visual confirmation of stations/programs
- Multi-language capability

ENHANCED

Flow-Sensing for Greater Water Savings

With flow-sensing capability that monitors up to three independent flow sensors, the controller consistently monitors for problems and takes action as needed to isolate breaks or system issues.



TSM-4



TSM-4H



TSM-4F

Additional Features

- Hot-swappable station modules indicate module location and station count in real time
- Armchair programming
- 4 independent programs
- 16 start times (assignable by program) provide exceptional scheduling flexibility
- 365 day calendar with true odd or even day watering schedule
- Three scheduling choices by program:
 - 7-day calendar
 - 1- 31 day interval
 - Day exclusion (remove a day from standard program)
- Manual watering by station, program or a test program
- Flow monitoring
 - Flows are automatically learned
 - Up to 3 flow modules, each with its own master value output
 - Each station can have its own underflow, overflow and critical overflow alarms
- Well recovery from 5 seconds to 30 minutes
- Pump start/master valve set by program and station
- Pump start/master valve output in both stand alone mode or with flow monitoring modules
- Rain delay from 1-14 days
- Water budgeting from 0-200% in 10% increments
- 12/24 hour real-time clock for programming accuracy
- Key-lockable, weatherproof cabinet

Additional Service Features

- Clear memory feature erases programming, by program
- Non-volatile memory requires no batteries
- Review feature quickly recaps all program information on the face of the controller
- Short detection for faster troubleshooting
- Valve test mode for quick system checks

Specifications

- Input Power
 - 120, 230 or 240 V.a.c., 50/60 Hz
 - 30 VA (external and internal plug-in type transformer)
 - UL/cUL, CSA Certified (or equivalent), TUV, SAA, CE, C-Tick
- Station Output Power:
 - 24 VAC (50/60 Hz)
 - 0.50 amps per station maximum
 - 0.50 amps pump/master valve
 - 1.20 amps total load
- Special high-surge station modules are offered to meet surge protection requirements
- Surge Protection
 - Standard: 6.0 kV common mode, 600V normal mode
 - High surge: 6.0 kV common mode, 6.0 kV normal mode
- Dimensions (Indoor/Outdoor Models):
 - 273 x 260 x 117mm
 - (10 3/4" x 10 1/4" x 4 5/8")
 - (W x H x D)
- Shipping weight (Indoor/Outdoor Model including transformer):
 - (2,43 kg) 5.35 lbs

TMC-424 Modular Specifying Information

TMC-424E - XX - XXX

Description	Configuration	Voltage
TMC-424E – Modular Controller	OD – outdoor cabinet ID – indoor cabinet	(blank) – 120V Transformer 220 – 220V Plug in Transformer 50H – 220/240 V.a.c. Transformer
For Example: When specifying a 16-station TMC-424E controller in an outdoor cabinet, a 220/240 V.a.c. transformer, with two flow monitors, you would specify:		
TMC-424E-OD-50H and 1 x TSM-8F 1 x TSM-4F		

* Note: Models come with one TSM-4 pre-installed



TMR-1 Compatible



TriComm Compatible



Flow Sensor Compatible



RainSensor Compatible



Custom Command Series Controller

12, 15, 18 & 24 Fixed Stations Plastic 12, 15, 18, 24, 36 & 48 Fixed Stations - Metal

Toro's Custom Command commercial grade controller is designed to meet a wide variety of sophisticated watering requirements. Available in models ranging from 12 to 48 stations with four independent programs, 16 total start times and a 365-day calendar for odd/even day scheduling.

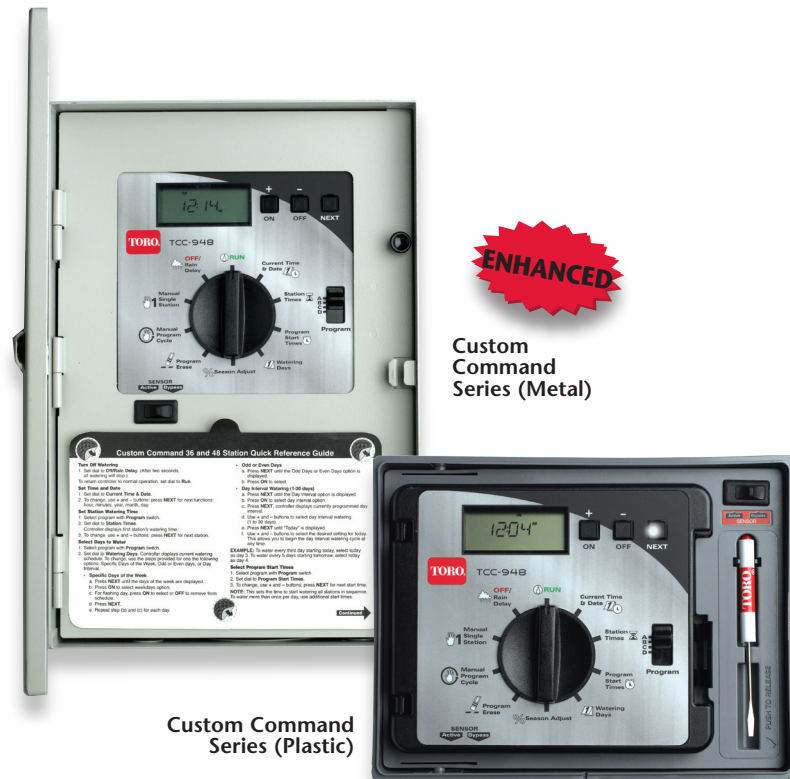
Key Features

- User-friendly, 10 position programming dial and large, easy-to-read LCD
- 4 independent programs offer concurrent operation capability
- 16 total start times
- Start time stacking within each program
- Self-diagnostic circuit breaker identifies and overrides an electrical malfunction of a valve
- Lightning SurgePro™ System on all 120 V.a.c. models; and 24, 36 and 48 station 220/240 V.a.c. models
- Station run times of 1 minute to 10 hours in 1-minute increments
- Hand held remote compatible, for troubleshooting, and field maintenance operation

Additional Features

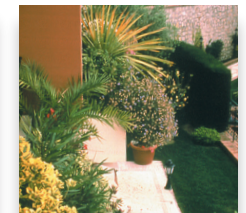
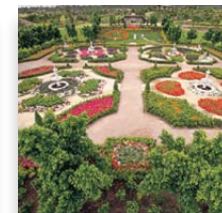
- Snap-out design allows easy removal of control module without disturbing valve wiring
- 7 day calendar, odd/even day or day interval options of 1-30 days
- Excluded day option, when used with the odd/even day option, allows selection of specific day(s) not to water
- 365 day clock/calendar with excluded day option
- Water Budget setting from 10 - 200% in 10% increments
- Rain delay setting from one to seven days prevents water waste
- Programmable Master Valve On/Off per program
- Automatic, semi-automatic, manual and timed-manual operation
- Non-volatile memory retains program data through power failures of any duration
- Battery backup keeps accurate time for up to 90 days during power failure
- Battery operation allows for Armchair Programming™

- Plastic models made with durable, UV-resistant material and with a built-in screwdriver for convenience
- Pedestal mount available (metal models)
- Sensor hook-up with sensor override switch on faceplate
- Weather-resistant metal, locking cabinet with heavy-duty internal transformer (plastic/metal models)
- Suitable for mounting outdoors
- Extended 5 year warranty



Custom
Command
Series (Metal)

Custom Command
Series (Plastic)



Custom Command Series Controller (continued)

Additional features for 36- and 48-station models

- User-defined stacked or multiple simultaneous program operation, selectable from one to four programs
- Runs up to four valves and master valve or pump start simultaneously

Specifications

- UL/cUL listed, CE marked, C-Tick

Maximum output per station:

- 24 V.a.c., 0,5 Amps
- Maximum output to valves: 24 V.a.c., 1,25 Amps (including master valve)
- Station Capacity: Up to two 24 V.a.c., 0,25 Amps solenoids per station, plus Master Valve

Battery backup:

- 9-volt alkaline battery (included)
- Outdoor Models
 - Transformer input: 120/230 V.a.c., 50/60 Hz
 - Transformer input: 50H 220 V.a.c., 50 Hz
 - Transformer output: 24 V.a.c., 2,08 Amps
- Power supply: 50 VA

Dimensions:

- Plastic: 292 x 149 x 219mm (11 1/2" x 5 7/8" x 8 5/8") (W x H x D)
- Pedestal: 273 x 702 x 86mm (10 3/4" x 27 5/8" x 3 3/8") (W x H x D)
- Metal (12- 15- 18- and 24-station models): 273 x 248 x 146mm (10 3/4" W x 9 3/4" H x 5 3/4" D)
- Metal (36- and 48-station models): 273 x 399 x 146mm (10 3/4" W x 15 3/4" H x 5 3/4" D)

Shipping weight (including carton):

- Plastic: 6,8kg (15 lbs.)
- Metal (12, 15- 18- and 24-station models): 6,4kg (14 lbs. 5 oz.)
- Metal (36- and 48-station models): 8,1kg (18 lbs.)

High-Surge Protection

With the highest surge protection in its competitive price range, a self-diagnostic circuit breaker and backing by a five-year warranty, this controller withstands the test of time.



Custom Command Series in Pedestal Mount (12-, 15-, 18- or-24-station)



Custom Command Series Specifying Information

CC X XX XXX			
Description	Style	Type	Transformer
CC –Custom Command	M –Metal Cabinet, Outdoor Mount, Internal Transformer	(blank) – 120V Transformer	50H – 220/240 V.a.c. (50/60 Hz)
	P –Plastic Cabinet, Indoor/Outdoor Mount, Internal Transformer	220 – 220V Plug in Transformer	(Blank) – 120 V.a.c. (50/60 Hz)
		50H - 220/240 V a.c. Transformer	
Optional CC-PED—Pedestal Mount (Metal)			
For Example: When specifying a 12-station Custom Command Controller with a 50 Hz, 220/240 V.a.c. internal transformer, metal cabinet and pedestal mount you would specify: CC-M12-50H and CC-PED			



TDC Series Controller

The TDC (Turf Decoder Controller) system provides a durable, cost-effective alternative to traditionally wired irrigation control systems. Using a 2-wire path to communicate to buried decoders, the TDC is vandal-resistant, easy-to-install and easy to expand.

Key Features

- Modular Design with a base of 100 stations and can be upgraded to 200 stations
- Advanced Diagnostics provides true two-way communication with each decoder in the field, providing communication verification to decoders in the field
- Detects shorted or open solenoid conditions, making troubleshooting easier
- Operates DC Latching Solenoids, which use significantly less power than AC solenoids
- Water budget by controller, by program and by station (Season Adjust) 0 to 250% in 1% increments
- Installing and servicing are quick and simple thanks to the large LCD display and the industry's most intuitive interface
- Decoders able to operate 1 or 2 solenoids per station

Additional Features

- 20 KV surge protection with proper grounding of 10 Ohms or less at the controller
- 10 independent irrigation programs
- Six start times per program
- Day of the week programming, odd/even, interval (1-31 days)
- Day Exclusion (remove a day from standard program)
- Programmable master valve and pump start, by program and by station
- Manual start of each station or entire program
- Non-volatile memory retains programming
- Self-diagnostics circuit breaker skips shorted/open stations and continues watering
- InterStation Delay
- 1 minute to 5 hour cycle and soak
- Two-way confirmation of decoder activation
- Activate up to 20 solenoids at up to 4.5 kilometers (2.8 miles) away
- Programmable rain delay up to 31 days
- Water window calculator
- 10-digit alpha-numeric zone identification
- Remote-Ready and RainSensor-compatible
- Upgradeable to Toro Sentinel® Central Control

Specifications

- Operating temperature: 0-60° Celsius (0° to 140° F)
- Input power: 120 or 220/240 V.a.c., 50/60 Hz. Transformer
- Station output power: Up to 38 V.a.c. max; 3 amps max output
- UL/cUL, TUV, CE, C-Tick, and SAA approved
- Wiring-two wire path: Jacketed, twisted pair 14 AWG to 15,000 ft.
- Wiring-decoder to solenoid: Standard pair 14 AWG to 400 ft.
- Cabinet Dimensions: 33.5 x 35.5 x 15cm 13" x 14" x 6" (H x W x D)
- Available as a stainless steel pedestal CDEC-PED-XXX



**TMR-1
Compatible**



**TriComm
Compatible***



**RainSensor
Compatible**

*Future Enhancement

**Two Wire Path
Surge Protection.
1 per 300m (1000 ft)
DEC-SG-LINE**

TDC Series Controller Specifying Information

CDEC - XXX - XXX

Model	Cabinet	Description
CDEC—2-wire Controller	SA—Wall Mount Metal Cabinet PED—Stainless Steel Pedestal	100–100 Stations 200–200 Stations

For Example: A TDC controller with 200 stations, you would specify: **CDEC-SA-200**

1-, 2-, and 4-station Decoders Specifying Information

CDEC - ISP - X

Model	Type	Description
CDEC—2-wire Decoder	ISP—Integrated Surge Protection	1—Single Station Decoder 2—Two Station Decoder 4—Four Station Decoder**

For Example: A TDC decoder with 2 stations, you would specify:

CDEC-ISP-2

**Future Option

RainSensor™ Series Sensor

The wired and wireless RainSensors automatically shut off water when it rains. Coupled with the irrigation saving features offered on Toro controllers, the RainSensor takes total water management a step further. For varying climates, RainSensor models include sensors for not only rain, but freeze as well.

Key Features

- Advanced water conservation mode saves up to 30%* more water than other disc rain sensors
- Versatile mounting options (one-piece Quick-Clip™ gutter bracket and conduit adapter included – no special tools)
- Wired model includes 7,6m (25') of weather and UV resistant cable
- Compatible with almost any controller

Additional Features (Wireless Model Only)

- Multi-functional receiver
 - Large LCD provides visual sensor status
 - Selectable water conservation modes (to delay resumption of irrigation)
 - Smart Bypass™ allows for system override at any time and switches back on automatically
 - Low battery life indicator
 - Simple mounting with side/snap-on cover for added protection
- Signal strength indicator/scale
- Selectable rain shut-off indexes at 3, 6, 12, and 20mm (1/8", 1/4", 1/2", and 3/4") of rain
- Extended 3-year warranty

Specifications (Wireless Model)

- Operating temperature: -28.9°C to 48.9°C (-20°F to 120°F)
- Housing material: Weather and UV-resistant engineered polymer
- FCC, IC, ACA, UL, CUL, CE and C-Tick approved

Transmitter

- Transmitting range: Up to 152m (500')
- Sensor: maintenance-free hygroscopic disks; adjustable rain sensitivity 3-20mm (1/8" to 3/4")
- Power source: 2 lithium coin batteries—replaceable (CR2032-3V)

Receiver

- Factory set to Normally Closed (N.C.); can be set to Normally Open (N.O.), 3A @ 24 V ac
- Power: 22-28 V-ac/VDC, 100mA

Options

Digital Freeze Sensor

- Reduces vegetation damage and accidents
- Fully integrated into the wireless unit
- Current outdoor temperature displayed on LCD in Celsius or Fahrenheit
- Adjustable freeze shutoff point (2-7°C or 35-45°F) an industry first



Water Conservation Modes

Selectable water conservation modes delay resumption of irrigation by intelligently extending beyond mechanical reset time and can save you up to 30%* more water.

* Savings vary based on sensor setting, watering schedule and other conditions.



Simple to Understand Icons for Ease of Use

- Simple programming
- Signal strength indicator
- Battery life indicator
- Temperature Indication (Rain/Freeze model)

RainSensor™ Series Specifying Information

TXRXS - X					
Model	Type	Rain	Freeze	Sensor	Region
T—Toro RainSensor	(blank)—Wired W—Wireless	R—Rain Sensing	(blank)—No Freeze Sensing F—Freeze Sensing	S—Sensor	(blank)—North American Icons/ Approvals I—International Icons/Approvals

*Patents pending. RainSensor is a trademark of The Toro Company.

TMR-1 (Maintenance Remote) Sensors and Controller Accessories

1.9 km (1.2 mile) Range

Designed for convenience and usability, the Toro® TMR-1 is a maintenance remote system that allows a single operator to perform irrigation checks and operate a system from up to 1.9 km (1.2 miles) away. A large, easy-to-read LCD, push button interface and intuitive command set make the TMR-1 easy to use and operate.

Features

- Operates on unlicensed frequency
- Up to 1.9 km (1.2 miles) line-of-sight range without the hassles of FCC licensing.
- Toro Exclusive All Stations Cycle (ASC) Function
- Provides one-start system operation for walk-throughs, maximizing productivity – 2-minute runtimes per station.
- Quick-Connect System (For Toro Controllers)
- Allows receiver to easily be moved from one controller to another; circular connector can be bracket-mounted or mounted using 12.7mm (1/2") conduit.
- Multi-Controller/Multi-Site Capability
- Programmable address allowing selection of up to 999 different remote receivers at controllers.
- Two year warranty

Additional Features

- Intuitive, easy-to-use keypad
- Large, easy-to-read LCD display
- Remotely controls up to 500 stations
- Battery life indicator
- Circular connector comes standard with 5' cable
- Simple, intuitive command set
- Default run time is 10 minutes
- Display shows countdown of time left to run
- Ergonomic design and removable belt clip make for easy handling

Specifications

- Receiver size: 10" x 3" (with antenna)
- Transmitter size: 10" x 3" (with antenna)
- Electrical Specifications
 - Receiver input voltage: 12-26 VAC input
 - Transmitter DC Operating voltage: 6-8V DC (4 AA Standard or NiMH rechargeable batteries)
 - User may use NiMH rechargeable batteries or standard AA alkaline cells
 - Battery charger: Dual rate 12-hour charger
 - Receiver operates off of the 24 VAC power from the controller
 - TUV-GS, CE compliant
- Operating Specifications
 - Frequency: 869.5 MHz
 - Operating temperature range: -10° to 60° C
 - Up to 1.9 km (1.2 miles) line-of-sight range and 0.8 km (1/2 mile) in obstructed areas

Controller Compatibility

- Toro: TMC-212, TMC-424, Custom Command, TIS-360/480

Optional Accessories

- TMR-1-ACH: Auto Charger



TMR-1-E Specifying Information		
TMR - 1 - XXX - E		
Model	Description	Region
TMR-1—Toro Maintenance Remote	KIT—Complete Kit: Transmitter, Receiver, Circular Connector/Cable Assembly, Wall Charger, Batteries, Carrying Case TX—Hand-held Transmitter, Batteries, Charger RX—Receiver, Circular Connector Assembly CC—Circular Connector	E—European Icons and Approvals
Example: A complete TMR-1-E Maintenance Remote Kit would be specified as: TMR-1-KIT-E		



General Accessories

Flow Gauge Model 995-01

- A combination of pressure and flow gauge to check water availability.
- Used on residential hose bib or silcock.
- Maximum of 49 LPM (13 GPM) and 11 Bar (160 PSI).



Pressure Gauge Kit Model 995-51

- Checks operating pressure at either the sprinkler nozzle or on a pressure-regulating valve.
- Measures up to 14 Bar (200 PSI). Elements may be ordered separately.



Pitot Tube Model 995-50

- Included in Pressure Gauge Kit Model 995-51

Toro Flow Sensors

- Simple impeller-based design with potted electronics designed for valve box or underground applications
- Sensor pre-installed in tee

NEW

TFS-400

- 100mm (4"):
Schedule 80 PVC



TFS-300

- 76mm (3"):
Schedule 80 PVC



TFS-200

- 50mm, (2"):
Schedule 80 PVC



TFS-150

- 40mm, (1 1/2"):
Schedule 80 PVC



TFS-100

- 25mm, (1"):
Schedule 40 PVC



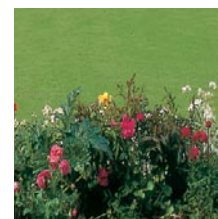
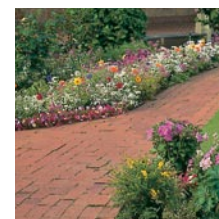
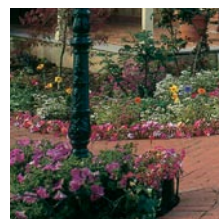
TFS-075

- 20mm, (3/4"):
Schedule 40 PVC

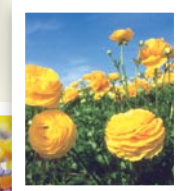
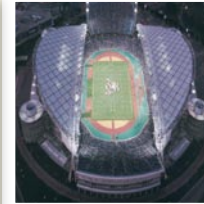


TFS-050

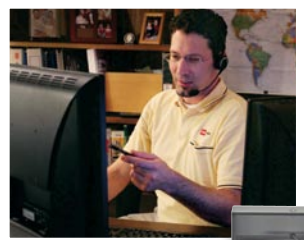
- 13mm, (1/2"):
Schedule 40 PVC



Site Management



TriComm



Sentinel



Site Management Solutions

Toro's dynamic new offerings in the site management category provide a full range of innovative and flexible features. Sentinel addresses the sophisticated needs of large, multi-dimensional sites. TriComm offers the power of remote control, but with the flexibility that smaller, separated sites demand.



		TriComm™	Sentinel
Features	Maximum Number of Satellites	Unlimited	999 Total
	Number Of Programs	4 per Satellite	16 per Satellite
	Ability To Make Program Changes In Field	X	X
	Programming By Time	X	X
	ET-Based Runtime Adjustment	X	X
	Programmable Valve Sequence		X
	Flow Optimization		X
	Alarms & Reports	X	X
	Station Operation Recording	X	X
	Water Use Recording	X	X
	Historical Water Use Comparison		Daily, Weekly, Yearly
	Interactive Map		X
	Windows® Compatible	X	X
	Toro NSN® Support Included		Two years
Controller Compatibility	TMC-424E	X	
	TDC	X (Future Compatibility)	X
	Sentinel Satellite		X
	RainSensor	X	X
	FlowSensor	X	X
Communications Options	Narrowband Radio		X
	Ethernet/Internet	X	X
	Cellular Telephone	X	X
	Landline Telephone		X
	Spread Spectrum Radio (900 MHz)		X

TriComm™ System

The TriComm System's feature set is unlike any site management solution available for smaller municipal and commercial applications. Specifically designed with flexibility and ease of use in mind.

Key Features

- Remote programming and monitoring of TMC-424E™ Modular controllers from a web-enabled PC, mobile phone, or mobile handheld device
- Automatic learned flow monitoring
- Customized alarm notification through independent online programming of TMC-424E controllers which contact different mobile device numbers for different alarms
- Updates to the TriComm web-based interface occur automatically, without disturbing controller programming or user access
- Multi-language compatibility in English, French, Spanish, German, Italian, and Portuguese
- Remote off-site programming saves travel time and site visits, resulting in: Increased employee productivity

TriComm System with TDC

- TriComm with Toro Two-Wire Decoder planned for 2009



TriComm System with TMC-424E

- Intuitive programming replicates the TMC-424E Modular Controller on internet-connected PC
- Remote ready, RainSensor™ and Flow Sensor compatible
- Program stacking with the ability to operate up to 3 programs simultaneously
- Station and total run times in seconds or minutes
- Water budgeting from 0-200% in 10% increments
- Pump start/master valve set by program and station
- Existing TMC-424E™ Modular Controllers can be upgraded to be compatible with TriComm
- Compatible with indoor and outdoor models of the TMC-424 and TMC-424E

Additional Features

- Minimal training required to learn and operate system
- Seamless access to the most up-to-date TriComm application every time user logs on to TriComm website
- Lower on-going usage/system costs
- GPRS cellular data communication results in lower transmission costs
- No software updates or annual software renewal fees

- Real time alarm notification allows municipalities and commercial sites to quickly respond and reduce potential water waste
- Off-site control capability facilitates active remote monitoring and management

WST65 Wireless Smart Terminal

- Built-in GPRS connectivity.
- OTAP (Over-The-Air-Programming) enabled for remote programming
- GSM (850/900/1800/1900 MHz) Quad-band
- Supports standard GSM SIM cards
- Input Power: 100-240 VAC, 50/60 Hz
- Operating temperature -30°C to 65°C ambient
- Operating humidity: 0 to 80% (non-condensing)
- Dimensions: 90 x 63 x 20 mm
- Shipping weight: 150 grams
- Fully compliant with EU RoHS and WEEE



Specifying Information - TriComm™

TCOMM - [XXXXXX] [N]		
Model	Description	Optional Support
TCOMM-ACTKIT	One-time Account Activation, WST65 Wireless Smart Terminal Kit with 1 Cellular Modem, 1 100/240VAC - 12VDC Plug, TriComm Online Account Access for use with the TMC-424E Toro Modular Controller.	N** - 1 Year NSN Support
TCOMM-MODEM	1 TriComm-ready WST65 Cellular Modem, 1 Antenna, 1 Communication Adaptor, 1 Communication Cable, 1 100/240VAC - 12VDC Power Plug, and 12 mos. FREE TriComm Connectivity.	

Note: Products may not be available in all regions. Please consult your Toro regional sales manager for availability.

* Airtime and SIM card not included.

** Available only in select markets.



Sentinel™ Global Irrigation System

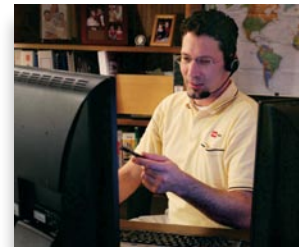
Engineered to be the highest quality and reliability, yet simple to use, the Sentinel Global Irrigation System is ideal for large cities, business parks and school districts as it allows a user to control up to 999 field satellites from a remote location with a computer.

Key Features

- Simplicity: 90% of all operations executed in on screen
- True two-way programming: Changes in the field can be easily uploaded into the central computer
- Reliability: Data storage in both computer and satellites to allow satellites to continue irrigating in the event of a power outage
- System-wide adjustments of controllers: Rain days, percent adjust, and ET-Adjustment from shared weather source
- Extensive Reporting Features: Run Time, Water Usage, Alarms, System Change Logs
- Alarm Reporting of communication issues from the central to the satellites
- Flow Optimization maintains maximum flow of the system
- Valve sequence can be redefined without making physical change in satellite
- System can be divided into groups representing similar field attributes
- Online help screens

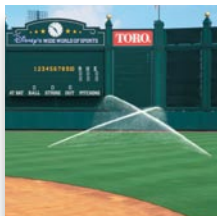
NSN® Support

Whether you need training, programming support or just have a question, you can count on Toro NSN® for worldwide, 24 hour, 365-day support.



Key Features:

- Unlimited 24-hour toll-free support with 24/7/365 emergency paging.
- Microsoft® Certified Partner
- Technical assistance by e-mail with next business day response.
- Remote PC assistance where connectivity is available.
- Extension options provide continued reliable, cost-effective support
- Support of Microsoft® software when purchased from NSN.
- Remote data storage for duration of subscription period
- NSN lab for field issue duplication and diagnostics
- Technical bulletins
- NSN Support Package extensions: 1 or 2 year extensions
- Support is virtual (telephone, email, or live computer monitoring support)
- Support available in Spanish, French, Portuguese, Italian, German, and English



Sentinel™ Central Control Specifying Information

SGIS - X - X

Model	Description
SGIS-0-1	Sentinel Central Control software, Peripheral Communications Hardware and Two Years of NSN Virtual Support
SGIS-1-0	Sentinel Central Control software, Central Computer Package, Peripheral Communications Hardware and Two Years of NSN Virtual Support
For Example: When ordering a Sentinel™ Global Irrigation System with Software and Computer Equipment and Two Years of NSN Virtual Support, you would specify: SGIS -1-0	

Note: Products may not be available in all regions. Please consult your Toro regional manager for availability.

Sentinel™ Satellites

These commercial grade modular controllers are manufactured to operate over a number of different communication protocols and store all data locally so central PC is not required for irrigation or for reaction to alarms.



Powder-coated, wall-mount enclosure



Key Features

- Real time data displayed in Satellite's LCD
- Reads, displays, and reacts to under and over flow situations
- Modular from 12 to 48 stations in 12-station increments
- Stations can be manually operated simply by using toggle switches
- Ability to connect to a laptop to download large station count programs
- Tracks water usage
- Upgrade to a central computer system without additional field satellite hardware costs
- Program single or multiple stations to operate sequentially
- 6-week scheduling calendar



Double-sided, plastic, top-entry pedestal-mount enclosure with dual backplates and junction box



16-gauge stainless steel, top-entry, pedestal-mount enclosure with backplate and junction box

Additional Features

- Up to eight start times per program
- 16 programs available in stand-alone mode
- Station run times from 1 minute to 4 hours and 15 minutes
- Global adjustment from 0-255%
- Percent adjustment from 0-255%
- Operate 1 to 6 programs simultaneously
- Read open or closed contact switches in any station count configuration
- ET-based run times with use of low-cost weather station
- Non-volatile memory retains all programming and real-time data in the event of a power failure for 10 years
- Current monitoring disables station if excessive draw occurs

Specifications

- Description: Front-Entry Metal Wall-Mount Cabinet
- Dimensions: 28cm W x 40cm H x 15cm D (10 3/4" W x 15 3/4" H x 5 1/4" D)
- Weight (with 48 stations): 21,1 Kg (47 lbs.)
- Input power: 110-120 V ac, 50/60 Hz
 - 230-240 V ac, 50/60 Hz
 - 14 mA (no load)
 - 400 mA (maximum load)
- Output power: 24 V ac, 50/60Hz
 - .25 amps (12 VA) per station
 - 2.0 amps maximum
- Station Draw: 6 stations and pump maximum (also limited by software)
- Operating temperatures: -10° to 60° C (14° to 140°F)
- Three levels of surge protection available



Flow Sensor Compatible



RainSensor Compatible

Sentinel™ Satellites Specifying Information

SSAK - XX - XXX - 6 - X - S - X - 50H

Description	Station Count	Cabinet Type	Output	Communication	Sensor Cable	Surge Options	Input
SSAK - Sentinel™ Satellite Assembly with Keypad	12 - 12 Station Count 24 - 24 Station Count 36 - 36 Station Count 48 - 48 Station Count	WS3—Powder-coated Wall Mount (Small) PS1—Stainless Steel Pedestal Mount (Large) PP1—Plastic Pedestal Mount (Large)	6—Electric 24 V ac	N—Narrow-band L—Less Communication Module	S—Sensor	1—Standard Surge Large-capacity Terminal Block w/LEDs 3—Surge on Small Wall Mount 4—Large-capacity Terminal Block w/LEDs Switches Chokes and add'l Surge	50H—Electric 50Hz
For example: A 24-station Sentinel Satellite in a metal wall-mount cabinet with electric output, narrow-band communication and surge, you would specify: SSAK-24-WS3-6-N-S-3							

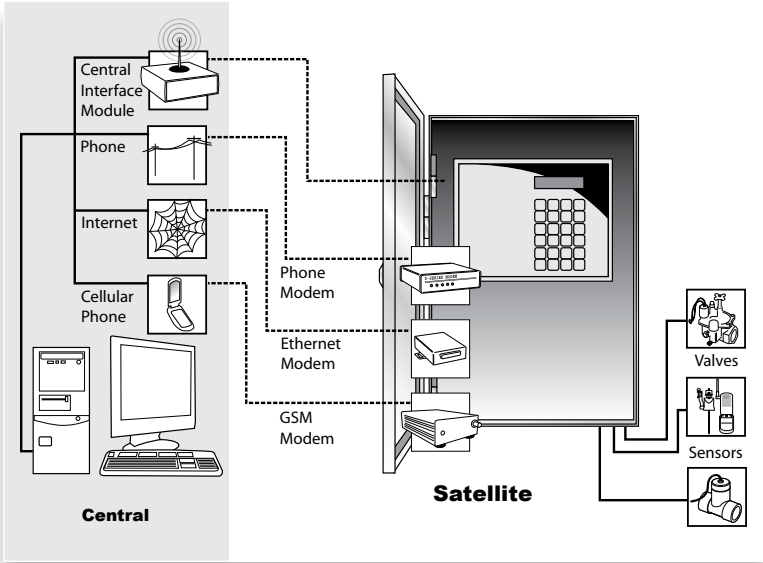
Sentinel™ Communication Options

Sentinel provides a variety of Central Computer to Satellite communication options--allowing you to choose the one that best meets your site-specific need or to mix-and-match across multiple sites.

Key Features

- Radio communication from the Central Computer to Sentinel Satellites allows little or no disruption of existing landscapes and is ideal for single-site installations
- Ethernet/Internet: The simple combination of an IP address and an Ethernet adapter will allow for network access and control of Sentinel Satellites
- Standard telephone communications can meet your needs when reliable communication to multiple geographically-remote satellites is needed
- Cellular networks provide a wireless communication option when remote-access is preferable but a phone line is not available at the Sentinel location

- Options:
 - 900 MHz spread spectrum
 - Narrowband technology
 - Standard telephone
 - Cellular GSM modem
 - Ethernet/Internet
 - Mixed Communication Methods: For example, use a cellular modem to reach a distant site, but narrowband radio to communicate to the Satellites on-site can provide an effective solution
- Satellites come standard with either a narrow band radio or the inputs needed to install a compatible communication device
- An internationally certified Sentinel compatible GSM modem is available from Toro, pre-installed in a satellite when ordered, using the specifying information shown below



Sentinel™ Satellite Communication Specifying Information

SSAK - COM - GSM1		
Description	Communication	Communication Module
SSAK — Sentinel™ Satellite	COM — Communication Module	GSM1 — Modem International
For Example: When ordering an Sentinel™ Satellite Communication International GSM Modem, you would specify: SSAK-COM-GSM1		

Note: Products may not be available in all regions. Please consult your Toro regional manager for availability.

Sentinel™ with TDC

Engineered to the highest quality and reliability, yet simple to use, the Sentinel Two-Wire Control System is ideal for controlling single or multiple irrigation sites with diverse landscapes and varied watering requirements.

Key Features:

- Control up to 999 field satellites
- Group controllers into “systems” for system-wide adjustments:
 - Rain Days
 - Percent Adjust
 - ET-Adjustment from shared weather source
- Field changes to controller programs can be uploaded to computer
- Support for the System Administration
 - Set system, program and satellite descriptions
 - Map valve positions on site maps
 - Group related Satellites into Systems sharing common functions

- Alarm reporting of any system component failure, including communications, electrical problems or power failure
- Extensive reporting features:
 - Run time reports
 - Water usage
 - Alarms
 - Logging of system changes
- Water use, rain and ET reporting
- Ability to redefine valve sequence without physically changing wire terminations in field satellite
- Information overview by group and satellite
- System status indications for individual field satellite
- Map-based feedback on system status



Double-sided, plastic, top-entry pedestal-mount enclosure with dual backplates and junction box



16-gauge stainless steel, top-entry, pedestal-mount enclosure with backplate and junction box

Sentinel™ Two-Wire Controllers Specifying Information			
ESBTW - XXX - XXX - XXX			
Configuration	Communication Method	Cabinet Type	Antenna Selection
ESBTW — EICON Special Build Two-Wire (96 Stations)	DSC—Direct Serial Connection-not available as Central/Satellite Connection U2—UHF Two-Way Radio EN—Ethernet WEN—Wireless Ethernet PM—Phone Modem SS—Spread Spectrum FIB—Fiber Optic	PS1— Stainless Steel Pedestal Mount (Large) PP1— Plastic Pedestal Mount (Large)	VRA—Antenna for PS1, PP1
For example: For a 96 station EICON Special Build Two-Wire with a Direct Serial Connection in a Small Wall Mount, you would specify: ESBTW-DSC-WS3-ATX			

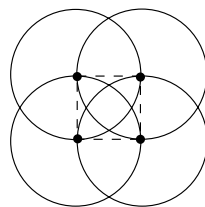


Technical Data *Formulas*

Sprinkler Spacing

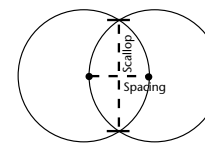
The Toro Company does not recommend designing for 0 kph (mph) wind conditions. Design in consideration of the worst wind conditions.

Recommended Sprinkler Spacing in Wind			
Wind	Square Spacing	Triangular Spacing	Single Row
No Wind	55%	60%	50%
7 kph (4 mph)	50%	55%	50%
13 kph (8 mph)	45%	50%	45%
Toro does not recommend designing for 0 KPH wind conditions. Design in consideration of the worst wind conditions.			



Square Spacing

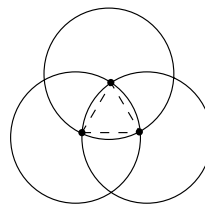
- No wind – 55% of diameter
- 7 kph (4 mph) wind – 50% of diameter
- 13 kph (8 mph) wind – 45% of diameter



Single-Row Spacing

- No wind – 50% of diameter
- 7 kph (4 mph) wind – 50% of diameter
- 13 kph (8 mph) wind – 45% of diameter

Slope Table		
Slope	Slope % (Rise/Run)	Angle
Flat	0%	0.0
Gentle	9%	5.0
Moderate	14%	8.0
Steep	21%	12.0



Triangular Spacing

- No wind – 60% of diameter
- 7 kph (4 mph) wind – 55% of diameter
- 13 kph (8 mph) wind – 50% of diameter

Formulas

Precipitation Rates	(English)	(Metric)
Equilateral Triangular Spacing	$P.R. = \frac{(GPM \text{ of } 360) \times 96.25}{(in/hr) \text{ (Head Spacing)}^2 \times .866}$	$P.R. = \frac{m^3/hr \text{ of } 360 \times 1000}{(mm/hr) \text{ } m^2 \times .866}$
Square/Rectangular Spacing	$P.R. = \frac{(GPM \text{ of } 360) \times 96.25}{(in/hr) \text{ Head Spacing} \times Row \text{ Spacing}}$	$P.R. = \frac{m^3/hr \text{ of } 360 \times 1000}{(mm/hr) \text{ Head Spacing} \times Row \text{ Spacing}}$
Area and Flow	$P.R. = \frac{(Total \text{ GPM of Zone}) \times 96.3}{(in/hr) \text{ Total Irrigated Square Feet of Zone}}$	$P.R. = \frac{LPM \times 96.3}{(mm/hr) \text{ Total Irrigated } m^2 \text{ of Zone}}$
Scheduling Coefficient	$S.C. = \frac{Average \text{ Precipitation Rate (in/hr)}}{Lowest \text{ Precipitation Rate (in/hr)}}$	$S.C. = \frac{Average \text{ Precipitation Rate (mm/hr)}}{Lowest \text{ Precipitation Rate (mm/hr)}}$
Station Run Time	$S.R.T. = \frac{Total \text{ Weekly Req'd (inch/wk)} \times 60 \text{ (min/hr)}}{(min/wk) \text{ Precipitation Rate (in/hr)}}$	$S.R.T. = \frac{Total \text{ Weekly Req'd (mm/wk)} \times 60 \text{ (min/hr)}}{(min/wk) \text{ Precipitation Rate (mm/hr)}}$
Pipe Velocity	$V = \frac{0.4085 \times Flow \text{ (GPM)}}{(ft/sec) \text{ (Inside Pipe Diameter in Inches)}^2}$	$V = \frac{1273 \times Flow \text{ (liters/sec)}}{(m/sec) \text{ (Inside Pipe Diameter in Millimeters)}^2}$
Horsepower	$H.P. = \frac{GPM \times Ft. \text{ of Head}}{3960 \times Pump \text{ Efficiency}}$ (expressed by decimal)	$H.P. = \frac{LPM \times Meters \text{ of Head}}{3433 \times Pump \text{ Efficiency}}$ (expressed by decimal)
Slope	$S = \frac{Rise \text{ (Feet)}}{Run \text{ (Feet)}}$	$S = \frac{Rise \text{ (Meters)}}{Run \text{ (Meters)}}$



Technical Data Precipitation Rate

Precipitation Rate Calculation in Millimeters/Hour

The precipitation rate depends upon the operating pressure at the sprinkler, the sprinkler spacing and the spacing pattern. For example, to calculate the precipitation rate in mm/hour of a full circle S700 sprinkler with a 6.0 nozzle, operating pressure of 3,5 Bar, spaced at 15 meters in a square pattern, the precipitation rate calculation would be:

$$\frac{23,9 \text{ LPM} \times 60 \text{ min.}}{15\text{m} \times 15\text{m}} = 6,37\text{mm/hr}$$

Maximum Precipitation Rates (Metric)								
Maximum Precipitation Rates: Millimeters Per Hour								
Soil Texture	0 to 5% slope		5 to 8% slope		8 to 12% slope		12% + slope	
	Cover	Bare	Cover	Bare	Cover	Bare	Cover	Bare
Coarse sandy soils	50,8	50,8	50,8	38,1	38,1	25,4	25,4	12,7
Coarse sandy soils over compact subsoils	44,5	38,1	31,8	25,4	25,4	19,1	19,1	10,2
Light sandy loams uniform	44,5	25,4	31,8	20,3	25,4	15,2	19,1	10,2
Light sandy loams over compact subsoils	31,8	19,8	25,4	12,7	19,1	10,2	12,7	7,6
Uniform silt loams	25,4	12,7	20,3	10,2	15,2	7,6	10,2	5,1
Silt loams over compact subsoil	15,2	7,6	12,7	6,4	10,2	3,8	7,6	2,5
Heavy clay or clay loam	5,1	3,8	3,8	2,5	3,0	2,0	2,5	1,5

The maximum PR values listed above are as suggested by the United States Department of Agriculture.
The values are average and may vary with respect to actual soil condition and condition of ground cover.

Precipitation Rate Calculation in Inches/Hour

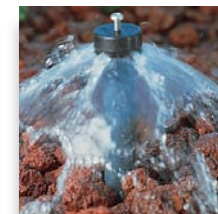
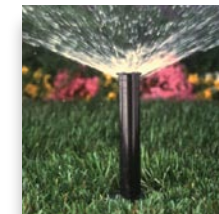
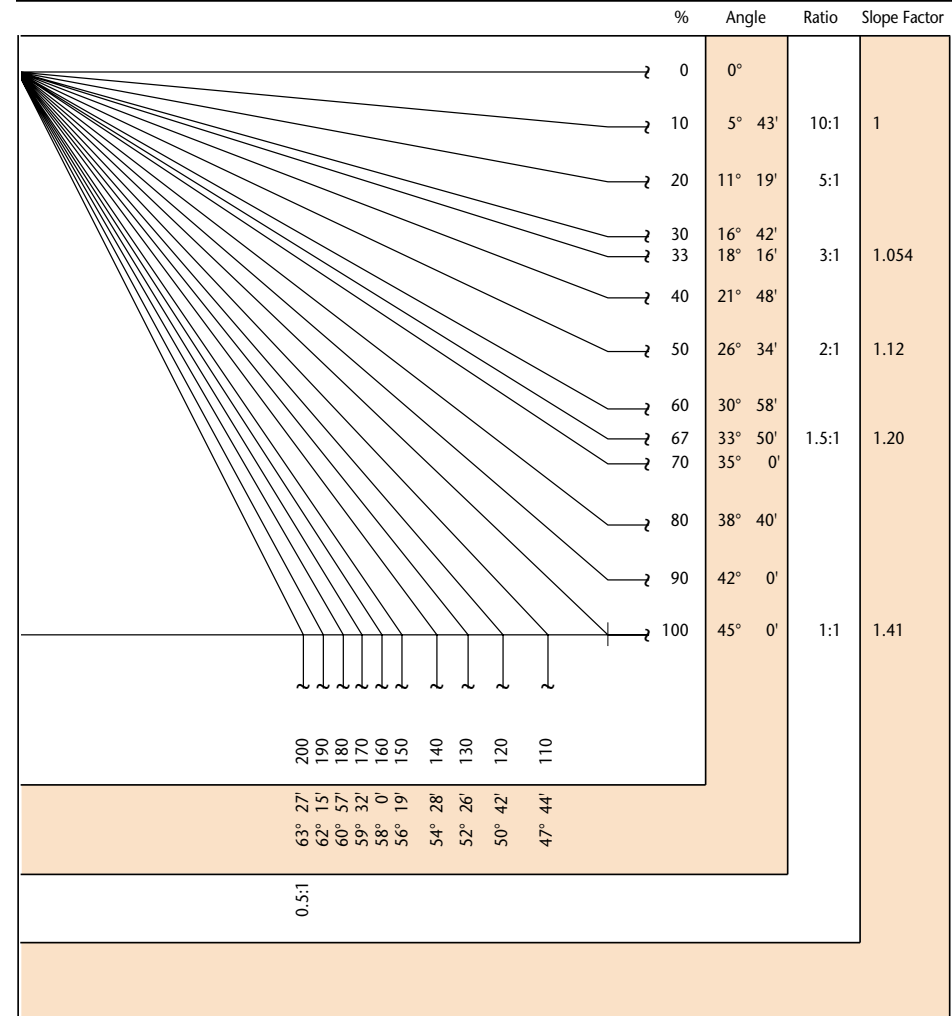
To find the precipitation in inches per hour using a S700 full circle sprinkler with a 6.0 nozzle, operating pressure of 50 PSI, spaced at 49 feet in a square pattern, the precipitation rate calculation would be:

$$\frac{6.28 \text{ GPM} \times 96.3}{49' \times 49'} = 0.25''/\text{hr}$$

Maximum Precipitation Rates (English)								
Maximum Precipitation Rates: Inches Per Hour								
Soil Texture	0 to 5% slope		5 to 8% slope		8 to 12% slope		12% + slope	
	Cover	Bare	Cover	Bare	Cover	Bare	Cover	Bare
Coarse sandy soils	2.00	2.00	2.00	1.50	1.50	1.00	1.00	0.50
Coarse sandy soils over compact subsoils	1.75	1.50	1.25	1.00	1.00	0.75	0.75	0.40
Light sandy loams uniform	1.75	1.00	1.25	0.80	1.00	0.60	0.75	0.40
Light sandy loams over compact subsoils	1.25	0.75	1.00	0.50	0.75	0.40	0.50	0.30
Uniform silt loams	1.00	0.50	0.80	0.40	0.60	0.30	0.40	0.20
Silt loams over compact subsoil	0.60	0.30	0.50	0.25	0.40	0.15	0.30	0.10
Heavy clay or clay loam	0.20	0.15	0.15	0.10	0.12	0.08	0.10	0.06

The maximum PR values listed above are as suggested by the United States Department of Agriculture.
The values are average and may vary with respect to actual soil condition and condition of ground cover.

Slope, Angle and Ratio Precipitation Rates



Technical Data Wire Sizing

Method of Wire Sizing for Electrical Components of an Automatic Irrigation System

Data Needed

- Maximum current draw of the electrical unit (valve or controller) in amperes (I)
- Distance in feet (one way) to the electrical unit (F)
- The allowable voltage drop in the wire without affecting functions of the electrical unit (Vd)

Steps

1. Calculate the maximum allowable wire resistance per 1000 feet with the following formula:

$$R = \frac{500 \times Vd}{F \times I}$$

where R = allowable wire resistance per 1000 feet.

2. Select the wire size from Chart #2 which has a resistance less than that calculated in the above formula.

Example: A valve with a minimum operating voltage of 20 volts and inrush current of .30 amps is to be located 2680 ft. from a controller. The controller minimum output voltage is 24 V ac.

The allowable voltage drop

(Vd) = 24 – 20 = 4 volts

The distance to valve (F) = 2680 ft.

The current draw (I) = .3 amps

$$R = \frac{500 \times 4}{2680 \times .3} = 2.49 \text{ ohm/1000 ft.}$$

From Chart #2 we find that #14 AWG wire has slightly too much resistance. Therefore, choose #12 AWG copper wire.

Minimum Operating Voltages at Various Static Pressures (standard 24 V ac solenoid)

Chart 1

Minimum Solenoid Operating Voltage Under Various Line Pressure		
Line Pressure	Voltage (Internal Bleed Configurations)	Voltage (External Bleed Configurations)
200 psi (13,8 Bar)	21.1	
175 psi (12,1 Bar)	20.2	
150 psi (10,3 Bar)	19.1	20.0
125 psi (8,6 Bar)	18.2	19.1
100 psi (6,9 Bar)	17.1	18.2
75 psi (5,2 Bar)	16.1	17.3
50 psi (3,4 Bar)	16.0	16.4

Chart 2

Copper Wire Resistance of Various Sizes	
Sizes AWG	Resistance at 20°C Ohms per 1000 ft.
4	.25
6	.40
8	.64
10	1.02
12	1.62
14	2.57
16	4.10
18	6.51

The accompanying charts are useful for quick and easy selection of wire sizes for valves with standard and optional solenoids. Chart #3 is set up to provide maximum wire runs given a standard 24 V ac valve with a minimum operating voltage of 20 volts and a controller output of 24 V ac Chart #4 is a multiplier factor for determining maximum wire runs for other controller output voltages and optional solenoids.

Example: Determine maximum wire run to a valve with model 24 V ac-D solenoid and controller output voltage of 26 volts and #14 control and ground wire.

From Chart #3 we find a length of 2590 ft. with #14 ground and control wire. From Chart #4 the multiplier factor at 26 V ac controller output with a model 24 V ac-D solenoid is 4.33. Therefore, the maximum wire distance to the valve is: 4.33 x 2590 feet = 11,215 feet.

* This assumes control wire and ground wire are the same size.

Chart 3

Maximum One-way Distance (ft.) Between Controller and Valve (standard 24 VAC solenoid) †							
Valve Wire Sizing							
Ground Wire	Control Wire						
	18	16	14	12	10	8	6
18	1020	1260	1470	1640	1770	1860	1930
16	1260	1630	2000	2330	2610	2810	2960
14	1470	2000	2590	3180	3710	4150	4480
12	1640	2330	3180	4120	5050	5900	6590
10	1770	2610	3710	5050	6540	8030	9380
8	1860	2810	4150	5900	8030	10400	12770
6	1930	2960	4480	6590	9380	12770	16540

† Solenoid Model: 24 V ac Pressure: 150 psi Voltage Drop: 4 V Min. Op. Voltage: 20 V Amperage (peak): 0.3A

Multiplier Factor for Various Controller Output Voltages and Optional Low-voltage Solenoids

Chart 4

Controller Output Voltage	24-Volt Solenoids		
	24 V ac	24 V ac-D	24 VDC
28	2.00	5.77	5.45
27	1.75	5.05	4.77
26	1.50	4.33	4.09
25	1.25	3.61	3.41
24	1.00	2.88	2.73
23	.75	2.16	2.05
22	.50	1.44	1.36

Chart 5

Controller Output Voltage	12-Volt Solenoids		
	12 V a.c.	12 V ac-D	12 VDC
16	.58	2.50	1.96
15	.50	2.08	1.63
14	.41	1.67	1.30
13	.33	1.25	.98
12	.25	.83	.65
11	.17	.42	.33

Technical Data *Conversion Factors*

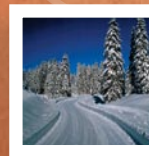
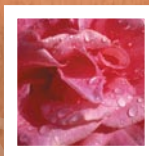
To Convert	From	To	Multiply By
Area	acres	feet ²	43560
	acres	meters ²	4046.8
	meters ²	feet ²	10.764
	feet ²	inches ²	144
	inches ²	centimeters ²	6.452
	hectares	meters ²	10,000
	hectares	acres	2.471
Power	kilowatts	horsepower	1.3410
Flow	feet ³ /minutes	meters ³ /second	0.0004719
	feet ³ /second	meters ³ /second	.02832
	yards ³ /minute	meters ³ /second	.01274
	gallons/minute	meters ³ /hour	.22716
	gallons/minute	liters/minute	3.7854
	gallons/minutes	liters/second	.06309
	meters ³ /hour	liters/minute	16.645
	meters ³ /hour	liters/second	.2774
	liters/minute	liters/second	60
Length	feet	inches	12
	inches	centimeters	2.540
	feet	meters	.30481
	kilometers	miles	.6214
	miles	feet	5280
	miles	meters	1609.34
	millimeters	inch	.03937
Pressure	psi	kilopascals	6.89476
	psi	bars	.068948
	bars	kilopascals	100
	psi	feet of head	2.31
Velocity	feet/second	meters/second	.3048
Volume	feet ³	gallons	7.481
	feet ³	liters	28.32
	meters ³	feet ³	35.31
	meters ³	yard ³	1.3087
	yards ³	feet ³	27
	yards ³	gallons	202
	acres/feet	feet ³	43,560
	gallons	meters ³	.003785
	gallons	liters	3.785
	imperial gallons	gallons	1.833



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