TORO. Count on it.

Golf Irrigation Specification Catalog 2011-2012

Table of Contents

Irrigation Services

Toro Technical Support

Our technical support team is highly skilled at what they do. From helping superintendents, program controllers, to troubleshooting complex system issues with consultants, the support team provides years of irrigation experience that you can count on. For exceptional technical support, call 1-877-345-TORO.

Toro Controller Repair

Did you know that with Toro's Board Exchange Program you can get the replacement controller boards you need immediately? Through your distributor, Controller Repair provides controller boards ready for immediate board exchange to assure that controller downtime is minimal and your golf course and reputation stays protected. For immediate assistance call: 1-877-345-TORO.

Toro Field Service

With some of the most knowledgeable and helpful field service staff in the industry, and our extensive training and support programs; Toro field service personnel are always there to assist—before, during, and well after a sale.

Toro Genuine Parts

From the smallest sprinkler part to complete control systems, Toro Service Parts support can deliver most replacement parts to our distributors within hours. In fact, Toro offers its customers the highest parts order completion rate in the industry: 98%!

Toro Financing

By offering a variety of customized, competitive financing plans, Toro gives you "one-stop shopping" eliminating the need for third-party funding. You can improve your course without draining your budget.

www.toro.com/golf

Log onto www.toro.com/golf for more information about our products and services.

NSN® (National Support Network)- We're Always Here For You

An Unparalleled Range Of Support Service Solutions
At Toro, our top priority is providing you with the best golf irrigation products and then backing them with superior service and support. To keep you and your course on track, our comprehensive service offerings range from installation and training to system optimization, and everything in between. We understand your reputation is on the line every day and we pledge to provide a levelof support that ensures your success, with every Toro product, every day.

NSN® Connect

Features

- Remote access so that you can control Irrigation anytime, anywhere
- Easy access from your Apple or Windows mobile device
- Ability to easily transfer files
- Ability to print remote documents from a remote location
- Remote access activity logs and other security features

Minimum Requirements for Remote Control Devices

- Desktop or Laptop
  - Windows 7 or XP
  - Internet Explorer 5.0 or higher
- Apple Mobile Device
  - iPhone, iPod Touch, or iPad
  - iOS 3.0 or higher
  - NSN Connect app from the iTunes App Store
- Windows Mobile Device
  - Windows Mobile 5.x, 6.0, or 6.1.x
  - Mobile Internet Explorer
  - Touch screen

NSN® Custom Database Management

Features

- Control system repair and refinement provides more precise watering.
- Site code setup for micro-managed irrigation.
- Nozzle database and hydraulic system repair and refinement provide greater operational flexibility and reduced system wear and tear.
- TZF file compression & cleaning and multiple database creation provide specialized programming to meet specific site requirements.

NSN® Connect Plus

Features

- Adds remote hardware and software monitoring to NSN Connect
- Automatic notifications via Email and Txt
- Proactive support and computer hardware replacement from NSN
- Ability to chat with NSN support staff

Specifications

- Platform – Toro® Lynx™ control system
- Operating System – Windows 7 (64-bit)
- User Configuration
  - Ability to have multiple email/txt recipients for alert notifications
  - Ability to set a schedule (days and times) of when to receive alert notifications
  - Ability to enable / disable specific monitors
  - Ability to have alerts sent to different recipients for different monitors
- Monitors
  - Toro Lynx Control System Software
- Errors / Issues
- Status
  - Computer Hardware
- Health
- Status
- High speed Internet access required at the Irrigation computer
- NSN Chat capability integrated into the NSN Button of the Toro Lynx control system

Lynx™ Central Control System

Features

- Area and Hole orientation allows you to control your irrigation system the same way you think about the course
- Runtimes are executed to the second rather than rounding to the whole minute, resulting in more precise irrigation and water savings
- Dynamic Drilldown enables area, hole or station views in Watering Plan and Course Report screens
- Course Report provides both real time and daily summaries of both scheduled and manual watering events. Take the guesswork out of knowing how your system performed
- Control your irrigation by setting runtime minutes or application inches and let the system calculate the other. See exactly how much water you will apply and how long you will irrigate each area.
- Turf Guard integration helps you determine when to irrigate and how much
- Create and edit your own interactive digital map.
- Fully supports CAD-generated maps
- Integrated run time display shows past and planned irrigation activity so you can easily determine what action to take.
- With Quick Setup, you create station, hardware and area associations, and control the definition of greens, tees, fairways and sprinklers based on their locations.
- A basic hydraulic tree is auto-generated for you during Quick Setup.
- Instant Program has simple check-box selection and Dynamic Drilldown so you can instantly create and personalize new irrigation programs.
- Projected Flow view shows you areas that will be watered and how much will be applied.
- Integration with an ITT Flowtronex® pump station enables the exclusive Lynx Power Guard feature to track and controlelectricity usage of the system.

Features (continued)

- Pump station monitoring helps ensure sprinkler performance and prevent wasted water or energy.
- Runtime synchronization with Network VP satellites prevents irrigation outages if the central goes offline.
- Current-sensing capabilities notify you of wire cuts and sprinklers unintentionally turned off.
- Constant communication with Network VP® satellites lets you take action if a power outage threatens irrigation.
- GDC communication and solenoid diagnostics help identify shorts, low voltage and other issues.
- Weather station integration and Hand-held Remote Interface support are included as standard features

Specifications

- Maximum satellites: 500
- Maximum satellite stations: 32,000
- Maximum GDC control units: 4000
- Maximum GDC stations: 6400
- Map Interface: Standard
- Hand-held Radio Interface: Standard*
- Weather Software: Standard*
- Pump Station Integration: Standard*
- Turf Guard Soil Sensor Integration: Standard*
- Flow / Pressure / Temperature / Status Sensor Monitoring: Standard*
- Communication modes: Wireless digital paging; 2-way wireline; 2-way wireless; Hybrid
- Operating System: Windows 7
- Platforms supported: Network VP, E-OSMAC, OSMAC-RDR, GDC

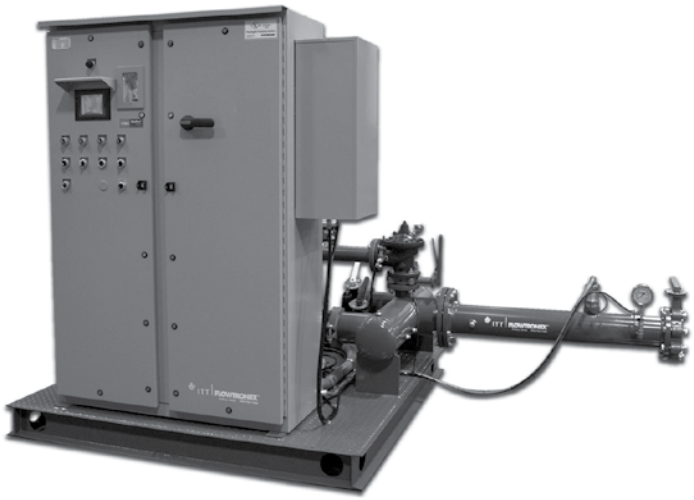
Warranty

- 1 or 5 Years Renewable NSN Support

Specifying Information—Lynx Central

LX-0X-X-0X		
Computer Hardware	*Service*	*Field Hardware*
0X	**X**	**0X**
1—Standard Computer 4—Premium Computer	1—1-year NSN 5—5-years NSN	01—For OSMAC 07—For Network VP 08—For Network GDC
Example: When ordering a LYNX Central standard computer with one year of NSN and Network VP field hardware, you would order: LX-01-1-07		

ITT Flowtronex® Pump Stations



Silent Storm Vertical and Horizontal Specifications

- Toro central control ready with dynamic interaction
- NEMA 4 enclosure provides optimum weather resistance for vital electrical components
- Color touch screen menu-driven and easy to use, web-empowered control touch screen displays key station operational data
- Smoothflow VII proven on thousands of pump stations, seventh generation control software is powerful & user-friendly
- Web-enabled monitoring and control software allows remote access from almost anywhere.
- cUL and UL listed for US and Canada
- Fused disconnect 65kA rating provides extra protection for equipment and personnel
- Protective coating direct-to-metal process with 3-year warranty ensures long-life station protective coating
- Continuous uninterrupted weld around deck plate minimizes station corrosion
- Wafer-style check valves
- Integral Wetwell cover with built-in hinged panels provide easy access & ensure safety around the skid
- Claval relief valve with inlet isolation valve provides proper hydraulic control in the event of drive failure
- 1" Pump plate prevents deflection & adds life to the pumps & the station
- Superior construction techniques ensure a long service life
- UL listed as a packaged pump system
- High discharge pressure safety
- S.L.A.P. (Surge & Lightning Advanced Protection)
- Solid state overload for phase imbalance, low voltage, and overload protection
- Low discharge pressure with manual override
- Suction & discharge "Z" Pipe
- Lake level controls
- Flowmeters available in mechanical or digital

NEW Silent Storm SSC Specifications

- Compact Modular Design
- Available in 4 to 6 weeks
- Flow Rates from 200-4300 gpm**
- Pressures from 50-150 psi**

*** Other flows and pressures available*

FloBoy Series Specifications

- Flow rates up to 450 gpm**
- Pressures from 50-150 psi**

*** Other flows and pressures available*

Nutrifeed Features

- Rigid chemical resistant base
- Neptune adjustable diaphragm metering pumps - 12.5, 30, and 85 GPH capacity
- Corrosion-resistant control enclosure, NEMA 4X rated
- High pressure braided PVC flexible hose for suction & discharge
- Polypropylene fittings, impervious to all known irrigation chemicals
- 316 SS wetted components are standard in 12.5 & 30 GPH pumps
- PTFE diaphragm
- Built-in externally adjustable pressure relief valve
- Up to 3 pumps any combination can be operated at once

FlowNet Service - ***the largest most experienced service network in the golf course pump station industry. Sixty-five field offices with over 200 Certified FlowNet technicians. 24/7/365 customer support available at 1-800-786-7480.***

Turf Guard®
Wireless Soil Monitoring System

Sensor

Pedestal Repeater

Base Station

Operational Features

- Sensing
  - Monitor moisture levels
  - Track salt build-up and schedule flushing.
  - Monitor daily soil temperatures
- Wireless Network - install sensors in greens, fairways, tees and other areas without having to trench or pull wires
- Base station connects to internet in the office
- Immediately ready for play after installation
- Even remote canyon courses have complete coverage due to advanced MESH routing technology
- Repeater mounts in most Toro irrigation satellite pedestals
- External repeater available for other models including non Toro pedestals
- Supports up to 500 sensors per course
- Expected sensor battery life of 3 years
- Sensor reading sent every 5 minutes
- Measures two distinct depths in the soil profile
  - Critical root zone level and a second 5" lower
- Automatic network configuration and failure recovery
- Graphical course overview displays sensor data at-a-glance
- Plots trends and compares historical and current readings
- Move quickly from course-wide averages to individual sensor readings

Electrical Specifications

- Input Power:
  - Repeater: <.02A @ 6 VDC
  - Base Station: <.1A @ 120 VAC, 50/60 Hz
- Sensor dimensions:
  - Body: 2 in. x 3 in. x 5 in. (5 X 7,6 x 12,7 cm)
  - Spikes: 2.5 in. x 3/16 in. (6,4 x ,48 cm)
  - Installation Hole Diameter: 4.25 in. (10,8 cm)
- Sensor temperature:
  - Operating: 0°C to 60°C (32°F to 140°F)
  - Storage: -30°C to 82°C (-22°F to 180°F)
- Sensing:
  - 0.1°F Temperature resolution
  - 0.1 % Volumetric soil moisture content resolution
  - 0.1 dS/m Soil conductivity resolution (Salinity)
- Communication:
  - Repeater Range: 5,000' (1524m) line-of-sight
  - Buried Sensor Range: 500' (152m) line-of-sight
  - 900 MHz ISM Band FHSS Communication
  - Additional licensing not required

Warranty

- 1 Year (NSN plans available)

OPTIONAL TURF GUARD RENTAL PROGRAM

- Administered by Toro NSN®
- Available in the following states:
  – AZ, CA, CO, FL, HI, IL, IN, IA, MA, MI, MN, MS, NE, NV, NJ, ND, OH, OR, PA, SD, TN, TX, WA, WI, WY
- Order through your local Toro distributor

Specifying Information—Turf Guard

Model	*Description*
TG-S2-R	Turf Guard Sensor
TG-R-INT	Repeater-Internal Mount
TG-R-EXT	Repeater-External Mount
TG-B	Base Station
TG-PS	Power Supply

SitePro® Central Control System

Features

- Remote access to your system anytime, anywhere with NSN® Connect.
- Integrate SitePro with your pump station.
- Run your system directly from T.Map® to view, edit and create irrigation programs. Compatible with GPS, CAD and aerial photography.
- Multiple communication modes:
  - Wireless digital paging
  - 2-way wireline
  - 2-way wireless
  - Hybrid (combination of wireline and wireless) for Network LTC® Plus and Network VP®
- Available Alarm/Response capabilities:
  - Reads sensors from the field
  - Logs status of sensors based on multiple "if/then" logic to generate alarms
- Automated adjustment factors allow scheduling refinement from 0-999% by station, satellite, program, group and global
- Selectable program upload information
- Microsoft® Windows XP Professional™ compatible
- User-definable names vs. system defaults
- Toro Repeat & Soak assigned by program or station:
  - Up to 3 repeats per program
  - Up to 24 starts per program
- Advanced multi-manual operations for overseeding, hot spots or fertilizer wash-in for all hardware platforms
- Extensive reporting capabilities

Features (continued)

- Multi-lingual display (English, Spanish, French, German, Italian, Japanese and Chinese)
- Pump station integration
  - Connect to multple pump stations
  - Maximize system efficiency and save energy

SitePro 3.0 Network VP Support

- Station base flow management
- Station current sensing
- Download times reduced by up to 80%
- Individual station cancel

Optional Features

- T.Weather® WeatherLogic® software module which allows:
  - Calculated ET-driven runtimes
  - User-defined alarm thresholds
  - Interactive, automatic response to the central
- NWHH hand-held radio software for on-course irrigation control
- PRISM graphical on-course irrigation control

Warranty

- 1 Year or 5 Year renewable warranty with NSN® support agreement

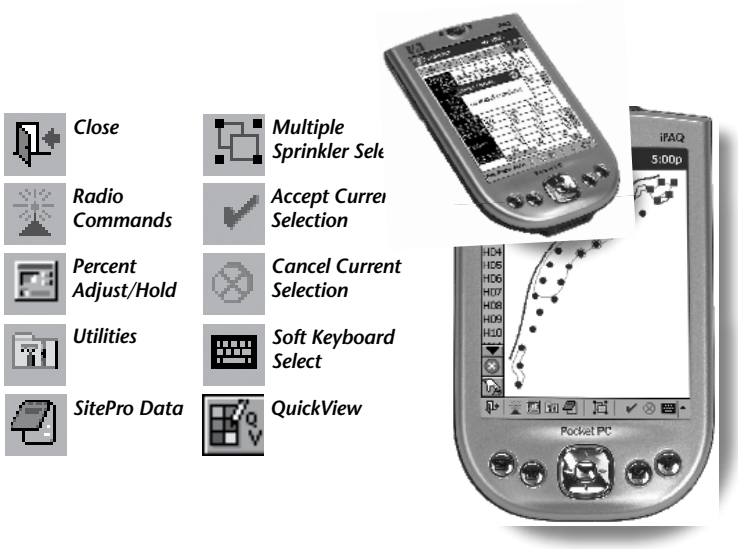
Specifying Information—SitePro

SP-0X-X-0X-NB				
Type	*Computer Hardware*	*Service*	*Field Hardware*	*Optional*
SP	**0X**	**X**	**0X**	**NB**
SP—SitePro	1—Standard Computer 4—Premium Computer	1—1-year NSN 5—5-years NSN	3—Network LTC Plus	NB—Narrow-band Digital Wireless Paging
Example: When specifying a SitePro Central standard computer with one year of NSN and Network LTC Plus field hardware, you would specify: **SP-01-1-03**				

Specifying Information—SitePro Synergy Series

Model Number	*Description*
SP-00-1-11-NB	SitePro Synergy Series for E-OSMAC and OSMAC RDR
SP-00-1-13	SitePro Synergy Series for Network LTC Plus
SP-00-1-18	SitePro Synergy Series for GDC

PRISM™ Mobile Control



Features

- Manually start stations, change station percent adjustments or put selected sprinklers on hold
- Review and adjust system settings
- PRISM desktop software allows you to download all changes to update your SitePro system
- View greens, tees, fairways, etc.
- Select holes and sprinklers
- With the QuickView™ feature, use PRISM before you have a map—it converts SitePro® data into a grid view with a station summary display
- Send radio commands (with repeat functions)
- Save and recall up to 20 user-defined commands
- Modify hold times by utilizing a pop-up calendar
- One-year NSN® toll-free telephone support
- Voice recorder, mobile address book and calendar capability
- Works exclusively with Toro SitePro®, Network CDS, Network LTC® Plus, Network DR2™, Network 8000®, Network VP® and GDC in conjunction with the Hand-Held remote system, and SitePro for E-OSMAC®

Specifying Information—PRISM Software

Order No.	*Description*
	Bundles with iPAQ PDA
676-17	PRISM Software, iPAQ Unit, 1 Year NSN Support (1st Unit)
676-18	PRISM Software, iPAQ Unit, 1 Year NSN Support (2nd Unit)
676-19	PRISM Software, iPAQ Unit, 1 Year NSN Support (Units 3–5)
	Software Only* (with NSN) for iPAQ 3800
676-26*	PRISM Software, 1 Year NSN Support (1st Unit)
676-27*	PRISM Software, 1 Year NSN Support (2nd Unit)
676-28*	PRISM Software, 1 Year NSN Support (Units 3–5)

*Only available to customers who have purchased an iPAQ through Toro NSN

T.Weather® with WeatherLogic®

Features

- Provides control of on-site or off-site weather stations:
  - Phone
  - Radio
  - Wireline
- User-defined polling interval
- Color-coded alerts indicate when environmental conditions are not within the normal range
- Interactive, automatic response to the SitePro central control system
- Weather station data (temperature, relative humidity, dew point, wind speed and direction) displays in real time or 24-hour periods:
  - 24-hour periods show high, low and average data
- Solar radiation displays daily total
- Data totals for ET, rain and the difference between them shown for the last hour, 24 hours, 7 days and 365 days
- Stores weather station data for up to one year
- System displays time in 12-hour (a.m./p.m.) or 24-hour format
- Defines specific conditions for alarms using multiple inputs
- Pause irrigation cycles according to the user-defined alarm thresholds
- Transmits the changes in alarm conditions to SitePro so it can resume irrigation again
- Weather tracking allows viewing of current data retrieved from the weather stations, or creating reports based on the past hour, day, week or year

Specifying Information— T.Weather w/WeatherLogic

Model No.	*Description*
997-04	T.Weather w/WeatherLogic Software

Hand-held Radio Interface

Features

- Optional for the following Lynx™ central control systems:
  - Network VP
  - OSMAC
  - GDC
- Optional for the following SitePro® Network central control systems:
  - Network VP® - Network 8000® - Network LTC® Plus
  - Network CDS - Network DR2 - GDC
- Access central and satellite features from the field.
- Clear audio verification of system commands.
- Simple command set
- Extensive start and syringe capabilities
- Comprehensive multi-manual functionality
- System and program pause and resume
- System On and Off command activation
- Built-in programmable radio
- UL listed

Specifying Information—Hand-held Radio Interface

NB-HHRI-0X		
Communication	*Hardware*	*Optional*
NB	**HHRI**	**0X**
NB—Narrow Band	HHRI—Hand-held Radio Interface	01—With Radio 02—Less Radio
Example: When specifying a Network Hand-held radio with narrow-band frequency and a 110 V ac transformer, you would specify: **NB-HHRI-01**		

Note: FCC license required.

Specifying Information—Network Hand-held Software

Model Number	*Description*
997-05	Network Hand-held Software

Note: FCC license required.

Network Radio-Link and FIU with Radio

Features

- Wireless communication to Network satellites
- Network Radio-Link kits for upgrades
- True 2-way communication
- Multi-port field interface allows one radio to be shared among many satellites
- Easy satellite installation
- Compatible with Network LTC Plus and Network VP

Specifying Information—Field Interface Unit (FIU)

Model No.	*Description*
FIU-2010	Field Interface Unit with 1 Wire Line
FIU-2011	Field Interface Unit with 1 Wire Line and 1 Radio Line, Radio Not Included
FIU-2011R	Field Interface Unit with 1 Wire Line and 1 Radio Line, Radio Included
FIU-2020	Field Interface Unit with 2 Wire Lines
FIU-2021	Field Interface Unit with 2 Wire Lines and 1 Radio Line, Radio Not Included
FIU-2021R	Field Interface Unit with 2 Wire Lines and 1 Radio Line, Radio Included

Note: FCC license required.

Network VP® Satellites

Pedestal available in standard Green, Desert Sand and Tree Bark

Upgrade Kit - Network LTC® Plus to Network VP

Upgrade kits include a new timing mechanism and power distribution board and a full installation can be completed in minutes per controller. Network LTC Plus Upgrade Kit consists of Network VP faceplate, power distribution board, and interface cable.

Features

- Station based flow management reduces nighttime water window and optimizes pump capacity.
- Variable Length (VL) communication reduces download time by up to 80%.
- Current sensing monitors each station output for proper amperage draw with user defined thresholds.
- Intuitive user interface with backlit display for better low-light viewing.
- Optional output switches and surge protection
- Multi-Manual, Program Start and Syringe manual operations
- Group Multi-Manual operation
- Sturdy plastic or painted stainless steel pedestals
- Operates as a stand-alone controller, or under the management of a central computer
  - Supports wireline or radio communications
  - Supports hybrid communication (wireline and radio) for increased flexibility and cost effectiveness.
- 64 irrigation programs: independent stand-alone and central operation
- Basic, Advanced and Grow-in programs
- Pause, Resume and Stop functions
- Supports run times from 1 second to 23 hours, 59 minutes, 59 seconds
- Percent adjust from 1% to 900% (Station, Program, Satellite)

Features (continued)

- Each output can be defined as an irrigation station or general application switch
- Non-volatile memory retains program information and satellite settings during power-off conditions. Battery back-up retains the satellite date and time
- 16-64 stations in 8-station increments – 64 programs – individual station control and the ability to run up to 32 stations simultaneously
- Backwards compatible with Network 8000 satellites.

Electrical Specifications

Input Power:

- 108 V ac to 132 V ac, 60 Hz
  - 0.20 amps (no load) 115 V ac
  - 1.20 amps (max load) 115 V ac
- 216 V ac to 264 V ac, 50 Hz
  - 0.10 amps (no load) 230 V ac
  - 0.60 amps (max load) 230 V ac

Output Power:

- 24 V ac
  - 3.0 amps (max total load)
- UL Listed

Additional Specifications

- Operating temperature: -10°C to 60°C (15°F to 140°F)
- Storage temperature: -30°C to 65°C (-22°F to 149°F)
- Humidity: 0% to 95% RH (non-condensing)

Dimensions

- Plastic Cabinet: 17" W x 40" H x 16" D (41cm W x 99cm H x 41cm D)
- Metal Cabinet: 13" W x 36" H x 13" D (33cm W x 91cm H x 33cm D)

Specifying Information—Network VP Satellites

201-XX-X-6-X-X					
Description	*Configuration*	*Cabinet*	*Output*	*Comm.*	*Options*
201	XX	X	**6**	X	X
201—Network VP Satellite	16—16 Stations 24—24 Stations 32—32 Stations 40—40 Stations 48—48 Stations 56—56 Stations 64—64 Stations	P—Plastic, Green S—Stainless Steel (Painted) T—Desert Sand B—Tree Bark	6—24 VAC Electric	A—Stand-alone M—2-Way Wire Modem R—UHF Radio	0—No Options 1—Large-capacity Terminal Block w/Standard Surge 2—Large-capacity Terminal Block w/Add'l Surge 3—Large-capacity Terminal Block & Switches 4—Large-capacity Terminal Block w/Add'l Surge & Switches
Example: When ordering a 24-station, Stand-alone VP Satellite in a plastic cabinet with large-capacity terminal block, additional surge and switches, you would specify: **201-24P6A4**					

Specifying Information—Network LTC Plus Upgrade Kit

118-0038
Kit Contains
Network VP Faceplate, Network LTC Plus To Network VP Power Distribution Board, Cable And Hardware

E-OSMAC® and OSMAC RDR Satellites

Pedestal available in standard Green, Desert Sand and Tree Bark

Features-E-OSMAC

- Up to 64 stations
- Synthesized decoder modules that can be reprogrammed in the field - new frequency models can store up to 4 pre-programmed frequencies to transition from construction to permanent frequencies (narrow band)
- Stainless steel (painted) and bi-wall plastic cabinet configurations
- Five terminal strip options available
- Colored LED indicators to confirm 24, 9-, and 5-volt power to various boards within the cabinet
- LED's for each station output
- Simple self-testing by sliding a switch - more than eight separate functions can be verified.
- Internal antenna allows for smaller profile cabinet
- Uses automotive fuses
- Patented Hot Post for each eight-station module
- Mounts to many existing pedestal bolt patterns.

Features-OSMAC RDR

- Expandable up to 48 stations in eight-station increments
- Hydraulic or electric models available
- Runs up to 16 stations simultaneously (from the central or by remote control)
- Hand-held radio
- Multi-function radio allows control and voice transmissions from the same unit
- Programmable syringe time from 30 seconds to 128 minutes in 30-second intervals.
- Optional relay card available
- Pre-wired satellite pedestal models available without RDR control unit for upgrading existing OSMAC systems

Electrical Specifications

- Input power: 120/240 V ac, 50/60 Hz
  - **E-OSMAC**
    - × 0.20 amps, 110-120 V ac, 60 Hz (no load)
    - × 0.96 amps, 110-120 V ac, 60 Hz (max load)
    - × 0.10 amps, 220-240 V ac, 50/60 Hz (no load)
    - × 0.47 amps, 220-240 V ac, 50/60 Hz (max load)
  - **OSMAC RDR**
    - × 0.17 amps @ 115 V ac, 60 Hz (no load)
    - × 0.76 amps @ 115 V ac, 60 Hz (max load)
    - × 0.09 amps @ 230 V ac, 50 Hz (no load)
    - × 0.41 amps @ 230 V ac, 50 Hz (max load)
- Station output power: 24 V ac; 3.0 amps (72 VA) total
- Enhanced surge protection for lower operating costs
- UL and CE approved

Dimensions

- Plastic Cabinet:
  17" W x 40" H x 16" D
- Metal Cabinet:
  13" W x 36" H x 13" D
- OSMAC RDR Large pedestal:
  16' W x 45 ½" H x 16" D

Optional Accessories

- Wide-band frequency modules (N1551XX) for E-OSMAC or OSMAC RDR
- Low-voltage Retrofit Kit – (RDR0160LVN0) for OSMAC RDR

Warranty

- 1 Year

Specifying Information—OSMAC RDR Satellite

RDR-XX-P-XX-X-XX

Description	*Configuration*	*Cabinet*	*Output*	*Communication*	*Surge Protection*
RDR	XX	**P**	XX	X	**0**
RDR— OSMAC RDR Satellite	16—16 Stations 24—24 Stations 32—32 Stations 40—40 Stations 48—48 Stations	P—Plastic	01—Normally Open Hydraulic 6A—24 VAC Electric	P—Wide Band N—Narrow Band	0—No Surge M4—Full Surge

When specifying a 32-station OSMAC RDR Hydraulic satellite in a plastic cabinet, normally open hydraulic output with narrow-band communication, you would specify: **RDR32P01N0**

Note: FCC license required.

Specifying Information—E-OSMAC Satellites

E-XX-X-6A-X-MX

Description	*Configuration*	*Cabinet*	*Output*	*Communication*	*Options*
E	XX	X	**6A**	X	**MX**
E—E-OSMAC Satellite	16—16 Stations 24—24 Stations 32—32 Stations 40—40 Stations 48—48 Stations 56—56 Stations 64—64 Stations	P—Plastic, Green S—Stainless Steel (Painted) T—Desert Sand B—Tree Bark	6A—Electric	N—Narrow Band P—Wide Band	0—No Options 1—Large-capacity Terminal Block w/Standard Surge 2—Large-capacity Terminal Block w/Additional Surge 3—Large-capacity Terminal Block & Switches 4—Large-capacity Terminal Block w/Additional Surge & Switches

Example: When specifying a 32-station, E-OSMAC Satellite with Wide Band digital wireless paging, a stainless steel cabinet, electric output, additional surge protection and a large-capacity terminal block, you would specify: **E-32S6APM2**

Note: FCC license required. Frequency modules do not need to be ordered separately.
Product shipped with four pre-programmed synthesized frequency modules (462.2125, 462.4375, 467.2125 and 467.4375).

Network LTC® Plus Satellites

Pedestal available in standard Green, Desert Sand and Tree Bark

Electrical Specifications

- Input power (Network LTC Plus):
  - 115/230 V ac, 50/60 Hz
  - 0.183 amps @ 115 V ac, 60 Hz (no load)
  - 0.872 amps @ 115 V ac, 60 Hz (max load)
  - 0.100 amps @ 230 V ac, 50 Hz (no load)
  - 0.50 amps @ 230 V ac, 50 Hz (max load)
- Input power (Network LTC with Electric-hydraulic Converters):
  - 115/230 V ac, 50/60 Hz
  - 0.15 amps @ 115 V ac, 60 Hz (no load)
  - 1.09 amps @ 115 V ac, 60 Hz (max load)
  - 0.15 amps @ 230 V ac, 50 Hz (no load)
  - 0.59 amps @ 230 V ac, 50 Hz (max load)
- Output power:
  - 24 V ac
  - 3.15 amps (76 VA) total

Dimensions

- Network LTC Plus Plastic Cabinet: 17" W x 40" H x 16" D
- Network LTC Plus Stainless Steel (painted): 13" W x 35 3/4" H x 13" D
- Network LTC with Electric-hydraulic Converters: 16" W x 39" H x 16" D

Warranty

- 1 Year

Features

- Exclusive Toro Flowsafe™ protects flow-managed programs in the event of a central or wireline interruption
- Transition from stand-alone to central control after construction is complete
- 16 independent programs with up to eight running simultaneously (The Network LTC with Electric-hydraulic converters has 8 independent programs with up to 4 running simultaneously)
- Wireless, wireline and hybrid configurations allow you to customize the communication network to meet site specific needs.
- 16-64 stations in eight-station increments on the Network LTC Plus. The Electric-hydraulic converter models offer 12 to 24 stations in four-station increments
- Standard or large-capacity terminal connections (accepts two 14-guage wires)
- Standard or additional surge protection
- Manual On/Off station switches (optional)
- 14-day calendar or 1- to 29- day Interval scheduling by program
- 0 to 3 repeats per program
- 0- to 59-minute soak time between repeats
- Up to 12 starts per program, per day
- Station run times from 1-minute to 8 hours and 59 minutes
- Global or independent program adjust at the satellite
- Percent adjust by program (10 to 250%)
- Syringe %, allows 10 to 99% operating adjustment.
- Up to 2 non-irrigation (switch) programs available with central software
- Non-volatile memory saves program data for up to 10 years without power
- Pump and Common control module with standard surge protection
- Manual operation by program (normal or syringe), independent station or multiple stations (up to 6)
- Patented Toro Hot Post for easy valve activation and identification
- Maximum lightning protection with EHC's

Specifying Information—Network LTC Plus Satellites

LTCP-XX-X-6-X-X					
Configuration	***Stations***	***Cabinet***	***Output***	***Communication***	***Options***
LTCP	**XX**	**X**	**6**	**X**	**X**
LTCP—Network LTC Plus	16—16 Sta. 24—24 Sta. 32—32 Sta. 40—40 Sta. 48—48 Sta. 56—56 Sta. 64—64 Sta.	P—Plastic, Green S—Stainless Steel (Painted) T—Desert Sand B—Tree Bark)	6—24 VAC Electric	A—Stand-alone M—2-Way Wire Modem R—UHF Radio	0—No Options 1—Large-capacity Terminal Block w/Standard Surge 2—Large-capacity Terminal Block w/Additional Surge 3—Large-capacity Terminal Block & Switches 4—Large-capacity Terminal Block w/Additional Surge & Switches
Example: When specifying a 64-station Network LTC Plus Satellite with a plastic cabinet, electric output with a 2-way wire modem and optional large-capacity terminal block, you would specify: **LTCP64P6M1**					

Note: FIUs must be ordered separately.

GDC 2-Wire Control System

Lynx™ for GDC

GDC 100/200

1, 2 and 4-station Decoders

In addition to our standard GDC decoders, Toro® offers most valve-in-head sprinkler models with an integrated decoder.

Features

- Connect to Lynx or SitePro® Synergy Control Systems or use it as a stand-alone system with the GDC
- Station-based flow management
- Lynx™ Central
  - Mapping capabilities
  - Remote hand-held operation
  - Weather station integration
  - Pump station integration
- Enhanced diagnostics
  - Communication
  - Electrical shorts/opens
  - Solenoid check
- No holding power required to operate stations
- Decoder identification is a unique 6-character address
- Non-corrosive lockable wall mount cabinet, indoor/outdoor installation

Specifications

- Maximum number of wire paths:
  - 16 per gateway
- Maximum stations per gateway:
  - 200 on stand-alone
  - 1600 on Lynx™ Central
- Maximum stations per system:
  - 200 on stand-alone
  - 6400 on Lynx Central
- Simultaneous stations per output:
  - 20 on stand-alone
  - 100 on Lynx Central
- Maximum distance from central to decoder (using 14 gauge wire): 2.6 miles
- Maximum distance from decoder to sprinkler (using 14 gauge wire): 400 ft.
- Solenoids per output: 2 DCLS-P
- Stations per decoder: 1, 2 or 4
- Operating temperature: 32°F to 140°F (0°C to 60°C)
- Storage temperature: -22°F to 212°F (-30°C to 100°C)

Electrical Specifications

- ISP decoders are rated at 20 KV surge protection—the highest in the industry.
- Input Power:
  - 100 V ac, 50/60 Hz
  - 120 V ac, 50/60 Hz
  - 220-240 V ac, 50/60 Hz
- Gateway output voltage: 38 V ac max
- Gateway output power: 98 VA max
- Decoder wiring: 14 gauge

Warranty

- 1 Year

Specifying Information—Decoder

DEC-ISP-X	
Type	*Configuration*
DEC	**XX**
DEC-ISP—Decoder*	1—1-station 2—2-station 4—4-station
Example: A 2-station GDC Decoder would be specified as: **DEC-ISP-2**	

*Refer to sprinkler pages for specifying information on Sprinkler Decoders

Specifying Information—Stand-alone Gateway

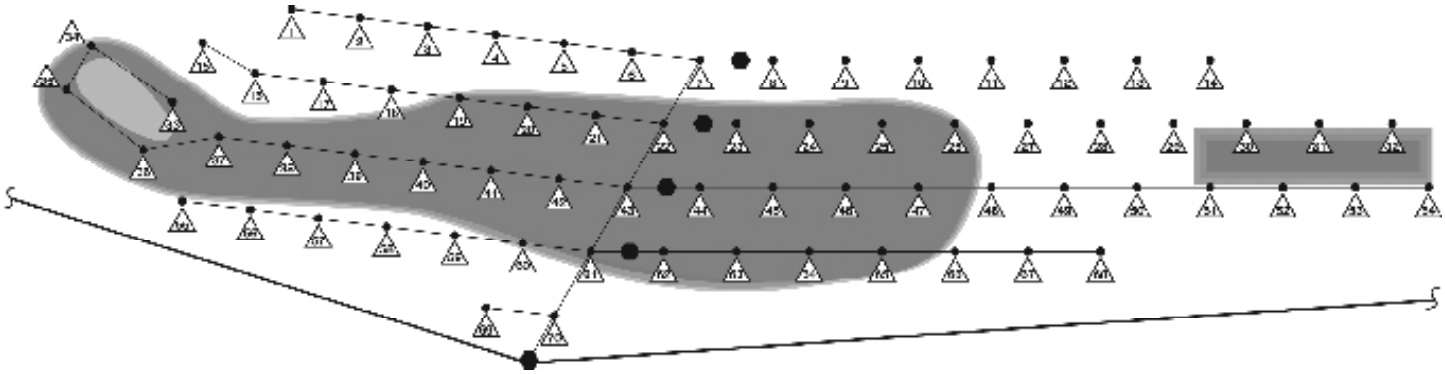
DEC-SA-200		
Type	*Communication*	*Sta. Count*
DEC	**SA**	**200**
DEC—Decoder	SA—Stand-alone	200—200 Stations

Specifying Information—GDC System

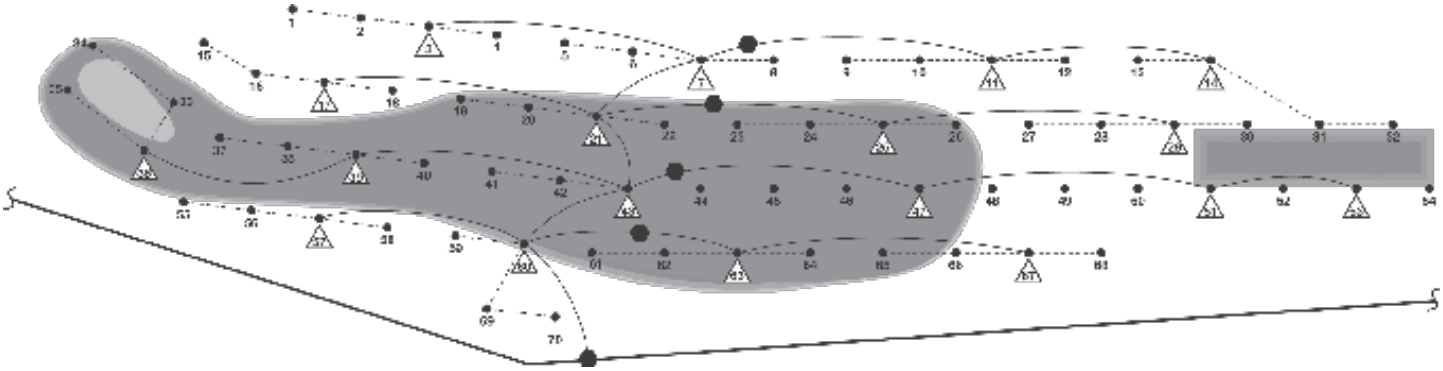
XX-0X-X-0X			
Type	*Computer Hardware*	*Service*	*Field Hardware*
XX	**0X**	**X**	**0X**
LX—Lynx SP—SitePro	0— SitePro Synergy 1—Standard Computer 4—Premium Computer	1—1-year NSN 5—5-years NSN	8—GDC System 18—GDC Synergy (SitePro only)
Example: A Lynx Central standard computer with 1-year of NSN and GDC System field hardware would be specified as: **LX-01-1-08**			

System configuration options: One size does not fit all. And one type of control system design is not the best for all applications. Whether it's lowering system costs, reducing field wire or splices, or providing easy access to system components, the GDC system offers a variety of configuration options to best fit your objectives.

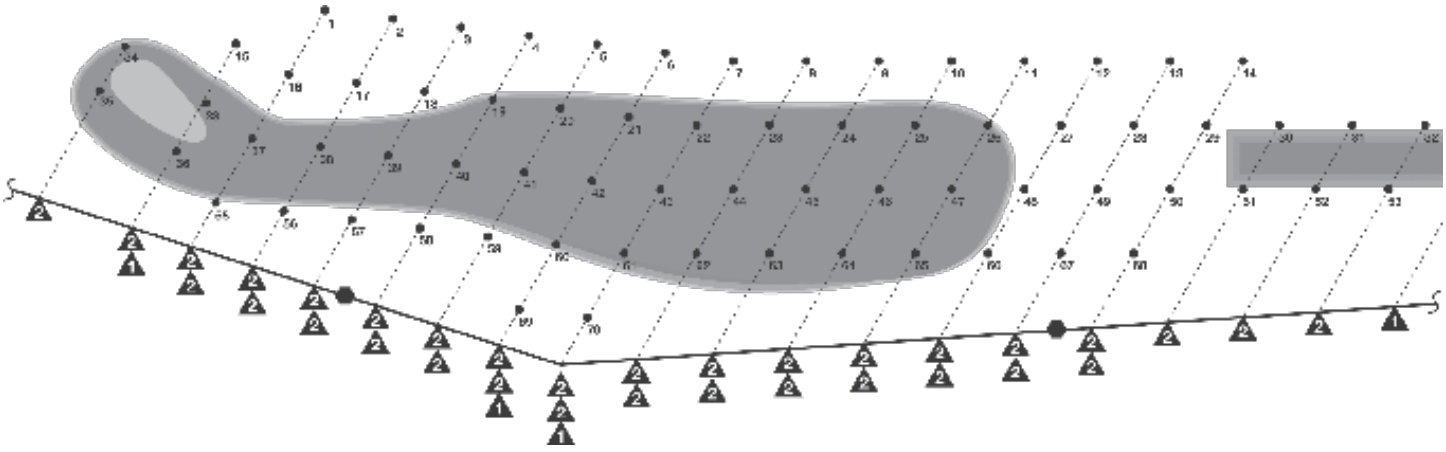
Looped Lateral – reduces overall field wire. Direct connect option with integrated sprinkler-decoder reduces system splices.



Looped Lateral with Multi-Station Decoder – reduces overall field wire and communication wire splices. Provides lower system cost.



Herringbone Lateral – minimizes the quantity of communication wire and critical splices. Allows decoders to be accessed without digging.



Sprinkler Comparison Charts

Model	835S/855S	834S/854S	DT35/DT55	DT34/DT54	B Series
Page Number	18-19	20-21	22-23	24-25	26-27
Radius	42′-100′	52′-99′	43′-92′	52′-99′	42′-95′
Short Radius (mainless)	42′-51′		34′-50′		
Radius Reduction Screw		X	Optional	Optional	
Back nozzle Capable	X		X	X	X
Inlet size	1″ and 1½″ NPT, BSP, Acme	1″ and 1½″ NPT, BSP, Acme	1″ and 1½″ NPT, BSP, Acme	1″ and 1½″ NPT, BSP, Acme	1″ NPT, BSP, Acme
Flow Range	7.1-61.1 GPM	13.-61.8 GPM	8.2-61.3 GPM	13.0-61.8 GPM	7.1-56.3 GPM
Recommended Operating Pressure	65/100 PSI	65/100 PSI	65/100 PSI	65100 PSI	50/100 PSI
Turf	X	X	X	X	X
High Wind	X	X	X	X	X
Decoder Systems	X	X	X	X	
Normally Open Hydraulic System	X	X	X	X	
Spike Guard™ Solenoid	X	X			
Full Circle	X	X	X	X	X
Part-circle Adjustable	X		X		X
Part-circle Fixed					
Part/Full Circle In One	40˚-330˚ and 360˚		40˚-330˚ and 360˚		40˚-330˚ and 360˚
Ratcheting Riser	X				
Check Valve	X	X	X	X	X
Effluent Water Option	X	X	X	X	X
Smart-Arc Memory					
Below Grade					
Trajectory Adjustment	7˚-30˚	25˚ & 15˚	25˚ & 15˚	25˚ & 15˚	7˚-30˚ / 25˚ & 15˚
Warranty	3 Years/5 Years*	3 Years/5 Years*	3 Years/5 Years*	3 Years/5 Years*	3 Years/5 Years*

*When purchased and installed with Toro Swing Joints.

Model	810G	810G "L"	720/720G	640	690	590GF
Page Number	32-33		34	35	36	38
Radius	33'-71'	20'-47'	19'-49'	47'-67'	87'-108'	
Radius Reduction Screw	X	X		X		
Inlet size	1" NPT, BSP, Acme	1" NPT, BSP, Acme	3/4" NPT & 1" NPT, BSP, Acme	1" NPT, BSP	1½" NPT	1/2"
Flow Range	6.7-27 GPM	1.0-9.8 GPM	.85-11.62 GPM	6.0-25.0 GPM	51.0-82.2 GPM	.05-4.5 GPM
Recommended Operating Pressure	40-100 PSI	40-100 PSI	See page 28	40-100 PSI	80/100 PSI	20-50 PSI
Turf	X	X	X	X	X	X
Low Pressure	X	X	X			X
High Wind	X	X	X			
Decoder Systems						
Normally Open Hydraulic System			720 Only	X	X	
Spike Guard Solenoid			720 Only			
Full Circle	X	X	X	X	1 and 2 Speed	X
Part-circle Adjustable	X	X	X			
Part-circle Fixed				X	90° and 180°	X
Part/Full Circle In One	X	X	X			X
Stainless Steel Riser				X		
Check Valve	Standard	Standard	Standard	Standard	X	X
Effluent Water Option						X
Smart-Arc Memory	X	X	X			
Below Grade	X	X	X	X		
Trajectory Adjustment	5°-25°	5°-25°	5°-25°			
Warranty	3 Years/5 Years*	5 Years*	3 Years/5 Years*	3 Years/5 Years*	3 Years/5 Years*	3 Years

835S/855S Series

835S 855S

Features

- Trajectory 24 positions from 7 to 30 degrees in 1 degree increments.
- Spike-guard solenoid with 20,000 volt lightning rating.
- Arc adjustment - 40 - 330 degrees and true full-circle in one.
- Ratcheting riser allows adjustment with no disassembly.

Operating Specifications

- Inlet:
  - 835S: 1" NPT, BSP or ACME
  - 855S: 1 ½" NPT, BSP or ACME
- Radius:
  - 835S: 42' – 92'
  - 855S: 52' – 100'
- Flow Rate:
  - 835S: 7.1 – 45.3 GPM
  - 855S: 13.9 - 61.1 GPM
- Precipitation Rates:
  - 835S: Minimum - .37"/hr; Maximum - .53"/hr
  - 855S: Minimum - .43"/hr; Maximum - .60"/hr
- Pilot Valve: Selectable at 50, 65, 80 and 100 psi
- Recommended Operating Pressure Range: 65-100 psi (maximum -150 psi and minimum - 40 psi)
- Electric Valve-in-Head Solenoid: 24V ac, 50/60 Hz
  - Inrush: 60 Hz, 0.12 Amps
  - Holding: 60 Hz, 0.10 Amps
- Trajectory: 24 positions from 7° - 30° in 1° increments
- Check-O-Matic maintains up to 37' elevation

Nozzle Selection

- 835S has eight nozzle variations (30, 31, 32, 33, 34, 35, 36 and 37)
- 855S has nine nozzle variations (51, 52, 53, 54, 55, 56, 57, 58 and 59)
- Four in-line nozzles, rotating stream pattern
- One back nozzle position
- Stator variations: 835S – 3 and 855S – 3

Dimensions

- Body diameter:
  - 835S: 6 ½"
  - 855S: 7 ½"
- Body height:
  - 835S: 10"
  - 855S: 11 3/8"
- Weight:
  - 835S: 2.98 lbs.
  - 855S: 3.70 lbs.
- Pop-up height to nozzle: 3 ¼"

Warranty

- Three years
- Five years when installed with Toro Swing Joints

835S Conversion Assemblies

Models	Description
• 835S-3134	835S w/31–34 Nozzles (33 Nozzle Installed)
• 835S-3537	835S w/35–37 Nozzles (35 Nozzle Installed)
• 835S-3134E	835S w/31–34 Nozzles (33 Nozzle Installed), Effluent
• 835S-3537E	835S w/35–37 Nozzles (35 Nozzle Installed), Effluent

855S Conversion Assemblies—(Ribbed Body)

Models	Description
• 855S-5154	855S w/51–54 Nozzles (53 Nozzle Installed)
• 855S-5558	855S w/55–58 Nozzles (55 Nozzle Installed)
• 855S-59	(59 Nozzle installed) 855S w/51–54 Nozzles
• 855S-5154E	(53 Nozzle Installed), Effluent 855S w/55–58 Nozzles
• 855S-5558E	(55 Nozzle Installed), Effluent
• 855S-59E	(59 Nozzle installed), Effluent
• 102-5011	690 Adapter allows you upgrade any 690 with 855S conversions

855S Conversion Assemblies—(Ribless Body)

Models	Description
• 855S-5154R	855S w/51–54 Nozzles (53 Nozzle Installed)
• 855S-5558R	855S w/55–58 Nozzles (55 Nozzle Installed)
• 855S-59R	(59 Nozzle Installed)
• 855S-5154RE	855S w/51–54 Nozzles (53 Nozzle Installed), Effluent
• 855S-5558RE	855S w/55–58 Nozzles (55 Nozzle Installed), Effluent
• 855S-59RE	(59 Nozzle installed, Effluent)

835S Series Performance Chart

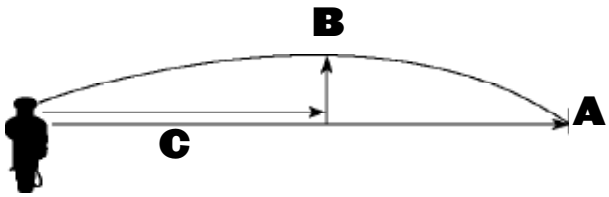
Base Pressure	Nozzle Set 30 (White)		Nozzle Set 31 (Yellow)		Nozzle Set 32 (Blue)		Nozzle Set 33 (Brown)		Nozzle Set 34 (Orange)		Nozzle Set 35 (Green)		Nozzle Set 36 (Gray)		Nozzle Set 37 (Black)	
	102-2208		102-4587		102-4588		102-4589		102-0728		102-0729		102-0730		102-4261	
	Blue	Gray	Blue	Gray	Red	Gray	Orange	Gray	Orange	Gray	Blue	Gray	Blue	Gray	Orange	Gray
	102-2925	102-2910	102-2925	102-2910	102-2928	102-2910	102-2926	102-2910	102-2926	102-2910	102-2925	102-2910	102-2925	102-2910	102-2926	102-2910
psi	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	42	7.1	52	13.7	61	17.1	64	20.2	69	27.4	—	—	—	—	—	—
65	45	8.7	54	15.5	63	20.5	66	22.9	74	30.0	76	32.4	80	34.0	—	—
80	46	9.6	57	17.0	67	22.6	70	25.3	77	33.2	79	35.8	84	37.5	86	40.8
100	48	11.2	59	18.9	72	25.2	74	28.2	80	37.0	84	39.9	88	42.5	92	45.3
Stator	102-6929 Blue		102-1939 Yellow								102-1940 White					
Conversions			835S-3134								835S-3537					

855S Series Performance Chart

Base Pressure	Nozzle Set 51 (Yellow)		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)	
	102-4587		102-4588		102-4589		102-0728		102-0729		102-0730		102-4261		102-4260		102-4259	
	Blue	Gray	Red	Gray	Orange	Gray	Orange	Gray	Blue	Gray	Blue	Gray	Orange	Gray	Blue	Gray	Blue	Gray
	102-2925	102-2910	102-2928	102-2910	102-2926	102-2910	102-2926	102-2910	102-2925	102-2910	102-2925	102-2910	102-2926	102-2910	102-2925	102-2910	102-2925	102-2910
psi	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	52	13.9	62	17.4	66	20.7	69	28.6	—	—	—	—	—	—	—	—	—	—
65	54	15.7	64	20.8	68	23.4	74	31.2	76	33.8	81	35.7	—	—	—	—	—	—
80	57	17.2	68	22.9	72	25.8	77	34.4	79	37.2	85	39.4	89	43.6	92	47.5	96	57.0
100	59	19.1	73	25.5	76	28.7	80	38.2	84	41.3	89	43.7	94	48.5	95	51.1	100	61.1
Stator	102-1939 Yellow								102-1940 White								102-1941	
Conver.	855S-5154								855S-5558								855S-59	

— *Not recommended at these pressures. Radius shown in feet.*

Toro recommends the use of a 1¼" swing joint at flows over 25-GPM (95-LPM). Sprinkler radius data collected in Toro's zero wind test facility per ASAE standard S398.1. Actual site conditions must be considered when selecting the appropriate nozzle. All sprinklers are equipped with the selectable pilot valve that allows settings at 50, 65, 80 and 100 psi.



835S Trajectory Performance

Nozzle/PSI	#31/51 Nozzle @ 65 psi						#32/52 Nozzle @ 65 psi						#33/53 Nozzle @ 65 psi					
Trajectory	**7°**	**10°**	**15°**	**20°**	**25°**	**30°**	**7°**	**10°**	**15°**	**20°**	**25°**	**30°**	**7°**	**10°**	**15°**	**20°**	**25°**	**30°**
"A" Radius	46'	46'	50'/51'	53'	54'	50'	46'/49'	49'/50'	51'	55'	63'/64'	54'/65'	54'	56'	59'	62'	66'/68'	61'
"B" Spray Height	4'	4'	5'/6'	8'/10'	11'/13'	13'/15'	3'/4'	4'	6'	9'	12'/11'	15'/13'	4'/5'	5'/6'	7'	9'	13'	15'
"C" Distance from Head	25'/26'	25'/27'	26'/32'	33'/38'	33'/40'	33'/41'	20'/22'	24'/26'	28'/31'	34'/35'	34'	34'/30'	23'/30'	28'/33'	32'	34'/35'	35'/37'	35'/37'

Nozzle/PSI/GPM	#34/54 Nozzle @ 65 psi						#35/55 Nozzle @ 65 psi						#36/56 Nozzle @ 80 psi					
Trajectory	**7°**	**10°**	**15°**	**20°**	**25°**	**30°**	**7°**	**10°**	**15°**	**20°**	**25°**	**30°**	**7°**	**10°**	**15°**	**20°**	**25°**	**30°**
"A" Radius	58'	60'	63'	67'	74'	70'	59'	61'/62'	64'/66'	70'	76'	74'/77'	64'/72'	68'/73'	76'/75'	80'/82'	84'/85'	82'
"B" Spray Height	4'/5'	4'/6'	6'/8'	11'/10'	14'	17'	4'/6'	5'/6'	7'/9'	11'	15'	17'	5'	7'	9'	14'	17'	22'
"C" Distance from Head	24'/31'	26'/34'	35'/40'	39'/41'	39'	39'/42'	30'/34'	32'/36'	36'/43'	43'/45'	43'/45'	43'/45'	25'	38'	40'	45'	49'	45'

Nozzle/PSI/GPM	#37/57 Nozzle @ 80 psi						#58 Nozzle @ 80 psi						#59 Nozzle @ 80 psi					
Trajectory	**7°**	**10°**	**15°**	**20°**	**25°**	**30°**	**7°**	**10°**	**15°**	**20°**	**25°**	**30°**	**7°**	**10°**	**15°**	**20°**	**25°**	**30°**
"A" Radius	65'/72'	69'/74'	78'/77'	82'/83'	86'/89'	84'/85'	75'	77'	83'	87'	92'	88'	77'	78'	84'	89'	96'	92'
"B" Spray Height	5'	7'	9'	14'	18'	22'	6'	7'	10'	15'	18'	22'	7'	8'	11'	16'	21'	25'
"C" Distance from Head	30'	39'	41'	46'	50'	46'	38'	40'	43'	47'	52'	48'	42'	44'	45'	47'	53'	49'

Information is for reference only. Actual results may vary.

Specifying Information—835S & 855S

8X5S-XX-XXXXX

Body Inlet	*Arc*	*Body Threads*	*Valve Type*	*Nozzle*	*Pressure Regulation**	*Optional*
8X5S	**5**	X	X	X X	X	XX
3—1" 5—1½"	5—Part-circle and Full-circle in one	0—NPT 4—ACME 5—BSP	1—Normally Open Hydraulic 2—Check-O-Matic 6—Electric	**835S**—30, 31, 32, 33, 34, 35, 36, 37 **855S**—51, 52, 53, 54, 55, 56, 57, 58, 59	6—65 psi 8—80 psi 1—100 psi	E—Effluent DL—DC Latching Solenoid N—Nickel-plated I—Integrated GDC

Example: When specifying an 835S Series Sprinkler with NPT threads, #34 nozzle, an electric valve and pressure regulation at 65 psi you would specify: **835S–06–346**

** Electric models only. All sprinklers are equipped with the selectable pilot valve that allows settings at 50, 65, 80 and 100 psi.*
Note: Not all models available. Nickel-plated, corrosion-resistant models are available upon request.

834S/854S Series

834S 854S

Features

- Dual Trajectory adjustment on main nozzle - 25 or 15 degrees
- Spike-Guard solenoid with 20,000 volt lightning rating.
- Constant velocity full circle drive
- Radius reduction screw can effectively reduce the sprinkler throw down to 30'

Operating Specifications

- Inlet:
  - 834S: 1" NPT, BSP or ACME
  - 854S: 1 ½" NPT, BSP or ACME
- Radius:
  - 834S: 52' – 91'
  - 854S: 52' – 99'
- Flow Rate:
  - 834S: 13.0 – 46.9 GPM
  - 854S: 13.2 - 61.8 GPM
- Precipitation Rates:
  - 834S: Minimum - .33"/hr; Maximum - .55"/hr
  - 854S: Minimum - .33"/hr; Maximum - .61"/hr
- Pilot Valve: Selectable at 50, 65, 80 and 100 psi
- Recommended Operating Pressure Range: 65-100 psi (maximum-150 psi and minimum-40 psi)
- Electric Valve-in-Head Solenoid: 24V ac, 50/60 Hz
  - Inrush: 60 Hz, 0.12 Amps
  - Holding: 60 Hz, 0.10 Amps
- Trajectory: 25° or 15°
- Check-O-Matic maintains up to 37' elevation

Nozzle Selection

- 834S has seven nozzle variations (31, 32, 33, 34, 35, 36 and 37)
- 854S has nine nozzle variations (51, 52, 53, 54, 55, 56, 57, 58 and 59)
- Three opposing nozzles, rotating stream pattern
- Two additional front nozzle positions provide maximum flexibility
- Stator variations: 834S – 2 and 854S - 3

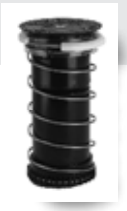
Dimensions

- Body diameter:
  - 834S: 6 ½"
  - 854S: 7 ½"
- Body height:
  - 834S: 10"
  - 854S: 11 3/8"
- Weight:
  - 834S: 2.98 lbs.
  - 854S: 3.70 lbs.
- Pop-up height to nozzle: 3 ¼"

Warranty

- Three years
- Five years when installed with Toro Swing Joints

834S Conversion Assemblies



Models	Description
• 834S-3134	834S w/31–34 Nozzles (33 Nozzle Installed)
• 834S-3537	834S w/35–37 Nozzles (35 Nozzle Installed)
• 834S-3134E	834S w/31–34 Nozzles (33 Nozzle Installed), Effluent
• 834S-3537E	834S w/35–37 Nozzles (35 Nozzle Installed), Effluent

854S Conversion Assemblies

Models	Description
• 854S-5154	854S w/51–54 Nozzles (53 Nozzle Installed)
• 854S-5558	854S w/55–58 Nozzles (55 Nozzle Installed)
• 854S-59	854S w/ 59 Nozzle
• 854S-5154E	854S w/51–54 Nozzles (53 Nozzle Installed), Effluent
• 854S-5558E	854S w/55–58 Nozzles (55 Nozzle Installed),
• 854S-59E	Effluent
• 102-5011	854S w/ 59 Nozzle, Effluent 690 Adapter allows you to upgrade any 690 with 854S conversions

854S Nozzle Apex

Pressure	Nozzle	Apex at 15°	Apex at 25°
65 PSI	31/51	6' @ 51'	13' @ 54'
	32/52	6' @ 51'	11' @ 64'
	33/53	7' @ 59'	13' @ 68'
	34/54	8' @ 63'	15' @ 74'
	35/55	9' @ 66'	15' @ 76'
80 PSI	36/56	8' @ 75'	18' @ 83'
	37/57	9' @ 74'	19' @ 82'
	58	10' @ 82'	18' @ 87'
	59	11' @ 81'	21' @ 91'

834S Series Performance Chart—25°

Front Nozzle Positions	Nozzle Set 31 (Yellow)		Nozzle Set 32 (Blue)		Nozzle Set 33 (Brown)		Nozzle Set 34 (Orange)		Nozzle Set 35 (Green)		Nozzle Set 36 Gray)		Nozzle Set 37 (Black)	
	102-0725		102-7001		102-0727		102-7002		102-6908		102-0730		102-4261	
	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Brown
	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-6883
Back Nozzle Positions	Yellow	Blue	Yellow	Orange	Yellow	Red	Yellow	Beige	Yellow	Beige	Yellow	Red	Yellow	Gray
	102-6937	102-2925	102-6937	102-2926	102-6937	102-2928	102-6937	102-2929	102-6937	102-2929	102-6937	102-6944	102-6937	102-6945
PSI	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	57	13.0	58	15.5	64	21.9	68	24.4	—	—	—	—	—	—
65	58	14.6	60	18.0	68	24.4	72	28.1	76	32.2	—	—	—	—
80	60	16.2	63	20.5	72	26.9	76	31.1	80	35.6	83	38.2	85	41.5
100	62	17.9	66	23.4	75	29.8	79	34.9	84	49.3	88	43.4	91	46.9

834S Series Performance Chart—15°

PSI	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	52	12.9	53	15.6	60	21.7	62	25.5	—	—	—	—	—	—
65	53	14.4	54	17.1	61	24.2	64	28.0	67	32.1	—	—	—	—
80	56	16.0	57	19.0	65	26.6	69	31.0	73	35.5	76	38.0	77	41.3
100	57	17.5	59	20.5	67	29.5	71	33.9	75	38.4	80	43.1	81	46.8

854S Series Performance Chart—25°

Front Nozzle Positions	Nozzle Set 51 (Yellow)		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)	
	102-0725		102-7001		102-0727		102-7002		102-6908		102-0730		102-4261		102-4260		102-4259	
	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Brown	Red Plug	Brown	Red Plug	Red Plug
	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-6883	102-4335	102-6883	102-4335	102-4335
Back Nozzle Positions	Yellow	Blue	Yellow	Orange	Yellow	Red	Yellow	Beige	Yellow	Beige	Yellow	Red	Yellow	Gray	Yellow	Gray	Yellow	Gray
	102-6937	102-2925	102-6937	102-2926	102-6937	102-2928	102-6937	102-2929	102-6937	102-2929	102-6937	102-6944	102-6937	102-6945	102-6937	102-6945	102-6937	102-6945
PSI	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	58	13.2	59	15.7	64	22.0	70	26.2	—	—	—	—	—	—	—	—	—	—
65	60	14.8	61	17.5	68	24.8	74	29.3	79	34.2	—	—	—	—	—	—	—	—
80	61	16.4	64	20.0	72	27.6	78	32.6	83	38.0	85	40.7	87	44.9	91	50.2	96	55.6
100	63	18.1	67	23.6	75	30.4	81	36.7	87	42.5	90	45.8	93	50.2	95	55.4	99	61.8

854S Series Performance Chart—15°

PSI	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	52	13.2	53	15.6	61	22.0	65	26.0	—	—	—	—	—	—	—	—	—	—
65	53	14.8	54	17.1	63	24.8	67	29.2	69	34.1	—	—	—	—	—	—	—	—
80	56	16.4	58	19.0	68	27.6	72	32.5	75	37.8	79	40.4	81	44.6	85	49.9	87	55.3
100	58	18.1	60	20.5	71	30.4	75	36.4	79	42.3	84	45.5	87	49.9	89	55.1	94	61.5
Stator	102-6929 Blue								102-1940 White								102-1941 White	
Conversions	854S-5154								854S-5557								854S-59	

Not recommended at these pressures. Radius shown in feet.

Toro recommends the use of a 1¼" swing joint at flows over 25-GPM (95-LPM). Sprinkler radius data collected in Toro's zero wind test facility per ASAE standard S398.1. Actual site conditions must be considered when selecting the appropriate nozzle.

All sprinklers are equipped with the selectable pilot valve that allows settings at 50, 65, 80 and 100 psi.

Specifying Information—834S & 854S

8X4S-XX-XXXXX

Body Inlet	*Arc*	*Body Threads*	*Valve Type*	*Nozzle*	*Pressure Regulation**	*Optional*
8X4S	**4**	X	X	X X	X	XX
3—1" 5—1½"	4—Full Circle	0—NPT 4—ACME 5—BSP	1—Normally Open Hydraulic 2—Check-O-Matic 6—Electric	**834S**—31, 32, 33 , 34, 35, 36, 37 **854S**—51, 52, 53, 54, 55, 56, 57, 58, 59	6—65 psi 8—80 psi 1—100 psi	E—Effluent DL—DC Latching Solenoid For GDC Systems N—Nickel-plated I—Integrated GDC Systems

Example: When specifying an 834S Series Sprinkler with NPT threads, #34 nozzle, an electric valve and pressure regulation at 65 psi you would specify: **834S–06–346**

** Electric models only. All sprinklers are equipped with the selectable pilot valve that allows settings at 50, 65, 80 and 100 psi.*

Note: Not all models available. Nickel-plated, corrosion-resistant models are available upon request.

DT35/DT55 Series

DT35 DT55

Features

- Dual trajectory adjustment of the main nozzle—25° or 15°
- Part and full circle in one – 40° – 330° and true uni-directional full circle
- Stainless steel valve seat is molded to the body and has virtually eliminated body replacements due to seat damage

Operating Specifications

- Inlet:
  - DT35: 1" NPT, BSP or ACME
  - DT55: 1 ½" NPT, BSP or ACME
- Radius:
  - DT35: 43' – 83'
  - DT55: 55' – 92'
- Flow Rate:
  - DT35: 8.2 – 47.3 GPM
  - DT55: 14.1 - 61.3 GPM
- Precipitation Rates:
  - DT35: Minimum - .41"/hr; Maximum - .45"/hr
  - DT55: Minimum - .46"/hr; Maximum - .58"/hr
- Pilot Valve: Selectable at 50, 65, 80 and 100 psi
- Recommended Operating Pressure Range: 65-100 psi (maximum-150 psi and minimum-40 psi)
- Electric Valve-in-Head Solenoid: 24V ac, 50/60 Hz
  - Inrush: 60 Hz, 0.3 Amps
  - Holding: 60 Hz, 0.2 Amps
- Check-O-Matic maintains up to 37' elevation

Nozzle Selection

- DT35 has eight nozzle variations (30, 31, 32, 33, 34, 35, 36 and 37)
- DT55 has nine nozzle variations (51, 52, 53, 54, 55, 56, 57, 58 and 59)
- Three in-line nozzles, rotating stream pattern
- Two back nozzle positions
- Stator variations
- Optional radius reduction screw 363-4839 for fine tuning

Dimensions

- Body diameter:
  - DT35: 6 ½"
  - DT55: 7 ½"
- Body height:
  - DT35: 10"
  - DT55: 11 3/8"
- Weight:
  - DT35: 2.98 lbs.
  - DT55: 3.70 lbs.
- Pop-up height to nozzle: 3 ¼"

Warranty

- Three years
- Five years when installed with Toro Swing Joints

DT35 Conversion Assemblies

Models	Description
• DT35-3134	DT35 w/31–34 Nozzles (33 Nozzle Installed)
• DT35-3537	DT35 w/35–37 Nozzles (35 Nozzle Installed)
• DT35-3134E	DT35 w/31–34 Nozzles (33 Nozzle Installed), Effluent
• DT35-3537E	DT35 w/35–37 Nozzles (35 Nozzle Installed), Effluent

DT55 Conversion Assemblies (Ribbed Body)

Models	Description
• DT55-5154	DT55 w/51–54 Nozzles (53 Nozzle Installed)
• DT55-5558	DT55 w/55–58 Nozzles (55 Nozzle Installed)
• DT55-59	DT55 w/59 Nozzle
• DT55-5154E	DT55 w/51–54 Nozzles (53 Nozzle Installed), Effluent
• DT55-5558E	DT55 w/55–58 Nozzles (55 Nozzle Installed), Effluent
• DT55-59E	DT55 w/59 Nozzle, Effluent
• 102-5011	690 Adapter allows you to upgrade any 690 with DT55 conversions

DT55 Conversion Assemblies (Ribless Body)

Models	Description
• DT55-5154R	DT55 w/51–54 Nozzles (53 Nozzle Installed)
• DT55-5558R	DT55 w/55–58 Nozzles (55 Nozzle Installed)
• DT55-59R	DT55 w/9 Nozzle
• DT55-5154RE	DT55 w/51–54 Nozzles (53 Nozzle Installed), Effluent
• DT55-5558RE	DT55 w/55–58 Nozzles (55 Nozzle Installed), Effluent
• DT55-59RE	DT55 w/59 Nozzle, Effluent

DT35 Series Performance Chart—25°

Front Nozzle Positions	Nozzle Set 30 (White Plug)		Nozzle Set 31 (Yellow)		Nozzle Set 32 (Blue)		Nozzle Set 33 (Brown)		Nozzle Set 34 (Orange)		Nozzle Set 35 (Green)		Nozzle Set 36 (Gray)		Nozzle Set 37 (Black)	
	102-2208		102-6906		102-0726		102-6907		102-0728		102-6955		102-6935		102-6936	
	Yellow	Biege	Yellow	Brown	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Green	Green	Green	Green
	102-5670	102-6942	102-5670	102-5671	102-5670	102-6884	102-5670	102-6884	102-5670	102-6884	102-5670	102-6885	102-6531	102-6885	102-6531	102-6885
Back Nozzle Positions	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug
	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335
PSI	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	43	8.2	53	13.8	56	18.3	61	21.7	65	25.3	—	—	—	—	—	—
65	45	10.0	53	15.5	59	20.5	64	24.4	68	28.2	72	34.1	—	—	—	—
80	46	11.5	57	17.3	62	22.7	67	27.1	71	31.1	75	37.8	78	40.3	80	44.0
100	47	13.4	59	19.1	65	24.9	70	29.8	74	34.1	79	40.9	81	43.8	83	47.3

DT35 Series Performance Chart—15°

psi	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	43	8.2	52	13.6	58	18.1	61	21.5	62	25.6	—	—	—	—	—	—
65	45	10.0	54	15.3	60	20.3	64	24.2	65	27.3	69	33.1	—	—	—	—
80	46	11.5	58	17.2	64	22.6	69	26.8	69	30.2	75	36.8	76	39.7	76	42.9
100	47	13.4	60	19.0	66	24.7	71	29.5	72	32.9	78	39.5	82	42.6	82	46.1
Stator	102-6929 Blue		102-1939 Yellow								102-1940 White					
Conversions			DT35-3134								DT35-3537					

DT55 Series Performance Chart—25°

Front Nozzle Positions	Nozzle Set 51 (Yellow)		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)	
	102-6906		102-0726		102-6907		102-0728		102-6955		102-6935		102-6936		102-6909		102-4259	
	Yellow	Brown	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green
	102-5670	102-5671	102-5670	102-6884	102-5670	102-6884	102-5670	102-6884	102-5670	02-6885	102-6531	102-6885	102-6531	102-6885	102-6531	102-6885	102-6531	102-6885
Back Nozzle Positions	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug
	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335
PSI	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	55	14.1	57	18.5	62	22.3	66	25.8	—	—	—	—	—	—	—	—	—	—
65	57	15.8	60	20.9	65	25.1	69	28.7	73	35.9	—	—	—	—	—	—	—	—
80	59	17.5	61	23.1	68	27.8	72	31.7	76	39.7	80	43.1	83	48.2	85	50.0	89	57.5
100	61	19.3	63	25.3	71	30.3	75	34.5	80	43.5	83	49.0	88	51.5	90	53.9	92	61.3

DT55 Series Performance Chart—15°

psi	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	55	14.0	59	16.5	62	22.2	63	25.6	—	—	—	—	—	—	—	—	—	—
65	56	15.6	62	20.7	65	25.0	66	28.5	75	35.3	—	—	—	—	—	—	—	—
80	59	17.4	66	23.0	69	27.7	70	31.5	78	39.0	78	42.4	79	46.9	79	49.5	82	57.2
100	60	19.2	68	25.1	71	30.2	72	34.3	80	41.9	81	47.2	83	52.1	83	53.4	85	60.8
Stator	102-1939 Yellow								102-1940 White								102-1941 White	
Conver.	DT55-5154								DT55-5558								DT55-59	

Not recommended at these pressures. Radius shown in feet.
Toro recommends the use of a 1¼" swing joint at flows over 25-GPM (95-LPM). Sprinkler radius data collected in Toro's zero wind test facility per ASAE standard S398.1.
Actual site conditions must be considered when selecting the appropriate nozzle.
All sprinklers are equipped with the selectable pilot valve that allows settings at 50, 65, 80 and 100 psi.

Note: ***Mainless and Back Nozzle Data Located on Page 28.***
Apex Data Located on Page 24.

Specifying Information—DT35 & DT55

DTX5-XX-XXXXX

Body Inlet	*Arc*	*Body Threads*	*Valve Type*	*Nozzle*	*Pressure Regulation**	*Optional*
DTX5	**5**	X	X	X X	X	XX
3—1" 5—1½"	5—Part-circle and Full-circle In One	0—NPT 4—ACME 5—BSP	1—Normally Open Hydraulic 2—Check-O-Matic 6—Electric	**DT35** 30, 31, 32, 33, 34, 35, 36, 37 **DT55** 51, 52, 53, 54, 55, 56, 57, 58, 59	6—65 psi (4,5 Bar) 8—80 psi (5,5 Bar)	E—Effluent DL—DC Latching Solenoid For GDC Systems N—Nickel-plated I—Integrated GDC Systems

Example: When specifying a DT35 Series Sprinkler with NPT threads, #34 nozzle, an electric valve and pressure regulation at 65 psi (4,5 Bar), you would specify: **DT35–06–346**

** Electric models only. All sprinklers are equipped with the selectable pilot valve that allows settings at 50, 65, 80 and 100 psi.*
Note: Not all models available.

DT34/DT54 Series

DT34 DT54

Features

- Dual trajectory adjustment of the main nozzle—25° or 15°
- Constant velocity full circle drive
- Stainless steel valve seat is molded to the body and has virtually eliminated body replacements due to seat damage

Operating Specifications

- Inlet:
  - DT34: 1" NPT, BSP or ACME
  - DT54: 1 ½" NPT, BSP or ACME
- Radius:
  - DT34: 52' – 91'
  - DT54: 52' – 99'
- Flow Rate:
  -DT34: 13.0 – 46.9 GPM
  - DT54: 13.2 - 61.8 GPM
- Precipitation Rates:
  - DT34: Minimum - .33"/hr; Maximum - .55"/hr
  - DT54: Minimum - .33"/hr; Maximum - .61"/hr
- Pilot Valve: Selectable at 50, 65, 80 and 100 psi
- Recommended Operating Pressure Range: 65-100 psi (maximum-150 psi and minimum-40 psi)
- Electric Valve-in-Head Solenoid: 24V ac, 50/60 Hz
  - Inrush: 60 Hz, 0.3 Amps
  - Holding: 60 Hz, 0.2 Amps
- Trajectory: 25° or 15°
- Check-O-Matic maintains up to 37' elevation

Nozzle Selection

- DT34 has seven nozzle variations (31, 32, 33, 34, 35, 36 and 37)
- DT54 has nine nozzle variations (51, 52, 53, 54, 55, 56, 57, 58 and 59)
- Three opposing nozzles, rotating stream pattern
- Two additional front nozzle positions provide maximum flexibility
- Stator variations: DT34–2 and DT54–3
- Optional radius reduction screw 363-4839 for fine tuning

Dimensions

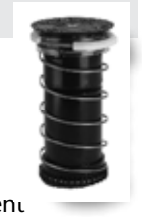
- Body diameter:
  - DT34: 6 ½"
  - DT54: 7 ½"
- Body height:
  - DT34: 10"
  - DT54: 11 3/8"
- Weight:
  - DT34: 2.98 lbs.
  - DT54: 3.70 lbs.
- Pop-up height to nozzle: 3 ¼"

Warranty

- Three years
- Five years when installed with Toro Swing Joints

DT34 Conversion Assemblies

Models	Description
• DT34-3134	DT34 w/31–34 Nozzles (33 Nozzle Installed)
• DT34-3537	DT34 w/35–37 Nozzles (35 Nozzle Installed)
• DT34-3134E	DT34 w/31–34 Nozzles (33 Nozzle Installed), Effluent
• DT34-3537E	DT34 w/35–37 Nozzles (35 Nozzle Installed), Effluent



DT54 Conversion Assemblies

Models	Description
• DT54-5154	DT54 w/51–54 Nozzles (53 Nozzle Installed)
• DT54-5558	DT54 w/55–58 Nozzles (55 Nozzle Installed)
• DT54-59	DT54 w/59 Nozzle
• DT54-5154E	DT54 w/51–54 Nozzles (53 Nozzle Installed), Effluent
• DT54-5558E	DT54 w/55–58 Nozzles (55 Nozzle Installed), Effluent
• DT54-59E	DT55 w/59 Nozzle, Effluent
• 102-5011	690 Adapter allows you to upgrade any 690 with DT54 conversions

DT34/54 Nozzle Apex

Pressure	Nozzle	Apex at 15°	Apex at 25°
65 PSI	31/51	6' @ 51'	13' @ 54'
	32/52	6' @ 51'	11' @ 64'
	33/53	7' @ 59'	13' @ 68'
	34/54	8' @ 63'	15' @ 74'
	35/55	9' @ 66'	15' @ 76'
80 PSI	36/56	8' @ 75'	18' @ 83'
	37/57	9' @ 74'	19' @ 82'
	58	10' @ 82'	18' @ 87'
	59	11' @ 81'	21' @ 91'

DT34 Series Performance Chart—25°

Front Nozzle Positions	Nozzle Set 31 (Yellow)		Nozzle Set 32 (Blue)		Nozzle Set 33 (Brown)		Nozzle Set 34 (Orange)		Nozzle Set 35 (Green)		Nozzle Set 36 (Gray)		Nozzle Set 37 (Black)	
	102-0725		102-7001		102-0727		102-7002		102-6908		102-0730		102-4261	
	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug
	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335
Back Nozzle Positions	Yellow	Blue	Yellow	Orange	Yellow	Red	Yellow	Beige	Yellow	Beige	Yellow	Red	Yellow	Gray
	102-6937	102-2925	102-6937	102-2926	102-6937	102-2928	102-6937	102-2929	102-6937	102-2929	102-6937	102-6944	102-6937	102-6945
PSI	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	57	13.0	58	15.5	64	21.9	68	24.4	—	—	—	—	—	—
65	58	14.6	60	18.0	68	24.4	72	28.1	76	32.2	—	—	—	—
80	60	16.2	63	20.5	72	26.9	76	31.1	80	35.6	83	38.2	85	41.5
100	62	17.9	66	23.4	75	29.8	79	34.9	84	39.3	88	43.4	91	46.9

DT34 Series Performance Chart—15°

psi	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	52	12.9	53	15.6	60	21.7	62	25.5	—	—	—	—	—	—
65	53	14.4	54	17.1	61	24.2	64	28.0	67	32.1	—	—	—	—
80	56	16.0	57	19.0	65	26.6	69	31.0	73	35.5	76	38.0	77	41.3
100	57	17.5	59	20.5	67	29.5	71	33.9	75	38.4	80	43.1	81	46.8
Stator	102-6929 Blue								102-1940 White					
Conversions	DT34-3134								DT34-3537					

Note: *Mainless and Back Nozzle Data Located on Page 30*

DT54 Series Performance Chart—25°

Front Nozzle Positions	Nozzle Set 51 (Yellow)		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)	
	102-0725		102-7001		102-0727		102-7002		102-6908		102-0730		102-4261		102-4260		102-4259	
	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Brown	Red Plug	Brown	Red Plug	Red Plug
	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-6883	102-4335	102-6883	102-4335	102-4335
Back Nozzle Positions	Yellow	Blue	Yellow	Orange	Yellow	Red	Yellow	Beige	Yellow	Beige	Yellow	Red	Yellow	Gray	Yellow	Gray	Yellow	Gray
	102-6937	102-2925	102-6937	102-2926	102-6937	102-2928	102-6937	102-2929	102-6937	102-2929	102-6937	102-6944	102-6937	102-6945	102-6937	102-6945	102-6937	102-6945
PSI	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	58	13.2	59	15.7	64	22.0	70	26.2	—	—	—	—	—	—	—	—	—	—
65	60	14.8	61	17.5	68	24.8	74	29.3	79	34.2	—	—	—	—	—	—	—	—
80	61	16.4	64	20.0	72	27.6	78	32.6	83	38.0	85	40.7	87	44.9	91	50.2	96	55.6
100	63	18.1	67	23.6	75	30.4	81	36.7	87	42.5	90	45.8	93	50.2	95	55.4	99	61.8

DT54 Series Performance Chart—15°

psi	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	52	13.2	53	15.8	61	22.0	65	26.0	—	—	—	—	—	—	—	—	—	—
65	53	14.8	54	17.4	63	24.8	67	29.2	69	34.1	—	—	—	—	—	—	—	—
80	56	16.4	58	19.4	68	27.6	72	32.5	75	37.8	79	40.4	81	44.6	85	49.9	87	55.3
100	58	18.1	60	21.1	71	30.4	75	36.4	79	42.3	84	45.5	87	49.9	89	55.1	94	61.5
Stator	102-6929 Blue								102-1940 White								102-1941 White	
Conversions	DT54-5154								DT54-5558								DT54-59	

▬ *Not recommended at these pressures. Radius shown in feet.*

Toro recommends the use of a 1¼" swing joint at flows over 25-GPM (95-LPM). Sprinkler radius data collected in Toro's zero wind test facility per ASAE standard S398.1. Actual site conditions must be considered when selecting the appropriate nozzle. All sprinklers are equipped with the selectable pilot valve that allows settings at 50, 65, 80 and 100 psi.

Specifying Information—DT34 & DT54

DTX4-XX-XXXXX

Body Inlet	*Arc*	*Body Threads*	*Valve Type*	*Nozzle*	*Pressure Regulation**	*Optional*
DTX4	**4**	X	X	X X	X	XX
3—1" 5—1½"	4—Full Circle	0—NPT 4—ACME 5—BSP	1—Normally Open Hydraulic 2—Check-O-Matic 6—Electric	**DT34**—31, 32, 33, 34, 35, 36, 37 **DT54**—51, 52, 53, 54, 55, 56, 57, 58, 59	6—65 psi 8—80 psi 1—100 psi	E—Effluent DL—DC LatchingSolenoid For GDC Systems N—Nickel-plated I—Integrated GDC Systems

Example: When specifying a DT34 Series Sprinkler with NPT threads, #34 nozzle, an electric valve and pressure regulation at 65 psi (4,5 Bar), you would specify: **DT34–06–346**

* Electric models only. All sprinklers are equipped with the selectable pilot valve that allows settings at 50, 65, 80 and 100 psi.
Note: Not all models available.

B Series

835B *DT34B*

Features

- Part and full circle in one – 40° to 330° and true uni-directional ful-circle
- Small exposed diameter. Perfect for high traffic areas like trees, greens and surrounds
- Flanged cap installs below grade

Nozzle Selection

- Nozzle variations
  - 835B – Nine variations (30, 31, 32, 33, 34, 35, 36, 37, 38)
  - DT35B - Nine variations (30, 31, 32, 33, 34, 35, 36, 37, 38)
  - DT34B – Eight variations (31, 32, 33, 34, 35, 36, 37, 38)
- Back nozzle capability on part circle models standard
  - 835B – one position available
  - DT35B – two positions available
  - DT34B has 2 additional front nozzle positions
- Main-less capability for short radius applications
- Optional radius reduction screw (363-4839) on DT models for fine tuning the radius
- Stator variations – 2

Operating Specifications

- Inlet:
  - 1" NPT, BSP or ACME
- Radius:
  - 835B—42'-95'
  - DT35B—43'-90'
  - DT34B—57'-95'
- Flow Rate:
  - 835B—7.1 – 52.5 gpm
  - DT35B—8.2 – 56.3 gpm
  - DT34B—13.0 – 55.4 gpm
- Precipitation Rates:
  - 835B—.34 in/hr - .56 in/hr
  - DT35B—.37 in/hr - .67 in/hr
  - DT34B—.33 in/hr - .59 in/hr
- Recommended Operating Pressure
  - 50-100 psi
- Trajectory:
  - 835B – 7°-30° in 1° increments; 24 positions
  - DT35B - 15° or 25° - 2 positions
  - DT34B - 15° or 25° - 2 positions
- Check-O-Matic feature prevents low head drainage up to 10' of elevation change

Dimensions

- Body diameter: 6"
- Body height: 8.5"
- Weight: 2 lbs.
- Pop-up height to nozzle: 3 ¼"

Warranty

- Three years
- Five years when installed with Toro swing joints

Specifying Information—B Series

XXXXB-X2-XXXXX						
Series	*Arc*	*System*	*Thread Type*	*Valve Type*	*Nozzle*	*Optional*
XXX	X	B	X	2	XXXX	X
DT3—DT Series 83—835 Series	4—Full-Circle (DT only) 5—Part-/Full-Circle	B—Block	0—NPT 4—ACME 5—BSP	Check-O-Matic	3134— Includes nozzles #31, 32, 33 & 34 3538— Includes nozzles #35, 36, 37 & 38	E—Effluent Model
Example: When specifying a DT34B Series Sprinkler with NPT threads, #34 nozzle, you would specify: **DT34B–02–3134**						

835B Series Performance Chart—25°

Base Pressure	Nozzle Set 30 (White) 102-2208		Nozzle Set 31 (Yellow) 102-4587		Nozzle Set 32 (Blue) 102-4588		Nozzle Set 33 (Brown) 102-4589		Nozzle Set 34 (Orange) 102-0728		Nozzle Set 35 (Green) 102-0729		Nozzle Set 36 (Gray) 102-0730		Nozzle Set 37 (Black) 102-4261		Nozzle Set 38 (Red) 102-6909	
	Blue	Gray	Blue	Gray	Red	Gray	Orange	Gray	Orange	Gray	Blue	Gray	Blue	Gray	Orange	Gray	Blue	Gray
	102-2925	102-2910	102-2925	102-2910	102-2928	102-2910	102-2926	102-2910	102-2926	102-2910	102-2925	102-2910	102-2925	102-2910	102-2926	102-2910	102-2925	102-2910
	Back Nozzle 102-4335 Red Plug																	
psi	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	42	7.1	52	14.0	58	18.0	—	—	—	—	—	—	—	—	—	—	—	—
60	43	7.9	54	15.2	60	19.5	66	21.9	—	—	—	—	—	—	—	—	—	—
70	45	8.8	55	16.4	63	21.0	68	23.6	74	32.7	77	35.2	—	—	—	—	—	—
80	46	9.6	57	17.4	65	22.6	70	25.3	77	35.1	79	37.7	84	39.6	86	43.4	90	47.5
90	47	10.4	58	18.5	68	23.9	72	26.8	79	37.0	82	9.9	86	41.9	88	45.9	93	50.0
100	48	11.2	59	19.4	70	25.2	74	28.2	80	38.9	84	41.8	88	44.1	90	48.4	95	52.5
Stator	102-6929 Blue		102-1939 Yellow								102-1940 White							
Conversions			835S-3134 (Requires screen replacement)								835S-3537 (Requires screen replacement)							

Not recommended at these pressures. Radius shown in feet.
Toro recommends the use of a 1¼" swing joint at flows over 25-GPM (95-LPM). Sprinkler radius data collected in Toro's zero wind test facility per ASAE standard S398.1.
Actual site conditions must be considered when selecting the appropriate nozzle.
All sprinklers are equipped with the selectable pilot valve that allows settings at 50, 65, 80 and 100 psi.

DT35B Series Performance Chart—25°

Front Nozzle Positions	Nozzle Set 30 (White Plug) 102-2208		Nozzle Set 31 (Yellow) 102-6906		Nozzle Set 32 (Blue) 102-0726		Nozzle Set 33 (Brown) 102-6907		Nozzle Set 34 (Orange) 102-0728		Nozzle Set 35 (Green) 102-6955		Nozzle Set 36 (Gray) 102-6935		Nozzle Set 37 (Black) 102-6936		Nozzle Set 38 (Red) 102-6909	
	Yellow	Biege	Yellow	Brown	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Green	Green	Green	Green	Green	Green
	102-5670	102-6942	102-5670	102-5671	102-5670	102-6884	102-5670	102-6884	102-5670	102-6884	102-5670	102-6885	102-6531	102-6885	102-6531	102-6885	102-6531	102-6885
	Back Nozzles 102-4335 Red Plug																	
PSI	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	43	8.2	55	13.6	56	18.3	—	—	—	—	—	—	—	—	—	—	—	—
60	44	9.3	56	15.0	58	20.1	63	24.2	—	—	—	—	—	—	—	—	—	—
70	45	10.4	58	16.2	60	21.8	65	26.3	69	30.0	73	37.0	—	—	—	—	—	—
80	46	11.5	59	17.3	62	23.3	67	28.0	71	32.1	75	39.6	78	42.9	80	48.6	85	50.6
90	47	12.5	60	18.4	64	24.7	69	29.8	73	34.2	77	42.0	80	45.4	82	51.5	88	53.6
100	47	13.4	61	19.3	65	26.0	70	31.4	74	35.9	79	44.2	81	48.8	83	54.2	90	56.3
Stator	102-6929 Blue		102-1939 Yellow								102-1940 White							
Conversions			DT35-3134 (Requires screen replacement)								DT35-3537 (Requires screen replacement)							

DT34B Series Performance Chart—25°

Front Nozzle Positions	Nozzle Set 31 (Yellow) 102-0725		Nozzle Set 32 (Blue) 102-7001		Nozzle Set 33 (Brown) 102-0727		Nozzle Set 34 (Orange) 102-7002		Nozzle Set 35 (Green) 102-6908		Nozzle Set 36 (Gray) 102-0730		Nozzle Set 37 (Black) 102-4261		Nozzle Set 38 (Red) 102-4260	
	Front Nozzles 102-4335 Red Plug															
Back Nozzle Positions	Yellow	Blue	Yellow	Orange	Yellow	Red	Yellow	Beige	Yellow	Beige	Yellow	Red	Yellow	Gray	Yellow	Gray
	102-6937	102-2925	102-6937	102-2926	102-6937	102-2928	102-6937	102-2929	102-6937	102-2929	102-6937	102-6944	102-6937	102-6945	102-6937	102-6945
PSI	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
50	57	13.0	58	15.5	—	—	—	—	—	—	—	—	—	—	—	—
60	58	14.1	60	17.2	67	23.6	—	—	—	—	—	—	—	—	—	—
70	59	15.5	61	18.2	69	26.2	73	30.0	78	35.7	—	—	—	—	—	—
80	60	16.2	63	20.5	72	27.9	76	32.1	80	38.2	83	40.9	85	42.1	91	50.2
90	61	17.5	65	22.0	74	29.7	78	34.1	82	40.5	86	43.4	88	44.5	93	52.8
100	62	18.8	66	23.4	75	31.4	79	36.0	84	42.7	88	45.8	91	46.9	95	55.4
Stator	102-6929 Blue								102-1940 White							
Conversions	DT34-3134 (Requires screen replacement)								DT34-3537 (Requires screen replacement)							

Not recommended at these pressures. Radius shown in feet.
Toro recommends the use of a 1¼" swing joint at flows over 25-GPM (95-LPM). Sprinkler radius data collected in Toro's zero wind test facility per ASAE standard S398.1.
Actual site conditions must be considered when selecting the appropriate nozzle.
All sprinklers are equipped with the selectable pilot valve that allows settings at 50, 65, 80 and 100 psi.

Note: *Mainless and Back Nozzle Data Located on Page 28*

Mainless and Back Nozzle Data

835S Series Mainless Nozzle Performance Data

	Blue - Plug - Gray 102-2925 102-2208 102-2910		Orange - Plug - Gray 102-2926 - 102-2208 - 102-2910		Red - Plug - Gray 102-2928 - 102-2208 - 102-2910		Gray - Plug - Gray 102-2910 - 102-2208 - 102-2910		Gray - Plug - Gray 102-2930 - 102-2208 - 102-2910	
PSI	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
65	46	8.7	46	10.4	50	12.4	42	10.2	47	13.9
SOR	5:02		4:16		3:36		4:19		4:06	
80	46	9.6	47	11.5	53	13.7	44	11.2	51	15.3
SOR	4:22		3:40		3:03		3:53		3:40	

DT35 Mainless Nozzle Performance Data

	Green 102-6531	Plug 102-2208	Grey 102-2910	Green 102-6531	Plug 102-2208	Green 102-6885	Green 102-6531	Plug 102-2208	Red 102-2928	Green 102-6531	Plug 102-2208	Beige 102-2929
PSI	**Radius**		**GPM**	**Radius**		**GPM**	**Radius**		**GPM**	**Radius**		**GPM**
65	34		10.4	44		10.2	48		11.5	50		13.5
SOR	3:40			3:50			3:25			2:40		
80	37		11.6	44		11.4	48		12.9	50		15.0
SOR	3:15			3:25			3:00			2:30		

Back Nozzle Performance Data

Nozzles			**65 PSI**		**80 PSI**		
Part #	**Description**	**Color**	**Radius**	**GPM**	**Radius**	**GPM**	**Profile**
102-6937	Inner Nozzle w/ Yellow Restrictor	Yel/Yel	29	3.7	30	4.1	
102-6531	Inner Nozzle w/ White Restrictor	Grn/Wht	31	4.3	33	4.6	
102-6883	Intermediate Nozzle	Brown	38	2.8	38	2.8	
102-6884	Intermediate Nozzle	Yellow	41	4.1	43	4.5	
102-6885	Intermediate Nozzle	Green	42	5.4	45	6.0	
102-2925	Intermediate Nozzle	Blue	40	2.8	42	3.2	
102-2926	Intermediate Nozzle	Orange	44	4.3	45	4.8	
102-2927	Intermediate Nozzle	Gray	46	5.1	47	5.4	
102-2928	Intermediate Nozzle	Red	48	6.5	50	7.0	
102-2929	Intermediate Nozzle	Beige	51	8.1	53	9.1	

Conversion Assembly Chart

720 Conversion Assembly

830S Conversion Assembly

850S Conversion Assembly

855S Conversion Assembly

835S Conversion Assembly

855S Conversion Assembly, ribless body

1" Models	F/C	P/C	Radius	Flow	630	660	730	760	834S	860S	835S
DT34-3134	X		57'-79'	13.0-34.9 GPM	X	X	X	X	X	X	X
DT34-3537	X		76'-91'	32.2-46.9 GPM	X	X	X	X	X	X	X
834S-3134	X		55'-81'	13.7-35.4 GPM	X	X	X	X	X	X	X
834S-3537	X		69'-91'	28.2-45.3 GPM	X	X	X	X	X	X	X
DT35-3134	X	X	53'-74'	13.8-34.1 GPM			1	X	X	X	X
DT35-3537	X	X	72'-83'	34.1-47.3 GPM			1	X	X	X	X
835S-3134	X	X	52'-80'	13.7-37.0 GPM			1	X	X	X	X
835S-3537	X	X	76'-92'	32.4-45.3 GPM			1	X	X	X	X

1. Must have ribbed bodies manufactured after 1992 to use part circles (P/C).

1.5" Models	F/C	P/C	Radius	Flow	650	670	680	690	750	780	850S	880S	855S
DT54-5154	X		58'-81'	13.2-36.7 GPM	X	X	X	2	X	X	X	X	X
DT54-5558	X		79'-95'	34.2-55.4 GPM	X	X	X	2	X	X	X	X	X
DT54-59	X		96'-99'	55.6-61.8 GPM	X	X	X	2	X	X	X	X	X
854S-5154	X		61'-83'	14.0-38.0 GPM	X	X	X	2	X	X	X	X	X
854S-5558	X		71'-96'	30.3-53.2 GPM	X	X	X	2	X	X	X	X	X
854S-59	X		91'-97'	55.7-60.0 GPM	X	X	X	2	X	X	X	X	X
DT55-5154	X	X	55'-75'	14.1-34.5 GPM				2	3	X	X	X	X
DT55-5558	X	X	73'-90'	35.9-53.9 GPM				2	3	X	X	X	X
DT55-59	X	X	89'-92'	57.5-61.3 GPM						X	X	X	X
DT55-5154R	X	X	55'-75'	14.1-34.5 GPM	3	3	3		3				
DT55-5557R	X	X	73'-90'	35.9-53.9 GPM	3	3	3		3				
DT55-59R	X	X	89'-92'	57.5-61.3 GPM	3	3	3						
855S-5154	X	X	52'-80'	13.9-38.2 GPM				2	3	X	X	X	X
855S-5558	X	X	76'-95'	33.8-51.1 GPM				2	3	X	X	X	X
855S-59			96'-100'	57.0-61.1 GPM						X	X	X	X
855S-5154R	X	X	52'-80'	13.9-38.2 GPM	3	3	3		3				
855S-5557R	X	X	76'-95'	33.8-51.1 GPM	3	3	3		3				
855S-59R			96'-100'	57.0-61.1 GPM	3	3	3		3				

2. Requires the use of conversion adapter part number 102-5011.
3. Use the ribless conversions "R" for these models dated earlier than 1992.

R Series Conversion Assemblies

Adds 1" of pop-up height

855RB DT55RB DT54RB

R-Series Solenoid Adapters

The New Toro solenoid adapters allow you to easily and economically upgrade your Rain Bird® Eagle 700, 900 and 1100 Series sprinklers with the Toro Spike Guard and DC Latching solenoids.

SPIKEGUARD-RB

DCLATCH-RB

Features

- Trajectory adjustment of the main nozzle for radius reduction and obstacle avoidance
  - 24 positions from 7-30 degrees in 1 degree increments – 855RB
  - 2 positions 25 or 15 degrees - DT54RB & DT55RB
- Adjustable part/full circle or full circle only models available
  - Adjustable part circle from 40-330 degrees and true full circle - 855RB & DT55RB
  - Full circle only - DT54RB
- Ratcheting riser allows riser positioning without riser removal
- 4 main nozzle combinations included provides a wide range of radius and flow capabilities
- Largest and most flexible nozzle offering
- Radius reduction screw for radius refinement
- All nozzles threaded in from the front with no disassembly required
- Back nozzle capable (855RB & DT55RB only)
- Two additional front nozzle positions (DT54RB only)
- Riser pull up feature simplifies servicing
- Nozzle base clutching (855RB & DT55RB only) allows nozzle base movement by hand
- Effluent identifier included
- Yardage marker capable
- 3.25" pop up clears the tall grasses

Specifications

- 60-100 psi – operating pressure range
- 150 psi maximum pressure rating

Features

SPIKEGUARD-RB

- 20,000 volt surge protection; 3 times the surge protection of the leading competitor. Save time and money with fewer replacements and less time digging up failed solenoids
- Half the amperage of the leading competitor; Run more heads simultaneously (if control system and available water allow) and provides improved performance in low voltage situations

DCLATCH-RB

- Compatible with Toro's GDC 2-wire control system this solenoid adapter allows a more economical solution when considering a control system upgrade
- Sometimes the cost of a complete system upgrade can be a bit overwhelming. This adapter allows you to manage that cost better by maintaining your existing sprinkler bodies and upgrading just the controls.
- Solenoids are 100% compatible with all Toro sprinklers so when it's time to upgrade the sprinklers your already part way there.

Specifying Information—R Series Conversion Assemblies

Model Number	*Description*
855RB-5154	R Series Conversion with 855 riser assembly and low flow nozzle set #51 - #54
855RB-5558	R Series Conversion with 855 riser assembly and high flow nozzle set #55 - #58
DT55RB-5154	R Series Conversion with DT55 riser assembly and low flow nozzle set #51 - #54
DT55RB-5558	R Series Conversion with DT55 riser assembly and high flow nozzle set #55 - #58
DT54RB-5154	R Series Conversion with DT54 riser assembly and low flow nozzle set #51 - #54
DT54RB-5558	R Series Conversion with DT54 riser assembly and high flow nozzle set #55 - #58

Specifying Information—R Series Solenoid Adaptors

Model Number	*Description*
SPIKEGUARD-RB	Toro solenoid adapter with Spike Guard™ solenoid for Rain Bird Eagle 700, 900 or 1100 Series sprinklers
DCLATCH-RB	Toro solenoid adapter with DC Latching solenoid for Rain Bird Eagle 700, 900 or 1100 Series sprinklers

855RB-5154 Performance Chart									855RB-5558 Performance Chart							
Front Nozzle Positions	Nozzle Set 51 (Yellow)		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)	
	102-4587		102-4588		102-4589		102-0728		102-0729		102-0730		102-4261		102-4260	
	Blue	Gray	Red	Gray	Orange	Gray	Orange	Gray	Blue	Gray	Blue	Gray	Orange	Gray	Blue	Gray
	102-2925	102-2910	102-2928	102-2910	102-2926	102-2910	102-2926	102-2910	102-2925	102-2910	102-2925	102-2910	102-2926	102-2910	102-2925	102-2910
Back Nozzle Positions	Red Plug		Red Plug		Red Plug		Red Plug		Red Plug		Red Plug		Red Plug		Red Plug	
	102-4335		102-4335		102-4335		102-4335		102-4335		102-4335		102-4335		102-4335	
PSI	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm
60	55	16.1	63	20.3	69	23.4	75	31.3	—	—	—	—	—	—	—	—
70	56	17.4	66	21.8	70	25.3	76	33.8	—	—	—	—	—	—	—	—
80	57	18.5	68	23.3	72	27.0	77	36.0	80	39.1	85	41.0	88	45.4	92	49.7
90	58	19.4	70	24.5	75	28.5	79	38.1	83	41.5	87	43.5	91	48.2	94	52.8
100	59	20.5	72	25.9	76	30.0	80	40.2	86	43.7	90	45.7	94	50.6	96	55.3
Stator	102-1939 Yellow								102-1940 White							
Conver.	855RB-5154								855RB-5558							

DT55RB-5154 Performance Chart									DT55RB-5558 Performance Chart							
Front Nozzle Positions	Nozzle Set 51 (Yellow)		Nozzle Set 52 (Blue)		Nozzle Set 53 (Brown)		Nozzle Set 54 (Orange)		Nozzle Set 55 (Green)		Nozzle Set 56 (Gray)		5Nozzle Set 57 (Black)		Nozzle Set 58 (Red)	
	102-6906		102-0726		102-6907		102-0728		102-6955		102-6935		102-6936		102-6909	
	Yellow	Brown	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Green	Green	Green	Green	Green	Green
	102-5670	102-5671	102-5670	102-6884	102-5670	102-6884	102-5670	102-6884	102-5670	102-6885	102-6531	102-6885	102-6531	102-6885	102-6531	102-6885
Back Nozzle Positions	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug
	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335
PSI	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm
60	56	15.2	57	20.1	66	24.3	68	28.0	—	—	—	—	—	—	—	—
70	58	16.5	60	21.7	67	26.2	71	30.4	—	—	—	—	—	—	—	—
80	59	17.5	62	23.1	68	27.8	72	31.7	76	39.7	80	43.1	83	48.2	85	53.0
90	60	18.4	64	24.5	71	28.8	74	34.5	78	43.1	81	45.1	86	51.2	87	56.0
100	61	19.3	66	25.3	72	30.3	75	36.5	80	45.5	82	49.0	90	54.5	89	59.0
Stator	102-1939 Yellow								102-1940 White							
Conver.	DT55RB-5154								DT55RB-5558							

DT54RB-5154 Performance Chart									DT54RB-5558 Performance Chart							
Front Nozzle Positions	Nozzle Set 51 (Yellow)		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)	
	102-0725		102-7001		102-0727		102-7002		102-6908		102-0730		102-4261		102-4260	
	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Red Plug	Brown	Red Plug	Brown
	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-4335	102-6883	102-4335	102-6883
Back Nozzle Positions	Yellow	Blue	Yellow	Orange	Yellow	Red	Yellow	Beige	Yellow	Beige	Yellow	Red	Yellow	Gray	Yellow	Gray
	102-6937	102-2925	102-6937	102-2926	102-6937	102-2928	102-6937	102-2929	102-6937	102-2929	102-6937	102-2928	102-6937	102-4965	102-6937	102-4965
PSI	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm	rad/ft	gpm
60	59	14.6	62	17.4	68	24.3	71	28.2	—	—	—	—	—	—	—	—
70	60	15.7	63	18.8	70	26.3	75	30.6	—	—	—	—	—	—	—	—
80	61	16.4	64	20.0	72	27.6	78	32.6	83	39.5	85	42.7	87	45.9	91	50.2
90	62	17.8	66	21.3	74	29.9	80	34.7	85	41.6	88	44.9	90	48.5	93	52.8
100	63	18.1	67	23.6	75	30.4	81	36.7	87	43.7	90	46.8	93	51.2	95	55.4
Stator	102-6929 Blue								102-1940 White							
Conver.	DT54RB-5154								DT54RB-5558							

— *Not recommended at these pressures. Radius shown in feet.*

Toro recommends the use of a 1¼" swing joint at flows over 25-GPM (95-LPM). Sprinkler radius data collected in Toro's zero wind test facility per ASAE standard S398.1. Actual site conditions must be considered when selecting the appropriate nozzle.

All sprinklers are equipped with the selectable pilot valve that allows settings at 50, 65, 80 and 100 psi.

810G Series

810G

Features

- Adjustable part and full circle in one—30° - 360°
- The flow shut-off features allows you to shut off the water to an individual sprinkler wet or dry
- Flanged cap installs below grade
- Simple to set adjusting band – arc is factory pre-set to 180°
- Smart Arc™ memory returns sprinkler to previously set arc
- Below-grade installation
- Unique over-molded wiper seal
- Cluster, water-lubricated, gear-drive design
- Standard rubber cover
- Large filter screen
- Color-coded nozzle tree with seven nozzles
- Factory-installed #12 nozzle

Operating Specifications

- Inlet: 1" female threaded NPT, BSP or ACME
- Radius: 30' – 68'
- Flow Rate: 6.6 – 26.3 GPM
- Recommended Operating Pressure Range: 40-100 psi
- Trajectory: Adjustable 5° to 25°
- Check Valve: Reversible check valve prevents low-head drainage (maintains up to 6' elevation change)

Dimensions

- Body diameter: 2 3/8"
- Body height: 9 ¼"
- Weight: .99 lbs.
- Pop-up height to nozzle: 4 ¾"

Warranty

- Three years
- Five years when installed with Toro swing joints

810G Performance Data

Nozzle Size	psi	Flow	25°			15°			5°		
			Radius	Precip. Rate* ▲	Precip. Rate* ■	Radius	Precip. Rate* ▲	Precip. Rate* ■	Radius	Precip. Rate* ▲	Precip. Rate* ■
7 Orange	40	6.6	38	0.51	0.44	35	0.60	0.52	30	0.82	0.71
	50	7.3	40	0.51	0.44	37	0.59	0.51	33	0.75	0.65
	60	8.1	43	0.49	0.42	40	0.56	0.49	36	0.69	0.60
	70	8.8	45	0.48	0.42	42	0.55	0.48	39	0.64	0.56
	80	9.4	46	0.49	0.43	43	0.57	0.49	40	0.65	0.57
	90	9.9	48	0.48	0.41	45	0.54	0.47	41	0.65	0.57
	100	10.4	49	0.48	0.42	46	0.55	0.47	42	0.66	0.57
9 Red	40	7.4	39	0.54	0.47	36	0.63	0.55	32	0.80	0.70
	50	8.1	41	0.54	0.46	38	0.62	0.54	35	0.73	0.64
	60	8.7	44	0.50	0.43	41	0.58	0.50	38	0.67	0.58
	70	9.4	46	0.49	0.43	43	0.57	0.49	40	0.65	0.57
	80	10	48	0.48	0.42	44	0.57	0.50	41	0.66	0.57
	90	10.7	49	0.50	0.43	46	0.56	0.49	43	0.64	0.56
	100	11.4	51	0.49	0.42	47	0.57	0.50	44	0.65	0.57
12* Black	40	9.7	40	0.67	0.58	36	0.83	0.72	32	1.05	0.91
	50	10.5	43	0.63	0.55	40	0.73	0.63	35	0.95	0.83
	60	11.2	47	0.56	0.49	44	0.64	0.56	38	0.86	0.75
	70	12	50	0.53	0.46	46	0.63	0.55	42	0.76	0.65
	80	12.9	52	0.53	0.46	49	0.60	0.52	45	0.71	0.61
	90	13.8	55	0.51	0.44	51	0.59	0.51	47	0.69	0.60
	100	14.7	57	0.50	0.44	53	0.58	0.50	49	0.68	0.59
16 Blue	40	11.9	40	0.83	0.72	36	1.02	0.88	33	1.21	1.05
	50	13.3	44	0.76	0.66	40	0.92	0.80	36	1.14	0.99
	60	14.7	48	0.71	0.61	45	0.81	0.70	39	1.07	0.93
	70	16.1	52	0.66	0.57	47	0.81	0.70	43	0.97	0.84
	80	17.2	54	0.66	0.57	50	0.76	0.66	46	0.90	0.78
	90	18.3	57	0.63	0.54	52	0.75	0.65	49	0.85	0.73
	100	19.4	59	0.62	0.54	54	0.74	0.64	50	0.86	0.75
20 Green	40	14.2	40	0.99	0.85	36	1.22	1.05	32	1.54	1.33
	50	15.8	45	0.87	0.75	40	1.10	0.95	35	1.43	1.24
	60	17.4	49	0.81	0.70	45	0.96	0.83	37	1.41	1.22
	70	19	54	0.72	0.63	48	0.92	0.79	44	1.09	0.94
	80	20.2	56	0.72	0.62	51	0.86	0.75	47	1.02	0.88
	90	21.3	59	0.68	0.59	53	0.84	0.73	50	0.95	0.82
	100	22.5	61	0.67	0.58	56	0.80	0.69	51	0.96	0.83
24 Brown	40	14.9	41	0.99	0.85	37	1.21	1.05	32	1.62	1.40
	50	17.1	46	0.90	0.78	41	1.13	0.98	35	1.55	1.34
	60	18.3	50	0.81	0.70	46	0.96	0.83	38	1.41	1.22
	70	19.5	56	0.69	0.60	52	0.80	0.69	45	1.07	0.93
	80	20.8	58	0.69	0.60	54	0.79	0.69	48	1.00	0.87
	90	22	60	0.68	0.59	56	0.78	0.68	51	0.94	0.81
	100	23.2	62	0.67	0.58	57	0.79	0.69	52	0.95	0.83
27 Gray	40	16.6	41	1.10	0.95	38	1.28	1.11	32	1.80	1.56
	50	18.9	47	0.95	0.82	42	1.19	1.03	38	1.45	1.26
	60	20.4	51	0.87	0.75	50	0.91	0.79	48	0.98	0.85
	70	21.9	55	0.80	0.70	54	0.83	0.72	53	0.87	0.75
	80	23.3	60	0.72	0.62	58	0.77	0.67	55	0.86	0.74
	90	24.8	64	0.67	0.58	61	0.74	0.64	58	0.82	0.71
	100	26.3	68	0.63	0.55	63	0.74	0.64	59	0.84	0.73

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

■ *Precipitation rates are for square spacing, shown in inches per hour, calculated at 50% of diameter.*

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

Radius shown in feet. Data based on 360°.

#12 nozzle comes pre-installed from factory in standard models.
Sprinkler radius data collected in Toro's zero wind test facility per ASAE standard S398.1.
Actual site conditions must be considered when selecting the appropriate nozzle.

Specifying Information—810G Series

810G-X2X		
Model	***Body Threads***	***Optional***
810G	**X2**	**X**
810G—810G Sprinkler	0—NPT 4—ACME 5—BSP	E—Effluent
Example: An 810G Series Sprinkler having NPT threads, would be specified as: **810G-02**		

810GL Series

810G "L"

Features

- Adjustable part and full circle in one—30° - 360°
- The flow shut-off features allows you to shut off the water to an individual sprinkler wet or dry
- Flanged cap installs below grade
- Simple to set adjusting band – arc is factory pre-set to 180°
- Smart Arc™ memory returns sprinkler to previously set arc
- Below-grade installation
- Unique over-molded wiper seal
- Cluster, water-lubricated, gear-drive design
- Standard rubber cover
- Large filter screen
- Color-coded nozzle tree with seven nozzles
- Factory-installed #3 nozzle

Operating Specifications

- Inlet: 1" female threaded NPT, BSP or ACME
- Radius: 28' – 48'
- Flow Rate: 1.0 – 9.8 GPM
- Recommended Operating Pressure Range: 40-100 psi
- Trajectory: Adjustable 5° to 25°
- Check Valve: Reversible check valve prevents low-head drainage (maintains up to 6' elevation change)

Dimensions

- Body diameter: 2 3/8"
- Body height: 9 ¼"
- Weight: .99 lbs.
- Pop-up height to nozzle: 4 ¾"

Warranty

- Three years
- Five years when installed with Toro swing joints

810G "L" Performance Data

Nozzle Size	PSI	Flow	25°			15°			5°		
			Radius	Precip. Rate*		Radius	Precip. Rate*		Radius	Precip. Rate*	
				▲	■		▲	■		▲	■
1.0 Yellow	30	1.0	33	0.10	0.09	31	0.12	0.10	28	0.14	0.12
	40	1.1	34	0.11	0.09	31	0.13	0.11	29	0.15	0.13
	50	1.3	35	0.12	0.10	32	0.14	0.12	30	0.16	0.14
	60	1.4	36	0.12	0.10	32	0.15	0.13	31	0.16	0.14
	70	1.5	37	0.12	0.11	33	0.15	0.13	31	0.17	0.15
1.5 Orange	30	1.1	34	0.11	0.09	32	0.12	0.10	30	0.14	0.12
	40	1.4	35	0.13	0.11	32	0.15	0.13	31	0.16	0.14
	50	1.6	36	0.14	0.12	33	0.16	0.14	32	0.17	0.15
	60	1.7	37	0.14	0.12	33	0.17	0.15	32	0.18	0.16
	70	1.9	38	0.15	0.13	34	0.18	0.16	33	0.19	0.17
2.0 Red	30	1.6	36	0.14	0.12	34	0.15	0.13	32	0.17	0.15
	40	1.9	37	0.15	0.13	34	0.18	0.16	33	0.19	0.17
	50	2.2	38	0.17	0.15	35	0.20	0.17	34	0.21	0.18
	60	2.4	39	0.18	0.15	36	0.21	0.18	35	0.22	0.19
	70	2.6	40	0.18	0.16	37	0.21	0.18	36	0.22	0.19
3.0** Black	30	2.3	37	0.19	0.16	35	0.21	0.18	33	0.23	0.20
	40	2.7	38	0.21	0.18	36	0.23	0.20	34	0.26	0.22
	50	3.1	39	0.23	0.20	37	0.25	0.22	35	0.28	0.24
	60	3.4	40	0.24	0.20	38	0.26	0.23	36	0.29	0.25
	70	3.6	42	0.23	0.20	39	0.26	0.23	38	0.28	0.24
4.5 Blue	30	3.4	38	0.26	0.23	35	0.31	0.27	33	0.35	0.30
	40	4.0	39	0.29	0.25	36	0.34	0.30	34	0.38	0.33
	50	4.6	40	0.32	0.28	38	0.35	0.31	36	0.39	0.34
	60	5.1	41	0.34	0.29	39	0.37	0.32	37	0.41	0.36
	70	5.6	43	0.34	0.29	40	0.39	0.34	39	0.41	0.35
6.0 Green	30	4.4	39	0.32	0.28	36	0.38	0.33	33	0.45	0.39
	40	5.1	40	0.35	0.31	37	0.41	0.36	34	0.49	0.42
	50	5.8	41	0.38	0.33	39	0.42	0.37	36	0.50	0.43
	60	6.5	42	0.41	0.35	40	0.45	0.39	38	0.50	0.43
	70	7.1	44	0.41	0.35	42	0.45	0.39	40	0.49	0.43
7.5 Brown	30	5.2	40	0.36	0.31	36	0.45	0.39	33	0.53	0.46
	40	6.2	41	0.41	0.35	38	0.48	0.41	35	0.56	0.49
	50	7.1	43	0.43	0.37	40	0.49	0.43	37	0.58	0.50
	60	7.8	44	0.45	0.39	41	0.52	0.45	39	0.57	0.49
	70	8.5	45	0.47	0.40	43	0.51	0.44	41	0.56	0.49
9.0 Gray	30	6.1	40	0.42	0.37	36	0.52	0.45	33	0.62	0.54
	40	7.1	42	0.45	0.39	39	0.52	0.45	36	0.61	0.53
	50	8.0	45	0.44	0.38	41	0.53	0.46	38	0.62	0.53
	60	8.9	46	0.47	0.40	42	0.56	0.49	40	0.62	0.54
	70	9.8	48	0.47	0.41	44	0.56	0.49	42	0.62	0.53

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

■ *Precipitation rates are for square spacing, shown in inches per hour, calculated at 50% of diameter.*

Shaded areas represent optimum operating pressure for that nozzle size.

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

Radius shown in feet. Data based on 360°.

***#3 nozzles come preinstalled from factory in "L" models.*

Sprinkler radius data collected in Toro's zero wind test facility per ASAE standard S398.1. Actual site conditions must be considered when selecting the appropriate nozzle.

Specifying Information—810G "L" Series

810G-X2X		
Model	*Body Threads*	*Optional*
810G	**X2**	**X**
810G—810G Sprinkler	0—NPT 4—ACME 5—BSP	E—Effluent L—Low Flow
Example: An 810G Series Sprinkler designed for low flow and having NPT threads, would be specified as: **810G-02L**		

720/720G Series

720 720G

Features

- The MultiMatrx nozzle allows you to select nine different flow settings from the top of the sprinkler wet or dry
- The 720 model is a golf valve-in-head body that provides the Spike Guard solenoid, individual head control, pressure regulation at the head, and manual ON-OFF-AUTO control.
- The 720G models are a block system style body that requires water supplied from a separate valve and includes a standard rubber cover and check vale and a riser snap ring retention feature that allows riser servicing without digging
- Adjustable part/full and true full circle uni-directional model from 40° to 360°
- High pop-up height to clear taller grasses
- All adjustments made from the top-wet or dry
- Balanced precipitation rates
- Time-proven planetary gear-drive design
- Variable reversing stator
- All internal components serviceable from the top of the sprinkler with Servi-Snap™
- Durable engineering plastic and stainless steel construction

Operating Specifications

- Inlet:
  - 720: 1" female threaded NPT, BSP or ACME
  - 720G: ¾" threaded
- Radius:
  - 720: 22' – 49'
  - 720G: 19' – 49'
- Flow Rate:
  - 720: 3.0 – 9.0 GPM
  - 720G: 0.85 – 11.62 GPM
- Precipitation rates from .10-.45 in./hr.
- Optimum Nozzle Performance: 65 psi
- Recommended Operating Pressure Range:
  - 720: Electric; 40-120 psi – Normally Open & Check-O-Matic; 40-90 psi
  - 720G: 20 – 50 psi
- Standard Pressure Regulation for Model 720: 65 psi
- Trajectory: Adjustable 5° - 25°
- Check-O-Matic:
  - 720: Maintains up to 37' elevation
  - 720G: Maintains up to 10' elevation
- Electric Valve-in-Head Solenoid: 24V ac, 50/60 Hz
  - Inrush: 60 Hz, 0.12 Amps
  - Holding: 60 Hz, 0.10 Amps

Dimensions

- Body diameter:
  - 720: 6½"
  - 720G: 2½"
- Body height:
  - 720: 10"
  - 720G: 7"
- Weight:
  - 720: 2.96 lbs.
  - 720G: .69 lbs
- Pop-up height to nozzle:
  - 720: 2 7/8"
  - 720G: 2 5/8"

Warranty

- Three years
- Five years when installed with Toro swing joints (720 only)

720G Series MultiMatrx Low-pressure Nozzle Performance Data

	1.0		1.5		2.0		3.0		4.0		4.5		6.0		8.0		9.0	
PSI	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM	Radius	GPM
25	29	0.85	25	1.05	27	1.44	26	1.85	26	2.73	27	3.23	28	4.00	28	5.0	29	5.57
30	30	0.94	27	1.15	29	1.65	28	2.09	30	3.09	30	3.68	31	4.56	31	5.6	33	6.25
35	31	1.02	29	1.25	32	1.82	32	2.34	33	3.47	34	4.09	35	5.05	35	6.3	37	6.96
40	31	1.08	30	1.33	33	1.96	33	2.54	34	3.72	36	4.42	35	5.51	38	6.8	39	7.58
45	31	1.12	31	1.42	31	2.08	34	2.73	35	4.06	39	4.71	39	5.90	42	7.4	42	8.16
50	31	1.17	31	1.49	34	2.15	34	2.89	36	4.31	39	4.98	41	6.27	43	7.9	44	8.75
55	31	1.21	31	1.55	35	2.29	35	3.04	38	4.52	40	5.23	42	6.61	45	8.26	46	9.23
60	32	1.24	30	1.60	35	2.39	35	3.15	38	4.69	40	5.41	43	6.87	45	8.61	47	9.67
65	32	1.28	30	1.66	36	2.48	36	3.30	39	4.88	41	5.62	44	7.14	45	8.99	49	10.09
70	31	1.31	30	1.70	36	2.57	36	3.42	39	5.05	41	5.84	44	7.43	46	9.29	49	10.42
75	30	1.34	30	1.75	37	2.64	37	3.55	39	5.21	42	6.00	44	7.68	47	9.61	49	10.89

= Nozzles not recommended at this pressure. *= Low flow setting recommended for 720G models only.* *= Optimum nozzle performance.*

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

Radius shown in feet. Data based on 360°.

Specifying Information—720G Series

72XGE	
Arc	*Optional*
72XG	**E**
4—Full-circle 5—Part-circle	E—Effluent Model

Example: When specifying a full-circle 720G Sprinkler, you would specify: **724G**

Specifying Information—720 Series

72X-XX-396E					
Body Arc	*Threads*	*Valve-In-Head Type*	*Nozzle*	*Pressure Regulation**	*Optional*
72X	**X**	**X**	**39**	**6**	**E**
4—Full-circle 5—Part-circle	0—NPT 4—ACME 5—BSP	1—N.O. Hydraulic 2—Check-O-Matic 6—Electric	Nozzles selection from 3-9	6—65 psi	E—Effluent Model

Example: When specifying a full-circle 720 Series Sprinkler with NPT threads, electric valve and pressure regulation at 65 psi, you would specify: **724-06-396**

640 Series

Check-O-Matic Valve in Head Effluent

Features

- High pressure with low flow nozzles creates a misting effect to bring the ambient temperature down and reduce turf stress
- Twelve fixed arc drive assemblies
- Standard rubber cover
- Vandal-resistant cap with locking set screw
- Gear-drive design
- Basket filter screen
- Stainless steel retraction spring

Operating Specifications

- Radius: 47' – 67'
- Flow Rate: 6.0 – 25.0 GPM
- Recommended Operating Pressure Range: 40-90 psi (maximum-100 psi)
- Trajectory: 27°
- Pop-up to nozzle: 2 3/8"
- Inlet: 1" female-threaded
- Below-grade installation: up to ½"
- Check-O-Matic maintains up to 15' elevation change
- Selection of five nozzles and 12 arcs
- Adjustment screw allows up to 25% radius reduction

Dimensions

- Body diameter: 2 ½"
- Cap diameter: 3 ¼"
- Body height: Check-O-Matic – 9"; Valve-In-head – 10 ½"
- Exposed surface diameter when buried ½" below grade: 1¾"

Warranty

- Five years

640 Series Sprinklers Apex @ 50 psi

Nozzle	27°
	Max. Ht. of Spray
40	11' 6"
41	13' 10"
42	13' 5"

640 Series Sprinklers Apex @ 60 psi

Nozzle	27°
	Max. Ht. of Spray
43	18' 8"

640 Series Sprinklers Apex @ 75 psi

Nozzle	27°
	Max. Ht. of Spray
44	19' 8"

640 Series Performance Data

Nozzle	psi	GPM	Radius
40	40	6.0	47
	50	6.7	50
	60	7.3	52
	70	8.0	53
	80	8.6	54
	90	9.2	55
41	40	9.5	48
	50	10.2	53
	60	11.0	54
	70	11.9	55
	80	12.7	56
	90	13.4	57
42	40	12.0	52
	50	12.9	55
	60	14.0	56
	70	14.7	57
	80	15.8	58
	90	16.8	58
43	40	13.2	56
	50	14.5	59
	60	15.7	59
	70	17.0	61
	80	18.3	63
	90	19.4	64
44	40	16.7	55
	50	18.6	60
	60	19.9	61
	70	21.9	63
	80	23.4	65
	90	25.0	67

All performance specifications are based on the stated working pressure available at the base of the sprinkler.
Radius shown in feet. Data based on 360°.
Note: For the 640, differing arcs cannot be valved together.
Sprinkler radius data collected in Toro's zero wind test facility per ASAE standard S398.1.
Actual site conditions must be considered when selecting the appropriate nozzle.

Specifying Information—640 Series

64X-0X-4X-XXXE

Arc	*Valve Type*	*Nozzle*	*Special Arc*	*Optional*
64X	**0X**	**4X**	**XXX**	**E**
0—Special Arc 1—90° 2—180° 3—270° 4—360°	1—Normally Open Valve-In-Head 2—Check-O-Matic	0 1 2 3 4	045° 148° 060° 173° 108° 192° 127° 238°	E—Effluent Model

Example: A 640 Series Sprinkler with a 90° arc, 40 nozzle and a check valve, would be specified as: **641–02–40**

Most 640 sprinklers are available in component parts only. Consult Res/Com Finished Goods Price List (Form No. 8-1000-IRC) for a complete list of sprinklers available as finished goods.

690 Series

690

Features

- Used in single row applications the 696 2-speed models operate at a slower speed over the 60 degree non-overlap area and a faster speed over the 120 degree overlapped areas to provide a balanced application rate
- Used in double row applications the 698 2-speed models operate at a slower speed over the 180 degree non-overlap area and a faster speed over the 180 degree overlapped areas to provide a balanced application rate
- Radius and flow capabilities are perfect for cooling and rinsing artificial playing surfaces such as football fields
- Manual control at the sprinkler, On-Off-Auto (electric)
- Time-proven, gear-drive design
- All internal components serviceable from the top of the sprinkler
- Durable engineering plastic and stainless steel construction
- Nine arc selections

Operating Specifications

- Inlet: 1 ½" NPT
- Radius: 87' – 108'
- Flow Rate: 51.0 – 82.2 GPM
- Recommended Operating Pressure Range: 80-100 psi
  Maximum pressure: 150 psi
  Minimum pressure: 40 psi
- Electric Valve-In-Head Solenoid: 24V ac, 50/60 Hz
  - Inrush: 60 Hz, 0.30 Amps
  - Holding: 60 Hz, 0.20 Amps
- Check-O-Matic: Maintains 37' of elevation

Dimensions

- Body diameter: 10"
- Body height: 16"
- Weight: 5.6 lbs.
- Pop-up height to nozzle: 3/4"

Warranty

- Three years
- Five years when installed with Toro Swing Joints

690 Series Performance Chart

Base Pressure	Nozzle Set 90		Nozzle Set 91		Nozzle Set 92	
psi	Radius	GPM	Radius	GPM	Radius	GPM
80	87	51.0	96	61.2	100	74.0
100	90	57.1	100	73.5	108	82.2

Radius shown in feet.
Sprinkler radius of throw per ASAE standard S398.1.

Specifying Information—690

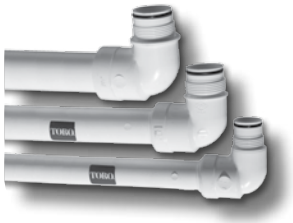
69X-0X-XXX

Arc	*Valve-In-Head Type*	*Nozzle*	*Pressure Regulation**
69X	**0X**	**XX**	**X**
1—90° 2—180° 4—Full-circle 6—Full-circle, 2-speed (60°–120°) 8—Full-circle, 2-speed (180°–180°)	1—Normally Open Hydraulic 2—Check-O-Matic 6—Electric	90 91 92	8—80 psi 1—100 psi

Example: When specifying a 690 Series Sprinkler with a 180° arc, electric valve-in-head, #91 nozzle, and pressure regulation at 80 psi, you would specify: **692-06-918**

*Electric models only.

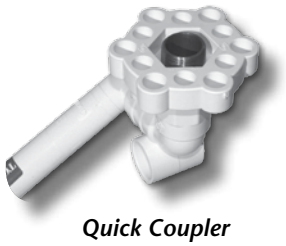
Toro® Swing Joints



1", 1 1/4" and 1 1/2"

Glue tees, Saddle tees

Standard 2x90 and Ultra 4x90



Quick Coupler

Features

- Schedule 80 PVC construction
- Double o-ring swivel joints
- Low friction loss characteristics
- 315 psi pressure rating
- 800 psi burst pressure safety rating
- 1", 1¼" and 1½" models
- Standard models with 2X90 outlet configuration
- Ultra models with 4X90 outlet for maximum alignment flexibility
- 3 inlet fittings styles; ACME, male thread and 4" spigot
- 2 outlet fitting styles; ACME and male thread
- 12" and 18" lay lengths
- Saddle Tee models; 2" tee w/ 1", 1¼" or 1½" outlet
- Glue Tee models; 2" tee w/ 1", 1 ¼" or 1½" outlet
- Glue 90° models; 2" 90° w/ 1", 1¼" or 1½" outlet
- Quick coupler models w/ Dura-lock anti-rotation feature
- Compatible with all brands of service and saddle tees

Warranty

- Five years
- Toro Golf sprinkler warranty extended to 5 years when purchased and installed with a Toro Swing Joint.

1 ¼" Female ACME x 1" Male ACME Adapter

Allows you to upgrade existing Rain Bird® Eagle 700 1 ¼" ACME sprinklers to any Toro 800S or DT Series Sprinkler. P/N TA36-132.

Toro Tool Tip:

Use a 1¼" hole saw for the 1" Saddle Tee.

Use a 1½" hole saw for the 1¼" and 1½" Saddles.

Specifying Information—Toro Swing Joint

TSJ-XXXXXX-XX-X-XXX*							
Description	*Inlet Size*	*Inlet Type*	*Size*	*Length*	*Number of Elbows*	*Outlet Size*	*Outlet Type*
TSJ	XX	XX	XX	XX	X	XX	X
TSJ— Toro Swing Joint	10—1" 12—1.25" 15—1.5"	M—MIPT (male pipe thread) S—4" Spigot A—ACME thread GE—Glue elow GT—Glue Tee ST—Saddle Tee	Blank—same as inlet size 10—1" 12—1.25" 15—1.5"	12—12" Lay Length 18—18" Lay Length	3—Standard Unibody 4—Standard Unibody for Saddle Tees 5—Ultra Unibody 6—Ultra Unibody for Saddle Tees	10—1" 15—1 1/2"	M—MIPT (Male pipe thread) A—ACME thread QC—Quick Coupler
Example: A Toro 1 1/4" Swing Joint with an 1 1/4" ACME inlet, 12" lay length, 3 elbows (standard uni-body) and 1" ACME outlet fitting would be specified as:**TSJ-12A-12-3-10A**							

* Not all combinations are available. Contact your Toro distributor for details.

590GF Series

590GF-12 590GF-4

590GF-6

Features

- Sprinkler flushes during pop-up and retraction clearing debris from around the riser
- X-Flow® shut-off device stops the flow of water if the nozzle is damaged or removed
- The standard check valve prevents low head drainage with up to 10′ of elevation change
- Flanged cap installs below grade
- Stainless steel retraction spring
- Ratcheting riser feature for arc adjustment
- Pop-up and retraction flushing clears debris for reliable pop-down
- Small 2″ diameter cap
- All bodies shipped with flush plug in place

Operating Specifications

- Radius: 2′ – 26′
- Recommended pressure range: 25-50 psi (maximum – 75 psi
- Flow rate: 0.05 – 4.71 GPM
- 2 GPM flush rate

Dimensions

- Body diameter:
  - 1 3/8″ on 4P and 6P
  - 1 5/8″ on 12P
- Cap diameter: 2″
- Inlet: ½″ female-threaded

Warranty

- Three years

The *590GF* Uses *ALL* Toro® Spray Nozzles

Including:

- Precision™ Series Spray Nozzles
- Precision™ Series Rotating Nozzles
- MPR Nozzles
- TVAN Nozzles

Risers and Extenders

570-6X

- 570 extender
- Male-inlet threads install onto any 570 pop-up sprinkler or shrub adapter to provide a 6" extension
- Maximum pressure: 75 psi

570-SR-6 and 570SR-18

- 570 stationary riser
- ½" male-threaded inlet for installation on pipe fittings
- Maximum pressure: 75 psi
- Height: 6" and 18"

Specifying Information

Model Number	Description
590GF-4	4″ Pop-Up
590GF-4E	4″ Pop-Up, Effluent
590GF-6	6″ Pop-Up
590GF-6E	6″ Pop-Up, Effluent
590GF-12	12″ Pop-Up
590GF-12E	12″ Pop-Up, Effluent

Specifying Information

Model Number	Description
570SR-6	570SR-6 Riser
570SR-18	570SR-18 Riser
570S	Shrub Adaptor
570-6X	570-6X Extender

DL2000® Subsurface Drip Irrigation System

Features

- Pressure compensating emitters
- Each emitter is impregnated with Treflan, a root inhibitor that prevents roots from entering and clogging the emitter opening
- The airjection system draws a measured amount of air into the system to deliver oxygen rich water directly to the root zone to promote healthy plant growth
- The air relief valve opens at the end of every watering cycle allowing clean air to enter the system and eliminate emitter clogging from siphoning
- Applies water directly to the root zone allowing turf to stay dry
- Uniformly applies water to areas such as fingers
- Minimizes runoff
- Eliminates overspray into bunker keeping sand dry
- Cycle/soak allows for application on steep slopes
- Reduces bunker cave-ins
- Saves time, labor and money by eliminating the need for hand-watering

Drip System Specifications

- Flow range:
  - Low flow: 0.1 to 8.0 GPM
  - High flow: 2.0 to 20.0 GPM
- DL2000 range:
  - Low flow: 12′ to 1000′
  - High flow: 250′ to 2500′
- Pressure compensating emitter: 0.5 GPH
- DL2000 Maximum run length: 250′
- Application rate (12″ x 12″ spacing): 0.85″ per hour

System Components

- DL2000 subsurface dripline
  - Low Flow system – 500′
  - High Flow system – 1000′
- Drip Zone Valve Kit – includes control valve, pressure regulator, Y-filter and manual ball valve
- Air Vent Assembly – pre-assembled and ready to install for labor savings
- Required inlet/outlet fittings
- Flush Assembly Fittings (8 GPM) 2 psi sealing flush valve
- Installation Fittings:
  - Includes Toro exclusive Loc-Eze® tees, couplings, elbows and end clamps
  - 10′ of Blue Stripe® polyethylene tubing
  - Soil staples for secure tubing placement
- Pipe thread tape

Warranty

- 2 Years

Specifying Information—DL2000®

Model Number	*Description*
SSDS-LF-500	DL2000 500' Subsurface Drip System—Low Flow
SSDS-HF-1000	DL2000 1000' Subsurface Drip System—High Flow
RGP-212-05	DL2000 500′ (Roll, 0.5 GPH), 12″ Spacing

Precision™ Series Spray Nozzles

Male- or Female-threaded Nozzles

5′ *8′* *10′*

12′ *15′* *Specialty Arcs*

Features

- Patented H²0 Chip Technology creates one or more high frequency oscillating streams to achieve the desired arc and radius with 1/3 less water usage
- Specialty Arcs available (60°, 120°, 150°, 210°, 240°)
- Radius reduction 25% maximum
- Color coded for radius on top of the nozzle
- Precipitation rate ≤ 1″/hour (≤ 25mm/hour)
- Maintains precipitation rate as radius is reduced up to max of 25%
- Matched precipitation rate within radius families
- Matched precipitation rates between radius families
- Screen attached to nozzle for easy insertion into the spray body
- Works on all spray bodies- male and female threaded

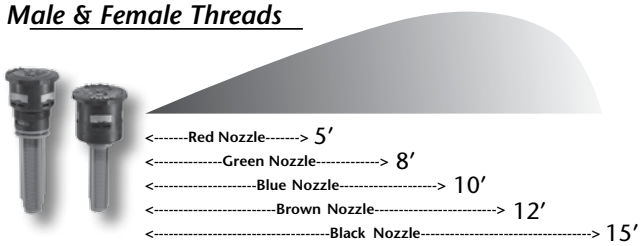
Operating Specifications

- Radius: 5′-15′
- Operating pressure range: 20-75 ps
- Recommended Pressure: 30 psi
- Flow Rate: 0.04-2.4 GPM
- Nozzle trajectory:
  - 5′: 5° - 8′: 10° - 10′: 15° - 12′: 20°
  - 15′: 27° - Corner and Side Strips: 20°

Warranty

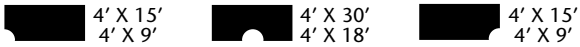
- Two years

5 Radii Available In Male & Female Threads



9 Arcs Plus Side and Corner Strips Available

60° 90° 120° 150° 180° 210° 240° 270° 360°



LCS (Left Corner Strip) **SST** (Side Strip) **RCS** (Right Corner Strip)

Specifying Information

O-X-XXXX-XXX

Nozzle	Thread	Radius	Arc	Body
O	X	XXXX	XXX	
O—1″ Per Hour	T—Toro Male Threaded Nozzle Blank—Female Threaded Nozzle	5—5′ 8—8′ 10—10′ 12— 12′ 15—15′ 4X15—4′X15′* 4X30—4′X30′* 4X9—4′X9′ 4X18—4′X18′	60—60° Q—90° T—120° 150—150° H—180° 210—210° TT—240° TQ—270° F-360—Full-circle LCS—Left Corner RCS—Right Corner SST—Side Strip*	Call out body as required

Example: A female threaded Precision Series Spray with a spray radius of 12′ and a 90° arc would be specified as: O-12-Q
Example 2: A male threaded Precision Series Spray with a spray radius of 10′ and a 180° arc would be specified as: O-T-10-H

*4X15′ and 4X30′ are only SST models available.

Performance Data Precision™ Series Spray Nozzles

Arc	PSI	GPM	Radius	Precip.Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)
5-60°	20	0.04	4.7	0.99	1.15
	30	0.04	5.0	0.99	1.15
	40	0.04	5.0	0.99	1.15
	50	0.05	5.3	0.99	1.14
5Q	20	0.06	4.6	1.02	1.18
	30	0.06	5.0	0.99	1.14
	40	0.07	5.0	1.00	1.16
	50	0.07	5.0	1.02	1.17
5T	20	0.07	4.4	1.01	1.17
	30	0.09	5.0	1.04	1.20
	40	0.09	5.2	0.99	1.15
	50	0.10	5.4	0.98	1.13
5-150°	20	0.07	4.0	1.02	1.18
	30	0.11	5.0	1.03	1.19
	40	0.12	5.2	1.04	1.20
	50	0.13	5.4	1.04	1.20
5H	20	0.10	4.4	0.99	1.15
	30	0.13	5.0	1.00	1.16
	40	0.14	5.1	1.00	1.15
	50	0.14	5.2	0.99	1.14
5-210°	20	0.10	4.4	0.99	1.15
	30	0.15	5.2	1.07	1.23
	40	0.16	5.3	1.10	1.27
	50	0.17	5.5	1.08	1.25
5TT	20	0.14	4.3	1.09	1.26
	30	0.17	5.0	0.98	1.13
	40	0.19	5.0	1.07	1.23
	50	0.19	5.0	1.09	1.25
5TQ	20	0.15	4.3	1.02	1.17
	30	0.20	5.0	1.00	1.16
	40	0.21	5.0	1.05	1.21
	50	0.22	5.0	1.10	1.27
5F	20	0.17	4.0	1.02	1.18
	30	0.26	5.0	1.00	1.16
	40	0.26	5.0	1.00	1.16
	50	0.26	5.0	1.00	1.16

Arc	PSI	GPM	Radius	Precip.Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)
8-60°	20	0.10	7.6	1.0	1.2
	30	0.11	8.0	1.0	1.1
	40	0.12	8.1	1.1	1.2
	50	0.13	8.3	1.1	1.3
8Q	20	0.14	7.0	1.1	1.3
	30	0.17	8.0	1.0	1.1
	40	0.18	8.2	1.0	1.2
	50	0.18	8.4	1.0	1.1
8T	20	0.20	7.6	1.0	1.2
	30	0.22	8.0	1.0	1.1
	40	0.23	8.2	1.0	1.1
	50	0.24	8.3	1.0	1.1
8-150°	20	0.25	7.5	1.0	1.2
	30	0.27	8.0	1.0	1.1
	40	0.28	8.1	1.0	1.1
	50	0.29	8.2	1.0	1.2
8H	20	0.26	7.0	1.0	1.2
	30	0.33	8.0	1.0	1.1
	40	0.34	8.0	1.0	1.2
	50	0.34	8.0	1.0	1.2
8-210°	20	0.33	7.6	1.1	1.3
	30	0.36	8.0	1.1	1.3
	40	0.37	8.1	1.1	1.3
	50	0.38	8.2	1.1	1.3
8TT	20	0.34	7.0	1.0	1.2
	30	0.44	8.0	1.0	1.1
	40	0.46	8.0	1.0	1.2
	50	0.46	8.0	1.0	1.2
8TQ	20	0.41	7.2	1.0	1.1
	30	0.49	8.0	1.1	1.1
	40	0.54	8.0	1.1	1.2
	50	0.55	8.0	1.1	1.2
8F	20	0.55	7.0	1.1	1.2
	30	0.66	8.0	1.0	1.1
	40	0.68	8.0	1.0	1.2
	50	0.71	8.0	1.1	1.2

Arc	PSI	GPM	Radius	Precip.Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)
10-60°	20	0.16	9.5	1.0	1.2
	30	0.17	10.0	1.0	1.1
	40	0.18	10.0	1.0	1.2
	50	0.19	10.0	1.1	1.3
10Q	20	0.26	9.5	1.0	1.1
	30	0.23	10.0	1.0	1.2
	40	0.28	10.2	1.0	1.2
	50	0.28	10.3	1.0	1.2
10T	20	0.31	9.5	1.0	1.1
	30	0.34	10.0	1.0	1.1
	40	0.36	10.0	1.0	1.2
	50	0.37	10.0	1.1	1.2
10-150°	20	0.41	9.8	1.0	1.1
	30	0.43	10.0	1.0	1.1
	40	0.44	10.2	1.0	1.1
	50	0.46	10.4	1.0	1.1
10H	20	0.48	9.7	1.0	1.1
	30	0.51	10.0	1.0	1.1
	40	0.55	10.3	1.0	1.2
	50	0.56	10.4	1.0	1.2
10-210°	20	0.56	9.8	1.1	1.3
	30	0.58	10.0	1.1	1.3
	40	0.60	10.4	1.1	1.2
	50	0.62	10.5	1.1	1.3
10TT	20	0.63	9.6	1.0	1.1
	30	0.69	10.0	1.0	1.2
	40	0.73	10.3	1.0	1.1
	50	0.74	10.4	1.0	1.1
10TQ	20	0.71	9.5	1.0	1.1
	30	0.79	10.0	1.0	1.1
	40	0.84	10.3	1.0	1.1
	50	0.86	10.4	1.0	1.1
10F	20	0.95	9.6	1.0	1.1
	30	1.03	10.0	1.0	1.1
	40	1.08	10.3	1.0	1.1
	50	1.12	10.4	1.0	1.2

Arc	PSI	GPM	Radius	Precip.Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)
12-60°	20	0.24	11.5	1.0	1.2
	30	0.25	12.0	1.0	1.2
	40	0.26	12.1	1.0	1.2
	50	0.28	12.2	1.1	1.3
12Q	20	0.34	12.0	1.0	1.2
	30	0.37	12.1	1.0	1.1
	40	0.39	11.4	1.0	1.2
	50	0.39	12.0	1.0	1.1
12T	20	0.46	11.5	1.0	1.2
	30	0.49	12.0	1.0	1.1
	40	0.51	12.2	1.0	1.1
	50	0.52	12.3	1.0	1.1
12-150°	20	0.60	11.6	1.0	1.2
	30	0.62	12.0	1.0	1.2
	40	0.63	12.2	1.0	1.1
	50	0.64	12.3	1.0	1.1
12H	20	0.70	11.5	1.0	1.2
	30	0.74	12.0	1.0	1.1
	40	0.79	12.3	1.0	1.2
	50	0.80	12.4	1.0	1.2
12-210°	20	0.76	11.6	1.1	1.3
	30	0.82	12.0	1.1	1.3
	40	0.84	12.3	1.1	1.2
	50	0.85	12.4	1.1	1.2
12TT	20	0.90	11.4	1.0	1.2
	30	0.99	12.0	1.0	1.1
	40	1.04	12.3	1.0	1.1
	50	1.05	12.4	1.0	1.1
12TQ	20	1.05	11.4	1.0	1.2
	30	1.15	12.0	1.0	1.2
	40	1.19	12.2	1.0	1.2
	50	1.22	12.3	1.0	1.2
12F	20	1.35	11.5	1.0	1.1
	30	1.48	12.0	1.0	1.1
	40	1.59	12.4	1.0	1.1
	50	1.60	12.5	1.0	1.1

Arc	PSI	GPM	Radius	Precip.Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)
15-60°	20	0.35	14.0	1.0	1.2
	30	0.39	15.0	1.0	1.2
	40	0.40	15.1	1.0	1.2
	50	0.42	15.3	1.0	1.2
15Q	20	0.53	14.2	1.0	1.2
	30	0.58	15.0	1.0	1.1
	40	0.60	15.1	1.0	1.2
	50	0.61	15.3	1.0	1.2
15T	20	0.72	14.3	1.0	1.2
	30	0.77	15.0	1.0	1.1
	40	0.81	15.3	1.0	1.2
	50	0.82	15.4	1.0	1.2
15-150°	20	0.92	14.7	1.0	1.2
	30	0.96	15.0	1.0	1.2
	40	1.00	15.2	1.0	1.2
	50	1.10	15.3	1.1	1.3
15H	20	1.10	14.5	1.0	1.2
	30	1.16	15.0	1.0	1.1
	40	1.25	15.4	1.0	1.2
	50	1.28	15.5	1.0	1.2
15-210°	20	1.15	14.5	1.1	1.2
	30	1.20	15.0	1.0	1.2
	40	1.30	15.5	1.0	1.2
	50	1.40	15.6	1.1	1.3
15TT	20	1.45	14.5	1.0	1.2
	30	1.54	15.0	1.0	1.1
	40	1.58	15.2	1.0	1.1
	50	1.61	15.3	1.0	1.1
15TQ	20	1.72	14.5	1.0	1.2
	30	1.78	15.0	1.0	1.1
	40	1.82	15.0	1.0	1.2
	50	1.90	15.3	1.0	1.2
15F	20	2.20	14.5	1.0	1.2
	30	2.31	15.0	1.0	1.1
	40	2.35	15.2	1.0	1.1
	50	2.40	15.3	1.0	1.1

Arc	PSI	GPM	Radius	Precip.Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)
4X30 SST	20	0.62	4x28	1.0	1.1
	30	0.66	4x30	1.1	1.2
	40	0.67	4x30	1.1	1.2
	50	0.68	4x30	1.1	1.3
4X15 LCS	20	0.32	4x15	1.0	1.2
	30	0.33	4x15	1.1	1.2
	40	0.34	4x15	1.1	1.3
	50	0.34	4x15	1.1	1.3
4X15 RCS	20	0.32	4x15	1.0	1.2
	30	0.33	4x15	1.1	1.2
	40	0.34	4x15	1.1	1.3
	50	0.34	4x15	1.1	1.3
4X18 SST	20	0.36	4X18	1.0	1.1
	30	0.37	4X18	1.0	1.1
	40	0.38	4X18	1.0	1.2
	50	0.38	4X18	1.0	1.2
4X9 LCS	20	0.18	4X9	1.0	1.1
	30	0.19	4X9	1.0	1.2
	40	0.20	4X9	1.1	1.2
	50	0.20	4X9	1.1	1.1
4X9 RCS	20	0.18	4X9	1.0	1.2
	30	0.19	4X9	1.0	1.2
	40	0.20	4X9	1.1	1.2
	50	0.20	4X9	1.1	1.2

Precision™ Series Rotating Nozzles

Female-threaded PRN-A *Male-threaded PRN-TA*

Female-threaded PRN-F *Male-threaded PRN-TF*

Features

- Proven planetary gear drive, variable stator and turbine to rotate the nozzle
- 15 unique streams with different trajectories
- Maximum height of 20° trajectory to fight through wind
- Threads onto nearly all sprayheads and shrub adapters (male & female)
- Pre-attached screen for easy installation
- Radius adjustment of 25% by turning set screw 60°
- Color coded to identify adjustable or full circle
- Precipitation rate = 0.55"hr on square spacing plans
- Maintains precipitation rate as radius is reduced
- Adjustable by hand or with included tool
- Consistent speed of rotation not affected by pressure

Operating Specifications

- Radius: 14'-26'
- Operating pressure range: 20-50 psi (maximum – 75 psi)
- Flow Rate: .17-3.68 GPM

Warranty

Five years

Male Threaded

- PRN-TA: Toro Threaded, 14-26 feet, Adjustable from 45°-270°
- PRN-TF: Toro Threaded, 14-26 feet, Full-Circle

Female Threaded

- PRN-A: Threaded, 14-26 feet, Adjustable from 45°-270°
- PRN-F: Threaded, 14-26 feet, Full-Circle

Performance Data—Precision™ Series Rotating Nozzles

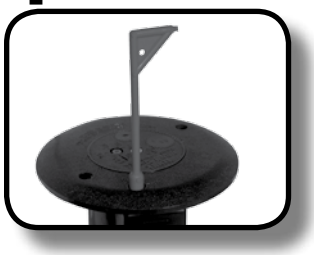
Arc	PSI	GPM	Radius	Precip.Rate ■ (in./hr.)	Precip. Rate ▲ (in./hr.)
45°	20	0.17	14.0	0.67	0.77
	30	0.19	15.0	0.65	0.75
	40	0.25	17.0	0.67	0.77
	50	0.31	18.5	0.70	0.81
	60	0.35	19.5	0.71	0.82
	75	0.43	22.0	0.68	0.79
90°	20	0.43	16.0	0.65	0.75
	30	0.49	17.5	0.62	0.71
	40	0.62	20.5	0.57	0.66
	50	0.75	22.5	0.57	0.66
	60	0.82	23.5	0.57	0.66
	75	0.92	25.0	0.57	0.65
120°	20	0.48	16.4	0.69	0.79
	30	0.57	17.5	0.72	0.83
	40	0.78	20.2	0.55	0.64
	50	0.97	22.5	0.55	0.64
	60	1.07	23.5	0.56	0.65
	75	1.18	25.0	0.55	0.63
180°	20	0.83	15.0	0.71	0.82
	30	0.94	17.0	0.63	0.72
	40	1.22	20.5	0.56	0.65
	50	1.46	22.5	0.56	0.64
	60	1.61	24.0	0.54	0.62
	75	1.81	26.0	0.52	0.60
240°	20	1.12	15.0	0.72	0.83
	30	1.27	17.0	0.63	0.73
	40	1.56	20.0	0.56	0.65
	50	1.80	21.5	0.56	0.65
	60	1.95	22.5	0.56	0.64
	75	2.20	24.0	0.55	0.64
270°	20	1.08	14.0	0.71	0.81
	30	1.23	16.0	0.62	0.71
	40	1.62	19.0	0.57	0.66
	50	2.00	21.5	0.55	0.64
	60	2.26	23.0	0.55	0.63
	75	2.60	25.0	0.53	0.61
360°	20	1.81	15.0	0.77	0.89
	30	2.00	17.2	0.65	0.75
	40	2.56	20.9	0.56	0.65
	50	3.09	22.9	0.57	0.65
	60	3.34	23.8	0.57	0.66
	75	3.68	25.6	0.54	0.62

Nozzle data subject to change.

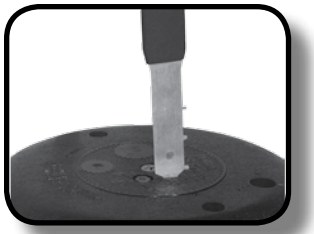
Specifying Information—Precision Series Rotating Nozzle

PRN-XX		
Model	**Thread**	**Model**
PRN	**X**	**X**
PRN—Precision Rotating Nozzle	T—Male Thread Blank—Female Thread	A—Adjustable arc F— Full-circle
Example: A male threaded Precision Series Rotating nozzle with a 24' radius and a 180° arc would be specified as: **PRN-TA**A female threaded Precision Series Rotating nozzle with a 20' radius and 360° arc would be specified as: **PRN-F**		

Sprinkler Tools

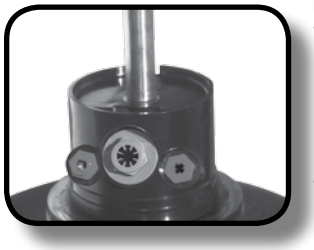


995-15 Selector tool
- All electric golf sprinklers
- Allows user to manually turn the sprinkler "ON", turn or leave it "OFF" or place it into the "AUTO" position awaiting a command from the controller

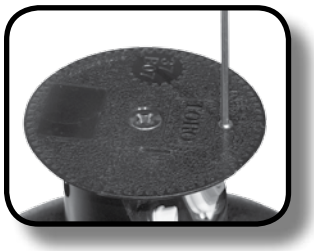


995-83 Multi Purpose tool
- All Golf sprinklers
- Riser pull up for DT and 800S Series.
- Riser screen removal on all models.
- Upper snap ring remover on all models

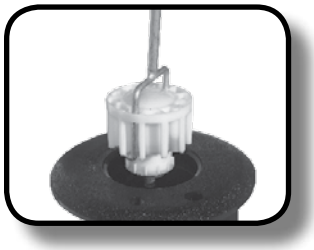
89-7350 Adjustment Key, 720/720G
- **Adjusts flow, arc and trajectory**
- **Removes riser snap ring**



Riser Removal Tools
- **995-06** drive assembly extraction tool 630, 650 and 690 models
  - Threads into the nozzle base and allows removal of the drive from the body
- **995-85** drive assembly extraction tool 730,750,760,780,860S,880S
  - Threads onto the drive output shaft and allows removal of the drive from the body

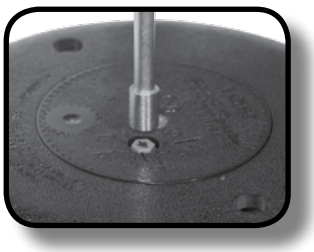


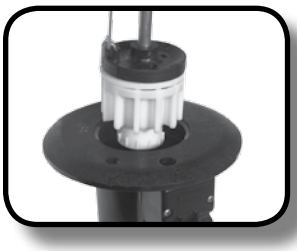
995-82 Arc adjustment tool, 3/32" allen wrench
- 765,785,865S,885S Arc adjustment of the part circle drives
- DT Series Adjustment of the radius reduction screw



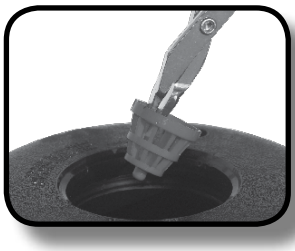
Valve Removal Tools
- **995-08** valve removal tool, 1" All 1" golf models and 640
  - Removes valve from the body of all 1" golf sprinklers and the 640
- **995-09** valve removal tool, 1.5" All 1.5" models and 690.
  - Removes valve from the body of all 1.5" goldf sprinklers and the 690

Nut Drivers
- **995-105** 5/16" nut driver DT and 800S Series Trujectory adjustment on 835S/855S models
  - Inner, intermediate and back nozzle removal on all DT and 800S models
- **995-99** 5/8" nut driver DT and 800S Series Dual trajectory selection on all DT models
  - Main nozzle removal on all DT and 800S models
- **995-79** 7/16" nut driver 834S/854S pre August 2007
  - Inner, intermediate and back nozzle removal
  - 650/760/780/860S/880S Inner, intermediate and back nozzle removal
- **995-81** 9/16" nut driver 760/780 Series Main nozzle removal
- **995-80** 1/2" nut driver 760/780/860S/880S Nozzle base jam nut removal
- **995-52** 1/4" nut driver 660/680 Drive plate nut removal
- **995-53** 3/8" nut driver 660/680 Cap nut removal





Valve Insertion Tools
- **995-xx** valve insertion tool, 640
  - Aligns and installs valve into the 640 VIH body
- **995-76** valve insertion tool, all 1" golf models
  - Aligns and installs valve into the 1" golf body
- **995-101** valve insertion tool, all 1.5" golf models
  - Aligns and installs valve into the 1.5" golf body
- **995-12** valve insertion tool, 690
  - Aligns and installs valve into the 690 body
- **995-20** valve insertion tool, 690 w/ rubber cover
  - Aligns and installs valve into the 690 body w/ rubber cover



995-100 Valve snap ring pliers with screen remover
- All Golf sprinklers Lower snap ring removal on all models
- Rock screen removal on all DT and 800S Series
- Valve removal on all models

Riser Hold Up Tools
- **995-55** Riser hold up tool, all 700 models
  - Holds riser up to allow for nozzle servicing
- **995-102** Universal hold up tool, all 700, 800S and DT models
  - Holds riser up to allow for nozzle servicing

Valve Comparison Chart

	Model	220G Series	P220G Series	P220GS Series Scrubber
	Page Number	**45**	**46**	**47**
	Flow Range	5.0-180 GPM	5.0-180 GPM	80.0-150 GPM
	Operating Pressure	10-220 Psi Max	10-220 PSI Max	10-220 PSI Max
Conditions	Electrically Activated Systems	X	X	X
	Pressure Regulated Systems	X	X	X
	Effluent Water	X	X	X
Sizes	1" (25 mm)	X	X	
	1 1/4" (32 mm)	X		
	1 1/2" (40 mm)	X	X	
	2" (50 mm)	X	X	X
Configurations	Angle	X	X	X
	Inline/Globe	X	X	X
Inlet/Outlet	Threaded (Female)	X	X	X
Features	Manual Flow Control	X	X	X
	Pressure Regulation	X	X	X
	Internal Manual Bleed	X	X	X
	External Manual Bleed (Flush)	X	X	X
Body Construction	Glass-filled Nylon		X	X
	Brass	X		
Warranty		5 Years	5 Years	5 Years

220G Series Brass

Dimensions

- 1" – 5 ¼" H x 5" W
- 1 ¼" – 6 ½" H x 6" W
- 1 ½" - 6 ½" H x 6" W
- 2" – 7 ½" H x 7" W

Operating Specifications

- Flow Range:
  – 1" – 5 to 40 GPM – 1 ¼" – 20 to 100 GPM
  – 1 ½" – 20 to 130 GPM – 2" – 30 to 180 GPM
- Operating Pressure (220 psi maximum pressure rating):
  – Electric – 10 to 220 psi
- Pressure regulating:
  – Outlet: 5 to 100 psi ± 3 psi
- Inlet: 10 to 220 psi
- Minimum pressure differential (between inlet and outlet) for pressure regulation: 10 psi
- Burst pressure safety rating: 750 psi
- Body style:
  – Globe valve – 1", 1 ¼", 1 ½", 2" female threads
- Spike Guard™ Solenoid with 20,000 volt lightning rating: 24 VAC (50/60 Hz) Standard
  – Inrush: 60 Hz: 0.12 amps
  – Holding: 60 Hz: 0.1 amps

Features

- EZ-Reg pressure regulating system can be adjusted from 5-100 PSI.
- Self flushing and serviceable stainless steel filter.
- Diaphragm stem guide
- Ingot brass and stainless steel construction
- Pressure regulates in electric and manual modes, serviceable under pressure
- Forward-flow design for more precise regulation
- Standard, built-in Schrader-type valve for downstream pressure verification
- Anti-vandal dust cap on pressure-regulating models
- No external tubing
- Internal and external manual bleed for system flushing
- Manual flow control: adjustable to zero flow
- Tough, double-beaded, fabric-reinforced rubber diaphragm
- Stainless steel diaphragm support ring for minimum wear
- Stainless steel solenoid seat for longer life and positive shutoff
- Low-power requirement for longer wire runs

Warranty

- Five years

Valve Wire Sizing Chart

Maximum One-way Distance (in ft.) Between Controller and Valve Using Spike-Guard™ Solenoid*

Ground Wire	Control Wire						
	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

* Solenoid Model: 24 V ac
Pressure: 150 psi
Voltage Drop: 4 V
Minimum Operating Voltage: 20 V
Amperage (peak) 0.12 A

220G Series Friction Loss Data

Model	Type	GPM Flow																		
		5	10	15	20	30	40	50	60	70	80	100	120	150	170	180	200	250	300	350
1"	Electric	2.0	2.5	1.5	2.5	5.5	8.9													
1¼"	Electric				4.4	4.7	5.1	5.5	5.8	7.2										
1½"	Electric				3.9	4.2	4.6	4.9	5.2	5.5	7.2									
2"	Electric					1.0	2.0	2.0	2.5	3.0	3.5	6.0	7.5	10.0	12.0	14.0				

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

Specifying Information—220G Series

220G-27-0XXXX			
Type	***Body Style***	***Size***	***Optional***
220G	**27**	**0X**	**XXX**
220G—220G Series Brass Valve	27—NPT, Pressure-regulated (5–100 PSI)	4—1" 5—1¼" 6—1½" 8—2"	DL—Latching Solenoid for GDC Systems E—Effluent
Example: A 1" NPT pressure-regulated,220G Series Brass Valve with 60 Hz solenoid, would be specified as: **220G-27-04**			

P-220G Series

P220G-27-08
2″

P220G-27-06
1½″

P220G-27-04
1″

Features

- Double beaded fabric reinforced diaphragm
- Glass-filled nylon and stainless steel construction
- Internal and External bleed
- No external tubing
- Standard, built-in Schrader-type valve for downstream pressure verification
- Flow control independent of solenoid
- Self-aligning bonnet to ensure correct installation
- Self-cleaning, stainless steel metering rod
- Low-flow capability down to 5 GPM
- Low-power requirement for longer wire runs

Dimensions

- 1″ – 6 ¾″ H x 3 ⅝″ W
- 1 ½″ – 7 ¼″ H x 3 ⅝″ W
- 2″ – 9 ½″ H x 6 ⅛″ W

Operating Specifications

- Flow Range:
  – 1″ – 5 to 35 GPM
  – 1 ½″ – 30 to 110 GPM
  – 2″ – 80 to 180 GPM
- Operating Pressure (220 psi maximum pressure rating):
  – Electric – 10 to 220 psi
- EZ-Reg® Pressure regulating:
  – Outlet: 5 to 100 psi ± 3 psi
- Inlet: 10 to 220 psi
- Minimum pressure differential (between inlet and outlet) for pressure regulation: 10 psi
- Burst pressure safety rating: 750 psi
- Body styles:
  – Globe/Angle – 1″, 1 ½″, 2″ female threads
- Spike Guard™ Solenoid with 20,000 volt lightning rating: 24 VAC (50/60 Hz) Standard
  – Inrush: 60 Hz: 0.12 amps
  – Holding: 60 Hz: 0.1 amps

Warranty

- Five years

Valve Wire Sizing Chart

Maximum One-way Distance (in ft.) Between Controller and Valve Using Spike-Guard™ Solenoid*

Ground Wire	Control Wire						
	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

* Solenoid Model: 24 V ac
Pressure: 150 psi
Voltage Drop: 4 V
Minimum Operating Voltage: 20 V
Amperage (peak) 0.12 A

P220G Series Friction Loss Data*

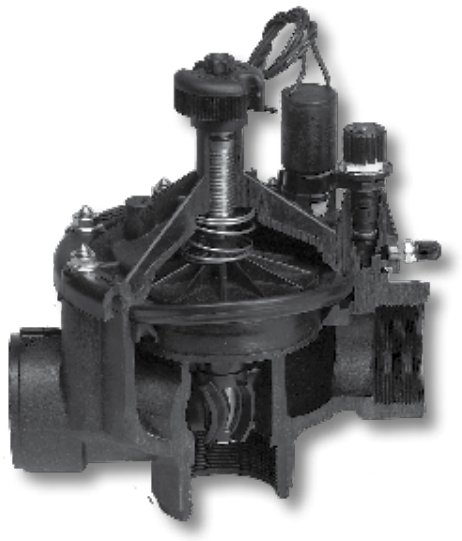
Size	Configuration	GPM Flow																					
		5	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	180	200	225	250	275	300
1"	Globe Angle	4.00 4.00	4.20 4.20	3.20 3.10	4.10 2.70	7.20 4.80																	
1½"	Globe Angle				1.60 1.30	2.30 1.60	3.60 2.80	5.20 4.00	7.00 5.50	9.20 7.10	11.20 8.90	13.60 10.90	16.40 13.80											
2"	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	8.70 5.20					

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.

Specifying Information—P220G Series

P220G-27-OXXXX			
Type	***Body Style***	***Size***	***Optional***
P220G	**27**	**X**	**XXX**
P220G—P220G Series Plastic Valve	27—NPT, Pressure-regulated (5–100 PSI)	4—1" 6—1½" 8—2"	DL—DC Latching Solenoid for GDC Systems E—Effluent
Example: A 1″ P220G Series plastic electric, pressure-regulating valve with a 60 Hz solenoid, would be specified as: **P220G-27-04**			

P-220GS Scrubber Series



Features

- Active Cleansing Technology (ACT™), the industry's first active scrubber valve, cleans continuously whereas competitive valves only clean on opening and closing
- Fabric-reinforced EPDM Diaphragm and EPDM Seat
- Diaphragm assembly may be replaced or retrofitted to previous models
- Tough glass-filled nylon and stainless steel construction
- Internal and External bleed
- Pressure regulates in electric or pressure-regulating models
- No external tubing for either pressure-regulating model
- Standard, built-in Schrader-type valve for downstream pressure verification
- Flow control independent of solenoid
- Self-aligning bonnet to ensure correct installation
- Self-cleaning, stainless steel metering rod
- Low-flow capability down to 5 GPM with EZReg®
- 316 nuclear-grade stainless-steel stem for maximum corrosion resistance

Dimensions

- 2": 9 ½" H x 6 ⅛" W

Operating Specifications

- Flow Range:
  – 2" 80 to 180 GPM
- Operating Pressure
  – Electric – 20 to 220 psi
- Pressure regulating:
  – Outlet (EZR-30): 5 to 30 psi ± 3
  – Outlet (EZR-100): 5 to 100 psi ± 3
- Inlet: 10 to 220 psi
- Minimum pressure differential (between inlet and outlet) for pressure regulation: 10 psi
- Body styles:
  – Globe/Angle – 2"
- Spike Guard™ Solenoid with 20,000 Volt lightning rating: 24 VAC (50/60 Hz) Standard
  – Inrush: 60 Hz: 1.2 amps
  – Holding: 60 Hz: 0.1 amps

Valve Wire Sizing Chart

*Maximum One-way Distance (in ft.) Between Controller and Valve Using Spike-Guard™ Solenoid**

Ground Wire	Control Wire						
	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

* Solenoid Model: 24 V ac
Pressure: 150 psi
Voltage Drop: 4 V
Minimum Operating Voltage: 20 V
Amperage (peak) 0.12 A

P-220S Series Friction Loss Data

Size	Config.	GPM Flow													
		80	90	100	110	120	130	140	150	180	200	225	250	275	300
2"	Globe	3.87	4.29	4.41	6.50	7.78	9.30	9.94	12.15						
	Angle	2.79	3.58	5.69	5.62	6.4	7.35	8.95	9.94						

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.

Specifying Information—P220S

P220GS-27-0-XX			
Model	**Activation Type**	**Size**	**Optional**
P220S	**27**	**X**	**X**
P220GS—P-220GS Scrubber Series Plastic Valve	7—NPT, Pressure-regulated (5-100 psi)	8—2"	DL—Latching Solenoid for GDC Systems E—Effluent
Example: A 2" (50mm) P220GS Series plastic electric, pressure-regulating valve would be specified as: **P220GS-27-08**			

470 Quick Coupler Valves

Features

- Full range of flows from 0 to 100 gallons per minute
- ¾", 1" and 1½" one- and two-piece single-lug models including ACME thread key connections to meet a variety of installation requirements
- Hose swivel provides 360° movement without hose tangling for ease of use
- A variety of sizes meet various applications
- Metal and vinyl locking and non-locking covers
- Effluent (lavender-colored) locking cover

Warranty

- Two years

Ordering Information— Quick Coupler Valve Accessories

Order Number	*Description*
463-01	½" Female, ¾" Male, Single-lug Coupler Key
464-01	¾" Female, 1" Male, Single-lug Coupler Key
464-02	1" Female, Single-lug Coupler Key
464-03	1" ACME Thread Coupler Key
465-01	1¼" Inlet, ¾" Female, 1" Male, Single-lug Coupler Key
465-02	1" Female, 1½" Male, Single-lug Coupler Key
466-01	1¼" Female, 1½" Male, Single-lug Coupler Key
477-00	¾" NPT x ¾" MHT Hose Swivel
477-01	1" NPT x ¾" MHT Hose Swivel
477-02	1" NPT x 1" MHT Hose Swivel
491-02	Key for Locking Cover

470 Series Friction Loss Data

	GPM Flow											
	10	15	20	25	30	35	40	50	60	70	85	100
Model 473	1.5	3.1	5.3	8.5								
Model 474			1.1	2.2	3.6	5.7	8.0					
Model 475				1.0	1.8	2.7	3.6	6.4	9.8			
Model 476							1.0	1.7	2.6	3.6	5.6	8.8

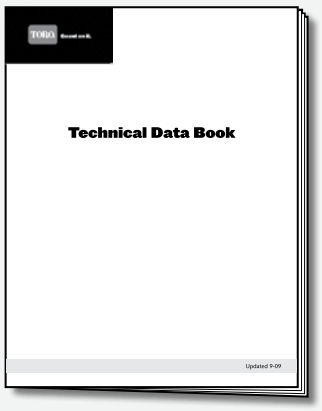
Note: For optimum sprinkler performance when designing a system, be sure to calculate total friction loss to ensure sufficient downstream pressure. Flow rates are recommended not to exceed 5 psi loss. Values listed in psi.

Specifying Information—Quick Couplers

Toro Model Number	*Description*	*Inlet Size NPT Threads*	*Body Type*	*Outlet Key Size*	*Corresponding Key(s)*	*Valve Cover Type*	*Corresponding Swivel(s)**		
							477-00	**477-01**	**477-02**
473-00	QCV .75, SS CVR	¾"	1 Piece	¾"	463-01	Stainless Steel	A	B	B
474-00	QCV 1, SS CVR	1"	1 Piece	1"	464-01 & 464-02	Stainless Steel	B	A	A
474-01	QCV 1, VYL CVR	1"	1 Piece	1"	464-01 & 464-02	Yellow Vinyl, Spring Loaded	B	A	A
474-03	QCV 1, VYL CVR, W/LK	1"	1 Piece	1"	464-01 & 464-02	Yellow Vinyl, Locking, Spring Loaded	B	A	A
474-04	QCV 1, LAV VYL CVR	1"	1 Piece	1"	464-01 & 464-02	Lavender Vinyl, Locking, Spring Loaded	B	A	A
474-21	QCV 1, VYL CVR, 2PC	1"	2 Piece	1"	464-01 & 464-02	Yellow Vinyl, Spring Loaded	B	A	A
474-24	QCV 1, LAV VYL CVR, 2PC	1"	2 Piece	1"	464-01 & 464-02	Lavender Vinyl, Locking, Spring Loaded	B	A	A
474-40	QCV 1, SS CVR, ACME	1"	1 Piece	1"	464-03	Stainless Steel	B	A	A
474-41	QCV 1, VYL CVR, ACME	1"	1 Piece	1"	464-03	Yellow Vinyl, Spring Loaded	B	A	A
474-44	QCV 1, LAV VYL CVR, W/LK, ACME	1"	1 Piece	1"	464-03	Lavender Vinyl, Locking, Spring Loaded	B	A	A
475-00	QCV 1.25, SS CVR	1"	1 Piece	1¼"	465-01 & 465-02	Stainless Steel	B	B	B
475-01	QCV 1.25, VYL CVR	1"	1 Piece	1¼"	465-01 & 465-02	Yellow Vinyl	B	B	B
476-00	QCV 1.5, SS CVR	1 ½"	1 Piece	1 ½"	466-01	Stainless Steel	B	B	B
476-01	QCV 1.5, VYL CVR	1 ½"	1 Piece	1 ½"	466-01	Yellow Vinyl, Spring Loaded	B	B	B
476-04	QCV 1.5, LAV VYL CVR	1 ½"	1 Piece	1 ½"	466-01	Lavender Vinyl, Locking, Spring Loaded	B	B	B

Technical Data

Technical Data Book



Form No. 490-1737

VALVE SPECIFICATIONS

CONTROL SYSTEMS		
Type of System	**Max. Distance From Controller to Valve**	**Elevation Restrictions**
Pin Type£ (00) Hydraulic* with 3/16" Control Tubing	100'	
Pin Type£ (00) Hydraulic* with 1/4" Control Tubing	200'	
Normally Open (01) with 3/16" Control Tubing	500'	Valve elevation should not exceed 25' ABOVE or 70' BELOW controller elevation.
Normally Closed (08) Hydraulic with 3/16" Control Tubing	500'	Valve elevation should not exceed 0' ABOVE or 70' BELOW controller elevation.
Normally Open (01) with 1/4" Control Tubing	1000'	Valve elevation should not exceed 25' ABOVE or 70' BELOW controller elevation.
Normally Closed (08) Hydraulic with 1/4" Control Tubing	1000'	Valve elevation should not exceed 0' ABOVE or 70' BELOW controller elevation.
Electric (06)	Depends on variables • Voltage available • Wire size	NONE

* - All hydraulic connections on Toro valves are 1/4" insert type.
- Control line pressure must be equal to or greater than mainline pressure. systems.
- Control line pressure range is 40 to 150 psi.

* * Minimum solenoid voltage required for reliable electric VIH operation is 19.5 V ac

£ Maximum of one (1) valve per station on pin type

CONVERSION INFORMATION

- All gallons per minute are shown in U.S.
- To convert to imperial gallons per minute, multiply by 0.833
- To convert to liters per minute, multiply by 3.78
- To convert pounds per square inch (psi) to atmospheres, divide by 14.7
- To convert pounds per square inch (psi) to kilograms per square centimeter (kg/cm^2), divide by 14.22
- To convert feet to meters, divide by 3.28

WINTERIZING SPECIFICATIONS

In freezing climates, valves should be properly winterized to prevent freeze-related damage.

SPRINKLER SPACING

The Toro Company does not recommend designing for zero (0) mph wind conditions.

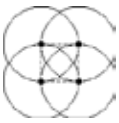
- **Square Spacing**
  - No wind - 55% of diameter
  - 4 mph wind - 50% of diameter
  - 6,4 kph wind - 50% of diameter
  - 8 mph wind - 45% of diameter
  - 12,8 kph - 45% of diameter
- **Triangular Spacing**
  - No wind - 60% of diameter
  - 4 mph wind - 55% of diameter
  - 6,4 kph wind - 55% of diameter
  - 8 mph wind - 50% of diameter
  - 12,8 kph - 50% of diameter
- **Single Row Spacing**
  - No wind - 50% of diameter
  - 4 mph wind - 50% of diameter
  - 6,4 kph wind - 50% of diameter
  - 8 mph wind - 45% of diameter
  - 12,8 kph - 45% of diameter

Design in consideration of the worst wind conditions.

PRECIPITATION RATE FORMULAS

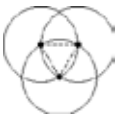
- Square-spaced sprinklers in pattern:

$$\frac{\text{GPM of full-circle} \times 96.3}{(\text{Spacing})^2}$$



- Triangular-spaced sprinklers in pattern:

$$\frac{\text{GPM of full-circle} \times 96.3}{(\text{Spacing})^2 \ (.866)}$$



- Area and flow:

$$\frac{\text{Total GPM of zone} \times 96.3}{\text{Total irrigated square feet of zone}}$$

- Single row:

$$\frac{\text{GPM of full-circle} \times 96.3}{(\text{Spacing}) \ (\text{Scallop})}$$

Valve-In-Head Activation Types

Electric
- Pressure regulation feature available to ensure that all heads operate at the same pressure—regardless of elevation changes
- Manual On-Off-Auto control at the sprinkler
- Individual sprinkler control for more precise watering

Normally Open
- Individual sprinkler control for more precise watering
- Hydraulic control capability with sophisticated electronic/electric control systems
- Ideal for all dirty water applications—irrigation water is not used for control
- Lightning resistant

Check-O-Matic
- Maintains 37' elevation change
- Eliminates low-head drainage
- Requires separate remote control valve

Wire Sizing
Current Draw (Amperage)

Standard Wattage Solenoid

Product	Solenoids	Assumes 24 VAC, 50/60 Hz Output			
		120 VAC, 60 Hz		240 VAC, 50 Hz	
		Inrush	Holding	Inrush	Holding
Network VP Satellite	0	—	0.20	—	0.19
	1	0.26	0.25	0.30	0.22
	2	0.35	0.30	0.34	0.25
	3	0.40	0.34	0.36	0.28
	4	0.46	0.39	0.39	0.30
	5	0.50	0.43	0.42	0.33
	6	0.64	0.48	0.44	0.36
	7	0.70	0.52	0.46	0.38
	8	0.73	0.56	0.50	0.41
	9	0.77	0.61	0.53	0.43
	10	0.80	0.65	0.57	0.46
	11	0.85	0.69	0.57	0.48
	12	0.91	0.73	0.57	0.51
	13	1.00	0.77	0.61	0.53
	14	1.03	0.81	0.62	0.55
	15	1.05	0.85	0.63	0.58
	16	1.14	0.88	0.66	0.60
Network LTC Satellite	0	0.15	0.15	0.08	0.08
	1	0.23	0.21	0.12	0.11
	2	0.31	0.27	0.17	0.14
	3	0.39	0.33	0.22	0.17
	4	0.47	0.39	0.26	0.20
	5	0.55	0.45	0.31	0.24
	6	0.63	0.51	0.36	0.27
	7	0.71	0.57	0.40	0.30
	8	0.79	0.63	0.45	0.33
	9	0.87	0.69	0.50	0.36
	10	0.95	0.75	0.55	0.40
	11	1.03	0.81	0.59	0.43
	12	1.11	0.87	0.64	0.46
E-Series OSMAC Satellite	0	0.05	0.05	0.03	0.03
	1	0.13	0.11	0.07	0.06
	2	0.21	0.17	0.12	0.09
	3	0.29	0.23	0.17	0.12
	4	0.37	0.29	0.21	0.15
	5	0.45	0.35	0.26	0.19
	6	0.53	0.41	0.31	0.22
	7	0.61	0.47	0.35	0.25
	8	0.69	0.53	0.40	0.28
	9	0.77	0.59	0.45	0.31
	10	0.85	0.65	0.50	0.35
	11	0.93	0.71	0.54	0.38
	12	1.01	0.77	0.59	0.41
	13	1.09	0.83	0.64	0.44
	14	1.17	0.89	0.68	0.47
	15	1.25	0.95	0.73	0.51
	16	1.33	1.01	0.81	0.54

Spike Guard™ Low Wattage Solenoid

Product	Solenoids	Assumes 24 VAC, 50/60 Hz Output			
		120 VAC, 60 Hz		240 VAC, 50 Hz	
		Inrush	Holding	Inrush	Holding
Network VP Satellite	0	—	0.20	0.21	0.20
	1	0.24	0.22	0.22	0.21
	2	0.26	0.24	0.23	0.22
	3	0.29	0.27	0.24	0.23
	4	0.31	0.29	0.25	0.24
	5	0.33	0.31	0.26	0.26
	6	0.35	0.33	0.28	0.27
	7	0.39	0.37	0.29	0.28
	8	0.41	0.39	0.30	0.30
	9	0.43	0.41	0.32	0.31
	10	0.46	0.44	0.34	0.33
	11	0.47	0.46	0.35	0.35
	12	0.49	0.48	0.36	0.36
	13	0.52	0.50	0.37	0.38
	14	0.54	0.52	0.38	0.39
	15	0.56	0.54	0.40	0.40
	16	0.58	0.56	0.43	0.42
	17	0.60	0.58	0.44	0.43
	18	0.61	0.60	0.46	0.45
	19	0.63	0.62	0.47	0.46
	20	0.66	0.64	0.49	0.48
	21	0.68	0.66	0.50	0.49
	22	0.70	0.68	0.51	0.50
	23	0.74	0.70	0.53	0.52
	24	0.76	0.72	0.54	0.53
	25	0.79	0.74	0.55	0.54
	26	0.80	0.75	0.57	0.56
	27	0.85	0.77	0.58	0.57
	28	0.90	0.79	0.59	0.58
	29	0.93	0.81	0.60	0.59
	30	0.96	0.82	0.61	0.60
	31	1.01	0.84	0.62	0.61
	32	1.04	0.86	0.64	0.62
Network LTC Satellite and Network LTC Plus Satellite	0	0.15	0.15	0.08	0.08
	1	0.17	0.17	0.10	0.10
	2	0.20	0.19	0.11	0.11
	3	0.22	0.21	0.13	0.13
	4	0.25	0.23	0.15	0.14
	5	0.27	0.25	0.17	0.16
	6	0.29	0.27	0.18	0.17
	7	0.32	0.29	0.20	0.19
	8	0.34	0.31	0.22	0.20
	9	0.37	0.33	0.23	0.22
	10	0.39	0.35	0.25	0.23
	11	0.41	0.37	0.27	0.25
	12	0.44	0.39	0.28	0.26
E-OSMAC Satellite	0	0.05	0.05	0.03	0.03
	1	0.07	0.07	0.05	0.05
	2	0.10	0.09	0.06	0.06
	3	0.12	0.11	0.08	0.08
	4	0.15	0.13	0.10	0.09
	5	0.17	0.15	0.12	0.11
	6	0.19	0.17	0.13	0.12
	7	0.22	0.19	0.15	0.14
	8	0.24	0.21	0.17	0.15
	9	0.27	0.23	0.18	0.17
	10	0.29	0.25	0.20	0.18
	11	0.31	0.27	0.22	0.20
	12	0.34	0.29	0.23	0.21
	13	0.36	0.31	0.25	0.23
	14	0.39	0.33	0.27	0.24
	15	0.41	0.35	0.29	0.26
	16	0.44	0.37	0.30	0.27

The Toro Limited Warranty for Golf Irrigation Equipment

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

During the warranty period, we will repair or replace, at our option, any part found to be defective. Your remedy is limited solely to the replacement or repair of defective parts.

This warranty does not apply (i) to Acts of God (e.g., lightning, flooding, etc.); or (ii) to products not manufactured by Toro when used in conjunction with Toro products; or (iii) where equipment is used, or installation is performed in any manner contrary to Toro's specifications and instructions, nor where equipment is altered or modified.

Return the defective part to your irrigation contractor or installer, or your local Golf Irrigation Distributor, or contact The Toro Warranty Company, P.O. Box 489, Riverside, California 92502, (800) 664-4740 for the location of your nearest Toro distributor or outside the U.S., call (951) 688-9221.

Neither Toro nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of equipment, including but not limited to: vegetation loss, the cost of substitute equipment or services required during periods of malfunction or resulting non-use, property damage or personal injury resulting from installer's actions, whether negligent or otherwise.
Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you.

All implied warranties, including those of merchantability and fitness for use, are limited to the duration of this express warranty.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

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

Golf Sprinklers

All Toro golf sprinklers and conversion assemblies are covered by this warranty for 3 years from date the date of installation. Proof of installation date required for any warranty claim.

All Toro golf sprinklers purchased and installed with a Toro swing joint will be covered by a 5-year Warranty*. Proof of simultaneous installation required for any warranty claim.

Swing Joints

Toro swing joints are covered by this warranty for 5 years from the date of installation. Proof of installation date required for any warranty claim.

Valves

220G Series and P-220G Series valves are covered by this warranty for 5 years from date of installation. 470 Series quick coupler valves are covered by this warranty for 2 years from date of installation.

DL2000 Subsurface Drip Irrigation

Toro DL2000 Subsurface Drip Irrigation products are covered by this warranty for 2 years from date of installation.

Control Systems and Turf Guard®

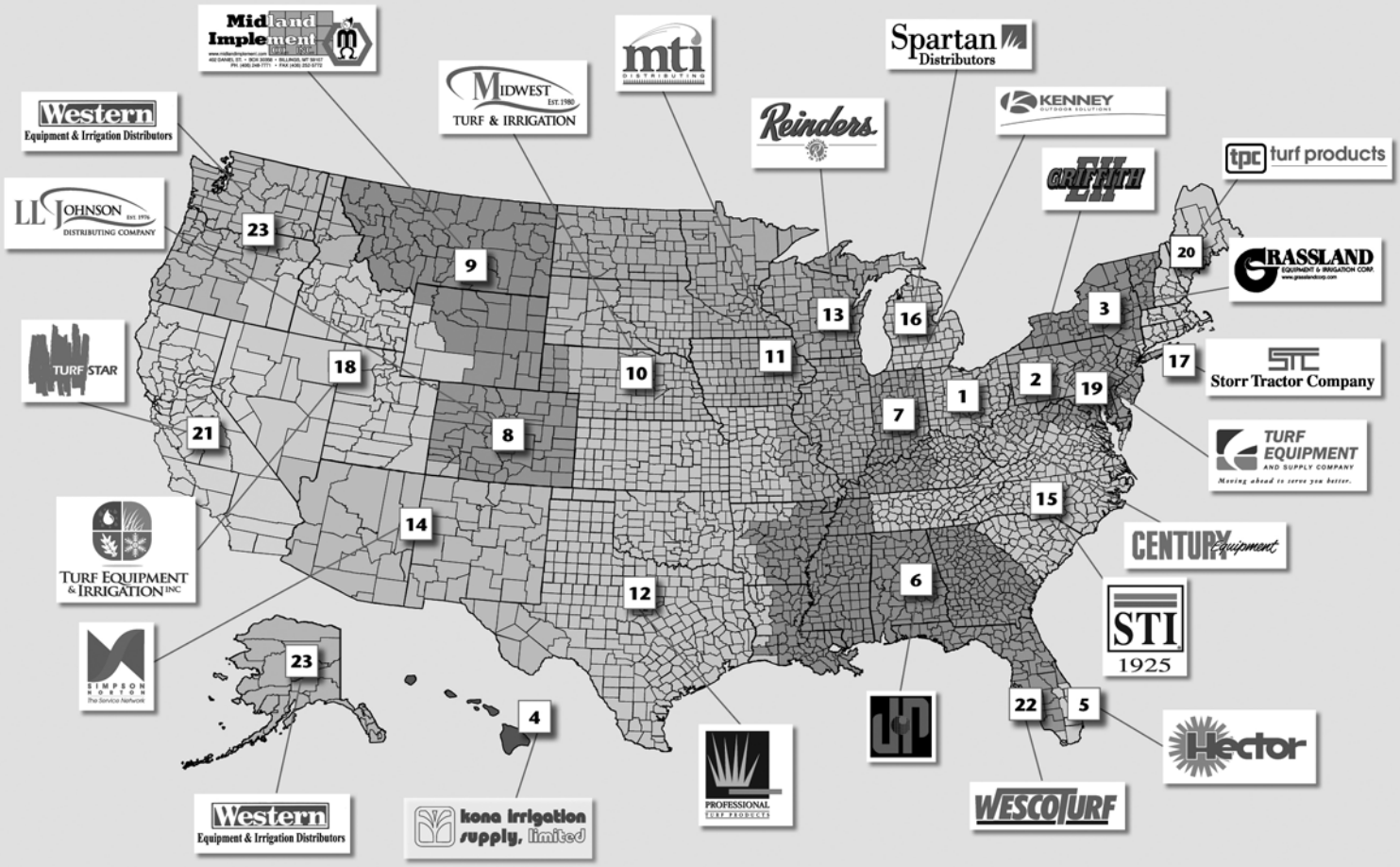
All Toro golf control systems (central controls, field satellite controllers, GDC and Turf Guard), unless covered by a Toro NSN Support Plan, are covered by this warranty for 1 year from date of installation.

* Excludes 720G Series, 590GF Series and sprinkler conversion assemblies.

We reserve the right to improve our products and make changes in the specifications and designs without notice and without incurring obligation. Products depicted in this brochure are for demonstration purposes only. Actual products offered for sale may vary in design and features.

Distribution – Our Trusted Partners

The Toro Company is a manufacturer that invests not only in product development but in its distribution partnerships as well. Our distributors have been our partners for an average of 36 years (ranging from 8 to 86 years) and we consider them to be an extension of us. Together we take extra steps to make sure you always get the responsive service you need and expect.



1. Century Equipment, Inc.
   (419) 865-7400
2. E. H. Griffith, Inc.
   (412) 271-3365
3. Grassland Equipment & Irrigation Corp.
   (518) 785-5841
4. Kona Irrigation Supply, Ltd.
   (808) 329-1167
5. Hector Turf
   (954) 429-3200
6. Jerry Pate Turf & Irrigation, Inc.
   (850) 479-4653
7. Kenney Machinery Corp.
   (317) 872-4793
8. L. L. Johnson Distributing Company
   (303) 320-1270
9. Midland Implement Company, Inc.
   (406) 248-7771
10. Midwest Turf & Irrigation, Inc.
    (402) 895-8900
11. MTI Distributing, Inc.
    (763) 592-5600
12. Professional Turf Products
    (817) 785-1900
13. Reinders, Inc.
    (262) 786-3300
14. Simpson Norton Corporation
    (623) 932-5116
15. Smith Turf & Irrigation L.L.C.
    (704) 393-8873
16. Spartan Distributors, Inc.
    (616) 887-7301
17. Storr Tractor Company
    (908) 722-9830
18. Turf Equipment & Irrigation
    (801) 566-3256
19. Turf Equipment & Supply Company, Inc.
    (410) 799-5575
20. Turf Products L.L.C.
    (860) 763-3581
21. Turf Star, Inc.
    (800) 585-8001
22. Wesco Turf Inc.
    (941) 377-6777
23. Western Equipment Distributors, Inc.
    (253) 872-8858

International distributors can be found at www.toro.com

Catalog Order # 11-5003-IG