

**TORO** Count on it.

# Sprinkler Replacement and System Troubleshooting

## Toro Irrigation Design Service



# How to Upgrade to Toro Sprinklers

Do you need to replace a **fixed-spray**, or a **rotating** sprinkler?

- If it is a rotating sprinkler, refer to the **Impact Sprinkler**, or the **Stream Sprinkler** tables (below).
- If it is a fixed-spray, refer to the **570™ Fixed Spray** tables (page 3).

## IMPACT SPRINKLER REPLACEMENT



If your sprinkler creates a "pulsed" stream of water, you can replace it with either the Toro Universal Impact 45 or 40.

### USE THE TORO UNIVERSAL IMPACT 45 IF:

You need a radius of 25-45 ft.,  
*or,*  
 You want interchangeable nozzles for setting different flow rates,  
*or,*  
 You want to use well, or dirty water on your lawn

### USE THE TORO UNIVERSAL IMPACT 40 IF:

If you need a radius of 25 - 40 ft.,  
*or,*  
 You want a flow rate of 2.2 GPM,  
*or,*  
 You want to use well, or dirty water on your lawn

## STREAM SPRINKLER REPLACEMENT



If your old sprinkler creates one or more continuous streams of water it is a gear drive rotor. Replace it with either of the Toro MultiStream or SingleStream sprinklers listed below.

### USE THE TORO MULTISTREAM IF:

You want multiple elegant streams of water,  
*or,*  
 You need an adjustable radius of 15 – 33 ft.,  
*or,*  
 You are watering on a slope,  
*or,*  
 You have slow-draining soil



### USE THE TORO SINGLESTREAM IF:

You want just a single stream of water,  
*or,*  
 You need an adjustable radius of 34 – 43 ft.,  
*or,*  
 You have faster-draining soil

## FIXED-SPRAY SPRINKLER REPLACEMENT



If your old sprinkler creates a constant "fan" pattern of water, replace it with a Toro 570™ pop-up sprinkler.

### 570™ FAN SPRAY – POP UP

Does your pop-up sprinkler cover a complete circle? If so, choose the 570™ sprinkler that matches the pop-up height and radius of your old sprinkler.

● 360°	12'	15'	
3"	53106	53102	
4"		53699	

Does your old spray create a partial circle pattern? If so, choose one of the following Toro replacements:

3" Pop-up Sprinklers		4" Pop-up	
	12'	15'	15'
▲ 90°	53104	53100	53711
◐ 180°	53105	53101	53309
● 0-360° Variable Arc		53732	53733

If you don't see the sprinkler head nozzle combination you need above, purchase the body and nozzle separately to create any combination you need.

### 570™ BODIES (nozzle not included)

2"	53395	
3"	53396	
4"	53397	
6"	53398	
12"	53710	



If your old sprinkler is permanently mounted above ground level on a riser, then replace it with a 570™ "shrub" sprinkler or you can replace with a 12" pop-up and nozzle.

### 570™ FAN SPRAY – SHRUB

Does your shrub sprinkler cover a complete circle? If so, choose the 570™ Shrub with full circle nozzle.

	5'	8'	10'	12'	15'
● 360°	53320	53145	53142	53136	53130

Does your old shrub spray create a partial circle pattern? If so, choose one of the following Toro replacements:

	12'	15'	
▲ 90°	53117	53113	
◐ 180°	53120	53114	
● 360°	53118	53115	
● 0-360° Variable Arc		53731	



If you don't see the shrub combination you need, purchase the 570™ shrub only (53299) and nozzle separately.

### 570™ SPRINKLER NOZZLES

					
	5'	8'	10'	12'	15'
▲ 90°	53318	53143	53140	53134	53128
◐ 120°			53327	53138	53132
◐ 180°	53319	53144	53141	53135	53129
◐ 270°			53329	53137	53131
● 360°	53320	53145	53142	53136	53130
● 0-360° Variable Arc					53730

Malfunctions aren't common, but when they occur, they're often due to one of these causes. Refer to each product's specific operating manual for additional information.

## TIMERS

PROBLEM	CAUSE	SOLUTION
Watering cycle repeats	Multiple start times set	Check program and turn off all but one start time
	Season adjust is set at more than 100%	Reset Season Adjust
Fuses blow regularly	Faulty valve solenoid	Replace solenoid
	Damaged or shorted wiring	Inspect and repair wire
	Faulty timer	Replace timer
LED display is blank	No power to timer	Check outlet for power
	Faulty transformer	Replace transformer
	Blown fuse	See above (fuses)
Lawn is not watered	Timer is off	Turn timer on
	Blown fuse	See above (fuses)
	Damaged timer/valve wiring	Repair wire
	Faulty transformer, timer or rain sensor device	Replace timer, sensor or transformer
	Program incorrect	Check timer program
One zone does not function	Damaged wiring at timer or one manifold	Repair wiring
No water to one or all zones	Damaged wiring at timer and zone	Repair wire

## VALVES

PROBLEM	CAUSE	SOLUTION
No water at sprinkler heads	Main water supply valve is off	Turn supply valve on
	Faulty valve solenoid	Replace solenoid
	Flow control at valve is closed	Open fully counterclockwise
	Zone valve wires not connected	Connect wires
One or more zones won't stop watering	Debris in valve, solenoid or metering orifice	Disassemble valve and clean with fresh water
	Faulty valve diaphragm	Replace diaphragm
	Faulty valve	Replace valve
External water leaks at valve	Damaged or cracked valve body	Replace valve
	Damaged or cracked diaphragm	Replace valve
Water leaks from lowest sprinkler in zone	Damaged or cracked pipe and fittings	Check and replace as needed
	Damaged diaphragm	Replace diaphragm
Water leaks from lowest sprinkler in zone	Debris between diaphragm and diaphragm seat	Clear debris from valve
	Damaged diaphragm	Replace diaphragm
	Debris in solenoid	Clean solenoid
	Faulty solenoid	Replace solenoid
	Valve manual bleed open	Tighten by hand

## ROTORS

PROBLEM	CAUSE	SOLUTION
Water doesn't spray from nozzle	Internal basket screen plugged with debris	Clean screen
Sprinkler does not rotate	Not enough water pressure to rotate sprinkler	Split zone in two
	Debris in sprinkler head	Clean debris from sprinkler
	Faulty sprinkler head	Replace sprinkler
Sprinkler rotates in one direction and stops	Not enough water pressure to rotate sprinkler	Split zone in two
	Faulty sprinkler head	Replace sprinkler
	Missing nozzle	Replace Nozzle

## ALL SPRINKLERS

PROBLEM	CAUSE	SOLUTION
Sprinklers will not pop up	Not enough water pressure to run the zone	Split the zone in two
	Master or zone valves not completely open	Open counterclockwise
	Flow control on zone valve not fully open	Open flow control
	Debris between sprinkler riser and riser seal	Clear debris
Sprinklers "stick up" after watering	Damaged riser or riser seal	Replace sprinkler
	Damaged retraction spring	Replace sprinkler
	Radius adjustment screw turned off	Open counterclockwise
	Debris in nozzle	Remove debris
Water doesn't spray from nozzle	Internal filter clogged	Clean screen
Water flooding from sprinkler	Missing nozzle	Install nozzle
	Faulty or missing sprinkler head	Replace sprinkler

# Using the Toro Water Smart® Design Service



## **UPGRADE** an Existing System

Did you know that an outdated or poorly designed irrigation system can result in water waste, unhealthy plant growth, dry or patchy lawn and a host of other common landscape problems? In many cases, upgrading the layout and components in your irrigation system can be the solution. In addition, a more up to date irrigation system means a more efficient system—saving you money.

Water conservation has increasingly become an important focus for the irrigation industry. If your system was installed 5 years ago or more you may be missing out on important water saving irrigation products that will result in more efficient water delivery and savings.

The Toro Water Smart® Design Service can upgrade your existing irrigation system to a water efficient system using the best Toro Water Smart® products available.

How the Water Smart® Design Upgrade Service Works: Follow the simple directions on page 4 to complete the **UPGRADE an Existing System Questionnaire** (page 6) and create a property sketch (page 7). Once completed, email, mail or fax the questionnaire and the property sketch to Toro, and a customized water savings design will be prepared for you.

Each design includes information on proper equipment placement throughout your yard, correct sprinkler selection, number of zones needed, ideal timer location and a complete shopping list for all the parts and accessories you will need. Designs are broken down by zone for ease of planning.

This **\$39.95** Water Smart® Design Upgrade Package Includes:

- 22" x 34" professional irrigation design
- Electronic files sent via email in PDF format
- Complete shopping list to upgrade your system
- Detailed installation instructions
- A custom watering schedule that tells you when to water and for how long to achieve the most efficient results.

Design time will vary depending upon the complexity of the project. A Toro Water Smart® Advisor may request a brief telephone consultation to discuss your specific needs.

# Using the Toro Water Smart® Design Service

## **NEW** System Installation

The first step in achieving a successful irrigation system is a good design. Properly designed sprinkler and drip systems decrease water consumption by improving the accuracy, timing and delivery of water, thereby reducing runoff and preventing over watering. This leads to better looking lawns and landscapes while preventing plant loss.

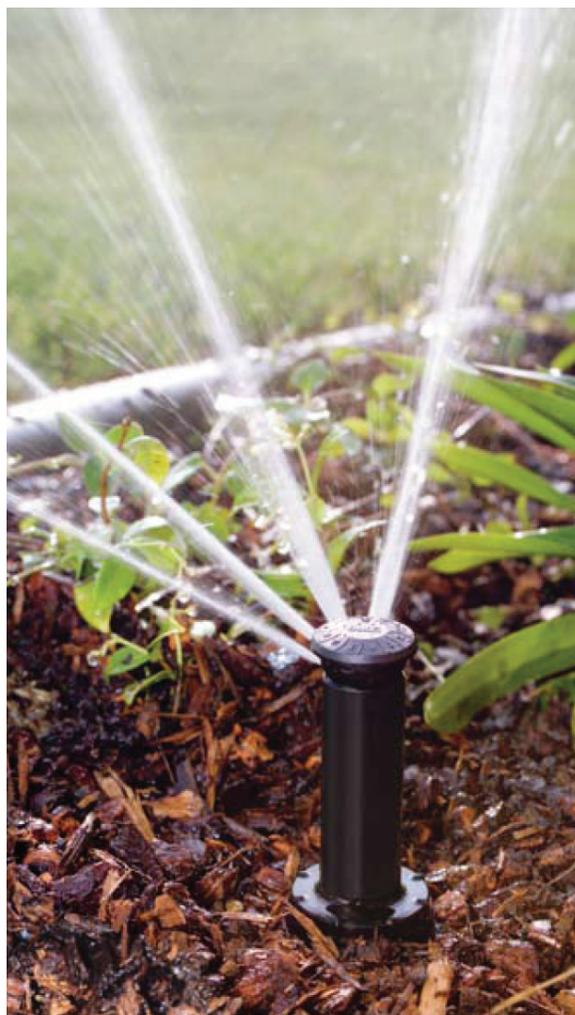
The Toro Water Smart® Design Service makes planning your system easy by creating a customized professional irrigation plan specific to your property's geography and landscape.

**How the Water Smart® Design Service Works:**  
Using the Design Service is easy. All you need to do is provide us with a sketch of your property and a few details. Follow the simple directions on page 4 to complete the **NEW System Installation Questionnaire** (page 5) and create a property sketch (page 7). Once completed, email, mail or fax the questionnaire and the property sketch to Toro, and a customized design will be prepared for you. Each design includes information on proper equipment placement throughout your yard, correct sprinkler selection, number of zones needed, ideal timer location and a complete shopping list of all the parts and accessories you need—even the amount of PVC or poly pipe your system will require. Designs are broken down by zone for ease of planning.

There are three Design Service options available:

- **\$19.95** Standard Service  
A professional irrigation design will be emailed to you in PDF format within 7 business days\* The \$19.95 design service fee is eligible for rebate after the purchase of Toro Irrigation products.
- **\$24.95** Premium Service  
Standard Service plus receive a 22" x 34" professional irrigation design by mail within 7 business days\* The \$19.95 design service fee is eligible for full rebate after the purchase of Toro Irrigation products.
- **\$49.95** Premium Express Service  
Premium Service Plan designed and mailed within 2 business days\* Designs received after 11:00 a.m. PST will be processed the following business day. Addresses with P.O. boxes are not eligible for express service. The \$19.95 design service fee is eligible for full rebate after the purchase of Toro Irrigation products.

\*Additional design time may be required depending on the complexity of the project.



# How to Complete the Toro Water Smart® Design Questionnaire

## 1 Draw Your Property to Scale

Use the Property Sketch Sheet (page 7). Each small square on the graph paper should represent one square foot of actual property or use a scale such as 1" = 10', 1" = 20', etc. Using a tape measure, measure your property and draw it to scale on the graph paper (see sample drawing on page 8).

1. Outline your house, garage, and other structures.
2. Show walkways, drives, slabs, patios and other surfaces.
3. Identify trees or major obstacles.
4. Measure and record the perimeter of your property.
5. Identify slopes.
6. Show ground cover, grass, flower beds and landscaping.
7. Identify the location of the water meter (or pump) and main line.

Additional grid paper is available at [www.ToroDesign.com](http://www.ToroDesign.com).

## 2 Determine Your Soil Type

You can easily determine your soil type—sand, loam or clay—using a clean empty jar with a lid, clean tap water, a tablespoon of detergent and a sample of the soil from your yard.

1. Fill the jar about 1/3 full with the soil to be tested.
2. Add water and detergent and cap the jar.
3. Shake the jar vigorously and set aside for several hours.
4. Evaluate the results and record on the questionnaire.

**Sand Soil:** Water is clear and soil has settled to the bottom of the jar.

**Loam Soil:** Water is still murky with bits of suspended matter.

**Clay Soil:** Water is murky and there is a ring of sediment around the jar.

## 3 Determining the Service Line Size

Contact your local water company or wrap a piece of string around the pipe once and then measure the string. Use the chart below to determine the supply line size/diameter. Record the line size on the questionnaire.

Length of String	2¾"	3¼"	3½"	4"	4¾"	5"
Copper Service Line	¾"		1"		1¼"	
Galvanized or PVC		¾"		1"		1¼"

If you have specific concerns please note them on a separate sheet of paper and submit along with your questionnaire and scale drawing.

## 4 Determine Your Water Pressure and Flow

Water pressure and flow can be determined using a Flow & Pressure Gauge or by performing a bucket test and using a standard pressure gauge.

### Using a Toro Flow and Pressure Gauge

The Toro Flow and Pressure Gauge is designed to measure water pressure up to 160 PSI and water flow up to 13 GPM. The gauge is not intended for use on lines larger than one inch.

Measure static pressure:

1. Ensure all water inside the home is turned off.
2. Attach the flow gauge to the outdoor faucet closest to where the main line enters the house.
3. Ensure that the gauge is completely closed.
4. Open the outside faucet slowly.
5. When the outdoor faucet is fully open, read the static pressure and record it on the questionnaire.

Measure dynamic pressure and gallons-per-minute (GPM):

1. Open the flow gauge slowly. (*The static reading will drop and the GPM will rise as the gauge is opened.*)
2. Continue to open the gauge until pressure drops to 50 PSI.
3. Record the GPM at 50 PSI on the questionnaire.
4. Continue to close the gauge to 45 and 40 PSI and record the GPM readings.

*If the pressure does not drop to 40 PSI or is above 50 PSI after opening the flow gauge all the way, then take the flow and pressure reading at the full open position. If rapid fluctuation occurs on the flow gauge, record the average reading.*

### Using a Bucket and Standard Pressure Gauge

1. Locate the outdoor faucet closest to the water supply line (Call this Faucet 1).
2. Select a different outdoor faucet on the house and attach a pressure gauge (This will be Faucet 2).
3. With Faucet 1 closed, open Faucet 2 all the way and record the static water pressure on the questionnaire.
4. With Faucet 1 open all the way, check the pressure reading on the gauge at Faucet 2. (*If less than 40 PSI, turn down the water flow from Faucet 1 until the reading reaches 40 PSI.*)
5. Place a 5 gallon bucket under Faucet 1 and time how long it takes to fill it. Use the chart below to convert to GPM to determine the water capacity at 40 PSI.
6. Repeat this procedure at 45 PSI and 50 PSI and record the results on the questionnaire.
7. If pressure is greater than 50 PSI record that reading.

TIME TO FILL BUCKET	GALLONS PER MINUTE
15 seconds	20 GPM
20 seconds	15 GPM
25 seconds	12 GPM
30 seconds	10 GPM
40 seconds	7.5 GPM

# Toro Water Smart® Design Questionnaire: **UPGRADE** an Existing System

DESIGNS ARE INTENDED FOR USE WITH TORO PRODUCTS ONLY.

To upgrade your existing irrigation system, complete the following and email, mail or fax to Toro along with a sketch of your property.

Please **PRINT CLEARLY** and fill out the form completely. All information must be properly supplied before we will be able to design your system. Your design and the recommended parts list will be based on the accuracy of the information we receive.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_ ZIP \_\_\_\_\_

DAYTIME PHONE NUMBER \_\_\_\_\_

EVENING PHONE NUMBER \_\_\_\_\_

EMAIL ADDRESS \_\_\_\_\_

*For e-mail notification when your design is complete*

RETAIL STORE WHERE YOU WILL BE PURCHASING PRODUCT: \_\_\_\_\_

*We will attempt to ensure that most recommended parts and products can be purchased from your retailer of choice.*

\$39.95 PAYMENT METHOD:  VISA  MasterCard

*We are unable to accept checks, money orders, debit cards, Discover or American Express*

CARD NO. \_\_\_\_\_

EXP. DATE: MO \_\_\_\_\_ YR \_\_\_\_\_

**PLEASE NOTE:** Homeowner is required to tap into water source and comply with local codes and permits. Before digging or trenching, check with your local utility companies to identify any buried cables, pipe or gas lines.

**DISCLAIMER:** The Toro Sprinkler Design and parts are recommended to customer based solely on the information, dimensions and drawings provided to Toro by the customer. Toro has not inspected customer's property landscape, sun exposure or soil conditions. Toro has no control over whether recommended Toro parts or sprinkler system design are properly purchased, installed, used or maintained. Toro shall have no liability, and disclaims any and all liability, arising from or with respect to the design, purchase and/or installation of the sprinkler systems. For specific warranty on Toro products, go to [www.Toro.com](http://www.Toro.com).

**MAIL PROPERTY SKETCH AND QUESTIONNAIRE TO:**  
**Toro Water Smart® Design Center**  
**5825 Jasmine Street, Riverside, CA 92504**

**FAX TO: (800) 504-4978**

**EMAIL TO: [DesignService@Toro.com](mailto:DesignService@Toro.com)**

If you have any questions feel free to call (800) 891-0742 or visit our web site at [www.ToroDesign.com](http://www.ToroDesign.com).

**1. Scale of Drawing:** \_\_\_\_\_ Inch = \_\_\_\_\_ Feet

**2. Water Meter Size:**  5/8"  3/4"  1"

**3. Water Supply Line:**  Copper  Galvanized  
 PVC  PEX (Poly)

**4. Water Supply Line Size:**  3/4"  1"  1 1/4"

**5. Water pressure and flow readings:**

Static water pressure \_\_\_\_\_ PSI

Gallons-per-minute: at 40 PSI: \_\_\_\_\_

at 45 PSI: \_\_\_\_\_

at 50 PSI: \_\_\_\_\_

If PSI is greater than 50: \_\_\_\_\_ PSI \_\_\_\_\_ GPM

**6. Pump Information**

If you use a pump, it is recommended that it produce a minimum of 45 PSI @ 10 GPM for a sprinkler system. If your pump is not adequate, call for advice or write "will purchase new pump" on your layout. We will design your system using the pump output recommended for your property.

**7. Soil information:**  Sandy  Loam  Clay

**8. Irrigation water:**  Clean  Containing Sediment

**9. Does the ground freeze?**  Yes  No

**10. Please indicate the type of sprinkler currently installed:**

Spray head  Gear Rotor  Impact Rotor

**11. Please indicate the brand and model of sprinkler currently installed (i.e. Toro 570):** \_\_\_\_\_

**12. Please indicate the type of valve currently installed:**

Anti-siphon  In-line

**13. Valve size:**  3/4"  1"

**14. Please indicate the brand(s) and model(s) for valves currently installed (i.e. Lawn Genie Model L7010):** \_\_\_\_\_

**15. Main Line Size:**  3/4"  1"  1 1/4"

**16. Lateral Line Pipe:**

PVC Schedule 40  PVC Class 200  Poly

**17. Lateral Line Size:**  3/4"  1"

**18. Timer:** \_\_\_\_\_ Number of Stations/Zones Available

**Please double check to ensure that:**

- Your property is drawn to scale
- All slopes are identified and show direction
- Water meter/pump location is indicated
- Timer and valve location is indicated
- Sprinkler location(s) are indicated
- Indicate which sprinklers are connected to each valve
- Indicate overly dry or wet areas
- All information on the questionnaire is complete
- Any sleeves/conduits and size of pipe inside is identified

WEB



# Toro Water Smart® Design Questionnaire: **NEW** System Installation

DESIGNS ARE INTENDED FOR USE WITH TORO PRODUCTS ONLY.

To receive a Toro Water Smart® irrigation design for a new system installation complete the following and email, mail or fax to Toro along with a sketch of your property.

Please **PRINT CLEARLY** and fill out the form completely. All information must be properly supplied before we will be able to design your system. Your design and the recommended parts list will be based on the accuracy of the information we receive.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_ ZIP \_\_\_\_\_

DAYTIME PHONE NUMBER \_\_\_\_\_

EVENING PHONE NUMBER \_\_\_\_\_

EMAIL ADDRESS \_\_\_\_\_

*For e-mail notification when your design is complete*

RETAIL STORE WHERE YOU WILL BE PURCHASING PRODUCT: \_\_\_\_\_

*We will attempt to ensure that most recommended parts and products can be purchased from your retailer of choice.*

PAYMENT METHOD:  VISA  MasterCard

*We are unable to accept checks, money orders, debit cards, Discover or American Express*

CARD NO. \_\_\_\_\_

EXP. DATE: MO \_\_\_\_\_ YR \_\_\_\_\_

**PLEASE NOTE:** Homeowner is required to tap into water source and comply with local codes and permits. Before digging or trenching, check with your local utility companies to identify any buried cables, pipe or gas lines.

**DISCLAIMER:** The Toro Sprinkler Design and parts are recommended to customer based solely on the information, dimensions and drawings provided to Toro by the customer. Toro has not inspected customer's property landscape, sun exposure or soil conditions. Toro has no control over whether recommended Toro parts or sprinkler system design are properly purchased, installed, used or maintained. Toro shall have no liability, and disclaims any and all liability, arising from or with respect to the design, purchase and/or installation of the sprinkler systems. For specific warranty on Toro products, go to [www.Toro.com](http://www.Toro.com).

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**5. Water Pressure and Flow Readings:**

Static water pressure \_\_\_\_\_ PSI

Gallons-per-minute: at 40 PSI: \_\_\_\_\_

at 45 PSI: \_\_\_\_\_

at 50 PSI: \_\_\_\_\_

If PSI is greater than 50: \_\_\_\_\_ PSI \_\_\_\_\_ GPM

**6. Pump Information**

If you use a pump, it is recommended that it produce a minimum of 45 PSI @ 10 GPM for a sprinkler system. If your pump is not adequate, call for advice or write "will purchase new pump" on your layout. We will design your system using the pump output recommended for your property.

**7. Soil information:**  Sandy  Loam  Clay

**8. Install timer:**  Indoors

**9. Irrigation water:**  Clean  Containing Sediment

**10. Does the ground freeze?**  Yes  No

**11. Please select a service option:**

**Standard Service – \$19.95**

A professional irrigation design will be emailed to you in PDF format within 7 business days.\*\* The \$19.95 design service fee is eligible for rebate after the purchase of Toro Irrigation products.

**Premium Service – \$24.95**

Standard Service plus receive a 22" x 34" professional irrigation design by mail within 7 business days.\*\* The \$19.95 design service fee is eligible for full rebate after the purchase of Toro Irrigation products.

**Premium Express Service – \$49.95\***

Premium Service Plan designed and mailed within 2 business days.\*\* Designs received after 11:00 a.m. PST will be processed the following business day. Addresses with P.O. boxes are not eligible for express service. The \$19.95 design service fee is eligible for full rebate after the purchase of Toro Irrigation products.

*\*Prices are based on shipping within the Continental United States and are subject to change. Shipment to areas outside the Continental United States may be higher.*

*\*\*Additional design time may be required depending on the complexity of the project.*

**Please double check to ensure that:**

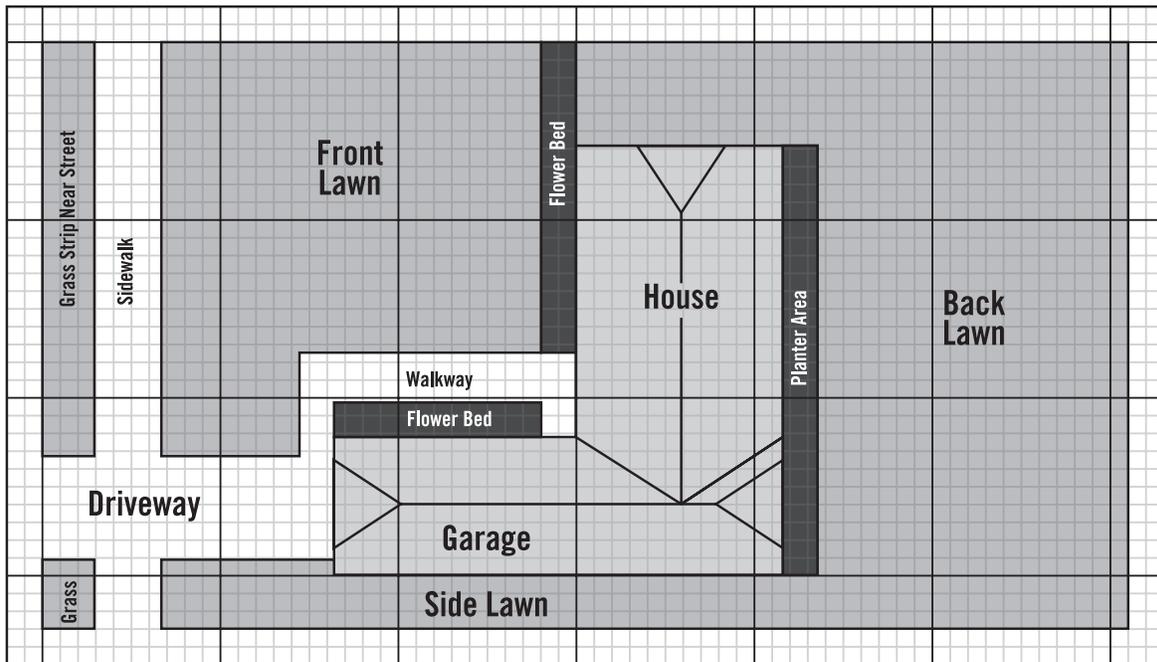
- Your property is drawn to scale
- All slopes are identified and show direction
- Water meter/pump location is indicated
- Timer and valve location is indicated
- All information on the questionnaire is complete

WEB

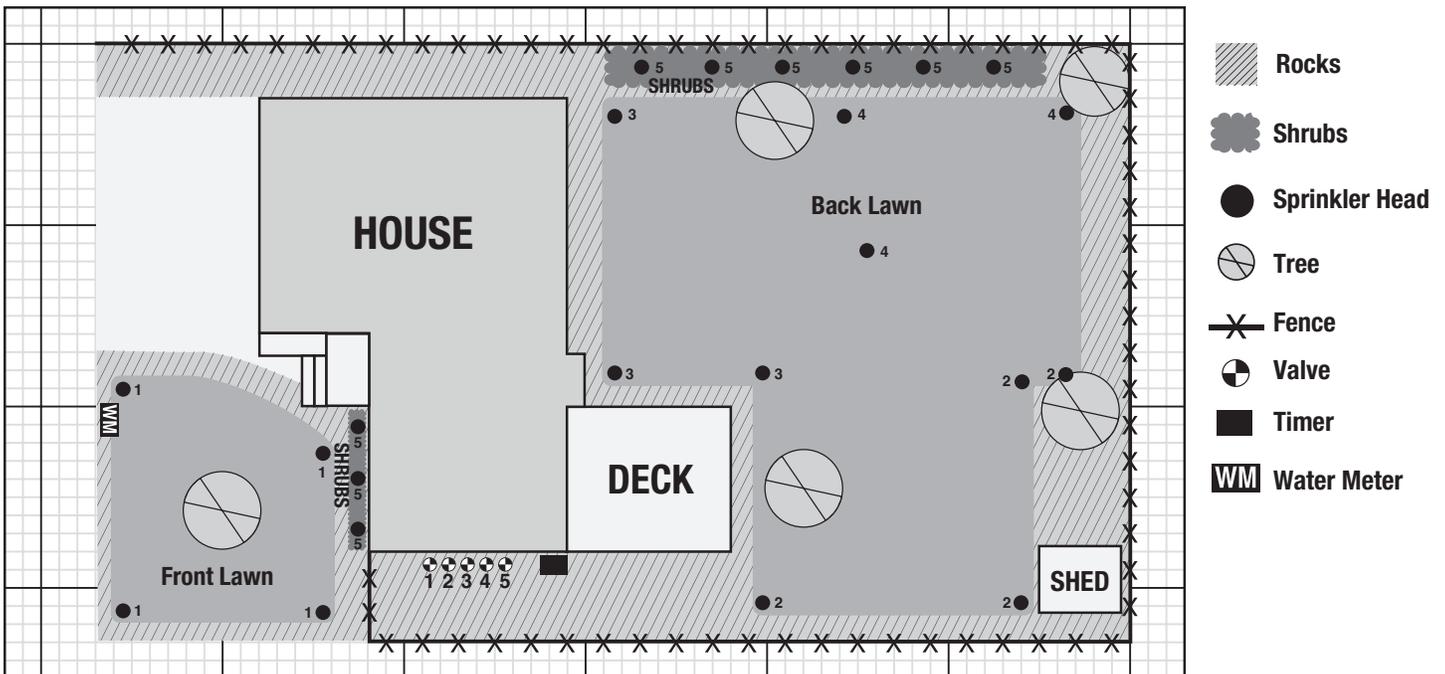
**TORO®**



# New System Sample Drawing



# Existing System Sample Drawing



-  Rocks
-  Shrubs
-  Sprinkler Head
-  Tree
-  Fence
-  Valve
-  Timer
-  Water Meter

The tips listed below will help you get the most from your new Toro irrigation system. Please pay special attention to the water conservation tips. Conserving water is not only the right thing to do for the planet; it is also the right thing to do for your budget.

## 1 WATER CONSERVATION

- Always use “head-to-head coverage” in your irrigation system.
- Keep the soil consistently moist but not wet. This eliminates runoff, and ensures your plants a steady supply of water.
- Do not water at night - water will sit on the lawn and may cause disease.
- Water in the early morning - evaporation is minimized and the lawn utilizes the most water.
- Do not water midday – evaporative loss is at its greatest.
- Create multiple programs for your irrigation system – this allows you to water most efficiently.
- Install a rain sensor – it will prevent the system from running during rain.
- Use drip irrigation in flower beds - it saves substantial amounts of water.
- Reduce run times for zones in the shade.
- Allow grass to grow before mowing - this reduces water usage.
- Practice “grass cycling”- this reduces evaporative water loss from the lawn, while reducing the need for fertilizer.
- Sharpen your mower blade - sharp blades are easier on the grass and save water.
- De-thatch your lawn - water will get to the roots faster and evaporate less.
- Aerate your lawn - it prevents soil compaction and allows water to soak in faster.
- Keep plants with different watering needs on different zones – trees vs. lawn, etc.
- Plant native species - native plants do better and need less special care than exotics.
- Mulch flowerbeds and trees - it reduces evaporation and controls weeds.
- Know your soil type - the three basic types: sand, loam, and clay require different watering schedules for optimal results.

*By implementing these conservation tips, your water use can be cut dramatically.*

## 2 WATER SCHEDULING

For best results, create a weekly watering schedule. Figure out your total weekly watering needs (run times). Divide those runtimes into watering days, and if your timer supports multiple start times, by that number.

For example, if the weekly watering requirement for one zone is 65 minutes a week, you would water 9-10 minutes every day or 16-17 minutes every other day. It is better to water for shorter periods, but to do it more often. This allows the moisture level in the soil to remain constant. Also, consider the type of soil you are watering. If you have sandy soil, longer runtimes may be better, whereas with clay soils, you will need to apply water more slowly and use more start times.

The key is building the most flexibility into your system possible, and using that flexibility to create the most precise schedule you can. Precision equals performance and water savings.

## 3 WINTERIZATION PROCEDURES FOR COLD CLIMATES

### A MANUAL DRAIN VALVES

1. Close the main water supply valve.
2. Open all manual drain valves upstream of the automatic valves to allow drainage of the main line and valve manifold.
3. Open all manual drain valves downstream of the automatic valves to allow drainage of the lines.
4. Follow recommended winterizing instructions included with your specific sprinkler timer.

### B AUTOMATIC DRAIN VALVES

If the system is installed with automatic drain valves, the lines downstream of the valves will drain automatically when the valve closes.

1. Close the main water supply valve.
2. Open any manual drain valves upstream of the automatic valves to allow complete drainage of the main line and valve manifold.
3. Follow recommended winterizing instructions included with your specific sprinkler timer.

### C WINTERIZATION WITH COMPRESSED AIR

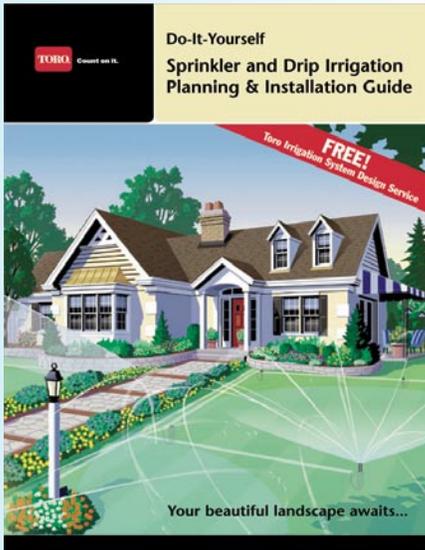
To winterize with compressed air, hire a professional, or remember the following tips:

- Install a suitable valve for attaching the compressed air hose downstream of the anti-siphon device, on the main irrigation supply line.
- Do not exceed 50 PSI of air pressure.
- Activate each zone manually and blow it until no more water comes out of the sprinkler heads.
- For complete information refer to the “Winterization” article on [www.yardcare.com](http://www.yardcare.com).



Count on it.

# Notes



To get a copy of the comprehensive 48 page Do-It-Yourself Sprinkler and Drip Irrigation Planning and Installation Guide, call **1-800-367-8676**.

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Model # 53655

