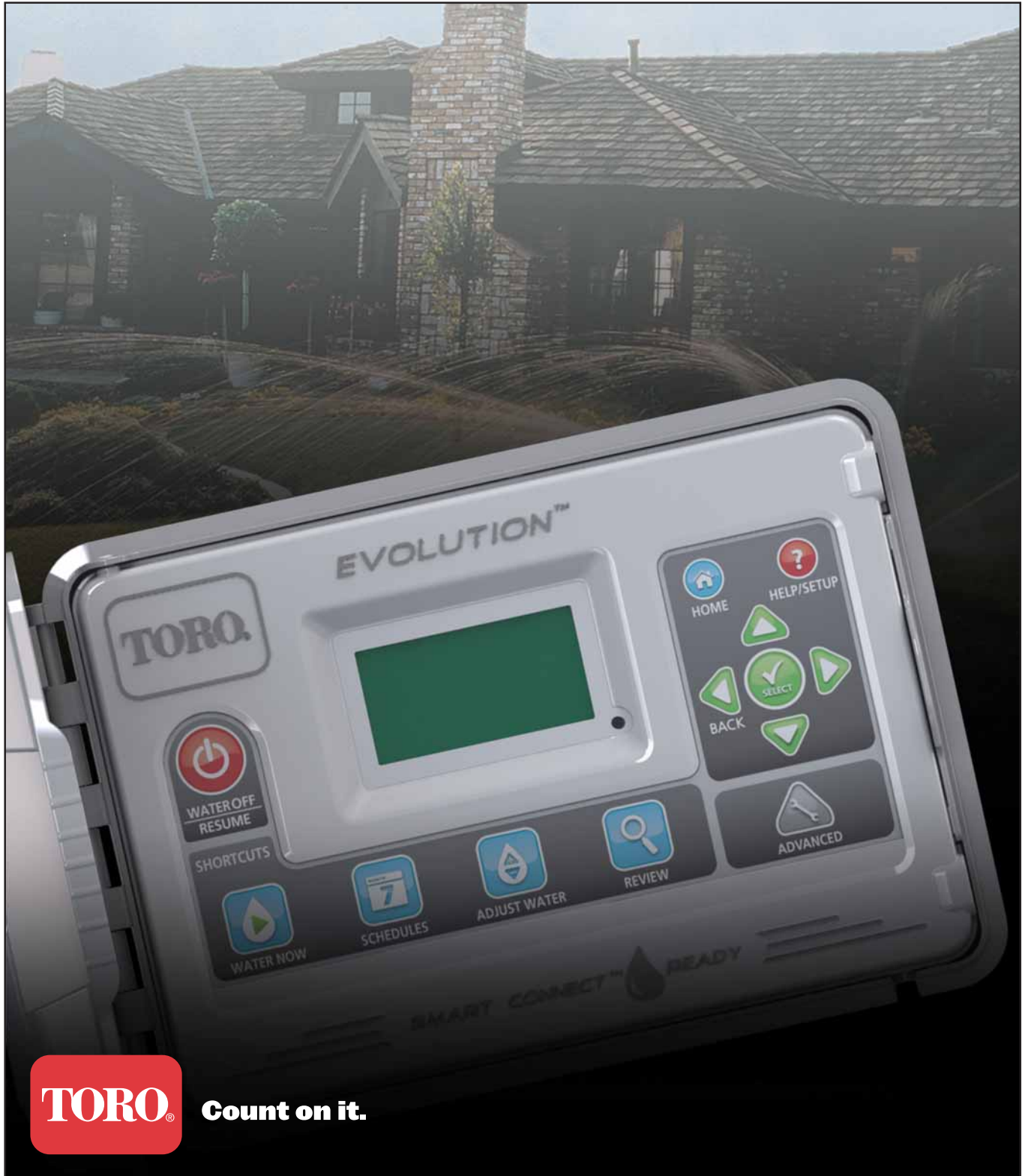


EVOLUTION™ Series Controller User's Guide



TORO

Count on it.

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Thank you for purchasing Toro's new EVOLUTION™ Series Controller delivering unprecedented control and ease-of-use of your irrigation system. The EVOLUTION™ controller is easily expandable from 4-zones to 8- and even 12-, giving the controller the ability to handle even the largest of residential irrigation systems. EVOLUTION™ allows a rain sensor or soil sensor to be attached further automating your irrigation needs. Using the bundled EVOLUTION™ software for your PC, you can use online evapotranspiration (ET) data to further automate irrigation. And lastly, the controller is housed in a rugged and durable case allowing for years of maintenance-free service and steadfast performance. If you have any questions or problems with our controller, please call us toll-free at 1-800-367-8676 and we will be happy to answer your questions and resolve any problem you might have.

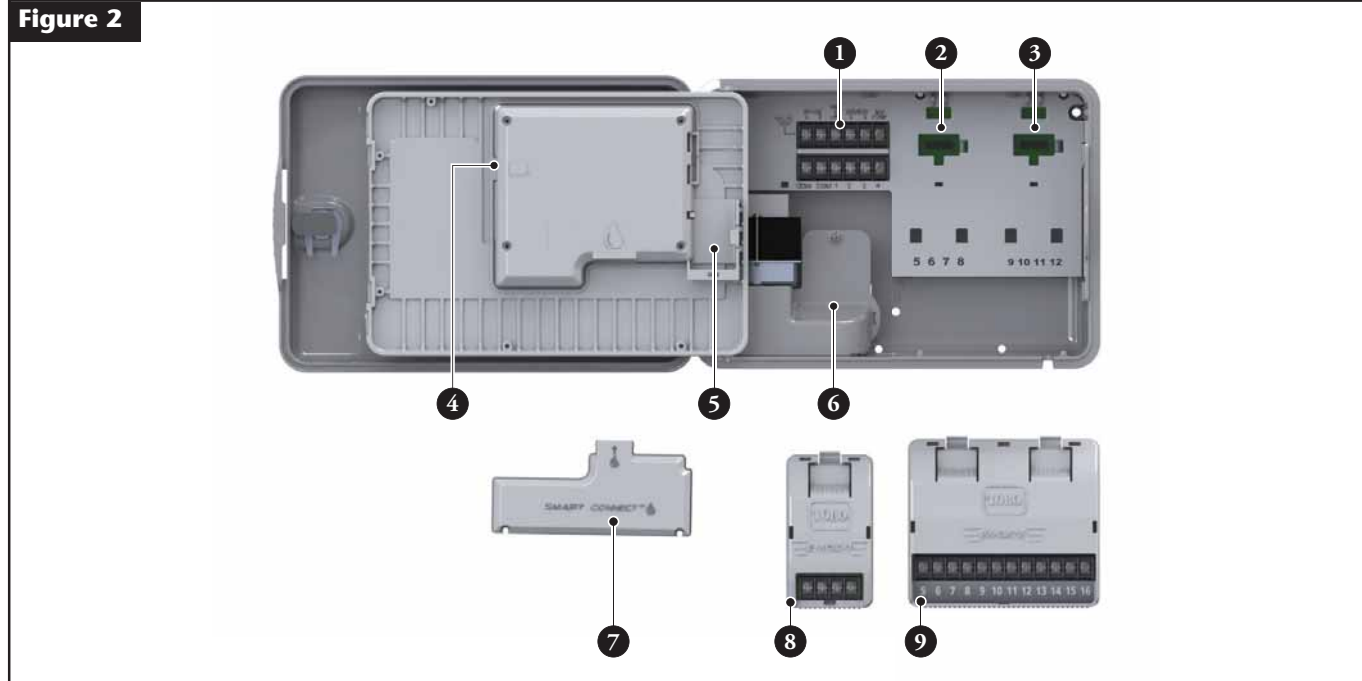
Controller Introduction

Timing Mechanism

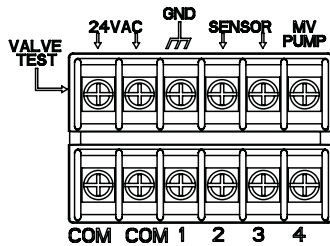


- 1 – LCD Screen
- 2 –  Water Off Button. Use to turn off scheduled and manually activated watering. For extended watering off, you can select 1-14 days or Remains Off.
- 3 –  Water Now Button. Use to manually activate a schedule, specific zone(s) or All Zones Test.
- 4 –  Schedules Button. Use to set your active watering day(s), schedule start(s) and zone runtime(s).
- 5 –  Adjust Water Button. Adjust your watering percentage per schedule or zone.
- 6 –  Review Button. Use to review your schedule parameters.
- 7 –  Advanced Button. Use to access the controller's advanced features from zone and schedule details to sensor setup and controller diagnostics.
- 8 –  Home Button. Use to display the controller's activity and alert messages.
- 9 –  Help/Setup Button. Use to access and clear alerts, set the controller's time and date, locate Toro contact information and local Toro service providers, as well as modify controller preferences such as the display language and time and date format. Use Setup also to save or load a schedule to or from your USB device.
- 10 –  Up and Down Arrow Buttons. Use to navigate up or down through the menu items. They is also used to modify parameters.
- 11 –  Left and Right Arrow Buttons. Use to navigate between menu parameters. The  button is also used to revert back to previous menu selections.
- 12 –  Select Button. Use to select a menu item or enter and save parameters.
- 13 – LED Indicator. Indicates that Water Off is active (constantly lit) or an Alert condition is detected (blinking).

Internal Components



1 – Zones and Sensor Terminals



VALVE TEST – Use this terminal to test a valve for proper function.

24VAC – 24 VAC Power Source

GND – Power Source Ground

SENSOR – Sensor Terminals

MV PUMP – Master Valve Terminal

COM – Zones' and Master Valve Common Terminals

1, 2, 3 and 4 – Zone 1, Zone 2, Zone 3, and Zone 4 Terminals

2 – Zones' 5, 6, 7 and 8 Expansion Module Socket

3 – Zones' 9, 10, 11 and 12 Expansion Module Socket

4 – Schedules USB Flash Drive Connector

5 – 9 Volt Battery Compartment

6 – Power Supply Terminal Compartment

7 – Smart Connect™ Module

8 – EMOD-4, Four-Zone Expansion Module (available separately)

9 – EMOD-12, Twelve-Zone Expansion Module (available separately)


Home Screen Messages



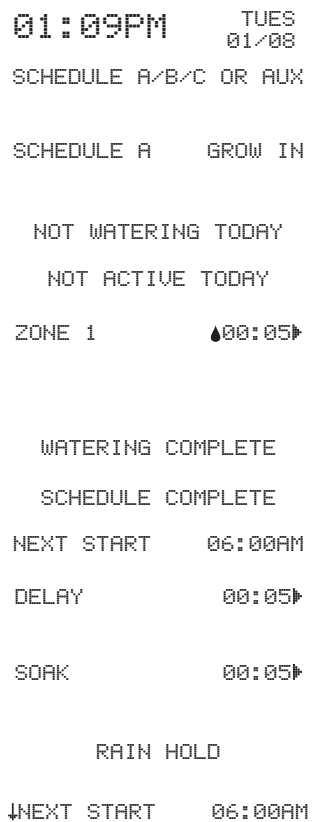
A Title Bar



The battery icon indicates that the controller's VAC power is off and the timer is running under the battery power.

 **Note:** The 9-volt battery is used to retain schedule parameters and will not activate any zones when the VAC power supply is off.

B Main Display




Display the current time, day of the week and date.

Indicates which schedule (A, B or C) or auxilliary is associated with the displayed status. If only Schedule A is active, EVOLUTION™ will not display the Schedule “A”, “B” and “C” or AUX.

Indicates the displayed schedule is set as Grow In. The Grow In option is set in the Schedule Details under the Advanced menu.

Indicates that the displayed schedule will not water that day.

The displayed auxilliary schedule (Aux) will not activate that day.

Indicates that Zone 1 is active with a 5-minute remaining runtime. Pressing the Right  arrow will deactivate the running zone and activate the next zone (if additional zones are scheduled) in the schedule regardless of the remaining runtime.

The displayed schedule completed its watering cycle.



The displayed auxilliary schedule (Aux) completed its cycle.

Indicates the next start time of the displayed watering or auxilliary (Aux) schedule.

Indicates that the controller is performing a zone delay before the next zone in the schedule is activated. The zone delay is set in the Schedule Details under the Advanced menu.

Indicates that the active zone is performing a soak delay before continuing operation. The soak delay is set in the Zone Details under the Advanced menu.

Indicates that the rain sensor is activated and the schedule is delayed until the rain sensor dries up. If rain delay is set, the controller will indicate Rain Hold until the rain delay expires.

The scroll down arrow  indicates that additional information are available. Use the Down  arrow to reveal the additional message(s).

B Message Bar



Indicates that the controller detected a condition that needs user attention. Check the alert messages in the Alerts menu under the Help/Setup function. For a list of the Alert messages and description, please refer to the **Alert Messages** section on page 20.



Indicates that scheduled watering has been suspended for the indicated days. Watering can be turned off from 1–14 days, Remains Off or will operate at the next scheduled start.



Indicates that the system is functioning as expected.

Setup Screen



Upon power up, the initialization screen will display briefly. On initial power up, the EVOLUTION™ will display the SETUP screen. This SETUP screen is only accessed during initial power up or after a factory reset is performed.

Set Language

Select the preferred display language. Select from English, Spanish, French, German, Italian or Portuguese.

- Step 1** – While LANGUAGE is selected, press the Right arrow or SELECT .
- Step 2** – Use the Up or Down arrows to select from English (default), Spanish, French, German, Italian or Portuguese. Press SELECT .
- Step 3** – Press the HOME button to return to the main screen.

Set Date Format

- Step 1** – Use the Down arrow to select DATE FORMAT. Press the Right arrow or SELECT .
- Step 2** – Use the Up or Down arrows to select MM/DD/YY (Month/Day/Year) (default) or DD/MM/YY (Day/Month/Year). Press SELECT .
- Step 3** – Press the HOME button to return to the main screen.

Set Clock Format

- Step 1** – Use the Down arrow to select CLOCK. Press the Right arrow or SELECT .
- Step 2** – Use the Up or Down arrows to select 12 HOUR (default) or 24 HOUR. Press SELECT .
- Step 3** – Press the HOME button to return to the main screen.

Set the Current Time

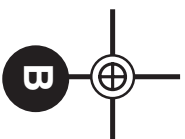
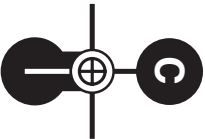
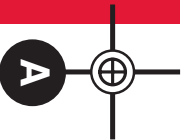
- Step 1** – Use the Down arrow to select TIME. Press the Right arrow or SELECT .
- Step 2** – Use the Left or Right arrows to navigate between the Hour and Minute positions. Use the Up or Down arrows to set the correct values. Press SELECT when finished.
- Step 3** – Press the HOME button to return to the main screen.

Set the Current Date

- Step 1** – Use the Down arrow to select DATE. Press the Right arrow or SELECT .
- Step 2** – Use the Left or Right arrows to navigate between the Month, Day and Year positions. Use the Up or Down arrows to set the correct values. Press SELECT when finished.
- Step 3** – Press the HOME button to return to the main screen.

Set the Beginning of the Week

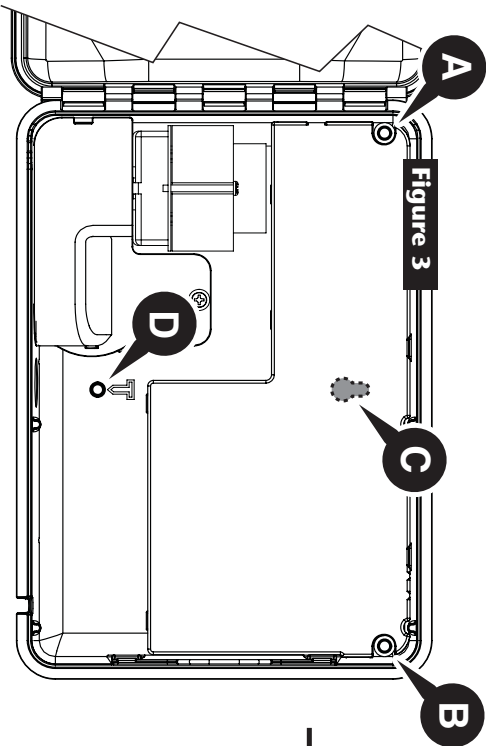
- Step 1** – Use the Down arrow to select BEGIN WEEK. Press the Right arrow or SELECT .
- Step 2** – Use the Up or Down arrows to select SUNDAY (default) or MONDAY as the beginning of the weekly schedule. Press SELECT when finished.
- Step 3** – Press the HOME button to return to the main screen.



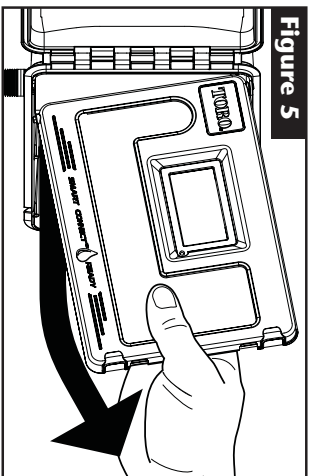
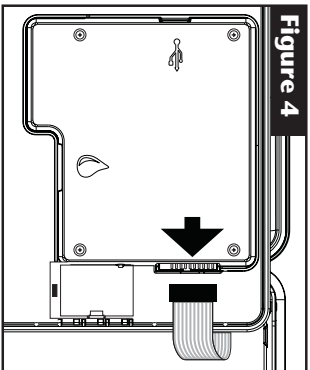
Cabinet Installation

Use this page as a template to mark the screw location of the EVOLUTION™ cabinet. There are two mounting options for the EVOLUTION™. The first option allows you to mount the cabinet with three screws and the second option allows you to mount the cabinet with two screws. For safe and reliable operation, select an installation site that can provide the following conditions:

- For **Indoor model controllers** - Inside a garage or other structure which will provide protection from the weather.
- For **Outdoor model controllers** - Protection from irrigation spray, wind and snow. A shaded location is recommended.
- Access to a grounded AC power source (within 4' [1.2 m] for indoor models) which is not controlled by a switch or utilized by a high current load appliance, such as a refrigerator or air conditioner.
- Access to the sprinkler control valve wiring and optional accessory wiring.



Option 1



Step 1 – Unplug the controller panel ribbon cable. Open the front panel about 90° and detach it from the cabinet by pulling the bottom portion upwards. Removing it from the cabinet allows you to access the mounting location.

Step 2 – Mark the mounting screw location **A**, **B** and **D**.

Step 3 – Drill 1/8" (3mm) pilot holes at the marked locations.

Step 4 – Secure the cabinet with screws.

Option 2

Step 2 – Mark the mounting screw location **C** and **D**.

Step 3 – Drill 1/8" (3mm) pilot holes at the marked locations.

Step 4 – Secure the cabinet with screws.

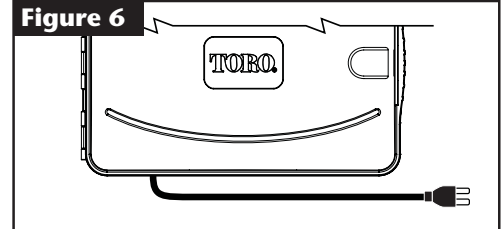


Power Supply Installation

⚠ WARNING: AC power wiring must be installed and connected by qualified personnel only. All electrical components and installation procedures must comply with all applicable local and national electrical codes. Some codes may require a means of disconnecting from the AC power source installed in the fixed wiring and having a contact separation of at least 0.120" (3mm) in the line and neutral poles. Make sure the power source is OFF prior to connecting the controller.


Indoor and 240 VAC Outdoor Models

Indoor models and the 240 VAC Outdoor model will be pre-wired with a power cord ready to be plugged into a wall power socket.

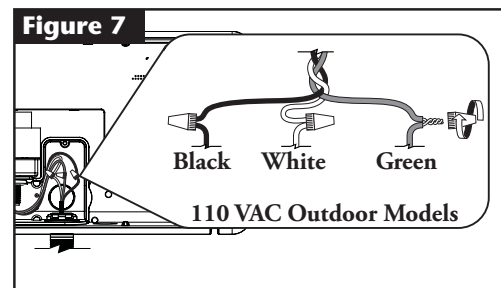


110 VAC Outdoor Models

- Step 1** – Route power and ground wires from a power source through a conduit and into the EVOLUTION™ cabinet.
- Step 2** – Open the EVOLUTION™ controller and access the internal components.
- Step 3** – Remove the power compartment cover to access the transformer wiring. Remove 1/2" (12.7mm) of insulation from the wire ends.
- Step 4** – Using the provided wire nuts, secure the transformer Line (black) wire to the black power source wire, Neutral (white) to the white power source wire and Equipment Ground wire (green) to the green power source wire.

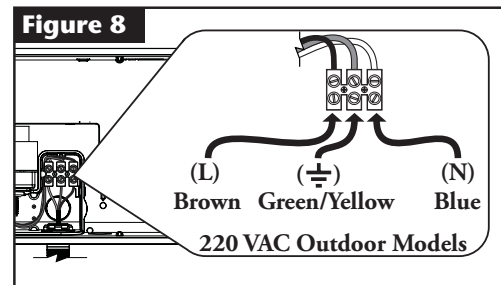
 **Note:** Earlier EVOLUTION™ model is equipped with two Equipment Ground wires (green). Connect both wires to the green power source wire.

- Step 5** – Install and secure the power compartment cover.
- Step 6** – Apply power to the controller.



220 VAC Outdoor Models

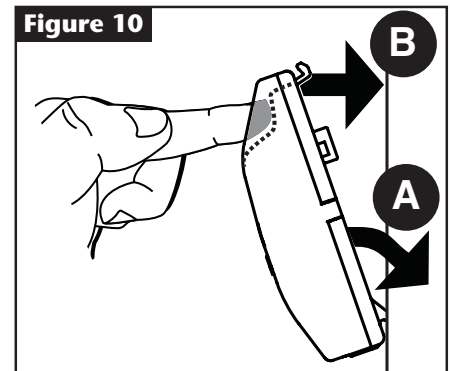
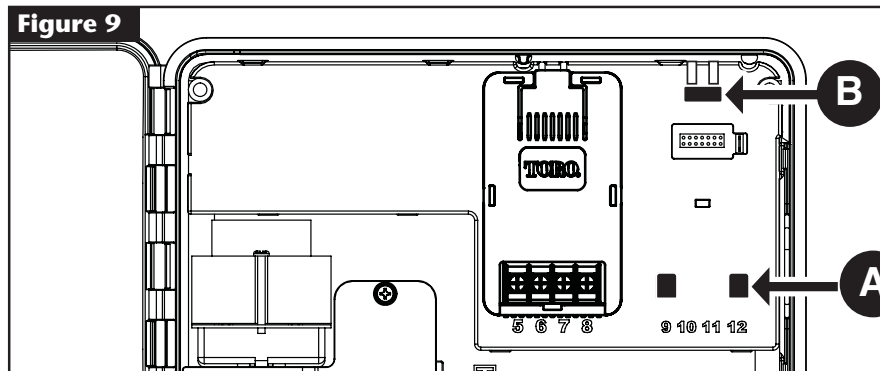
- Step 1** – Route power and ground wires from a power source through a conduit and into the EVOLUTION™ cabinet.
- Step 2** – Open the EVOLUTION™ controller and access the internal components.
- Step 3** – Remove the power compartment cover to access the transformer terminals.
- Step 4** – Remove 1/2" (12.7mm) of insulation from the power source wire ends and install the brown wire into the Line (L) terminal. Install the green wire into the Ground (\perp) terminal and the blue wire into the Neutral (N) terminal.
- Step 5** – Install and secure the power compartment cover.
- Step 6** – Apply power to the controller.



Zone Expansion Module Installation

The EVOLUTION™ controller can be expanded using the optional 4-zone (EMOD-4) or 12-zone (EMOD-12) modules to add more zones to the system.

Module Installation

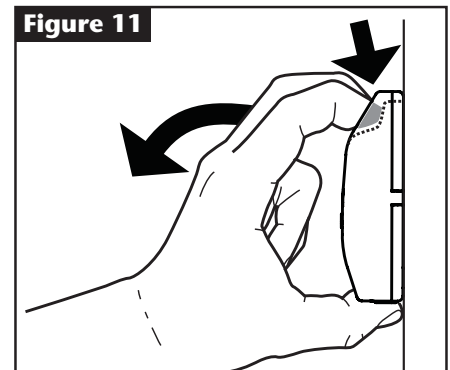


- Step 1** – Open the EVOLUTION™ controller door and control panel to access the internal components.
- Step 2** – Locate the module slot **A** and **B**. Install the module by placing the bottom hooked standoffs into slot **A** and push the module tab towards the cabinet until a positive click is achieved. The click indicates that the module's retaining tab is fully engaged. Once installed, the EVOLUTION™ controller will be able to read the additional zones and will make them available for scheduling.

 **Note:** If installing only one four-station module (EMOD-4), it must be installed in the zone 5-8 module slot.

Module Removal

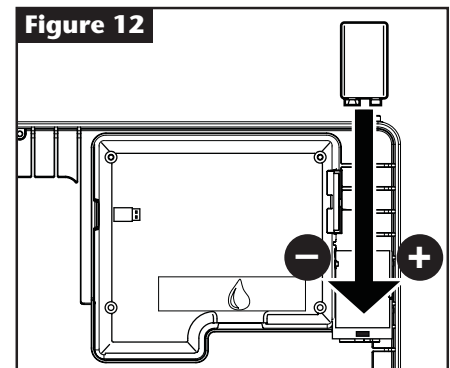
- Step 1** – Open the EVOLUTION™ controller door and control panel to access the internal components.
- Step 2** – Hold the module as shown in **Figure 11**. Press the retaining tab while pulling the module away from the cabinet.



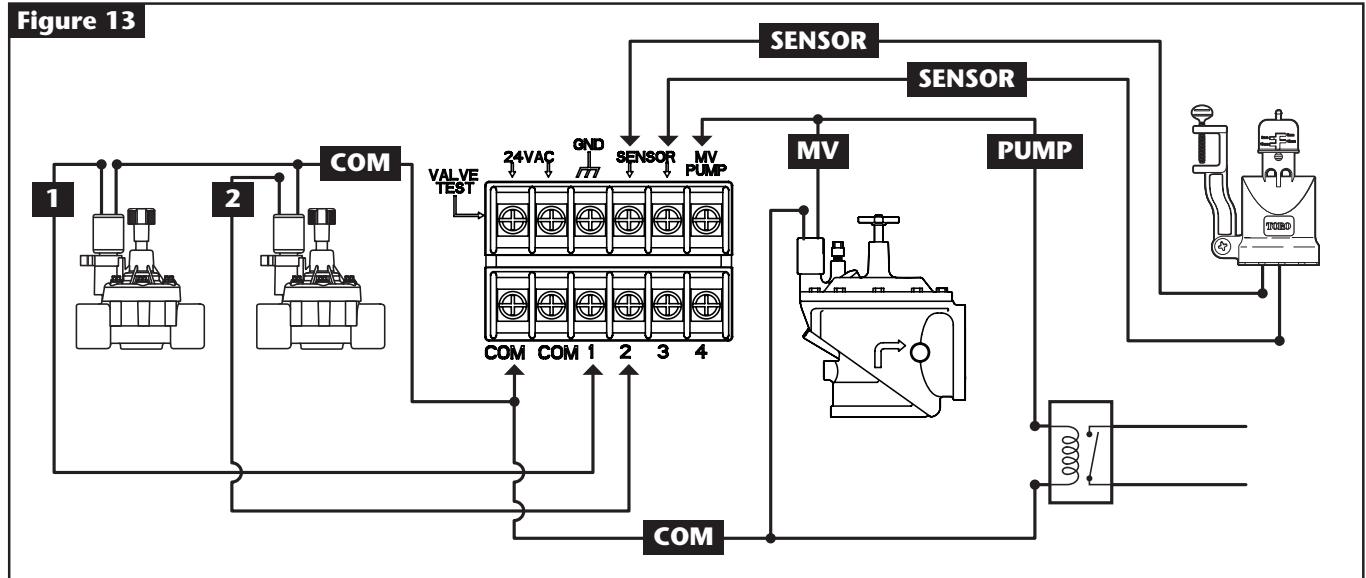
Battery Installation

The EVOLUTION™ controller uses a 9-VDC battery to retain schedule parameters during an extended period of power outages.


- Step 1** – Open the EVOLUTION™ controller door and control panel to access the internal components.
- Step 2** – Locate the battery compartment at the back of the control panel.
- Step 3** – Align the polarity (– and +) of the battery then slide it into the battery compartment as shown in **Figure 12**.



Valve, Pump Relay and Sensor Installation



Step 1 – Route valve wires from the valves, master valves, pump relay and/or sensor into the controller cabinet.

 **Note:** 18 AWG (1.0 mm²) multi-wire sprinkler valve connection cable can be used. This cable is insulated for direct burial and is color-coded to simplify installation. It can be routed directly into the controller through the access hole provided for valve wire conduit (if conduit is not used).

Step 2 – **Connect valves, master valves and pump start relay to the valve wires** - Connect the white color-coded wire from the cable to one wire from each valve solenoid and/or pump relay. (Either of the two wires from the solenoid or pump relay can be used for this connection.) This connection will be designated as the valve common wire. Connect a separate cable wire to the remaining wire from each valve solenoid. Note the wire color-code used for each valve and the zone it controls. You will need this information when connecting the valve wires to the controller.

Connect sensor to the valve wires - Connect any two unused color-coded wires to the sensor. Note the color-code of the sensor wires for installation.

Step 3 – Secure all wire splices using wire nut connectors. To prevent corrosion and possible short circuits, always use an insulated wire nut, grease cap or similar waterproofing method.

Step 4 – **Connect valves wires to the controller** - Secure the valve common wire (white) to either of the two terminals labeled **COM**. Secure the individual valve wires to the appropriate zones they control, Zone 1 valve to terminal **1**, Zone 2 valve to terminal **2**, etc.

Connect master valve/pump relay wires to the controller - Secure the valve common wire (white) to either of the two terminals labeled **COM**. Secure the Master Valve or Pump Relay wire to the terminal labeled **MV/PUMP**.

 **Caution:** To prevent controller damage, do not connect the pump motor starter directly to the controller.




Connect sensor wires to the controller - Remove the jumper wire from the **SENSORS** terminals. Secure the two sensor wires to the sensor terminals. Refer to the provided sensor instructions for further installation instructions.

Step 5 – Test for proper operation.





Time and Date Setup

Editing Time and Date

Step 1 – Press the  HELP/SETUP button.

Step 2 – Use the Up  or Down  arrows to navigate to SET TIME/DATE. Press SELECT .





Step 3 – Use the Up  or Down  arrows to select TIME or DATE. Navigate to the TIME or DATE parameters using the Left  or Right  arrows.

Step 4 – Use the Up  or Down  arrows to modify the TIME's Hour and Minutes or the DATE's Month, Day and Year (Day, Month and Year for International Format).






Step 5 – Press SELECT  to save the changes.

Step 6 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

Changing the Time and Date Format

The EVOLUTION™ controller display time and date in U.S. format. EVOLUTION™ can also display the time and date in the international format (24-Hours for TIME and Day/Month/Year for DATE). To change the time and date format, you have to access PREFERENCES.

Step 1 – Press the  HELP/SETUP button.



Step 2 – Use the Up  or Down  arrows to navigate to PREFERENCES. Press SELECT .

Step 3 – Use the Up  or Down  arrows to navigate to CLOCK or DATE FORMAT. Press the Right  arrow or SELECT .



Step 4 – Use the Up  or Down  arrows to modify the CLOCK or DATE FORMAT.

Step 5 – Press SELECT  to save the changes.

Step 6 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

Schedule Setup

The EVOLUTION™ controller only displays one schedule by default. See the **Advanced Functions** section to activate additional schedules if needed.

Water Days Setup

The EVOLUTION™ controller allows for flexible watering by giving you four schedule options: 7-day, Even days, Odd days or Interval days. By default, the 7-day schedule is set for the schedule. To set watering days to Odd, Even or Interval, see the **Advanced Functions** section.


7-Day Scheduling




The 7-day schedule allows you to activate or turn off any of the days in the week. By default, all days are active.

Step 1 – Press the  SCHEDULES button.







Step 2 – (For controllers with multiple active schedules only.)

Use the Up  or Down  arrows to select the Schedule you want to edit. Press SELECT .

 **Note:** The Schedule and Zone names can be customized using the EVOLUTION™ Software which can be accessed at www.toro.com/evolution.

Step 3 – Use the Up  or Down  arrows to navigate to WATER DAYS. Press SELECT .



Step 4 – Use the Left  or Right  arrows to navigate within the days of the week. Use the Up  or Down  arrows to activate  or turn off  the day for watering. Repeat for all days of the week.

Step 5 – Press SELECT  to save the changes and return to the SCHEDULES menu.

Step 6 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.


Schedule Start Setup




By default, the EVOLUTION™ controller is set with 1 start time set to OFF. Additional Starts can be added with a maximum of four starts per schedule. Once a start is activated, the schedule will activate the first zone (lowest number). Once it is complete, the second zone will water. The schedule will continue until all zones with runtimes have been activated.

Step 1 – Press the  SCHEDULES button.

Step 2 – (For controllers with multiple active schedules only.)

Use the Up  or Down  arrows to select the Schedule you want to edit. Press SELECT .

 **Note:** The Schedule name can be customized using the EVOLUTION™ Software which can be accessed at www.toro.com/evolution.

Step 3 – Use the Up  or Down  arrows to navigate to SCHEDULE STARTS. Press SELECT .



Step 4 – Use the Left  or Right  arrows to navigate to the start time's Hours, Minutes and AM/PM. Use the Up  or Down  arrows to set your desired start time. Press SELECT  to save.

Step 5 – Navigate to ADD START to add another start time. Press SELECT . Modify the new start time as indicated in Step 3.

Step 6 – To delete a start time, set the time to OFF. The OFF selection is located between the full hour of 11:00 AM/PM and the full hour of 12:00 AM/PM (23:00 and 00:00).




Step 7 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.


Zone Runtimes Setup




The Zone Runtimes is where you select all the zones that will run in the schedule. By default, all zones are set to OFF. Modify the runtime for each zone as necessary. Deactivate a zone by setting the runtime to OFF.

Step 1 – Press the  SCHEDULES button.

Step 2 – (For controllers with multiple active schedules only.)

Use the Up  or Down  arrows to select the Schedule you want to edit. Press SELECT . If only Schedule A is enabled, move to **Step 3**.

 **Note:** The Schedule and Zone names can be customized using the EVOLUTION™ Software which can be accessed at www.toro.com/evolution.

Step 3 – Use the Up  or Down  arrows to navigate to ZONE RUNTIMES. Press SELECT .

Step 4 – Use the Up  or Down  arrows to navigate to the ZONE you want to set or edit. Press the Right  arrow or SELECT .

SCHEDULE	
ZONE 1	00:15
ZONE 2	00:05
3: FRONT YARD	00:15
4: BACK YARD	00:20
ZONE 5	OFF

Step 5 – Use the Up  or Down  arrows to set the desired runtime for that particular zone. Press SELECT  to save.

Step 6 – Repeat Steps 4 and 5 for the remaining Zones. Set the Zone to OFF to disable.




Step 7 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

Water Now

Water Now is used to manually activate a schedule, zone(s), or to test all zones.


Manually Activate a Schedule


Step 1 – Press the  WATER NOW button.



Step 2 – Use the Up  or Down  arrows to navigate to SCHEDULE. Press SELECT . Watering will begin.
The selected schedule will run and activate all assigned zones.

(For controllers with multiple active schedules only.)

Use the Up  or Down  arrows to select the Schedule you want to activate. Press SELECT .

WATER NOW	
SCHEDULE A	
SCHEDULE B	
ZONES	

 **Note:** The Schedule name can be customized using the EVOLUTION™ Software which can be accessed at www.toro.com/evolution.

Step 3 – Press  BACK to return to the previous menu or  HOME to return to the main screen.

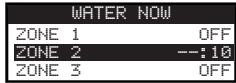
Manually Activate a Specific Zone(s)

Step 1 – Press the  WATER NOW button.




Step 2 – Use the Up  or Down  arrows to navigate to ZONES. Press SELECT .

 **Note:** The Zone name can be customized using the EVOLUTION™ Software which can be accessed at www.toro.com/evolution.

Step 3 – Use the Up  or Down  arrows to select the specific zone to activate. Press the Right  arrow or SELECT .





WATER NOW	
ZONE 1	OFF
ZONE 2	1:00
ZONE 3	OFF

Step 4 – Use the Up  or Down  arrows to assign the zone a runtime. Press SELECT .

The zone will activate until the specified runtime expires. A water drop icon is displayed to indicate that the zone is actively watering.

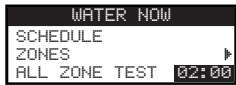
Step 5 – Repeat Steps 3 and 4 to activate additional zones. Watering will occur in the order that the zones are entered.

Step 6 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

Manually Activate All Zone Test

Step 1 – Press the  WATER NOW button.


Step 2 – Use the Up  or Down  arrows to navigate to ALL ZONE TEST. Press the Right  arrow or SELECT .




WATER NOW	
SCHEDULE	
ZONES	
ALL ZONE TEST	02:00

 **Note:** The Zone name can be customized using the EVOLUTION™ Software which can be accessed at www.toro.com/evolution.

Step 3 – Use the Up  or Down  arrows to assign a runtime. Press SELECT .

 **Note:** The EVOLUTION™ controller will sequentially water all active zones (only active zones will run) starting with Zone 1. All active zones will run the specified runtime duration.

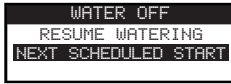
Step 4 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

 **Note:** All Zone Test will not affect the AUX schedule.


Water Off

Turn Off Current Operation

Step 1 – Press the  WATER OFF button.







All currently active automatic schedule(s) and manually activated schedules and zones will turn off. The EVOLUTION™ controller will not run any watering schedules while the WATER OFF screen is displayed.

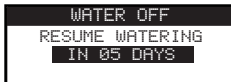
Step 2 – Press the  HOME button. Irrigation will resume at the next automatic scheduled start time.

Water Off



Step 1 – Press the  WATER OFF button.

All currently active automatic schedule(s) and manually activated schedules and zones will turn off. The EVOLUTION™ controller will not run any schedules while the WATER OFF screen is displayed.

Step 2 – Use the Up  or Down  arrows to assign the number of days until watering resumes. Select a delay of 1–14 days, NEXT SCHEDULED START or REMAINS OFF. Press SELECT  to enter or  HOME to cancel. Pressing SELECT will save your selection and take you back to the HOME screen.






Advanced Functions



You can access the EVOLUTION™ controller's advanced functions by pressing the  ADVANCED button and then pressing  SELECT button to confirm. In the Advanced Functions, you can activate additional schedules, check and set runtimes and start times to all schedules in one screen, set schedule and zone details, set rain sensors to the schedules, perform diagnostics test, check firmware version and reset the controller to factory defaults.






Zone Runtimes


The Zone Runtimes function is where you can set any of the zones to any of the three schedules (A, B and C). All the zones are listed from least to greatest. You can then set any zone to a schedule by entering a runtime to its corresponding schedule column.

Step 1 – While in the ADVANCED menu, use the Up  or Down  arrows to select the ZONE RUNTIMES. Press SELECT  to access.

Step 2 – Use the Up  or Down  arrows to select the zone you want to edit. Press SELECT .

ZONE RUNTIMES			
	A 	B 	C
01	00:05	OFF	OFF
02	00:10	OFF	OFF
03	00:05	OFF	OFF

Step 3 – Use the Left  or Right  arrows to navigate to the runtime you want to edit. Enter runtime using the Up  or Down  arrows. Moving to another parameter will save the changes as well as pressing the SELECT  button. Repeat Step 3 as necessary to assign runtimes to other schedules.

 **Note:** The maximum runtime that you can assign to a zone is 12 hours. Water Adjustment will not increase the runtime beyond 12 hours.

Step 4 – Repeat Steps 2 and 3 for the remaining zones as necessary.




Step 5 – To remove a zone from a schedule, set the runtime to OFF.




Step 6 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

 **Note:** A schedule will also need a Start Time for the zone to be activated.





Zone Details

Step 1 – While in the ADVANCED menu, use the Up  or Down  arrows to select the ZONE DETAILS. Press SELECT  to access.

Step 2 – Use the Up  or Down  arrows to select the zone you want edit. Press SELECT .

Step 3 – Use the Up  or Down  arrows to select the ZONE DETAILS you want to edit. Press SELECT .

ZONE 01	
MV PUMP	ON
CYCLE	OFF
SOAK	OFF

Step 4 – Use the Right  arrow to navigate to the parameter. Use the Up  or Down  arrows to modify its values. Press SELECT  to save and select the next zone detail.

MV/PUMP – Set to ON if a master valve is used in conjunction with this zone. Connect the master valve relay to MV PUMP terminals. If no master valve is used in conjunction with this zone, set to OFF.

CYCLE and SOAK – This function is used to break the zone's runtime into shorter cycles to allow the water to penetrate the soil and avoid runoff or wasted water.

The cycle time is the length of time the zone will run before entering a soak time.

The soak time is set as a delay between zone cycles. It is usually used to allow water to penetrate the soil into the root system. Allowing a soak time prevents water waste from water runoff during irrigation. Water runoff can occur when the applied irrigation is higher than the absorb rate of the soil being irrigated. The excess water will then accumulate on top of the soil and will form a runoff stream carrying water away from where it should be applied.

The cycle and soak will continue until the total runtime for the zone has been met.




Step 5 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

Schedule Starts




The Schedule Starts function allows you to view the three schedules with all four possible start times.

Step 1 – While in the ADVANCED menu, use the Up  or Down  arrows to select the SCHEDULE STARTS.

Press SELECT .



Step 2 – Use the Left  or Right  arrows to navigate to start time you want to edit. You can also press SELECT  until the desired start time is selected.

ZONE RUNTIMES		
A	B	C
04:30A	07:45A	OFF
08:00P	OFF	OFF
OFF	OFF	OFF

Step 3 – Use the Up  or Down  arrows to enter the desired start time. Moving to another parameter will save the changes as well as pressing the SELECT  button.

Step 4 – Repeat Steps 2 and 3 to edit or add another start time.



Step 5 – Place the start time to OFF to remove.




Step 6 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.






Schedule Details

Step 1 – While in the ADVANCED menu, use the Up  or Down  arrows to select SCHEDULE DETAILS. Press SELECT .

SCHEDULE DETAILS	
MAX SCHEDULES	1
SCHEDULE A	▶
SCHEDULE B	▶
SCHEDULE C	▶
AUX 1	▶

Step 2 – Use the Up  or Down  arrows to select the schedule you want to edit. Press SELECT .

Step 3 – Use the Up  or Down  arrows to select through the menu items you want to edit. Press SELECT .




Step 4 – Use the Left  or Right  arrows to navigate to the parameter and use the Up  or Down  arrows to modify the values. Press SELECT  to save.



Set Maximum Schedules

The maximum concurrently running schedule is set in Schedule Details. The default setting is 1 schedule. The auxiliary schedule is not included in the set maximum. You can set a maximum of 1–3 schedules to activate at the same time.

Step 1 – While in the ADVANCED/SCHEDULE DETAILS menu. Use the Up  or Down  arrows to select MAX SCHEDULES. Press the Right  arrow or SELECT .

SCHEDULE DETAILS	
MAX SCHEDULES	1
SCHEDULE A	▶
SCHEDULE B	▶
SCHEDULE C	▶
AUX 1	▶

Step 2 – Use the Up  or Down  arrows to set the maximum schedules to activate concurrently. Press SELECT  to save.

Step 3 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.




STATUS – Select the schedule's mode. Place it in ENABLED (Active) or DISABLED (OFF).





TYPE – Select the schedule type. Select between Weekdays, Even, Odd or Interval scheduling.

Set Schedule Type

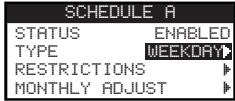
Weekday Scheduling

Selecting Weekday scheduling will activate all 7 days of the week. You can disable any of the 7 days as a non-watering day.

Step 1 – While in the ADVANCED/SCHEDULE DETAILS menu, use the Up  or Down  arrows to select the Schedule you want to edit. Press SELECT .

Step 2 – Use the Up  or Down  arrows to navigate to TYPE. Press the Right  arrow or SELECT .




Step 3 – Use the Up  or Down  arrows to select WEEKDAY. Press SELECT .



Step 4 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

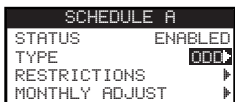
Odd Day Scheduling

Selecting Odd scheduling will activate all odd-numbered days in the calendar as a watering day. The 31st day of the month is not a watering day.

Step 1 – While in the ADVANCED/SCHEDULE DETAILS menu, use the Up  or Down  arrows to select the Schedule you want to edit. Press SELECT .

Step 2 – Use the Up  or Down  arrows to navigate to TYPE. Press the Right  arrow or SELECT .


Step 3 – Use the Up  or Down  arrows to select ODD. Press SELECT .



Step 4 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

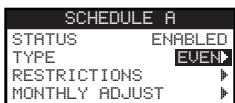
Even Day Scheduling


Selecting Even will activate all even-numbered days in the calendar as a watering day.

Step 1 – While in the ADVANCED/SCHEDULE DETAILS menu, use the Up  or Down  arrows to select the Schedule you want to edit. Press SELECT .

Step 2 – Use the Up  or Down  arrows to navigate to TYPE. Press SELECT .




Step 3 – Use the Up  or Down  arrows to select EVEN. Press the Right  arrow or SELECT .



Step 4 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

Interval Day Scheduling





Selecting Interval watering allows you to specify the number of days between watering. Selecting an interval of 3 will prompt the controller to water every 3rd day.


Step 1 – While in the ADVANCED/SCHEDULE DETAILS menu, use the Up  or Down  arrows to select the Schedule you want to edit. Press SELECT .

Step 2 – Use the Up  or Down  arrows to navigate to TYPE. Press SELECT .

Step 3 – Use the Up  or Down  arrows to select INTERVAL. Press SELECT .

```
INTERVAL
WATERS EVERY 03 DAYS
CURRENT DAY 01
WATERS ON LAST DAY
OF INTERVAL
```

Step 4 – Use the Right  arrow to navigate to WATERS EVERY designation. Modify using the Up  or Down  arrows. Press SELECT  to save and advance to the next parameter. Enter 2 for every other day, 3 for every third day, etc.

Step 5 – The CURRENT DAY designation represents the present day within the interval schedule. Enter 1 for first day, 2 for second day, 3 for third day, etc. Press SELECT  to save.




```
INTERVAL
WATERS EVERY 03 DAYS
CURRENT DAY 02
WATERS ON LAST DAY
OF INTERVAL
```




Step 6 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.




Set Watering Restrictions








Restrictions function allows you to select the day and time frame you do not want any scheduled watering activity.

Restriction Days

Step 1 – While in the ADVANCED/SCHEDULE DETAILS menu, use the Up  or Down  arrows to select the Schedule you want to edit. Press SELECT .

Step 2 – Use the Up  or Down  arrows to navigate to RESTRICTIONS. Press SELECT .




Step 3 – Use the Up  or Down  arrows to navigate to RESTRICTION DAYS. Press SELECT .




Step 4 – Use the Left  or Right  arrows to navigate through the days of the week. Use the Up  or Down  arrows to restrict watering . To activate watering, select  for that day. Press SELECT  to save.









```
RESTRICTION DAYS
S M T W T F S
☐ - ✓ - - - -
TODAY IS THURSDAY
```

Restriction Time


Step 1 – While in the ADVANCED/SCHEDULE DETAILS menu, use the Up  or Down  arrows to select the Schedule you want to edit. Press SELECT .

Step 2 – Use the Up  or Down  arrows to navigate to RESTRICTIONS. Press SELECT .

Step 3 – Use the Up  or Down  arrows to navigate to RESTRICTION TIME. Press SELECT .













Step 4 – Use the Up  or Down  arrows to select START or STOP. Press SELECT . Use the Left  or Right  arrows to navigate between the hours and minutes. Use the Up  or Down  arrows to adjust the time. Press SELECT  to save. The EVOLUTION™ controller will not allow any schedules to activate between the start time and the stop time during restricted days.

```
RESTRICTION TIME
START 10:00AM
STOP 03:00PM
```

 **Note:** Scheduled watering that continues into a restricted day will stop.

Set Monthly Adjust

Use the monthly adjust function to allow EVOLUTION™ to automatically increase or decrease your watering with respect to the seasons for all zones assigned to the schedule. During the winter and spring months, it may be necessary to decrease watering. In the summer months, it might be necessary to increase watering.

- Step 1** – While in the ADVANCED/SCHEDULE DETAILS menu, use the Up  or Down  arrows to select the Schedule you want to edit. Press SELECT .
- Step 2** – Use the Up  or Down  arrows to navigate to MONTHLY ADJUST. Press SELECT .
- Step 3** – Use the Up  or Down  arrows to select the month you want to edit. Press SELECT . Use the Up  or Down  arrows to enter the percentage you want your watering duration to increase or decrease. Press SELECT  to save.




Repeat **Step 3** for the remaining months as necessary.

MONTHLY ADJUST	
JANUARY	-15%
FEBRUARY	---
MARCH	---
APRIL	---
↓MAY	---

As an example, a runtime of 10 minutes with an adjustment of +50% will increase the actual runtime to 15 minutes. Similarly, an adjustment of -50% will decrease the runtime to 5 minutes.

Set Schedule as Grow In

Use the Grow In function to set the schedule to water continuously for an extended period of time.

- Step 4** – Use the Up  or Down  arrows to select the proper value. Press SELECT  to save.

START – Enter the start time of the cycle.

END – Enter the end time of the cycle.

RUNTIME – Enter the duration the cycle will run. Set runtime in hours and minutes (HH:MM).

DELAY – Enter the duration between each cycle. Set delay in hours and minutes (HH:MM).




END AFTER – Enter the number of days the cycle will repeat. Select from 1-90 days.




GROW IN	
START	07:00AM
END	05:00PM
RUNTIME	00:05
DELAY	00:20
END AFTER	10 DAYS

 **Note:** Restricted days will not affect the Grow In schedule but an activated rain sensor will.

Erase Schedule

Use the erase schedule function to reset the selected schedule. The schedule's status will be set to DISABLED (except for schedule A, it remains ENABLED) and the schedule TYPE set to WEEKDAYS. All other settings within the schedule will be set to OFF.

Step 1 – While in the ADVANCED/SCHEDULE DETAILS menu, use the Up  or Down  arrows to select the Schedule you want to edit. Press SELECT .




Step 2 – Use the Up  or Down  arrows to navigate to ERASE SCHEDULE. Press SELECT .




Step 3 – Use the Up  or Down  arrows to **Yes** to proceed to erase the schedule or **No** to cancel. Press SELECT .




```
ERASE SCHEDULE
ARE YOU SURE?  [NO]
```

Set MV/Pump Delay

Use the MV/Pump Delay function to set a wait time between activating the master valve or pump, and activating the first zone in the schedule. This delay is usually used to allow the system enough time to build pressure for proper operation, or to fill the irrigation piping system with water.

Step 1 – While in the ADVANCED/SCHEDULE DETAILS menu, use the Up  or Down  arrows to select the Schedule you want to edit. Press SELECT .


Step 2 – Use the Up  or Down  arrows to navigate to MV/PUMP DELAY. Press SELECT .




Step 3 – Use the Up  or Down  arrows to adjust the delay time as necessary. Press SELECT .




```
SCHEDULE A
ERASE SCHEDULE  [ ]
MV/PUMP DELAY  00:10
ZONE DELAY     OFF
```

Set Zone Delay

Use the Zone Delay function to set a wait time after a zone ends watering and before another zone is activated. This delay is usually used when the system is being fed by a well. The delay is used to allow the well enough time to recharge.

Step 1 – While in the ADVANCED/SCHEDULE DETAILS menu, use the Up  or Down  arrows to select the Schedule you want to edit. Press SELECT .




Step 2 – Use the Up  or Down  arrows to navigate to ZONE DELAY. Press SELECT .




Step 3 – Use the Up  or Down  arrows to adjust the delay time as necessary. Press SELECT .

```
SCHEDULE A
MV/PUMP DELAY  OFF
ZONE DELAY     00:10
MV/PUMP IN DELAY OFF
```

Set MV/Pump In Delay

Use the MV/Pump In Delay to set whether the master valve or pump is active during zone delays. The default is set to OFF.

Step 1 – While in the ADVANCED/SCHEDULE DETAILS menu, use the Up  or Down  arrows to select the Schedule you want to edit. Press SELECT .










Step 2 – Use the Up  or Down  arrows to navigate to MP/PUMP IN DELAY. Press SELECT .

Step 3 – Use the Up  or Down  arrows to set the MP/Pump In Delay to ON or OFF during zone delays. Press SELECT .

```
SCHEDULE A
MV/PUMP DELAY  OFF
ZONE DELAY     OFF
MV/PUMP IN DELAY ON
```

Sensors







The Sensors function allows you to assign a rain sensor to each of the schedules. Schedules with a rain sensor assigned will not water when the sensor is activated.

- Step 1** – While in the ADVANCED menu, use the Up  or Down  arrows to select the SENSORS. Press SELECT .
- Step 2** – Use the Up  or Down  arrows to select the sensor you want to set.
- Step 3** – Use the Left  or Right  arrows to select the schedule.
- Step 4** – Use the Up  or Down  arrows to place a check mark under the desired schedules to assign the rain sensor. When the rain sensor is activated, EVOLUTION™ will prevent schedules from operating. Replace the check mark with a dash to disable the sensor for that schedule.



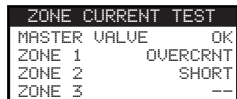
Use the Right  arrows to select  to access the sensor setup screen.



- Step 5** – Select Rain Delay. Press SELECT  or Right  arrows to navigate to the parameter.
- Step 6** – Use the Up  or Down  arrows to set a delay of 1-14 days or OFF. The rain delay is the waiting period after the rain sensor is detected to be dry.
- Step 7** – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

Diagnostics

The EVOLUTION™ controller provides a diagnostic function to check whether the system's zones are properly functioning. When activated, the controller will test each available zone. EVOLUTION™ will display dashes (--) for zones that are being tested and have not been tested, OK for zones working within the current draw range, OVERCRNT for zones drawing above the recommended current draw, or SHORT for zones that have a grounded circuitry.





Firmware

The Firmware function allows you to review the controller's firmware version. Press SELECT  to access the firmware version.

```
FIRMWARE
CONTROLLER 01.09
```

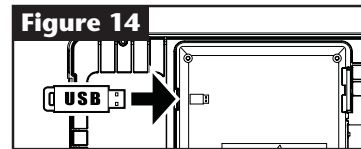
Firmware Update


The EVOLUTION™ controller's firmware can easily be updated by downloading the latest software from www.toro.com/evolution. A USB flash drive is needed for this procedure.

- Step 1** – Create a folder inside your USB flash drive with the name Evolution.
- Step 2** – Create a folder inside the Evolution folder with the name Firmware.
- Step 3** – Go to the EVOLUTION™ website, www.toro.com/evolution, and download the most current firmware version. Save the firmware inside the Firmware folder in your USB flash drive.
- Step 4** – Turn Off the power to the controller.
- Step 5** – Press the Up  and Down  arrows simultaneously and turn On the power to the controller.

```
BOOT LOAD MODE V1.02
USB DRIVE PLEASE !
```

- Step 6** – Connect your USB flash drive into the EVOLUTION™ USB port.
- Step 7** – Follow the controller prompts to finalize the firmware update.



 **Note:** Although many USB flash drives may function well with the EVOLUTION™ controller, the following USB specifications are recommended:

- USB Version 2.0 Compliant
- 1–8 GB Memory Size (Smaller memory size will perform faster.)
- FAT32 File System with 1 Logical Partition

Factory Reset

Select this function to reset the controller to the factory default parameters. Schedule B, C and Auxiliary will be disabled and all of their parameters will be cleared or set to OFF. Schedule A will be set with a WEEKDAY schedule with all 7 days active. It will have one start time set to OFF and all zone runtimes set to OFF.

```
FACTORY RESET
RESET TO FACTORY
DEFAULTS? YES
```

Alerts

The EVOLUTION™ controller always checks the system for proper function and it will provide feedback if it detects any system abnormality. The Alerts menu allows you to view and clear detected system faults.

Alert Listings

Short - EVOLUTION™ detected a short in the zone.

Overcurrent - EVOLUTION™ detected an over current in the zone. Over current occurs when a terminal exceeded the recommended current rating.

Low Battery - EVOLUTION™ detected no battery installed or the battery's power is low. Once the Low Battery alert is cleared, it will not display again unless a Factory Reset is performed.

Low A/C Power - EVOLUTION™ detected low or no A/C power.

Factory Reset - EVOLUTION™ encountered an error that required the system to reset to the factory defaults.

Communication Error - EVOLUTION™ encountered a communication error.

Clearing an Alert




You can clear an Alert individually or use the CLEAR ALL command to erase them all.

Step 1 – Press  HELP/SETUP.

Step 2 – Use the Up  or Down  arrows to select the Alerts. Press SELECT .

Step 3 – Use the Up  or Down  arrows to select individual alerts or CLEAR ALL. Press SELECT .



Step 4 – Use the Up  or Down  arrows to confirm (Yes) or cancel (No). Press SELECT .

Local Contact

Available only when your local distributor or dealer has programmed the local contact information in the controller.

Contact Toro

Access Contact Toro to get the latest contact information.




Step 1 – Press  HELP/SETUP.

Step 2 – Use the Up  or Down  arrows to select the Alerts. Press SELECT .







Set Time/Date

Step 1 – Press the  HELP/SETUP button.

Step 2 – Use the Up  or Down  arrows to navigate to SET TIME/DATE. Press SELECT .






Step 3 – Use the Up  or Down  arrows to select TIME or DATE. Navigate to the TIME or DATE parameters using the Right  arrow or SELECT .

(Continued to the next page.)


- Step 4** – Use the Up  or Down  arrows to modify the TIME's Hour and Minutes or the DATE's Month, Day and Year (Day, Month and Year for International Format).



- Step 5** – Press SELECT  to save the changes.
- Step 6** – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

Load From USB




Load from USB function is used to retrieve schedules saved in a USB Flash drive.

 **Note:** Although many USB flash drives may function well with the EVOLUTION™ controller, the following USB specifications are recommended:





- USB Version 2.0 Compliant
- 1–8 GB Memory Size (Smaller memory size will perform faster.)
- FAT32 File System with 1 Logical Partition


- Step 1** – Plug your USB Flash drive into the EVOLUTION™ USB port located at the back of the control panel. See **Figure 2** on page 2.

- Step 2** – Press the  HELP/SETUP button.

- Step 3** – Use the Up  or Down  arrows to navigate to LOAD FROM USB. Press SELECT .




The EVOLUTION™ controller will list all available the schedule files. Use the Up  or Down  arrows to navigate to the desired schedule. Use the Right  arrow or SELECT  to load the schedule.

- Step 4** – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

Save to USB



Save to USB is used to save all the schedules that are programmed in the controller so it can be reloaded if accidentally erased. The Save to USB function is also helpful when loading multiple controllers with the same schedule programs.

 **Note:** Although many USB flash drives may function well with the EVOLUTION™ controller, the following USB specifications are recommended:

- USB Version 2.0 Compliant
- 1–8 GB Memory Size (Smaller memory size will perform faster.)
- FAT32 File System with 1 Logical Partition



- Step 1** – Plug your USB Flash drive into the EVOLUTION™ USB port located at the back of the control panel. See **Figure 2** on page 2.

- Step 2** – Press the  HELP/SETUP button.

- Step 3** – Use the Up  or Down  arrows to navigate to SAVE TO USB. Press SELECT .






The EVOLUTION™ controller will automatically save the schedules in the USB drive under the name format MMDDHHMM.evo (MM = Month, DD = Day, HH = Hour and MM = Minute).

- Step 4** – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

Preferences

Accessing the Preferences Menu

Step 1 – Press the  HELP/SETUP button.




Step 2 – Use the Up  or Down  arrows to navigate to PREFERENCES. Press SELECT .


PREFERENCES	
LANGUAGE	ENGLISH
CONTRAST	00
CLOCK	12 HOUR
DATE FORMAT	MM/DD/YY
BEGIN WEEK	SUNDAY

Set Language

You can set the user interface to display in English (default), Spanish, French, German, Italian or Portuguese.




Step 1 – While in the PREFERENCES menu, use the Up  or Down  arrows to navigate to LANGUAGE. Press SELECT .

Step 2 – Use the Up  or Down  arrows to navigate to your preferred language. Press SELECT .

Step 3 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

Set Display Contrast




Step 1 – While in the PREFERENCES menu, use the Up  or Down  arrows to navigate to CONTRAST. Press SELECT .

Step 2 – Use the Up  or Down  arrows to your preferred display contrast. Positive (+) setting will increase the contrast and negative (–) setting will decrease the contrast. Once you find the desired contrast, press SELECT .

Step 3 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.









Set Clock Format (12 Hour/24 Hour)

Step 1 – While in the PREFERENCES menu, use the Up  or Down  arrows to navigate to CLOCK. Press SELECT .









Step 2 – Use the Up  or Down  arrows to select 12-Hour (default) or 24-Hour format. Press SELECT .

Step 3 – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

Set Date Format

- Step 1** – While in the PREFERENCES menu, use the Up  or Down  arrows to navigate to DATE FORMAT.
Press SELECT .
- Step 2** – Use the Up  or Down  arrows to select Month/Day/Year (MM/DD/YY) (default) or Day/Month/Year (DD/MM/YY) format. Press SELECT .
- Step 3** – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

Set the Beginning of the Week

- Step 1** – While in the PREFERENCES menu, use the Up  or Down  arrows to navigate to BEGIN WEEK.
Press SELECT .
- Step 2** – Use the Up  or Down  arrows to select SUNDAY (default) or MONDAY as your starting point of the week.
Press SELECT .
- Step 3** – Press the BACK  arrow to return to the previous menu or  HOME to return to the main screen.

Specifications

Cabinet Dimensions:

- 11.25" W x 7.75" H x 4.5" D (286 x 197 x 114 mm)

Power Specifications:

- North America
Internal Transformer, Class 2, UL Listed, CSA Certified (or equivalent)
Input: 120 VAC, 60 Hz
Output: 24 VAC, 60 Hz, 1.25A
- Europe and Australia
Internal Transformer, TUV Approved, SAA Approved
Input: 220–240 VAC, 50/60 Hz
Output: 24 VAC, 50/60 Hz, 30 VA
- Total Maximum Load:
1.0A @ 24 VAC

Surge Protection

6.0 KV common mode; 1.0 KV normal mode

Battery Type:

- 9V Alkaline (not included)

Electronic Compatibility

Domestic: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Subpart J of Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

The user may find the following booklet prepared by the Federal Communications Commission helpful:

“How To Identify and Resolve Radio-TV Interference Problems.” This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, stock # 004-000-00345-4.

International: This is a CISPR 22 Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures. Each stations can activate up to two solenoids.

This product, utilizing a Class 2 transformer tested to UL1585, satisfies the requirements of a Class 2 Power Source as defined in the NFPA 70 (NEC), Article 725.121(A)(3).

Toro Contact Information

For U.S.A. support, call 1-800-367-8676.

For global support, send email to evolution@toro.com.

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