Evolution™ Controller
User's Guide

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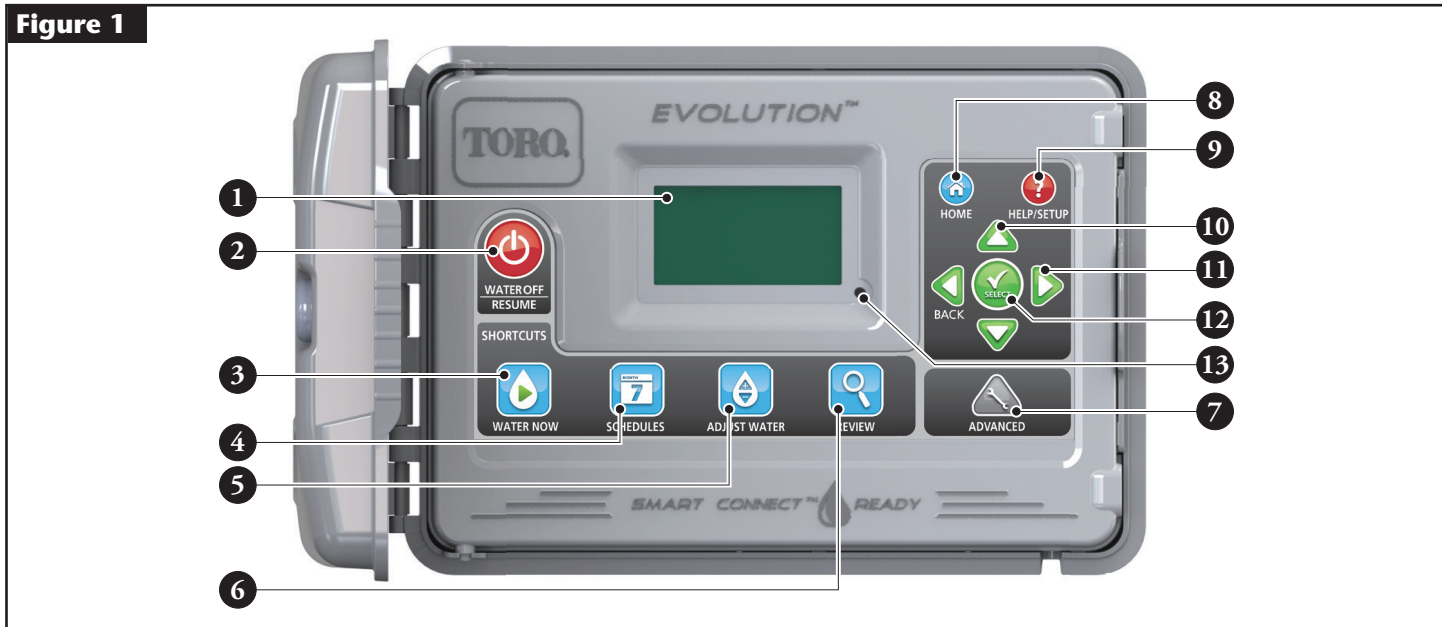
Controller Introduction

Timing Mechanism

Figure 1

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. You can adjust your watering percentage per schedule or zone.

6 – 🔍 Review Button. Use to review your schedule parameters.

7 – 🔧 Advanced Button. Use to access Evolution's advanced features from zone and schedule details to sensor setup and controller diagnostics.

8 – 🏠 Home Button. Use to display Evolution's controller activity and alert messages.

9 – ❓ Help/Setup Button. Use this function 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, 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 the menu items. It 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 the 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

Figure 2
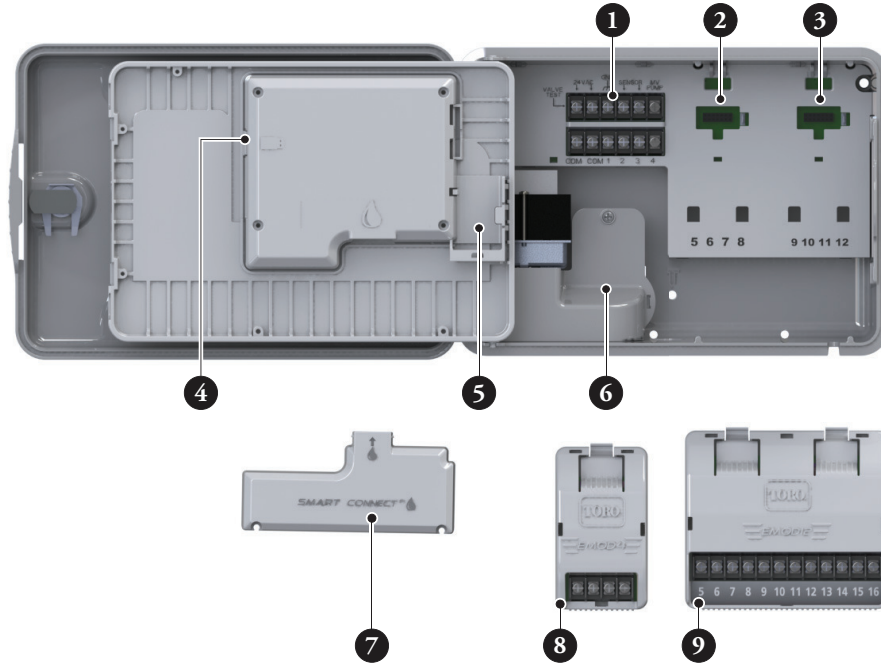
1 – Zones and Sensor Terminals
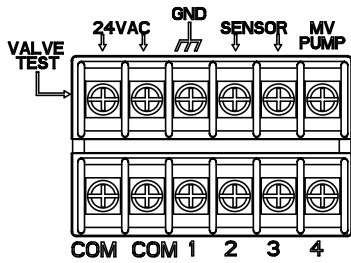
VALVE TEST – Use this terminal to test a valve for proper function.
24VAC – 24 VAC Power Source
GND – Power Source Ground
SENSOR – Sensor Terminals
MV PUMP – Master Valve Terminal
COM – Zones' and Master Valve Common Terminals
1, **2**, **3** and **4** – Zone 1, Zone 2, Zone 3, and Zone 4 Terminals

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
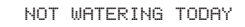
5 – 9 Volt Battery Compartment

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

01:09PM TUES 01/08 — Display the current time, day of the week and date.

SCHEDULE A/B/C OR AUX — Indicates which Schedule (A, B or C) or Aux 1 is associated with the displayed status. If only Schedule A is active, Evolution will not display the Schedule A, B and C or Aux 1.

SCHEDULE A   GROW IN — Indicates the displayed schedule is set as Grown In. The Grow In option is set in the Schedule Details under the Advanced menu.

NOT WATERING TODAY — Indicates that the displayed schedule will not water that day.

NOT ACTIVE TODAY — The displayed Aux is not schedules to activate that day.

ZONE 1   ◊00:05▶ — Indicates that Zone 1 is active with a 5-minute remaining runtime. The right arrow icon ▸ indicates that there is/are additional zone(s) that are scheduled to run. Pressing the Right ▷ arrow will deactivate the running zone and activate the next zone in the schedule regardless of the remaining runtime.

WATERING COMPLETE — The displayed schedule completed its watering cycle.

SCHEDULE COMPLETE — The displayed Aux schedule completed its cycle.

NEXT START 06:00AM — Indicates the next start time of the displayed Schedule or Aux.

DELAY   00:05▶ — Indicates that the active schedule is performing a delay before activating the next zone. The delay is set in the Schedule Details under the Advanced menu.

SOAK   00:05▶ — Indicates that the active zone is performing a soak delay before continuing operation. The soak delay is set in Zone Details under the Advanced menu.

RAIN HOLD — Indicates that the rain sensor is activated and all schedules are delayed until the rain sensor is dry or rain delay time expires.

ALERT: PRESS HELP — 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.

WATER OFF   04 DAYS — Indicates that scheduled watering has been suspended for the indicated days. Watering can be turned off from 1–14 days, Remains Off (no watering until Water Off is placed in Next Scheduled Start) or the next scheduled start.

SYSTEM OK — Indicates that the system is functioning as expected.

▭ HOME — The battery icon indicates that the controller's VAC power is off and the timer is running under battery power. It may also indicate that the 9-volt battery is not installed or battery power is low and needs replacement.

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

HOME   ▣ — The USB icon indicates that a USB device is attached to the Evolution's USB port.

Power Up Screen

```
     WELCOME
┌─────────────┐
│ INITIALIZING│
│ PLEASE WAIT ... │
└─────────────┘
```

```
        SETUP
┌───────────────────┐
│LANGUAGE    ENGLISH│
│DATE FORMAT MM/DD/YY│
│CLOCK      12 HOUR │
│TIME       12:01AM │
│DATE       01/01/13│
│BEGIN WEEK  SUNDAY │
└───────────────────┘
```

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.

Language - Select the preferred display language. Select from English, Spanish, French, German, Italian and Portuguese.

Date Format - Select Month/Day/Year or Day/Month/Year format to display the date.

Clock - Select 12-hour or 24-hour format to display the time.
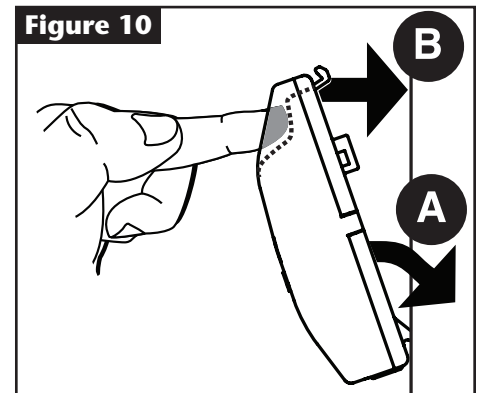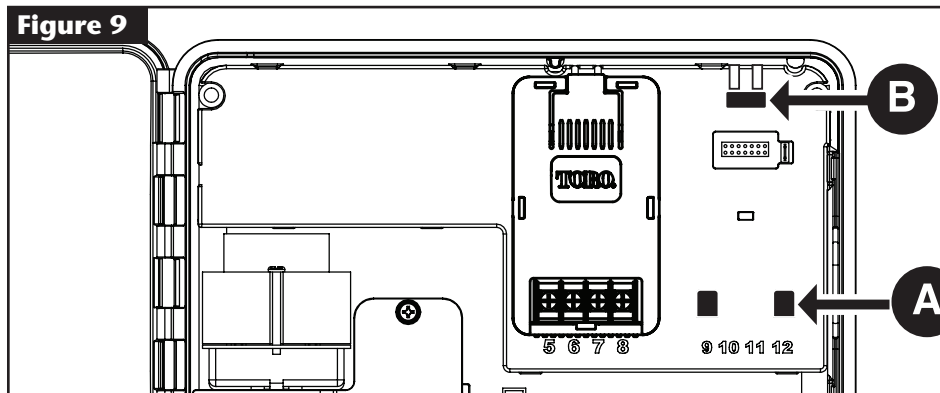
Time - Set the current time.

Date - Set the current date.

Begin Week - Select Sunday or Monday to begin your 7-day week schedule.

Zone Expansion Module Installation

The Evolution controller can be expanded using the optional 4-zone (E-Mod4) or 12-zone (E-Mod12) modules to add more zones to the system.

Module Installation

Figure 9

Figure 10

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 secured.

Once installed, the Evolution controller will be able to read the additional zones and will make them available for scheduling.

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** and press the retaining tab while pulling the module away from the cabinet.

Figure 11
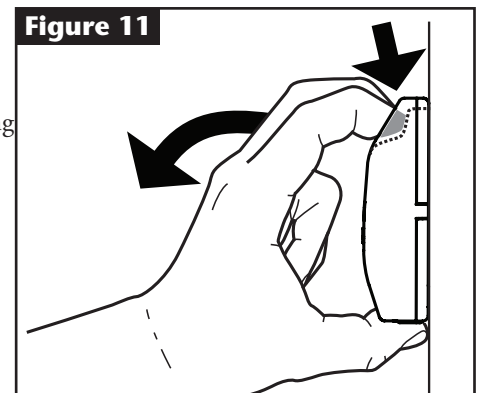
Battery Installation

The Evolution controller uses a 9-VDC battery to retain schedule parameters during extended period of power outages.
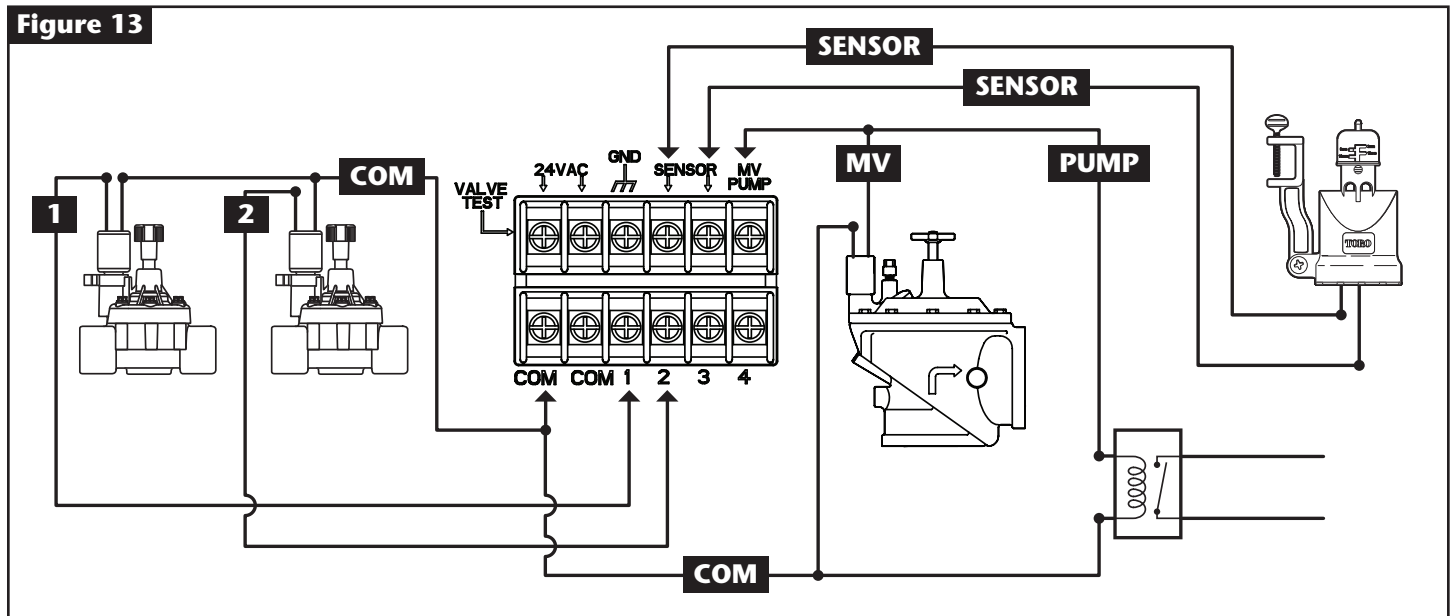
Step 1 – Open the Evolution controller door and control panel to access the internal components.

Step 2 – Locate the battery compartment at the back of the control panel.

Step 3 – Slide the battery into the battery compartment as shown in **Figure 12**.

Figure 12
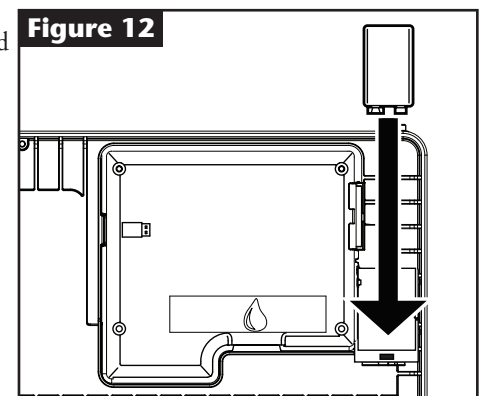
Valve and Sensor Installation

Figure 13

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 – **Valves, Master Valves and Pump Start Relay** - 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.

Sensor - 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 – **Valves** - Secure the valve common wire (white) to the terminal 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.

Master Valve/Pump Relay - Secure the valve common wire (white) to the terminal 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.

Sensor - 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
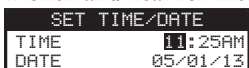
Editing Time and Date

Step 1 – Press the ❓ HELP/SETUP button.

Step 2 – Use the Up △ or Down ▽ arrows to navigate to SET TIME/DATE and press ✅ SELECT.

```
      HELP/SETUP
ALERTS             ▶
CONTACT TORO       ▶
SET TIME/DATE      ▶
LOAD FROM USB      ▶
↓SAVE TO USB       ▶
```

Step 3 – Use the Up △ or Down ▽ arrows to select TIME or DATE. Navigate to the TIME or DATE parameters using the Right ▷ arrows or ✅ SELECT..

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).

```
    SET TIME/DATE
TIME          11:25AM
DATE         05/01/13
```

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.
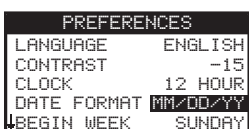
Changing the Time and Date Format

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 and press ✅ SELECT.

Step 3 – Use the Up △ or Down ▽ arrows to navigate to CLOCK or DATE FORMAT and press the Right ▷ arrow or ✅ SELECT.

```
      PREFERENCES
LANGUAGE      ENGLISH
CONTRAST          -15
CLOCK         12 HOUR
DATE FORMAT  MM/DD/YY
↓BEGIN WEEK    SUNDAY
```

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 and 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 and press ✅ SELECT.

```
          SCHEDULE
    S   M   T   W   T   F   S
    ⬕   ⬥   -   ⬥   ⬥   -   ⬥
```

Step 4 – Use the Left ◁ or Right ▷ arrows to navigate within the days of the week and 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 ◁ BACK 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. It 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.)

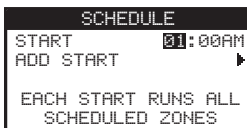Use the Up △ or Down ▽ arrows to select the Schedule you want to edit and press ✅ SELECT.

📝 **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 and press ✅ SELECT.

```
           SCHEDULE
    START        ▮1:00AM
    ADD START          ▶

    EACH START RUNS ALL
      SCHEDULED ZONES
```

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 and press ✅ SELECT to save.

Step 5 – Navigate to ADD START to add another start time and 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 11:59 AM/PM and 12:00 AM/PM (23:59 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 with 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 and 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 and press ✅ SELECT.

Step 4 – Use the Up △ or Down ▽ arrows to navigate to the ZONE you want to set or edit and 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 and 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 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 and 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 and 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 and 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 and press the Right ▷ arrow or ✅ SELECT.

```
      WATER NOW
ZONE 1          OFF
ZONE 2        --:10
ZONE 3          OFF
```

Step 4 – Use the Up ⬆ or Down ⬇ arrows to assign the zone a runtime and 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 and 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 and press ✅ SELECT.

📝 **Note:** The Evolution controller will sequentially water all active zones starting with Zone 1. All zones will run the specified runtime duration.
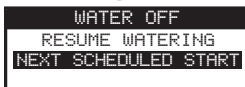
Step 4 – Press the ◁ BACK arrow to return to the previous menu or 🏠 HOME to return to the main screen.

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

Turn Off Current Operation

Step 1 – Press the ⏻ WATER OFF button.

```
    WATER OFF
 RESUME WATERING
NEXT SCHEDULED START
```

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.

```
    WATER OFF
 RESUME WATERING
   IN 05 DAYS
```