TORO® ECx®

USER GUIDE

Automatic Sprinkler Control Timer

TORO®

Questions? Call The Toro Help Line 1-800-367-8676

ECx Timer User Guide

P1 **8:24** AM

Features:

- **Expandable Up To 8 Zones With Plug-In Modules**
- **3 Watering Programs With:**
  - **4 Start Times a Day**
  - **Calendar and Interval Days**
  - **Up to 4 Hrs. Zone Run Time**
- **Battery Back-Up**
- **Automatic Pump Start**
- **Seasonal Run Time Adjust**
- **Rain Sensor Ready**
- **Snap-In Wire Connectors**

AUTO/ON
MANUAL START
SET TIME/DAY
OFF
ACTIVE DAYS
SEASON ADJUST
START TIMES
RUN TIMES

ESCAPE NEXT

Su Mo Tu We Th Fr Sa

TORO ECx™

➡ *Click Here For Quick Reference Guide*

Transformer: Plug In Class 2, U.L. Listed, C.S.A. Certified
Input: 120 VAC 50/60 Hz
Output: 24 VAC 50/60 Hz; 0.75 Amps
Fuse: 3/4 Amp, fast blow – Protects AC Return
Maximum Load Per Zone: 0.35 Amps @ 24 VAC @ 140° F
Maximum Load For Pump/Master Valve: 0.35 Amps @ 24 VAC @ 140° F
Total Maximum Output: 1 Zone plus Pump, not to exceed 0.70 Amps @ 24 VAC @ 140° F
Battery Type and Back-Up Duration: 9 Volt Alkaline – 72 hrs.   9 Volt Ni-Cd – 16 hrs.
Recommended Control Valve Wire Size: 18 Gauge
Cabinet: Plastic, Indoor wall mount, 7.5" W x 6.25" H x 2.0" D

FCC Rules

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to 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 of the following measures:

Reorient or relocate the receiving antenna
Increase the separation between the equipment and receiver
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
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 No. 004-000-00345-4.

1 - Display

A - Program Numbers

B - Time increments, Active Day Schedule identifiers (**CAL**, **Int** and **OFF**)

C - Watering in progress or watering interrupted (when flashing)

D - All Watering Canceled

E - No 24 VAC power to timer

F - Low Battery power – replace battery

G - Season Adjust indicator

H - Selected Day or Zone indicator

I - Day, Zone and Start Time numbers

2 - Command Buttons - Used for Timer programming and operations. For details, see "Controls For Programming…," p. 9.

3 - Control Dial - Selects programming and operating control features. For details, see "Controls For Programming…," p. 9.

4 - 3/4 Amp Fuse - Protects Timer circuitry. For details, see "Changing Fuse," p. 24.

5 - Sensor Switch - ON position allows sensor (optional Rain Switch) to prevent watering; OFF position bypasses sensor input.

6 - Battery Type Switch - Set according to battery type installed (Alkaline or Ni-Cd).

7 - Snap-In Wire Connectors - See Installation Instructions pp. 6-7.

8 - Plug-In Zone Modules - Each module connects two Zone control valves.

9 - Zone Module Expansion Slots - See "Installing Plug-In Zone Modules," p. 21.

10 - 9 Volt Battery - Retains timer memory when power is interrupted. See "Installing Battery," p. 4.

The 9 Volt battery protects the automatic watering information stored in the timer's programmable memory during a power failure. It also enables you to program the timer before it's installed. To take advantage of "Arm Chair Programming," skip ahead to the programming section starting on page 8, after you have installed the battery.

The Alkaline battery provided will power the timer's memory for about 72 hours and should be replaced every year. If you live in an area which has frequent power outages, installing a rechargeable Ni-Cd battery is recommended. A fully charged Ni-Cd battery will last about 16 hours. The built-in charger will keep the Ni-Cd battery at peak charge for several years.

Note: The battery does not supply power to operate the Zone control valves; 24 VAC power must be connected.

Figure 1

Procedure

1. Slide lower housing cover toward bottom of timer to remove. Locate battery clip and attach to battery.
2. Insert battery into timer housing as shown in **Figure 1**.
3. Set battery switch to Alkaline or Ni-Cd position according to battery type installed. See **Figure 2**.

CAUTION: Battery Switch must be properly set. Switch in Ni-Cd position can cause an Alkaline battery to overheat and leak; possibly damaging the timer.
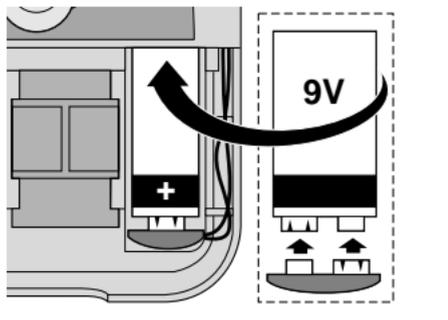
Figure 2
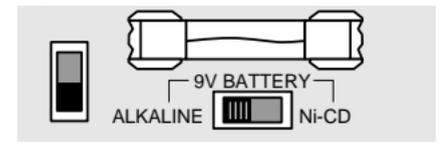
Mounting Timer to Wall

1. Select a suitable <u>indoor location</u> for timer within 4 ft. (1,2 m) of a 120 VAC outlet.

   Note: For outdoor installation, use the ECx Outdoor Cabinet Model #53335.

2. Locate mounting bracket attached to back of timer housing. Slide mounting bracket toward bottom of timer to remove.

3. Place mounting bracket against wall aligning top edge (**A**) at about eye level. Using two holes at top of bracket, secure bracket with #10 x 1 in. (13 mm) wood screws (**B**) provided with timer.

   Note: To ensure a secure installation, use screw anchors (**C**) if fastening bracket to dry-wall.

4. Align slotted openings on back of timer housing with tabs on mounting bracket. Lower timer slightly to engage tabs. Before releasing timer, make sure it is properly secured.

   Note: For handy reference, store User Guide in pocket (D) between timer and bracket. color used for each valve to simplify installation at timer.

Figure 3
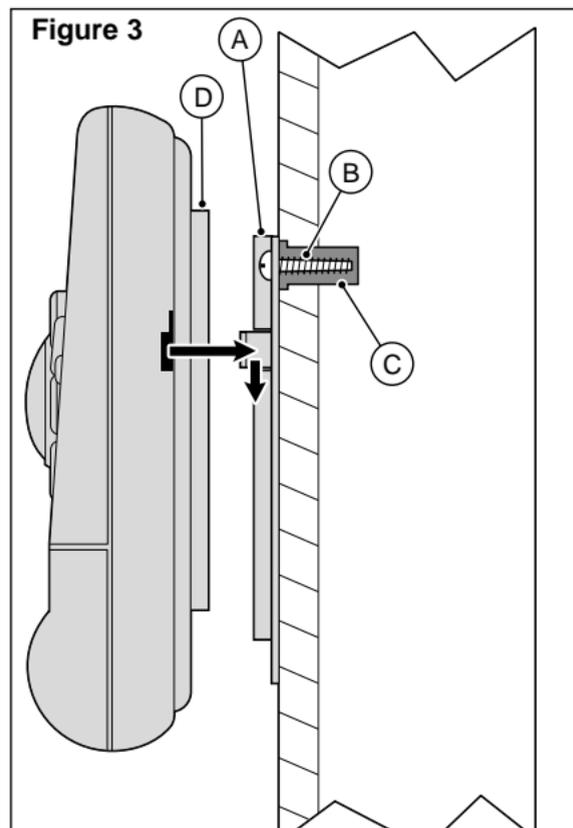
Connecting Control Valves and Transformer

1. Route sprinkler control wires between control valve location and timer.
2. At valves, attach a common wire to either solenoid wire of <u>all</u> valves. Attach a separate control wire to remaining wire of each valve. Waterproof all wire splice connections. Note wire color used for each valve to simplify installation at timer.
3. At timer, remove 1/2" (13 mm) of insulation from ends of all wires.
   Note: The ECx has snap-in wire terminals. To secure wire in terminal, simply raise lever, insert wire, then press lever down to lock.
4. Referring to diagram in **Figure 4**, secure valve common wire to COM terminal (**A**) and individual valve control wires to Zone Modules (**B**).

   Note: Each Zone Module connects two valves. Valve connections are numbered 1 – 8, from left to right. The number of valve connections available is determined by the number of Zone Modules installed.
5. Install wires from transformer (**T**) to terminals labeled 24VAC. **Leave transformer unplugged until all wiring has been completed.**

Figure 4

Note: 4- Zone model shown. 6 and 8 Zone models are connected in same manner.
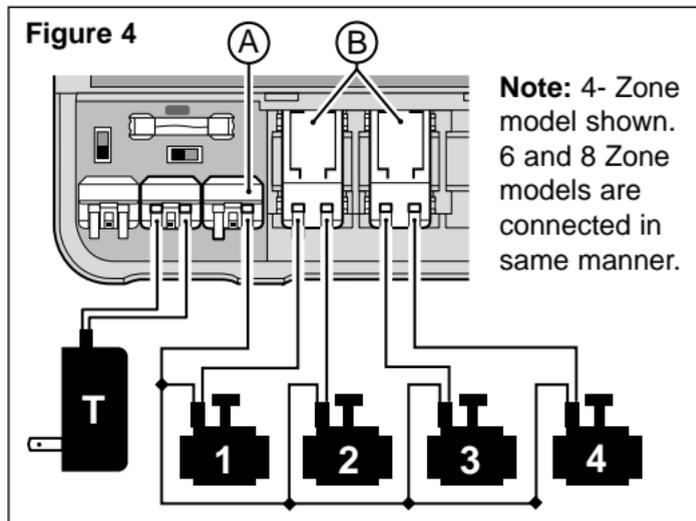
Connecting Master Valve or Pump Start Relay

1. Route wires from Master Valve or Pump Start Relay location to timer.
2. Referring to **Figure 5**, connect either wire from Pump Relay (**R**) or Master Valve (**MV**) to PUMP terminal **(B)**. Splice remaining wire to valve common **(A)** (COM).

CAUTION: Relay current draw must not exceed 0.35 Amps. **Do not connect timer directly to pump starter – damage to timer can result.**

CAUTION: To prevent pump damage, connect a jumper wire from any unused Zone terminal(s) to a Zone terminal with a control valve installed.

Figure 5

Connecting Toro Rain Switch (Optional)

The Toro Rain Switch interrupts watering during rain.

1. Route wire cable from Toro Rain Switch to timer.
2. Referring to **Figure 6**, connect 18 gauge copper wire and 24 gauge silver wire to terminals labeled SENSOR. Trim off remaining cable wires.
3. Set Sensor Switch (**A**) as required – ON allows Rain Switch to interrupt watering; OFF prevents Rain Switch input..

Figure 6
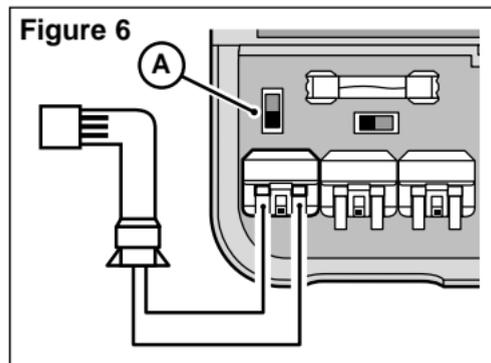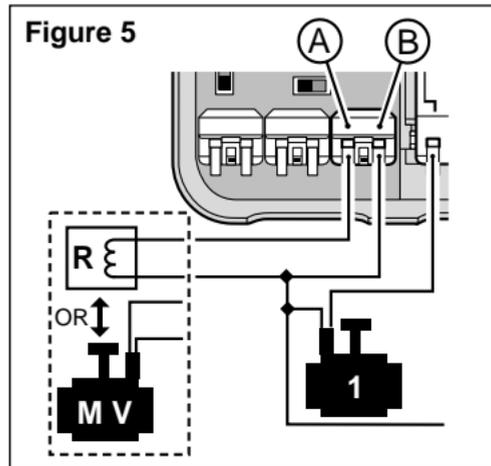
About Programming The Timer…

The ECx timer has a built-in or "default" watering program which becomes active the moment power is applied. The default program is automatically installed into the timer's memory as Program 1 (P1) and sets the timer into motion as follows. The clock is set at 12:00 AM. The watering Program will start every day at 12:30 AM and 12:30 PM, running each Zone in sequence for 5 minutes. This Program may be used "as is" if it meets your watering needs – all you have to do is set the timer's clock to the present time and set the Control Dial to Auto / On. But if you want to take advantage of the many programming options available with the ECx, please read on.

Because your lawn, garden, shrub and ground cover have different water requirements, it's best to keep them on separate watering schedules. You could, for example, water lawn zones every day with Program 1; water the shrubs every third day with Program 2 and run drip irrigation in the flower beds on Monday, Wednesday and Friday with Program 3.

Programming the timer for automatic operation is simply providing each of the three watering Programs with a small set of instructions: Which days to operate – called Active Days; when to start – called Start Times, and the length of watering time for each Zone – called Run Times.

Active days can be selected from a Calendar schedule, for watering on specific days of the week, or from an Interval schedule to water every day (1), every other day (2), up to every seventh day (7). If a Program is not needed, it is turned Off by setting its active day schedule to OFF. Each Program can be set to start from 1 to 4 times per active day. Each Zone is assigned to a Program when it is given a run time from 1 minute to 4 hours. If the Zone is not needed
during the Program, its run time is set to OFF.

Controls For Programming and Operation

The Control Dial and four Command Buttons are used to select, review, change and control all programming and operating functions of the timer.

❏ **Control Dial Positions**

Auto / On - Normal dial position for Automatic and Manual operations.

Set Time / Day - Enables clock time and/or day to be changed.

Active Days - Enables Active Days to be selected, deleted or reviewed.

Start Times - Enables Start Times to be selected, deleted or reviewed.

Run Times - Enables Zone Run Times to be selected, deleted or reviewed.

Season Adjust - Enables Season Adjust percentage to be changed or reviewed.

Off - Shuts off and prevents all Automatic and Manual watering operations.
(Refer to "Watering System Shutdown," p. 24 for detailed information.)

Manual Start - Enables Manual operations to be selected and started.

❏ **Command Buttons**

▲ - Press to increase time or scroll forward through selected (flashing) portion of program.

▼ - Press to decrease time or scroll backward through selected (flashing) portion of program.

↵ - Press to select next portion of program information or to resume operation if suspended.

⑧ - Press **once** to start over during programming, or to suspend watering during operation.
Press **twice** to cancel and return to time and day.

Watering Plan Record

The ECx offers many ways to schedule automatic watering cycles. By taking a few minutes to pencil in the locations of your watering Zones and your watering schedule plans, you will have a handy guide during programming and for future reference.

Zone Location (i.e., front lawn, back lawn, etc.)

1_____ 2_____ 3_____ 4 _____

5_____ 6_____ 7_____ 8 _____

Note: Two Programs or Zones can not operate at the same time – schedule accordingly.

PROGRAM	ACTIVE DAYS	START TIMES	ZONE RUN TIME
P1 Zone #'s _____	CAL 1 2 3 4 5 6 7 SU MO TU WE TH FR SA **OR** INT 1 2 3 4 5 6 7	1___:___ AM/PM 2___:___ AM/PM 3___:___ AM/PM 4___:___ AM/PM	1 __:__ 2 __:__ 3 __:__ 4 __:__ 5 __:__ 6 __:__ 7 __:__ 8 __:__
P2 Zone #'s _____	CAL 1 2 3 4 5 6 7 SU MO TU WE TH FR SA **OR** INT 1 2 3 4 5 6 7	1___:___ AM/PM 2___:___ AM/PM 3___:___ AM/PM 4___:___ AM/PM	1 __:__ 2 __:__ 3 __:__ 4 __:__ 5 __:__ 6 __:__ 7 __:__ 8 __:__
P3 Zone #'s _____	CAL 1 2 3 4 5 6 7 SU MO TU WE TH FR SA **OR** INT 1 2 3 4 5 6 7	1___:___ AM/PM 2___:___ AM/PM 3___:___ AM/PM 4___:___ AM/PM	1 __:__ 2 __:__ 3 __:__ 4 __:__ 5 __:__ 6 __:__ 7 __:__ 8 __:__

Helpful Reminders

❑ **Only the FLASHING portion of the display can be changed.**

❑ **If you make a mistake, simply press the ⫶ (stop) button; then repeat the programming steps as needed to change the display.**

❑ **All programming information is automatically entered into the timer memory as it is being selected or changed.**

Set Clock To Present Time and Day

1. Turn Control Dial to **Set Time / Day**. The clock time will start flashing.

2. Press and hold ▲ or ▼ button until present time is displayed.

   Note: The display will change rapidly after 3 seconds.

3. Press ↵ button. The Day Indicator will start flashing.

4. Press ▲ or ▼ button until present day number is displayed.

   1 = Sunday   **2** = Monday   **3** = Tuesday
   4 = Wednesday   **5** = Thursday   **6** = Friday   **7** = Saturday

5. Return Control Dial to **Auto / On**.

Example: Present Time set to 3:48 PM, Friday.

12:00 AM

3:48 PM

3:48 PM

3:48 PM
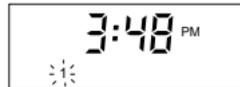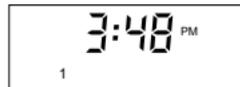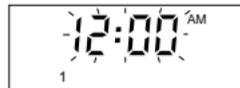
Set Active Day Schedule

A. Turn Control Dial to **Active Days**.

B. Follow one of the step-by-step procedures for the type of Active Day Schedule desired for each Program (**Calendar**, **Interval or OFF**).

C. After all Programs have been set as desired, return Control Dial to **Auto / On**.

To Set A Calendar Schedule:

1. Press ▲ or ▼ button as needed to display Program **P1, P2** or **P3**. (Program number will continue flashing.)

2. Press ↵ button. **CAL** (Calendar), **Int** (Interval) or **OFF** will start flashing.

3. Press ▲ or ▼ button to display **CAL**.

4. Press ↵ button. Day number **1** (Sunday) is selected.
   Note: Underlined number(s) indicates active day(s).

5. To select the day as **active**, press ▲ button. Day number is underlined and the next day number begins flashing.
   Or, to **omit** the day, press ▼ button. Underline disappears and the next day number starts flashing. Repeat this step for each day of the week.

6. Press ↵ button. Repeat Step **B** or **C**.

> **Example: Active days of Program 1 set to Monday, Wednesday and Friday.**
>
> P1 **CAL**
> 1 2 3 4 5 6 7
>
> P1 **CAL**
> 1 2 3 4 5 6 7
>
> P1 **CAL**
> 1 2 3 4 5 6 7
>
> P1 **CAL**
> 1 2 3 4 5 6 7

To Set An Interval Schedule:

1. Press ▲ or ▼ button as needed to display Program **P1, P2** or **P3**. (Program number will continue flashing.)

2. Press ↵ button. **CAL** (Calendar), **Int** (Interval) or **OFF** will start flashing.

3. Press ▲ or ▼ button to display **Int**.

4. Press ↵ button. An Interval number (**1 – 7**) is displayed.

5. Press ▲ or ▼ button to display desired Interval number.
   1 = every day   **2** = every other day   **3** = every third day
   4 = every fourth day   **5** = every fifth day
   6 = every sixth day   **7** = every seventh day

   Note: Any numbers preceding the Interval number selected will also be displayed.

6. Press ↵ button. Interval number underline will start flashing.

7. Press ▲ or ▼ button to select (underline) the first active day of the interval schedule.
   1 = today   **2** = tomorrow   **3** = two days from today
   4 = three days from today   **5** = four days from today
   6 = five days from today   **7** = six days from today

Example: Program 2 set to Every Third Day Interval, and Interval starts tomorrow.

PROGRAMMING THE TIMER
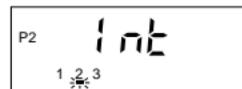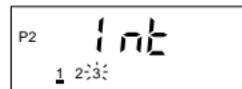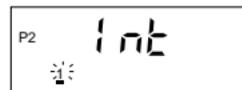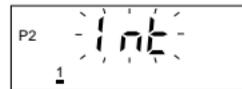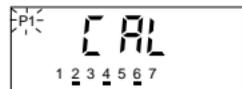
To Turn Program OFF:

1. Press ▲ or ▼ button as needed to display Program **P1, P2** or **P3**. (Program number will continue flashing.)
2. Press ↵ button. **CAL** (Calendar), **Int** (Interval) or **OFF** will start flashing.
3. Press ▲ or ▼ button to display **OFF**.
4. Press ↵ button. Repeat Step **B** or **C** on Page 12.

Example: Program 1 OFF.

P1 **C AL**
1 2 3 4 5 6 7

P1 **C AL**
1 2 3 4 5 6 7

P1 **OFF**
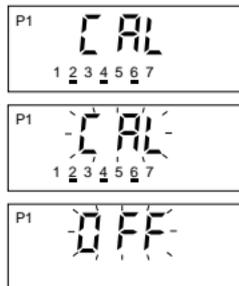
About Program Start Times…

The next programming step determines the time of day each Program watering cycle will start. The ECx has the ability to start each Program cycle up to four times per day. When a Program cycle starts, each zone assigned to the Program will water in sequence. When selecting Program start times, it is important to remember the following information:

– Start times are assigned to Programs, not individual zones. Therefore, only one start time is needed to operate all zones in a Program.

– Program start times must be selected which allow a Program watering cycle to finish before another Program cycle starts. If a Program start time occurs while a watering cycle is in progress, the Program start time will be delayed until the current watering cycle is finished.

Set Program Start Times

1. Turn Control Dial to **Start Times.** Program **P1** is displayed (flashing) and all start time numbers (**1** – **4**) assigned to this Program are displayed.

2. Press ▲ or ▼ button as needed to display Program **P1, P2** or **P3**. (Program number will continue flashing.)

3. Press ↵ button. Start time number **1** and its assigned start time or **OFF** is displayed.

4. To select a different start time number (**2** – **4**)**,** press ▲ or ▼ button.

5. Press ↵ button. Start Time or **OFF** will begin flashing.

6. Press and hold ▲ or ▼ button until desired Start Time is displayed. (To **omit** the Start Time, select **OFF**).

   Note: OFF is located between 11:59 PM and 12:00 AM.

7. Press ↵ button. Next start time number is displayed.

8. Repeat Steps 4 – 7 for all remaining start time numbers in this Program.

9. Press button. Repeat Steps 2 – 8 for each Program as required.

10. Return Control Dial to **Auto / On.**

Example: Program 1 start time number 2 changed from 12:30 PM to 3:00 AM.

P1
1 2

P1 12:30 AM
1

P1 12:30 PM
2

P1 12:30 PM
2

P1 3:00 AM
2

Set Zone Run Times

Example: Run Time for Zone 1 in Program 1, changed from 5 minutes to 12 minutes.

1. Turn Control Dial to **Run Times**. Program **P1** is displayed (flashing) and all Zone numbers (**1** – **8**) assigned to this Program are displayed.

   Note: Zone numbers displayed are determined by the number of Zone Modules installed in the timer.

2. To display a different Program, press ▲ or ▼ button.

3. Press ↵ button. Zone number **1** will begin flashing and its assigned Run Time or **OFF** will be displayed.

4. Press ▲ or ▼ button to display desired Zone number.

5. Press ↵ button. Currently assigned Zone Run Time or **OFF** will start flashing.

6. Press and hold ▲ or ▼ button until desired Run Time (1 minute to 4 hours) is displayed. Select **OFF** (located between 4:00 and 0:01) to omit Zone from this Program.

7. Press ↵ button. Next Zone number will start flashing.

8. Repeat Steps 4 – 7 for all remaining Zones.

9. Press ⏦ button. Repeat Steps 2 – 8 for each Program as required.

10. Return Control Dial to **Auto / On.**

The following control features apply to all Automatic and Manual watering operations. To use these controls, the watering operation **must** be in progress and the Control Dial **must** be in the **Auto / On** position.

To Interrupt Watering:

1. Press ⦚ button **one time**. Watering activity will stop; watering symbol ◊ will start flashing.

To Resume Watering:

1. Press ⏎ button.

To Cancel Watering:

1. Press ⦚ button **twice**. Watering will stop; display will return to time and day.

To Skip A Zone And/Or Program:

1. Press ⏎ button. Active Zone is skipped; next active Zone starts. Repeat this procedure as needed to advance to next active Program.

To Change Zone Run Time (for this operation only):

1. Press ▲ or ▼ button to increase or decrease run time.

To Run One or Two Programs:

1. Turn Control Dial to **Manual Start**.
2. Press ▲ or ▼ to display Program **P1, P2** or **P3**.
3. Press ⏎ button **two times**. Watering will start. Display will show ◊ , active Program number, active Zone and its remaining Run Time.

   Note: If running one Program only, continue at step 5.
4. To select another Program, repeat step 2 & 3, then continue at step 5. Note that Programs will run in sequence.
5. Return Control Dial to **Auto / On**.

To Run All Programs:

1. Turn Control Dial to **Manual Start**.
2. Press ▲ or ▼ button three times to display Programs **P1, P2 and P3**. All three indicators will begin flashing; all active Zone numbers will be displayed and underlined.
3. Press ⏎ button. Watering will start. Programs will operate in sequence. Display will show ◊ , active Program number, active Zone (flashing) and its remaining Run Time.
4. Return Control Dial to **Auto / On**.

Example: Program 1 running; 12 minutes remaining on Zone 1.

P1
1 2 3 4

P1   0:12
1 2 3 4

P1   0:12   ◊
1 2 3 4
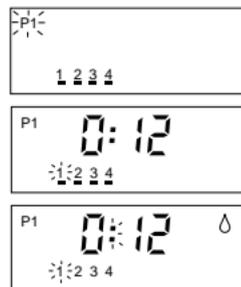
Example: All Programs selected, Program 1 running with 12 minutes remaining on Zone 1.
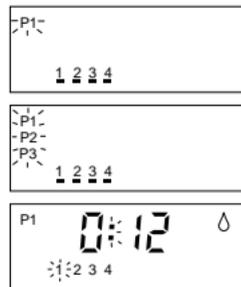
P1
1 2 3 4

P1
P2
P3   1 2 3 4

P1   0:12   ◊
1 2 3 4

To Run Selected Zone(s):

1. Turn Control Dial to **Manual Start**.

2. Press ▲ or ▼ button to display Program **P1, P2** or **P3**.
   Note: Timer will return to time and day display if the
   Program selected is turned OFF.

3. Press ↵ button. All Zones assigned to selected Program
   are displayed and underlined. Run time for first Zone in
   sequence is displayed.

4 To **select** Zone, Press ▲ button. Zone number is under-
   lined and next Zone number begins flashing.
   Or, to **omit** Zone, press ▼ button. Underline disappears
   and next Zone number begins flashing.
   Repeat this step to select or omit all Zones.

5. Press ↵ button. All selected Zones will operate in

      sequence. Display will show watering symbol ◊ , active
   Program, active Zone and its remaining run time.

6. Return Control Dial to **Auto / On**.

   Note: If a Manual operation is started while an Automatic watering cycle is in progress, the
   Automatic cycle will be suspended; then resume upon completion of the Manual operation.

**Example: Zones 2 and 4 of
Program 1 selected. Zone 2 run-
ning with 12 minutes remaining.**

| P1 |
| 1 2 3 4 |

| P1 0:12 |
| 1 2 3 4 |

| P1 0:12 |
| 1 2 3 4 |

| P1 0:12 ◊ |
| 4 |
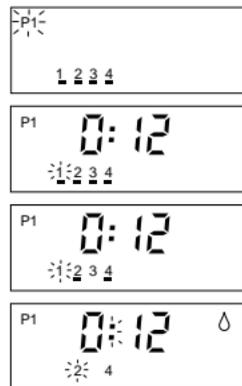
SEASON ADJUST FEATURE

The Season Adjust water conservation feature allows you to decrease your watering run time down to 10% of normal during cool months, or increase up to 200% during hot months, without having to reprogram. Normal operation is resumed when the Season Adjust percentage is reset to 100%.

As a water conservation measure and for the protection of your landscape, an adjustment above 100% will automatically split the watering Program into two equal watering cycles called "split-cycle" watering. That is, instead of simply increasing the run time, which may cause run-off and erosion, the timer will first increase the run time, then split the time in half and run two watering cycles back-to-back, allowing the water in each Zone to soak-in. The % symbol will flash during operation to indicate a split-cycle watering schedule.

Procedure

1. Turn Control Dial to **Season Adjust**. Program **P1** is flashing and current Program percentage is displayed.

2. Press ▲ or ▼ button as needed to display Program **P1, P2** or **P3**.

3. Press ↵ button. Current percentage will begin flashing.

4. Press ▲ or ▼ button until desired percentage (10% – 200%) is displayed.

5. Repeat Steps 2 – 4 for each Program as required.

6. Return Control Dial to **Auto / On**.

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Example: P2 increased to

      P1     100 %

      P2     100 %

      P2     130 %
```
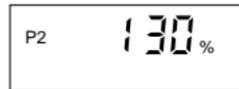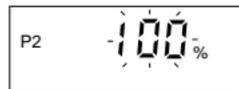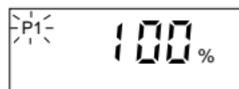
1. Turn Control Dial to OFF position and remove lower housing cover.
2. Referring to illustration in **Figure 7**, position new Zone Module into first expansion slot (from left to right). Slide Module toward top of timer to engage locking tab.
   Note: You will hear a "click" when the Module locks into position.
3. Refer to "Connecting Control Valves and Transformer," page 6, to connect valve wires.
4. Refer to "Set Zone Run Times," page 16, to add new Zones to watering Program(s).
5. Test operation of new module. Refer to "To Run Selected Zone(s)," page 19.

Figure 7
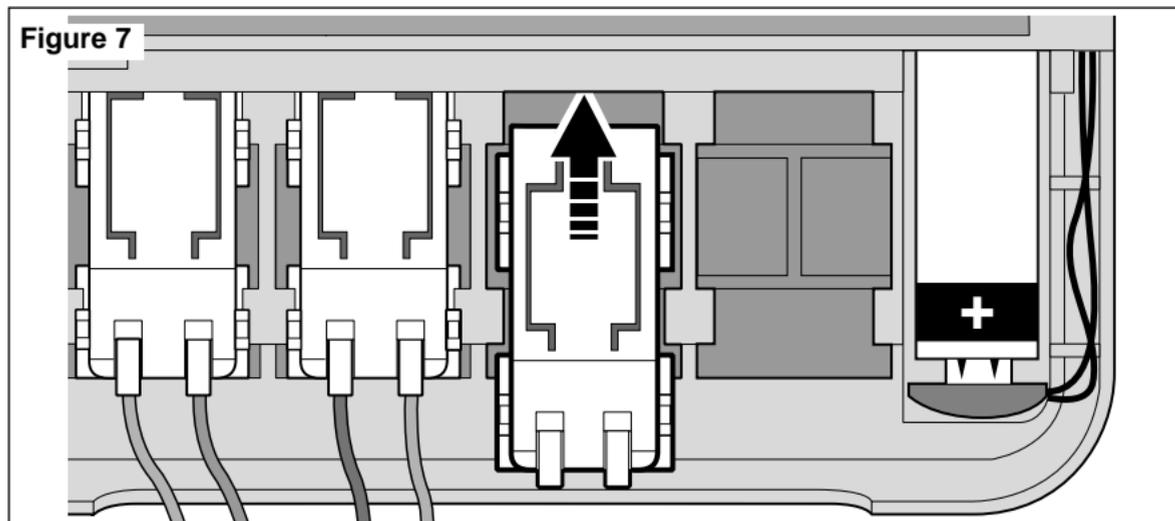
If you are experiencing a problem with the timer, check the following symptoms, causes and remedies. If the problem cannot be resolved, or you would like assistance with any Toro irrigation product, call the toll-free Toro Help Line 1-800-367-8676 Monday through Friday, 7:30 AM – 4:00 PM (Pacific Standard Time).	**Display blank; timer does not operate.**	**Watering Programs start at unscheduled times.**
	■ Dead battery **and** one or more of the following: 　■ Fuse blown. 　　✓ Replace fuse. 　■ Transformer unplugged or wires disconnected. 　　✓ Check transformer to ensure both wires are connected to timer and that it is plugged-in. ■ Dead branch circuit to wall plug receptacle: 　✓ Check circuit breaker at service box.	■ Overlapping Program start time schedules. If a Program start time occurs during a watering cycle in progress, the start time will be delayed until the previous cycle is finished. 　✓ Check your watering plan record and review for possible scheduling conflicts. Shorten Zone run times and/or space start times farther apart.

Valve will not turn off.

- Control valve problem.
  - ✓ Inspect, clean or replace valve solenoid assembly - (solenoid plunger must move freely in solenoid).

- Programming conflict.
  - ✓ See "Watering Programs start at unscheduled times".

Valve will not turn on.

- Faulty control wire connections.
  - ✓ Inspect and correct faulty wire connections at valves and timer.

- Faulty valve solenoid / plunger assembly
  - ✓ Inspect, clean/or replace solenoid assembly.

- Valve flow control holding valve closed.
  - ✓ Turn flow control counterclockwise to increase flow.

Control valve operates intermittently.

- Faulty control wire connections.
  - ✓ Inspect and correct faulty wire connections at valves and timer.

WATERING SYSTEM SHUTDOWN

When the Control Dial is turned to the **Off** position, the timer immediately shuts off any watering operation currently in progress and prevents all Automatic and Manual watering. The word **OFF** will appear in the display. After approximately 8 minutes, OFF will be replaced with the present time/day and the Ⓧ symbol (All Watering Canceled). The Ⓧ symbol will remain in the display as a reminder that no watering will take place.

To resume timer operation, turn the Control Dial to any other dial position.

CHANGING FUSE

A 3/4 Amp fuse protects the timer from damage due to power surges and excessive current draw through the Zone Modules. Before replacing fuse, check for the probable cause, such as a shorted or improperly connected control valve wire; then replace fuse as follows:
1. Unplug transformer from wall receptacle.

> **WARNING**
> **REMOVE 24 VAC POWER TO TIMER PRIOR TO SERVICING FUSE. FAILURE TO COMPLY MAY RESULT IN INJURY AND OR DAMAGE TO TIMER.**

2. Carefully remove blown fuse from clip.
3. Remove replacement fuse from back side of lower cover and install into fuse clip.

CAUTION: Never install a higher amperage fuse! Severe damage to timer can result.

4. Plug transformer into wall receptacle.

TORO ECx

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Questions? Call The Toro Help Line 1-800-367-8676

Quick Reference Guide

Quick Reference Guide

Once familiar with the ECx programming and operating features, use this guide for quick reference when you need to:

Change Clock Time and Day	p. R2
Review or Change Active Day Schedule..................	p. R2
Review or Change Program Start Times..................	p. R3
Review or Change Zone Run Times	p. R3
Water Manually	p. R4
Change Season Adjust %	p. R5
Control Watering Operation.....................................	p. R5

To Change Clock Time and Day

1. Turn Control Dial to **Set Time / Day**.
2. Press and hold ▲ or ▼ button to set correct time.
3. Press ↵ button.
4. Press ▲ or ▼ button to set correct day number.
5. Return Control Dial to **Auto / On**.

To Review Or Change Active Day Schedule:

• Calendar Schedule

1. Turn Control Dial to **Active Days**.
2. Press ▲ or ▼ button to display **P1, P2** or **P3**.
3. Press ↵ button.
4. Press ▲ or ▼ button to display **CAL**.
5. Press ↵ button.
6. To select day, Press ▲ button.
   Or, to omit day, press ▼ button. Repeat for each day.

7. Return Control Dial to **Auto / On**.

• Interval Schedule

1. Turn Control Dial to **Active Days**.
2. Press ▲ or ▼ button to display **P1, P2** or **P3**.
3. Press ↵ button.
4. Press ▲ or ▼ button to display **Int**.
5. Press ↵ button.
6. Press ▲ or ▼ button to display desired Interval number.
7. Press ↵ button.
8. Press ▲ or ▼ button to position indicator under the first active day of the interval schedule.
9. Return Control Dial to **Auto / On**.

• Program OFF

1. Turn Control Dial to **Active Days**.
2. Press ▲ or ▼ button to display **P1, P2** or **P3**.

To Review or Change Program Start Time(s):

1. Turn Control Dial to **Start Times**.
2. Press ▲ or ▼ button to display Program **P1, P2** or **P3**.
3. Press ↵ button.
4. Press ▲ or ▼ button to display Start Time Number (1 – 4).
5. Press ↵ button.
6. Press and hold ▲ or ▼ button to display Start Time or OFF.
7. Press ↵ button.
8. Repeat Steps 4 – 8 to review or change remaining Start Times for this program.
9. Press 🔋 button. Repeat Steps 2 – 8 for each Program as required.
10. Return Control Dial to **Auto / On**.

To Review or Change Zone Run Time(s)

1. Turn Control Dial to **Run Times**.
2. Press ▲ or ▼ button to display Program **P1, P2** or **P3**.
3. Press ↵ button.
4. Press ▲ or ▼ button to select desired Zone Number.
5. Press ↵ button.
6. Press and hold ▲ or ▼ button to display Run Time or Off.
7. Press ↵ button.
8. Repeat Step 4 – 7 for all remaining Zones in this Program.
9. Return Control Dial to **Auto / On**.

Manual Watering Operations

• To Run One or Two Programs:

1. Turn Control Dial to **Manual Start**.
2. Press ▲ or ▼ to select Program **P1, P2** or **P3**.
3. Press ↵ button **twice** to start Program.
4. To select another program, repeat steps 2 & 3, then continue at step 5.
5. Return Control Dial to **Auto / On**.

   Note: Programs selected will operate in sequence.

• To Run All Programs:

1. Turn Control Dial to **Manual Start**.
2. Press ▲ or ▼ button three times to select **P1, P2 and P3**.
3. Press ↵ button. All Programs will run in sequence.
4. Return Control Dial to **Auto / On**.

• To Run Selected Zone(s):

1. Turn Control Dial to **Manual Start**.
2. Press ▲ or ▼ to select Program **P1, P2** or **P3**.
3. Press ↵ button.
4. To select Zone, Press ▲ button (selected Zone will be underlined).

   Or, to omit Zone, press ▼ button .
5. Press ↵ button to start watering operation.

   Note: If running selected Zones of one Program only, continue at step 7.
6. To select zones within additional programs, repeat steps 2 – 5.
7. Return Control Dial to **Auto / On**.

   Note: Programs selected will operate in sequence.

To Change Season Adjust %

1. Turn Control Dial to **Season Adjust**.
2. Press ▲ or ▼ button to select Program **P1, P2** or **P3**.
3. Press ↵ button.
4. Press ▲ or ▼ button to change percentage (10% - 200%)
5. Repeat Steps 2 – 4 for each Program as required.
6. Return Control Dial to **Auto / On**.

Watering Operation Controls

(Control Dial must be in Auto / On position.)

To Interrupt Watering:

Press ⑧ button **one time**.

To Resume Watering:

Press ↵ button.

To Cancel Watering:

Press ⑧ button **twice**.

To Skip A Zone And/Or Program:

Press ↵ button as needed.

To Change A Zone Run Time (for this operation only):

Press ▲ or ▼ button.