



Collection Bottle Rotator—Model 1512

Instructions

Description

The **Collection Bottle Rotator** (PN 1512) is a device which allows segregating the catch of any of our miniature mechanical or pheromone traps or a collection device of your design into 8 bottles over periods of time determined by a programmable timer. The design permits almost complete flexibility in the collection schedule, which may range in total length from a few hours (or even as little as a single minute) to an entire week (184 hours) into a single bottle; the day, hour, and minute of the start of the collection into each bottle can be programmed as well. Timer accuracy is a nominal ± 60 seconds per week. An internal Lithium-ion battery maintains the current date/time and switching program for 3 years without external power. The **Collection Bottle Rotator (CBR)** requires a nominal 12 VDC input and supplies timer-switched same voltage to the trap via the 5-way binding posts on the top of the housing. With the option of the **Constant Voltage Power Supply** (PN 8.INT) the output of the 5-way binding posts is automatically regulated to 6.3 VDC so any of our 6-volt traps can be used without modification. The output voltage will be specified with a label next to the binding posts.

Electrical Requirements and Connections

The timer circuit and the gearmotor of the **CBR** requires ca. 12 VDC; when the gearmotor is not turning, the timer takes 0.01 amps and when the gearmotor is driving the platen the total is 0.15 amps. To these values the current consumption of your trap would need to be added; hence, the size, i.e., the amp-hour rating of the battery is largely determined by the requirement of the attached trap and the length of the trapping intervals programmed.

The external power cord set its red and black leads is used to attach the unit to the battery. The color-coded terminals on the top of the unit provide timer-switched 12 VDC power to the trap which is installed into the top of the CBR. This 12 VDC is appropriate for any of our 12-volt blacklight traps. The standard **CDC Miniature Light Trap** (PN 512), however, requires 6 VDC. Users can order a Model 512 modified to operate on 12 VDC from us for use with the **CBR** or modify one of your own by using a 12-volt/330-mAmps bulb (CM-1816) and installing a 10-wt/50- Ω resistor in series with the motor—call if you need parts and/or some help. The other, and better option is specifying an **Automatic DC-DC Buck/Boost Power Supply** (PN 8.INT); this can be mounted inside the housing; if you want an external version that is placed in series with the trap and CBR, specify the external version of the **Buck/Boost Power Supply** (PN 8.EXT). Call for details.

The **CBR** and power supply terminals are protected with a 10-amp fuse that is mounted in-line at the battery-terminal end of the power cord.

Operation

Outdoor mounting

The central stainless-steel rod extending from underneath the **Collection Bottle Rotator** is used to support the unit and associated trap; the diameter is 0.50" (18 mm). This should be inserted into a user-supplied piece of pipe or wood which has been driven into the ground. It is important that the platen of the **CBR** is horizontal and that the power supply cord and the support do not interfere with the rotation of the bottles. Take care that when inserting the shaft of the rotator into your holder, that you do not drive the shaft collar up and make the platen bind. The best mounting setup (see Fig. 1) is to use **Tripod and Powder-Coated Adapter** (pn 1512.50).

Installing the trap and filling collection bottles

Insert the base of your trap into the screened holder located on the top of the CBR unit; the inside diameter of the holder is 3.87" (98 mm). Secure the trap with the thumb screws. You can fill the collection bottles with a few ounces of water or a water and/or alcohol solution and then screw them into the jar lids fastened to the bottom side of the platen; some users collect into dry bottles by using a DDVP-based material (Hercon Vaportape II DDVP, Great Lakes IPM, <https://www.GreatLakesIPM.com/>) to provide knock-down. However, in early 2005, we modified the mechanism so after collecting into a bottle, and the program calls for power to be shut off to the trap, the platen will rotate to the next bottle and stop; the previous catch is prevented from flying out, the bottle now being covered with the internal cover over all bottles except the one under the trap. Note that after collecting into the eighth bottle, bottle one will be brought under the inactivated trap, possibly permitting the loss of catch from this bottle.

Electrical connections

If your trap/collection device requires 12 VDC power, connect it to the switched power supply terminals on the top of the CBR. The gray power supply cord of the **CBR** is connected to a 12 VDC battery. The red lead is positive (+) and the black lead is negative (-); connecting the **CBR** to the battery with reversed polarity will not harm the unit unless while connected, the operator attempts to manually move the platen (see below).

Manual movement of bottles

The bottle positions are marked consecutively from 1 to 8 on the underside of the bottle platen. There is a small push button switch located near the trap holder on the top of the **CBR** housing. With the **CBR** connected to power, momentarily pressing this for about one second will rotate the platen one bottle. Each time the switch is pressed and held closed for ca. one second, the platen will rotate to the next position.



Figure 1. **Collection Bottle Rotator**, PN 1512 mounted on the **Tripod and powder-coated adapter**, PN 1512.50.



Figure 2. The Digital Programmable Timer Switch of the **Collection Bottle Rotator** PN 1512 manufactured after 2024. Note, the display of the ∂ symbol (lower left in LED screen) indicates that the Timer Switch is in the LOCKED state; pressing the C/R button four (4) times until the ∂ symbol disappears will UNLOCK switch permitting the buttons to be used to program the **CBR's** Timer Switch.

Operation of the timer unit

Be careful to keep the timer enclosure tightly closed when in operation, the circuitry can stand humidity but not rainfall on to the face of the timer. The unit has an internal rechargeable Lithium-ion battery that holds the time and programs for up to 3 years (i.e., memory); when you first power up the **Collection Bottle Rotator**, this Li-ion battery takes a few hours to charge.

Unlocking instructions

- C/R (rightmost button, bottom row). Press the C/R button four (4) times until the ∂ symbol disappears in the lower left of the timer's display LED screen enter the word WEEK. At this time, the control switch is in the unlocked state; all keys are valid and can be used to program the timer.

Description of buttons and indicators

- CLOCK ⌚ (center of bottom row of buttons): Press to display the current time set in the timer; if this needs adjusting, enter the "Time Adjustment Mode" by pressing and holding the ⌚ button while pressing the D+, H+, and M+ buttons to set the current day of the WEEK and time (in Fig. 2, the timer set to Monday at 33 minutes and 03 seconds after midnight). Note that if no operation is performed within 15 seconds, the timer simply reverts to displaying again the current set time of the switch.
- TIMER ⌚ (right button on top row): Press to enter the "Editing Mode," where the times to turn the trap connected to the collection bottle rotator are entered. This timer can actually handle a total of 16 on/off events, more than required for the device's 8 bottles.
- MANUAL (topmost button above the display): This button cycles the output state through three conditions: ON → AUTO → OFF, then repeats. Where ON means manual override, forced ON where the output is on regardless of the programmed schedule (sometimes called *locked ON*). Next is OFF — manual override forced off where the output is off regardless of the programmed schedule, aka, *locked OFF*. And the third condition is AUTO — program-controlled operation where the timer follows the programmed ON/OFF schedule.

To set up your timer

1. To start the timer, press the recessed **RESET C** button to clear the time and the program.

- Next, set the clock to the current day of the week, the hour, and the minute, press and hold the **CLOCK ⌚**:
 - a. Press the D+ **DAY** button until the day appears in top of display,
 - b. Then press the H+ **HOUR** button until the correct hour is set,

- c. Then press the M+ **MINUTE** button until the displayed minutes are correct.
 - d. Finally, press the **CLOCK** ⌚ button to exit.
- For each of the on/off pairs press the ⌚ **TIMER** button
 - a. Once and enter the time of the first ON,
 - b. Then press the ⌚ button again and enter the time of the first OFF.
 - c. Repeat steps 3.a and 3.b until are pairs have been entered.
 - d. Finally, press the **CLOCK** ⌚ button once again to exit.
 - e. If you want to check the ONs and OFFs, press the **CLOCK** ⌚ button repeatedly and the display will show sequentially the first ON and OFF. Repeat for all pairs entered.
- After checking all pairs then press the **CLOCK** ⌚ button to exit.