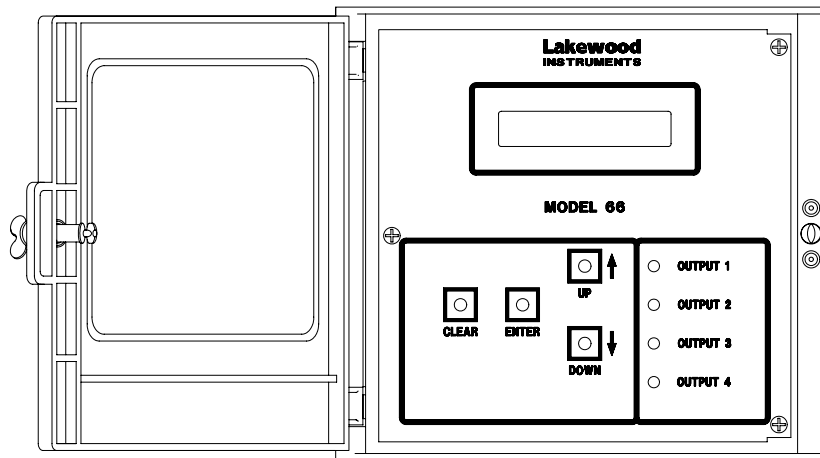


**LAKEWOOD INSTRUMENTS
MODEL 66**

MICROPROCESSOR CLOCK TIMER

INSTALLATION & OPERATION MANUAL

SERIAL #: _____



Lakewood Instruments

7838 North Faulkner Road, Milwaukee, WI 53224 USA
Phone (800) 228-0839 • Fax (414) 355-3508
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Lakewood Instruments

We thank you for your selection and purchase of a Lakewood Instruments product.

With proper care and maintenance, this device should give you many years of trouble-free service. Please take the time to read and understand this Installation and Operation Manual, paying special attention to the sections on **OPERATION** and **MAINTENANCE**.

If, in the future, any parts or repairs are required, we strongly recommend that only original replacement parts be used. Our Customer Service Department is happy to assist you with your parts or service requests.

MODEL 66 USER'S QUICK PROGRAMMING GUIDE

Keypad Functions

ENTER	Selects entries and moves you through programming.
CLEAR	Erases entries and moves you back to Function Menu.
UP	Moves you up through information in a menu and changes data in programming selection.
DOWN	Moves you down through information in a menu and changes data in programming selection.

Function Menu

DISPLAY TIME	Press ENTER to display day, date and time.
MANUAL OPERATION	Overrides preprogrammed selections to manually turn outputs ON and OFF .
SET PROGRAM	Select output and program settings to turn it ON and OFF . Up to 50 ON/OFF settings can be selected for each output.
SET CLOCK	Press ENTER to program proper day, month/date, hour, minute, seconds. All programmed settings operate based on these clock settings.

Output Programming

[SET PROGRAM]	Press ENTER .
[PROGRAM OUTPUT 1]	Press ENTER or UP to select other output.
[UP: EDIT; DN: ERASE]	Press UP to program, press DOWN to erase all programmed settings for this output.

Do you want your program settings to be on a weekly or day-cycle basis? Press **UP** or **DOWN** to select **WEEK** or **DAYS**; press **ENTER** to program selection.

[SELECT: WEEK]	[SELECT: DAYS]	Press ENTER .
[TODAY: TUESDAY]	[TODAY: 01 OF 28]	Press ENTER .
[END OF FILE]	[END OF FILE]	Changes to...
[ENTER TO INSERT]	[ENTER TO INSERT]	Press ENTER .
[MON 00:00-00:00]	[01 / 00:00-00:00]	UP/DOWN; ENTER .

To program settings, use **UP** and **DOWN** to change displayed information and **ENTER** to move through the selections.

When the selection is complete, you have the following choices:

1. Insert additional settings.
2. Return to the Function Menu.
3. Program other outputs.
4. Erase part or all settings for this output. (See the rest of the manual for details.)

NOTE: WHEN "CHECK BATTERY" MESSAGE FLASHES IN THE TIME DISPLAY, IT MEANS IT IS TIME TO CHANGE YOUR 3V BATTERY. SEE "INSTALLATION" IN THIS MANUAL.

MODEL 66

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INTRODUCTION

The Model 66 controller is a programmable clock timer with 4 relay (switch) outputs. You can simplify the water control process for your cooling towers by programming up to four separate output devices to be turned **ON** and **OFF** at any time of day, on either a weekly or day-cycle basis. This controller allows you to apply up to four different materials (biocides, chemicals, etc.) on four independent schedules.

This means that your investments in anti-scaling treatments are maximized.

For instance, in most cases, **Output 4** is set up as a delay timer to lock out slowdown and chemical feeds after biocide treatments from **Outputs 1** and **2**. This allows you to get maximum effectiveness from your biocides.

Features

- Easy to program.
- Only four push-buttons.
- Time of day displayed continuously.
- Controls up to four output devices simultaneously.
- Each output can be programmed to actuate at a given time on either a daily or weekly basis (max. 50 programmed settings for each output).

Specifications

Minimum Timing Increment	1 Minute
Relay Outputs	4 NO/NC Contacts
Relay Rating	5 Amps at 120 VAC
Display Type	LCD 16-Character Display
Battery Backup	3v Lithium
Enclosure Material	UV Stabilized PVC and ABS
Mounting	Surface Mount

Ordering Information

66 Microprocessor-based biocide chemical/timer. 50 program stops for each chemical output.

OUTPUT OPTIONS (required; must select one)

- DT 3 independent outputs with outlets, 1 delay timer output with power cord.
- 4C 4 independent outputs with outlets and power cord.
- CD 2 independent outputs, 1 delay time for use with Model 412 Controllers.
Wire harness included.

ENCLOSURE OPTIONS (optional)

- WP NEMA 4X watertight enclosure with 120/240VAC 50/60 Hz power switch.
No outlets or power cord.

PREFABRICATED PREWIRED ASSEMBLY (optional)

- AT External wiring for use with Models 101, 111, 151, 161 175, 222, 224, in separate enclosure.
- MP 316 SS mounting plate to attach 66 to Models 101, 111, 151, 161, 175, 222, 224. Must also specify **-AT** option, above.

MOUNTING OPTIONS (optional; -WP required)

- PM Panel mount 6 ¼" square cutout.
- BM Bracket mount for pipe mounting.

INSTALLATION

Checking

Inspect the shipping carton for obvious external damage. Note on the carrier's bill-of-lading the extent of the damage, if any, and notify the carrier. Save the shipping carton until your Model 66 controller is started up.

- 📞** If there was shipping damage, call the Lakewood Instruments Customer Service Department at (800) 228-0839 for permission to return the controller to the factory in the original carton.

Mounting

When you ordered the Model 66, you selected an appropriate mounting site. In case you need to relocate your unit in the future, below is a list of the four mounting options available with the Model 66:

- PM** Panel Mount w/Brackets
- BM** Bracket for 2" Pipe Mounting
- MP** 316 SS Mounting Plate for Controller and Biocide Timer

Mount the Model 66 controller on a FLAT, NON-VIBRATING wall. It should be located as close as possible to the system it serves and to the chemical pumps.

Avoid drilling or punching additional holes in the controller enclosure. Damage incurred as a result of any alteration to the enclosure is not covered under the Lakewood Instruments product warranty.

NOTE: EXCESSIVE HEAT AND/OR DIRECT SUNLIGHT EXPOSURE WILL DARKEN THE LCD DISPLAY SCREEN, MAKING IT DIFFICULT TO READ, AND MAY SHORTEN THE LIFE OF OTHER ELECTRONIC COMPONENTS.

Install Battery

After you have securely mounted the Model 66, you need to install the 3v Lithium battery which provides back-up power in order to maintain accurate crystal-controlled time if 120 VAC power is lost. To install the battery:

- Turn cover lock key counterclockwise a turn and lift to open cover.
- Turn straight head screw counterclockwise a quarter turn and lift it to open face panel.

- Remove the paper insert below the contact arm so it has direct contact with the battery.
- Insert battery.

Output Connections

To connect the outputs, attach wires to appropriate terminals. (**RY1** is Output 1, **RY2** is Output 2, **RY3** is Output 3, **RY4** is Output 4—a programmed delay timer.) See appropriate “Wiring Diagram” for your specific model to determine output connections.

After the outputs are connected, close and lock down the face panel.

Power Source

Make sure the Model 66 controller is powered from 120 VAC, unless it is specifically set up for 220 VAC.

Check the wiring to the controller to make sure that **NO** power wiring is connected to any of the low voltage circuits.

After the controller is connected to power, the LCD will read:

[M 01/01-00:00:00]

NOTE: AS SOON AS THE MODEL 66 IS PLUGGED IN, THE CLOCK BEGINS COUNTING TIME.

OPERATION AND PROGRAMMING

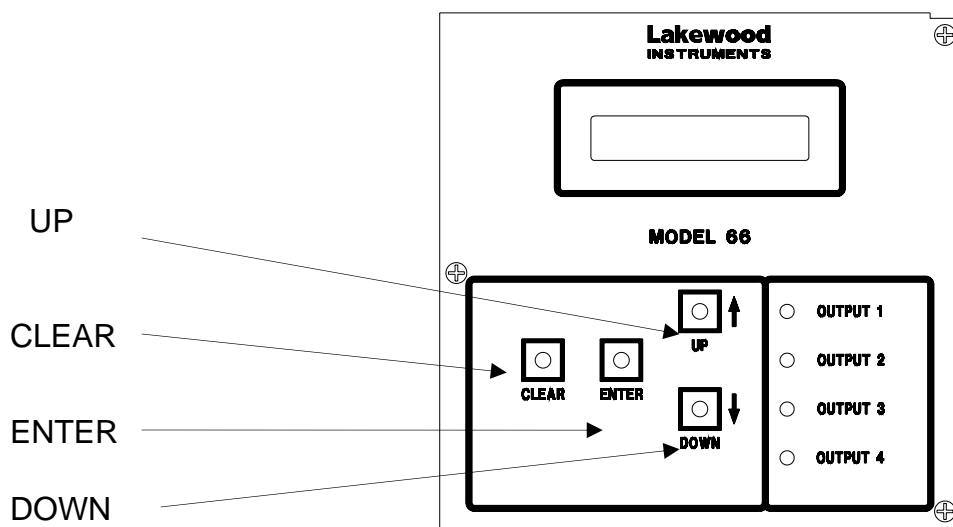
Introduction

The Model 66 is a programmable clock timer with four relay (switch) outputs. The outputs can be programmed to turn **ON** and **OFF** at any time of day, on either a day-of-the-week basis or on any day of a day-cycle (max. 250 days). Each output can be programmed to turn **ON** and **OFF** at fifty different time settings (except **Output 4** when it is a delay timer).

On most Model 66s, Output 4 is a delay timer. After biocide has been fed into the cooling water, **Output 4** is used to delay the cooling water controller operation. **Outputs 1 and 2** are the biocide feed timers. **Output 3** can be connected to a device of your choosing. However, when used with a Lakewood Instruments Model 412/420, **Output 3** remains **ON** at all times, except for 10 seconds after the delay timer has timed out. (See the Model 412/420 Instruction Manual for details to reset "Acid Overfeed" timer on the Model 412.)

It is essential that you become comfortable with the programming procedures in order to maximize the effectiveness of this equipment. This section is designed to allow you to learn the programming functions. Practice Skill sections have been designed to walk you through various programming functions so you can see what options are available to you. Take the time to do the Practice Skills section **BEFORE** you program your own output settings.

First, take time to become familiar with the front panel keypad. You will use these keys to program the various functions of your Model 66. Programming instructions will simply refer to these keys as:



Function Menu

After the Model 66 is connected to power, the LCD displays the preprogrammed clock, which looks like this:

[M 01/01 - 00:00:00]

and reads as

[Day Month/Date - Hour:Minutes:Seconds]

You will set the clock in the next section. At this point, you need to get familiar with the Function Menu. All programming options begin in the Function Menu. From the clock display, push **CLEAR** and the LCD will show:

[DISPLAY TIME]

This is the first of four functions in the menu:

- 1 DISPLAY TIME
- 2 MANUAL OPERATION
- 3 SET PROGRAM
- 4 SET CLOCK

Use **DOWN** to review the menu and **UP** to move back through the menu.

NOTE: IN THE FUNCTION MENU REVIEW, BELOW, NOTE HOW ENTER ALLOWS YOU TO GET INTO THE FUNCTIONS FOR PROGRAMMING AND REVIEW.

NOTE: CLEAR BRINGS YOU BACK TO DISPLAY TIME WHEN YOU ARE ELSEWHERE IN THE FUNCTION MENU, OR WHILE YOU ARE PERFORMING A PROGRAMMING OPERATION.

Practice Skill 1 — Function Menu Review

If you are in the Function Menu, press **CLEAR** and you should see Screen #1, below. If you don't know where you are, press **CLEAR** until you see Screen #1, below. Then complete these steps:

Screen #1	[DISPLAY TIME]	Press DOWN .
Screen #2	[MANUAL OPERATION]	Press DOWN .
Screen #3	[SET PROGRAM]	Press ENTER .
Screen #4	[PROGRAM OUTPUT 1]	Press ENTER .

Screen #5	[UP: EDIT; DN: ERASE]	Press CLEAR .
Screen #6	[PROGRAM OUTPUT 1]	Press CLEAR .
Screen #7	[SET PROGRAM]	Press DOWN .
Screen #8	[SET CLOCK]	Press CLEAR .
Screen #9	[DISPLAY TIME]	

Set Clock

Before entering output settings, it is necessary to program the clock with current day, date and time settings. The clock uses a military-style 24-hour display (i.e., 4:00 p.m. is 16:00).

While in the Function Menu, use **DOWN** to go to:

[SET CLOCK]

Press **ENTER** and the display shows the clock settings:

[M 01/01 - 00:00-00:00]

which reads as:

[Day Month/Date - Hour:Minutes:Seconds]

To program accurate settings, use **UP** or **DOWN** to change the displayed information in the flashing program area. After the correct information is selected, press **ENTER** to move to the next setting.

NOTE: AS SOON AS THE MODEL 66 IS PLUGGED IN, THE CLOCK BEGINS COUNTING TIME. MOST LIKELY, THE TIME DISPLAYED WILL SHOW SEVERAL MINUTES AND THE SECONDS COUNTING.

Practice Skill 2 — Set Clock

If you are in the Function Menu, press **CLEAR** and you should see Screen #1, below. If you don't know where you are, press **CLEAR** until you see Screen #1, below. Then complete these steps:

Screen #1	[DISPLAY TIME]	Press DOWN .
Screen #2	[MANUAL OPERATION]	Press DOWN .
Screen #3	[SET PROGRAM]	Press DOWN .
Screen #4	[SET CLOCK]	Press ENTER .
Day Flashing	[M 01/01 - 00:00:00]	Press UP for Tu; ENTER .
Month Flashing	[Tu 09/01 - 00:00:00]	Press UP for 09; ENTER .
Date Flashing	[Tu 09/12 - 00:00:00]	Press UP for 12; ENTER .

Hour Flashing	[Tu 09/12 - 09:00:00]	Press UP for 09 ; ENTER .
Minutes Flashing	[Tu 09/12 - 09:30:00]	Press UP for 30 ; ENTER .
Seconds Flashing	[Tu 09/12 - 09:30:00]	Press ENTER .

When completed, press **CLEAR** and return to the Function Menu with the LCD showing **[DISPLAY TIME]**. Press **ENTER** to view time.

Set Program

Programming the Model 66 is easy. It does require, however, that certain issues be resolved before you start.

First, do you want the output device to be turned **ON** and **OFF** on a weekly basis or on a day-cycle basis (max. 250 days)? For example, if you want **Output 1** to be activated every Friday from 9:00 a.m. to 10:00 a.m., you would select **WEEK**. If you want it activated every other Friday from 9:00 a.m. to 10:00 a.m., you would select **DAYS** with a 14-day cycle. Though you can program **Outputs 1-3** with up to 50 different **ON** and **OFF** time settings, the settings must all either be on a weekly basis or on a day-cycle basis.

Second, what times do you want the output device to be turned **ON** and **OFF**?

Third, if you are going to use **Output 4** as a delay timer to retain biocide, how long do you want to delay chemical feed and blowdown?

All output programming is done from **SET PROGRAM** in the Function Menu.

Below are a series of examples to demonstrate the programming structure and some of the options available. Use them as Practice Skill tests. Use the erase options to clear all programmed output settings before you begin programming your Model 66 for use.

Practice Skill 3 — Set Program

[DISPLAY TIME]	Press DOWN twice.
[SET PROGRAM]	Press ENTER .
[PROGRAM OUTPUT 1]	Press DOWN 3 times to review all four outputs. Press UP 3 times; return to [PROGRAM OUTPUT 1] . Press ENTER to select Output 1 .
[UP: EDIT; DN: ERASE]	Press UP to program a new output or to edit previously programmed settings. In Option 5 , below, you will learn to use the ERASE function.

[SELECT: WEEK]	Press UP or DOWN and change the select from WEEK to DAYS . For this example, use WEEK ; press ENTER .
[TODAY: TUESDAY]	Date displayed is based on your clock setting, press ENTER .
[END OF FILE]	Screen quickly moves automatically from this screen to the next.
[ENTER TO INSERT]	Press ENTER and you can then input the Day, Time- ON and Time- OFF settings. UP and DOWN changes displayed information. ENTER makes the selection and moves you on to the next setting for inputting.
[MON 00:00-00:00]	Input the Day (press UP , then ENTER).
[TUE 00:00-00:00]	Input the Day (press UP , then ENTER).
[TUE 11:00-00:00]	Input the Day (press UP , then ENTER).
[TUE 11:45-00:00]	Input the Day (press UP , then ENTER).
[TUE 11:45-13:00]	Input the Day (press UP , then ENTER).
[COMPLETE]	This screen flashes quickly to let you know that your selection is completed and then it changes to display the time setting selected.
[TUE 11:45-13:10]	This is what you selected.

PRACTICE SKILL 3 — (ON HOLD WHILE YOU READ OPTIONS)

At this point, you have to make a decision. Where do you want to go from here? At this time, simply read through the options listed below. The programming example will continue with this screen at the end of the options:

OPTION 1: If you want to add additional programmed settings for **Output 1** (up to 50), press **DOWN** and repeat the process you just completed, beginning with **ENTER TO INSERT**. Remember, all additional settings must be done based on day-of-week settings, since that was previously selected.

OPTION 2: If you are done programming and you just want to return to **DISPLAY TIME** in the Function Menu, press **CLEAR** 4 times.

OPTION 3: If you are done programming **Output 1**, but you want to program a different output device, press **CLEAR** twice as follows:

[TUE 11:45-13:10] Press **CLEAR**.

[UP: EDIT; DN: ERASE] Press **CLEAR**.

and you'll see:

[PROGRAM OUTPUT 1]

Then you can use **DOWN** or **UP** to select the next output you want to program and you simply repeat the process you just completed for **Output 1**.

OPTION 4: If the selection displayed has something that is not correct, you can erase the selection in one of two ways:

- a) When the programmed setting is displayed on the screen, press **ENTER** and you will be given a choice of erasing the setting or leaving it the same. It looks like this:

[TUE 11:45-13:10] Press **ENTER**.

[CLR: ERASE; ENT: OK] Press **CLEAR** to erase; press **ENTER** if O.K.

If you erase, you go to **ENTER TO INSERT** and can go through the process of entering the correct settings.

If you don't erase, press **ENTER**, then press **CLEAR** 3 times to return to the Function Menu.

- b) When the programmed setting is displayed on the screen, press **CLEAR**, then **UP** to edit. Press **ENTER** to move to the selection you want to edit (erase), then follow the instructions in Option 4a. It looks like this:

[TUE 11:45-13:10] Press **CLEAR**.

[UP: EDIT; DN: ERASE] Press **UP**.

[TODAY: TUESDAY] Press **ENTER**.

[TUE 11:45-13:10] Press **ENTER**.

[CLR: ERASE; ENT: OK] Press **CLEAR** to erase; press **ENTER** if O.K.

If you erase, you go to **ENTER TO INSERT** and can go through the process of entering the correct settings.

If you don't erase, press **ENTER**, then press **CLEAR** 3 times to return to the Function Menu.

NOTE: OPTIONS 4A AND 4B ONLY ERASE THE SPECIFIC SETTING YOU SELECT. TO ERASE ALL PROGRAMMED SETTINGS FOR AN OUTPUT, SEE OPTION 5.

OPTION 5: If you need to start over and change all the settings, the process is similar to Option 4b. Follow the process to get to the screen [UP: EDIT; DN: ERASE], then press **DOWN** to erase all settings for **Output 1**. This is what you must do if you have programmed an output in **WEEK** and want to change it to **DAYS**. It looks like this:

[TUE 11:45-13:10] Press **CLEAR**.

[UP: EDIT; DN: ERASE] Press **UP**.

[ERASE: PUSH ENT] Press **ENTER** to erase, or press **CLEAR** to return to the previous screen without erasing all settings.

[UP: EDIT; DN: ERASE] Press **UP** to reprogram, or press **CLEAR** 3 times to go to Function Menu.

PRACTICE SKILL 3 — CONTINUED

To illustrate the different programming choices between day-of-week and day-cycles, select Option 3, above, and program Output 2 using a day-cycle.

[TUE 11:45-13:10] Press **CLEAR**.

[UP: EDIT; DN: ERASE] Press **CLEAR**.

[PROGRAM: OUTPUT 1] Press **DOWN**.

[PROGRAM: OUTPUT 2] Press **DOWN**.

[UP: EDIT; DN: ERASE] Press **UP**.

[SELECT: WEEK] Press **UP** or **DOWN**.

[SELECT: DAYS] Press **ENTER**.

[TODAY: 01 OF 28] Determine which day of the cycle you want **"TODAY"** to be. We recommend that you use a Monday as **"01"** of the cycle and use this diagram

M	T	W	Th	F	S	Su
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

to select input days. So, if you are programming the setting on a Wednesday, **"TODAY"** is **"03"** in the cycle. The **"28"** represents a 28-day cycle, which is four weeks. If you want **Output 2** activated every other Friday, here is what it would look like (press **ENTER** to program day-cycle):

[TODAY: 01 OF 28] **"01"** is flashing. Use **UP** to get to **"03"**. Press **ENTER** to select **"03"**.

[TODAY: 03 OF 28] The Model 66 is preprogrammed for a 28-day cycle (max. 250-day cycle). Press **ENTER** to select the 28-day cycle.

[END OF FILE] Automatically changes to the next screen.

[ENTER TO INSERT] Press **ENTER**.

[01 / 00:00-00:00]	Press UP to “ 05 ” for the first Friday of the cycle. Then press ENTER .
[05 / 09:00-00:00]	Hour-of-day output turns ON . Press UP to “ 09 ”, then press ENTER .
[05 / 09:00-00:00]	Minute-of-day output turns ON . Press ENTER .
[05 / 09:00-10:00]	Hour-of-day output turns OFF . Press UP to “ 10 ”, then press ENTER .
[05 / 09:00-10:00]	Minute-of-day output turns OFF . Press ENTER , then press DOWN .
[END OF FILE]	Automatically changes to the next screen.
[ENTER TO INSERT]	Press ENTER to program additional settings. Or you can press CLEAR 3 times to return to the Function Menu.
[19 / 00:00-00:00]	Press UP to “ 19 ” for the third Friday of the cycle. Then press ENTER and repeat the selection process outlined above.

Practice Skill 4 — Review Program Settings

Now review the programmed settings for Output 2. Press CLEAR to get the [UP: EDIT; DN: ERASE] screen. Press UP, then use DOWN to review the program settings. Here is what the program file looks like:

[TODAY: 03 OF 28]	Press DOWN to move through the program settings in the order they were entered.
[05 / 09:30-10:00]	Press DOWN .
[19 / 09:30-10:00]	Press DOWN .
[END OF FILE]	Automatically changes to the next screen.
[ENTER TO INSERT]	Press UP to move back to the top of the program file.
[19 / 09:30-10:00]	Press UP .
[05 / 09:30-10:00]	Press UP .
[TOP OF FILE]	Automatically changes to the next screen.
[05 / 09:30-10:00]	Press CLEAR 3 times and return to the Function Menu.

Programmable Delay Timer (Output 4)

If the Model 66 timer is wired to another controller, **Output 4** is used to lock out chemical feed and blowdown during the biocide feed time, plus any additional time. This retains the biocide in the cooling water.

EXAMPLE:

- Feed biocide A from **Output 1** on Wednesday from 1:00 a.m. to 1:30 a.m.
- Feed biocide B from **Output 2** on Sunday from 1:00 a.m. to 1:30 a.m.
- Lock out the chemical feed and blowdown with **Output 4** from 1:00 a.m. to 4:00 a.m. on Wednesday and Sunday (2½ hours delay time after each biofeed).

The delay timer is activated after **Outputs 1** and **2** are turned **ON** and **OFF**. Both of these outputs must be **OFF** before the delay

timer is activated. Once activated, it will run the full length of time designated unless either output comes back **ON** during its running time. To set the timer for the 2½ hours needed for the example above, select **Output 4 [PROG DELAY TIMER]**, press **ENTER**.

Display reads **[DL TIME: 30 MIN]**. Press **ENTER**. “**30**” will flash, indicating you can use **UP** to select “**150**” minutes. Press **ENTER**, then **CLEAR**.

NOTE: MAXIMUM DELAY TIME IS 1440 MINUTES (24 HOURS).

Manual Operation

The **MANUAL OPERATION** function allows you to temporarily override the controlled timer settings for the outputs. All outputs are automatically shut **OFF** when you enter this programming function and any output can be turned **ON** manually for as long as you choose. While you are in **MANUAL OPERATION**, however all of your preprogrammed settings are inoperative. If you need to override preprogrammed settings to turn one or more outputs **ON** or **OFF**, go to the Function Menu and select **MANUAL OPERATION**.

[MANUAL OPERATION] Press **ENTER** and all outputs turn **OFF**.
Display shows current condition of **Output 1**.

[OUTPUT 1: OFF] **UP** or **DOWN** allows you to change outputs.
ENTER manually turns selected outputs **ON** or **OFF** as needed. **CLEAR** returns all outputs to their preprogrammed settings and you return to the Function Menu.

Practice Skill 5 — Manual Operation

As an example, suppose none of your outputs are currently activated, but **Output 3** needs to be turned **ON** temporarily. The LCD is displaying the time. Here is what you would do:

[Tu 09 / 12 - 11:00:00] Press **CLEAR**.

[DISPLAY TIME] Press **DOWN**.

[MANUAL OPERATION] Press **ENTER**. All outputs automatically shut **OFF**.

[OUTPUT 1: OFF] Press **DOWN**.

[OUTPUT 2: OFF] Press **DOWN**.

[OUTPUT 3: OFF] Press **ENTER**.

[OUTPUT 3: ON] Press **CLEAR** to return all outputs to their preprogrammed settings.

NOTE: ON 66-CD SOFTWARE USED WITH 412-66, TO OPERATE OUTPUTS 1 AND 2, YOU MUST TURN ON OUTPUT 3.

Press **CLEAR** until you are at **[DISPLAY TIME]** in the Function Menu. Press **ENTER** to view time.

Display Time

After programming is completed, the LCD should be set to display the time. While in the Function Menu, go to **DISPLAY TIME** and press **ENTER**.

MAINTENANCE AND TECHNICAL SERVICE

Technical Service

 **Technical Support for Lakewood Instruments can be reached by calling (800) 228-0839 or faxing (414) 355-3508, Monday through Friday, 7:30 a.m. - 5:00 p.m. CST.**

 **Mail and returns should be sent to:**

**Lakewood Instruments
7838 North Faulkner Road
Milwaukee, WI 53224 USA**

When any merchandise is returned to the factory, please call and obtain a return goods authorization (RGA) number and have the following information available:

- Customer's name, address, phone and fax numbers.
- A purchase order number (no exceptions) for cases where parts are required that are not under warranty.
- A contact person's name and phone number to call if the equipment is beyond repair or to discuss any other warranty matter.
- Equipment model and serial numbers.
- Reason for return (i.e., repair, warranty, incorrect part, etc.).

We will then fax to your attention an RGA form that must accompany the returned item.

NOTE: THE RGA NUMBER MUST BE CLEARLY WRITTEN ON THE OUTSIDE OF THE PACKAGE(S) BEING RETURNED.

Service Guide

When calling Lakewood Instruments, please have the controller's complete model number and serial number available, together with the software version and the software revision so that the technician can better assist you.

When any parts are returned to the factory, please indicate:

- Customer's name and address
- Individual at customer location to send the repaired controller or new part to
- The person (and phone number) to call if the equipment is beyond repair or for any warranty matter

Parts List

PART NUMBER	DESCRIPTION
1165956	Lithium batter, BR2325 (minimum order of 2)

Write your controller's complete model number and serial number here so that you will have them available if you wish to contact an Lakewood Instruments technician.

Model Number:

Serial Number:

Check Battery Message

A 3v lithium battery back-up provides accurate crystal-controlled time if power is lost. Make sure that you have installed your battery. When the **CHECK BATTERY** message flashes on and off in the time display, it is time to replace your battery.

Troubleshooting

PROBLEM	CORRECTIVE ACTION
If your LCD is blank:	<ol style="list-style-type: none">1. Check your power supply source and all connections.2. Make sure you have properly installed your 3v lithium battery.3. Look for wire damage or loose connections.
If devices are not turning ON or OFF properly:	<ol style="list-style-type: none">1. Check your program settings.2. Do a self-test on the program and relays using the MANUAL OPERATION function.<ol style="list-style-type: none">a. Move through the outputs, turning each one ON and OFF.b. Make sure the display reads ON when the light comes on and OFF when the light is off.3. Look for wire damage or loose connections.4. If attached to another Lakewood controller, check flowswitch.
If the clock does not keep time correctly:	<ol style="list-style-type: none">1. Call the Lakewood Instruments Customer Service Department.

For more information call toll free in the USA (800) 228-0839

Manufactured in the USA

LAKWOOD INSTRUMENTS

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<http://www.lakewoodinstruments.com>