

**Homework 13: User Manual**  
*Due: Thursday, December 1, at Classtime*

Team Code Name: Drug Lords Group No. 9

**User Manual Outline:**

- Brief (marketing-style) product description
- Product illustration annotated with callouts for each control/display
- Product setup instructions
- Product use instructions
- Product troubleshooting instructions

**Evaluation:**

Component/Criterion	Score	Multiplier	Points
Product description	0 1 2 3 4 5 6 7 8 9 10	X 2	
Product illustration with callouts	0 1 2 3 4 5 6 7 8 9 10	X 2	
Product setup instructions	0 1 2 3 4 5 6 7 8 9 10	X 2	
Product use instructions	0 1 2 3 4 5 6 7 8 9 10	X 2	
Product troubleshooting instructions	0 1 2 3 4 5 6 7 8 9 10	X 2	
		<b>TOTAL</b>	

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**Introduction**

Congratulations on your purchase of the Pill Dispenser Deluxe, the premier automated pill dispensing system on the market. We at Drug Lords, Inc. hope that you will enjoy the convenience and precision offered by the Pill Dispenser Deluxe.

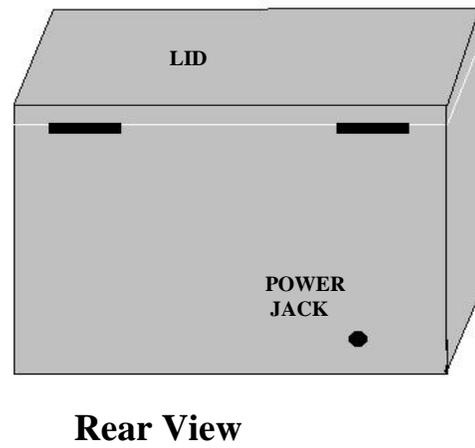
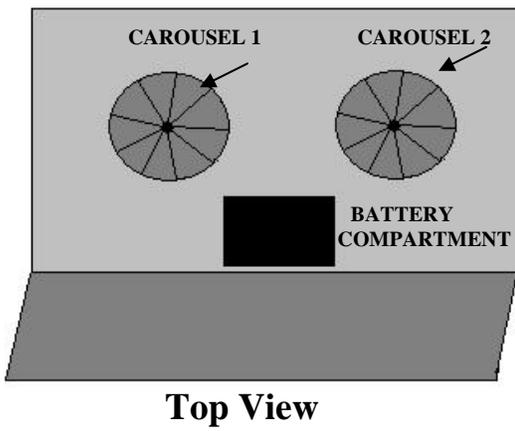
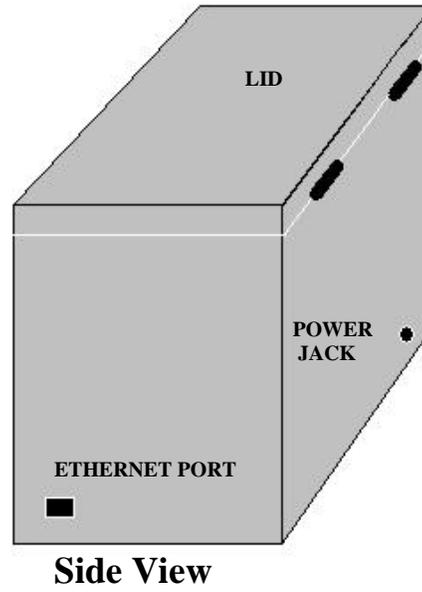
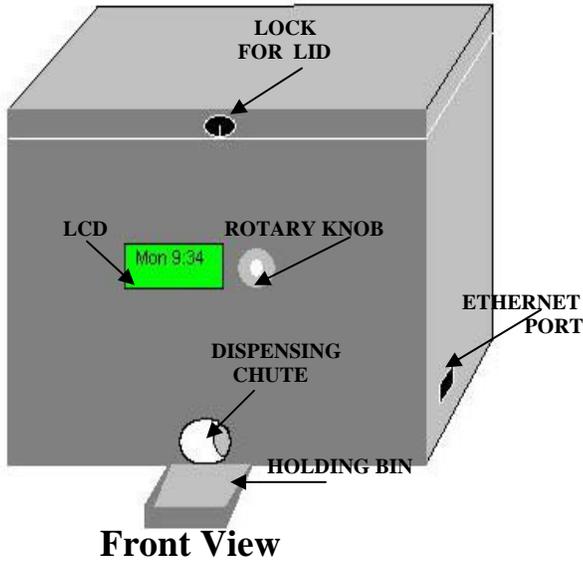
The Pill Dispenser Deluxe has many compelling features that make it an attractive household appliance. These features include:

- The ability to dispense any size or type of pill conveniently and on time.
- The ability to set twenty eight different pill dispensing times throughout a week.
- The convenience of setting the pill dispensing schedule remotely via the internet, or locally using a handy rotating knob.
- The peace of mind offered by knowing exactly when pills are dispensed and taken, using the integrated sensor and logging systems.
- The reliability of a battery backup, ensuring that you or your loved ones will be able to get proper medication even in the case of power outage.

With these features you can easily set up and monitor a reliable pill dispensing schedule for yourself or a loved one. With a computer you can check up on whether your loved one's medications are being taken from the convenience of your home. And you need not worry that someone will tamper with the pills, or accidentally change the dosage, thanks to a sturdy case with a lockable, clear cover over the pill compartment.

Regardless of whether you use the Pill Dispenser Deluxe for personal convenience, or to ensure the safety of a loved one, we are sure that you will be more than satisfied with your purchase.

**Product Illustrations**



## **Setup Instructions**

Setting up your new Pill Dispenser Deluxe is quite simple, and can be done in only a few minutes by following the instructions below:

### **Step 1 Select a place to setup the Pill Dispenser Deluxe.**

The Pill Dispenser Deluxe should be placed in a location with adequate ventilation around the sides and bottom of the case to avoid overheating. A countertop is ideal. Do not setup the Pill Dispenser Deluxe on carpet. Care should also be taken to ensure that the device will not be easily accessible to small children or pets.

### **Step 2 Install the backup battery (optional).**

Use the provided key to unlock the lid of the Pill Dispenser Deluxe case. With the top lid open, look down into the case of the dispenser and locate the backup battery connector. Attach a fresh, standard 9-Volt battery to the connector. As always, be sure to lock the lid when you are done to prevent unauthorized access.

### **Step 3 Supply Power to the Pill Dispenser Deluxe.**

Plug the small end of the included DC adapter into the small, round hole on the back of the dispenser. Plug the other end of the adapter into a standard 110-Volt AC power socket.

### **Step 4 Set the clock.**

Once the Pill Dispenser Deluxe is plugged in you should see the LCD on the front panel display "XXX XX:XX". Depress the rotary knob beside the LCD. The LCD should now display "Set Time". Depress the knob again and then turn the knob until the current weekday is displayed. Press the knob to lock in the current day. Repeat this process for the current hour and current minute. After pressing the knob to confirm the current minute, the LCD should return to its default display, now showing the correct time.

### **Step 5 Load medication and set dispensing schedule.**

Please see "Use Instructions" for the details of how to load the dispenser and set the schedule.

**Step 6 Setting up a Network Connection (optional)**

In order to use the Pill Dispenser Deluxe's remote administration functions via the World Wide Web, an Ethernet connection and a router which can supply a static IP address are required. In addition, it must be configured to operate on your network, as outlined below:

First, you must know the local IP address of your router, as well as a static IP which can be assigned by your router. Please consult your router's documentation for this information.

Connect a standard Ethernet cable from your router to the Ethernet jack on the right side of the Pill Dispenser Deluxe.

Enter the options menu by pressing the knob on the front of the dispenser. Turn the knob until the display reads: "Network Settings". Press the knob. Network settings include "IP address", "Gateway", and "Port". Using a procedure similar to setting the time (described above), set "IP address" to the static IP address determined above, "Gateway" to the local IP of your router, and "Port" to the desired port (optional, default is port 80).

Unplug the Pill Dispenser Deluxe and remove the battery. Wait 10 seconds, then re-insert the battery and plug the unit back in.

You should now be able to access the Pill Dispenser Deluxe's web server from other computers on the local area network by typing the static IP address determined above into the address bar of any web browser. In order for the Pill Dispenser Deluxe to be accessible from outside the local area network (e.g. the World Wide Web), you will need to set up your router to forward traffic on the dispenser's port to the dispenser's IP. The Pill Dispenser Deluxe should now be accessible from any internet-connected web browser, by typing the IP address of your router into the address bar. For information on how to setup port forwarding, please see your router's documentation.

**Product Use Instructions:**

After completing the Product Setup section, scheduling can be done either remotely via the web server or locally using the rotary knob on the face of the Pill Dispenser Deluxe.

**Step 1a – Set the schedule locally**

To set the schedule locally, simply depress the rotary knob to display a menu on the display. Rotate the knob clockwise until “Set Schedule” is displayed on the LCD. Push in on the knob to enter the Set Time menu. Rotate the knob to display each available pill dispensing time slot in the week. The day will be shown at the top of the display with the current time in the schedule beneath it. As the knob is rotated clockwise, the menu scrolls through the schedule with the time and days changing. To change the schedule slot that is displayed slot, press the rotary knob. Set the correct hour and minute using the knob rotation to change the value and pressing the rotary knob to accept the displayed hour or minute. Once the menu has cycled through the schedule, the main menu will be displayed. Rotate the knob until “Exit” is displayed and press the knob.

**Step 1b – Set the schedule remotely**

To set the schedule remotely, open a web browser and type in the IP address of the Pill Dispenser Deluxe. The login web page will be displayed in the browser if the device is set up properly. If no page is displayed, consult the Troubleshooting section of the manual to find a solution. To login, input the user name and password of the administrator and click the submit button. If the user name or password is incorrect, the web page will return to the login screen. If the user name and password are correct then the schedule will be displayed in the web browser. Any fields displaying “XX:XX” are not initialized and the dispenser will not dispense pills at that time. To set a time to dispense pills, locate the day of the week at the top of the table. Next, locate a time slot beneath the day that is displaying “XX:XX” and change the X's to numbers depending on the time of the day that the pills should be dispensed using 24 hour time. For instance, if pills should be dispensed on Tuesday at 1:15 pm, locate Tuesday at the top of the table and insert 13:15 in one of the uninitialized spaces.

**Step 2 – Loading the Pill Dispenser Deluxe**

Unlock and open the lid of the Pill Dispenser Deluxe to gain access to the pill dispensing carousels. Pills should be loaded into the carousel in the order in which they will be dispensed. The bin that is next to the opening should be filled first and the remaining pills should be placed in the adjacent bins in a clockwise manner as shown in Figure 1.

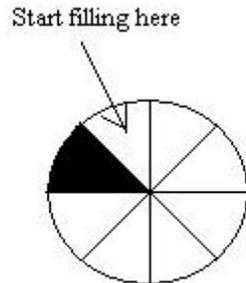


Figure 1. Filling the carousels

### Step 3 – Monitoring the Pill Dispenser Deluxe

The Pill Dispenser Deluxe can be monitored remotely to check that pills are being dispensed correctly. To check the status, log in as explained in Step 2b. Click the button labeled “View Log” to show the log file. The log file will contain the time stamp of every pill that was dispensed and whether the dispensing was successful. A successful dispensing has the pill falling from the carousel into the receiving bin and then being removed from the bin.

**Product Troubleshooting Instructions:**

If a problem is encountered while operating or setting up the Pill Dispenser Deluxe, there are several options that can be tried to resume normal operations.

**I. Unit does not power on properly**

If the unit does not appear to be powered and operating, the first thing to check is the power supply. Make sure that the power plug is securely inserted into the wall outlet, and that the outlet has power. Also check that the power jack that plugs into the side of the Pill Dispenser Deluxe is firmly plugged into its socket. In addition, the batteries in the battery backup compartment should be checked to see that they are properly charged, and inserted in the proper positions into the battery compartment. If after checking the power supply and battery backup, the unit still fails to resume normal operations, contact Drug Lords, Inc. for further maintenance.

**II. Unit powers on but does not dispense pills properly / allow local control**

If the unit appears to be powered and operating, but is not operating correctly, the first thing that should be done is to make sure the unit has not lost power recently. If the unit lost power long enough for the battery backup to fail, the batteries must be replaced, and the unit's time and schedule must be reset as described in the Product Usage Instructions. Also check the pill compartment to make sure that the unit has a sufficient supply of pills, and check the pill dispensing carousel to make sure that it has not been jammed by a foreign object.

If the unit still does not return to normal operating mode, then the unit should be unplugged, and the batteries removed from the battery backup compartment. Wait for 10 seconds, and then re-insert the batteries, and plug the unit back into the wall. Set the time and reschedule the Pill Dispenser Deluxe as described in the Product Usage Instructions and check to see if normal operation is resumed. If the unit still does not respond properly, contact Drug Lords, Inc. for further assistance or maintenance.

**III. Unit dispense pills properly, but can not be accessed over the network**

If the unit dispenses pills properly, and the settings can be changed locally, but cannot be accessed by a computer on the network, the first thing to check is the Ethernet cable. Make sure that the Ethernet cable is in good repair, and is plugged securely into both the wall/router Ethernet jack, and the Ethernet jack on the Pill Dispenser Deluxe. If the cable is plugged in properly, check the setup of the local network to make sure that there is no other device with a

conflicting IP address on the network. Refer to the Setup Instructions for further information on setting up the network properly. If the network is set up properly, and the Ethernet cable is securely plugged in, but the unit is still not accessible over the network, contact Drug Lords, Inc. for assistance.

#### **IV. Log file on web site does not match actual performance of the unit**

If the log file on the web site does not match what is actually happening on the Pill Dispenser Deluxe (for example, the log file claims that the pills were not properly dispensed but the unit did dispense the pills) then there is likely a problem with the sensors located inside the Pill Dispenser Deluxe. Please contact Drug Lords Inc. for maintenance.