



User Manual: HHM-100 Beehive Health Monitoring Scale



Introduction

Thank you for choosing a Cold Cove Technologies Hive Health Management system. You now have the means of making informed decisions to keep your hives healthy and productive.

The Hive Health Management system (HHM) allows you to monitor the health of your hive by recording hive weight, which correlates closely to hive health. (Visit <http://honeybeenet.gsfc.nasa.gov/About/ScaleHives.htm> for an introduction to the value of weighing beehives.) Generally, a hive that shows an increasing weight is healthy and productive and a hive that displays a decreasing weight or lower than expected weight gain indicates the presence of disease or a failing queen.

The Hive Health Monitor is self-contained and fully compatible with an IPM (screened) bottom board. Simply stack hive components, starting with the bottom board, on top of the Scale. Electronic weight recording allows the beekeeper to examine the current weight and historical weight data at the touch of a button.

Once again, thank you for choosing a Cold Cove Technologies' product. We stand-ready to assist you to assure that our system helps your beekeeping to be more productive and enjoyable

Contents

Please examine the contents of the package upon delivery. You should find the following in the shipping carton:

- 1- HHM Weighing Frame with electronic control box
- 1- This instruction manual

Inspect the frame for shipping damage and inform us as soon as possible so we can send you anything you need as soon as possible. (CustomerSupport@coldcovetechnologies.com)

Operation

The CCT HHM is easy to use. Instructions are shown on the cover label.

Setting the weight to zero

Calibrate the weight to zero before placing the scale into service.

Procedure:

1. Place the HHM system on a level surface.
2. Press and hold the "WEIGHT" button for five seconds.
3. Release the button.
4. The display should display "0". (A display of 1 is also acceptable.)

Installing hive components

Procedure

1. Stack hive components, starting with the bottom board, onto the frame.
2. The frame is designed to accommodate both 8-frame and 10-frame hives. A standard 10-frame hive will fit squarely onto the HHM frame. Please center an 8-frame hive on the front and back rails.
3. Slide the hive components toward the control box (towards the back of the hive) until it rests firmly against the hive stop bar as shown in figure 3. (Note: The Hive Stop may look different on more recent designs.)



Figure 3: Hive body against hive stop bar

Obtaining current weight

Procedure:

1. Press and immediately release the "WEIGHT" push-button on the electronics module.
2. The current weight of the hive will be displayed on the HHM digital display in a few seconds. Note: The weight may take a second or so to stabilize after first displayed. This is normal.
3. The current weight will remain on the display for approximately 30 seconds, and then the display will go blank.

Viewing the history of weights

Being able to view a history of daily weights is an important feature of the Beehive Weight Monitoring Scale. The beekeeper can view up to 99 days of historical weight data to see trends that may allow diagnosing issues such as honey flow, swarming, absconsion or disease.

Procedure:

1. From a blank display, simply press and release the “HISTORY” push-button. The display will first show a negative sign and a number for a few seconds. The number indicate the number of days ago when the reading was taken. The next number you will see is the weight the system recorded on that past day. This historical weight will be displayed for a few seconds, then followed immediately by the current weight, after which, the displays will go blank.
2. Pressing the “HISTORY” push-button over and over will allow the beekeeper to view a complete history of weight data. For example: Pressing the button until the display shows “ - 7 ” will show the weight the system recorded 7 days ago.

Alarms:

Low Battery

When the battery needs to be replaced, you will see “Lob” (Low battery) appear on the display just after the weight has been displayed.

System Maintenance:

General

The CCT Hive Health Monitor system is built to withstand harsh weather conditions and occasional rough handling. Generally, no maintenance is required.

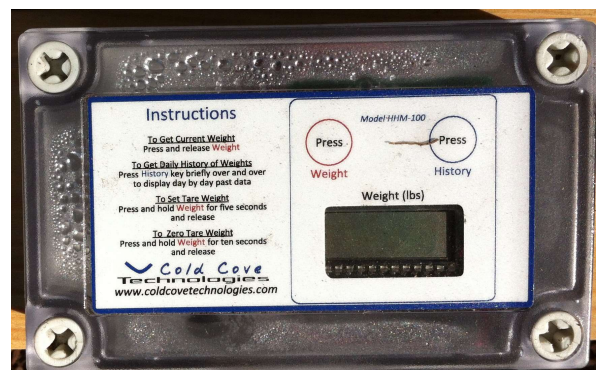
Make sure the hive components are sitting squarely on the HHM frame and that the hive is solidly against the hive stop rail to insure consistent weight readings.

Moisture in the Electronics Box

As the outside temperature changes you may notice moisture in the electronics box. This is normal and will not affect the operation of the scale. The electronics board has a conformal coating that protects it from moisture.

Cleaning the control box

Propolis and dirt can be cleaned from the control box so the display is more easily readable using isopropyl alcohol and a soft rag.



Battery Replacement

The 9V battery used should last for up to one year with average usage. When battery replacement becomes necessary, it is recommended that you use an Energizer or Duracell battery for the longest operational time.

To install a new battery:

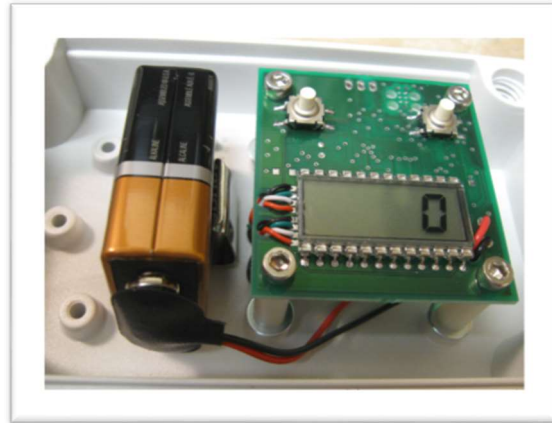
- 1- Use a straight blade screwdriver to loosen the four plastic screws that secure the clear cover to the top of the control box. Remove the cover. See Figure 1.
- 2- Snap the battery connector to the battery connections. The display should display a weight reading near zero for approximately 30 seconds after first connecting the battery.
- 3- Place the battery into the battery clamp as shown in figure 2.
- 4- Replace the clear cover. Make sure the rubber gasket seats completely around the perimeter of the cover.
- 5- Re-tighten the four screws securely, **but no more than one-eighth turn past where the screws first feel tight.**

Warning: To avoid rain ingress, double check that the cover is installed without any gaps.

Figure 1: Removing cover screws



Figure 2: Place battery in holder



Specifications

- Aluminum construction with 1-year warranty against factory defects
- Accommodates 8-frame and 10-frame hives
- Stores up to 99 previous days of weight history
- Low power consumption. Runs for one year on one 9V battery (Energizer LA522)
- Operation from 0° F to 122° F (-18° C to 50°C)
- Hive weight readings up to 350 pounds in one pound increments

Contact Information

We are here to help. Please feel free to contact us if you have any difficulty using Beehive Health Monitoring Scale.

By Email: CustomerService@coldcovetechnologies.com

By telephone: 828 206-6688

By Mail: Jerry Robinson

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