Horizontal Hive
You can keep bees, naturally!

LAYENS UNIVERSAL EXTRACTOR

IMPORTANT UNPACKING INSTRUCTIONS

(3-frame models – read below; 4-frame models – skip to next page)

We save you $250 in shipping costs by sending your 3-frame extractor FedEx Ground rather than via truck on a pallet. We built a plywood crate to protect it in transit.

1. Cut the outer cardboard box and remove it from around the plywood crate. Make sure the box is in the correct orientation with the top up.

2. Pry up the top with a flat screwdriver or a chisel. (Caution! Sharp staples! Don't scratch yourself or step on them!)

3. Open the top of the cardboard box inside the wooden crate. Locate the 4 wooden blocks screwed to the walls and holding the barrel in place.

4. Remove the blocks: use a screwdriver to remove screws from the *outside* of the crate while holding the block with the other hand so it does not fall into the barrel.

5. Lift the extractor out of the box and put it on some cardboard (the bottom has 3 welded brackets that may scratch finished surfaces).

6. Take out wrapped plexiglass covers from inside the barrel.

7. Look *inside* the barrel where the central shaft goes into a coupler under the middle of the top crossbar. You'll see a piece of wire where the top of the central shaft is engaged in the coupler *OR* a hose clamp around the shaft. The wire or clamp prevented the shaft from shifting during shipping and must now be removed. Remove the wire with pliers *or* remove the hose clamp with a screwdriver.

NOTE: motor extractors arrive in TWO packages

IMPORTANT: PLEASE INSPECT FOR DAMAGE!

SEE NEXT PAGE >>>

INSPECTING FOR DAMAGE. Our packaging minimizes damage, but please check for the following three issues. They *rarely* occur, and are easy to correct. If you need additional assistance, please contact us (email works best).

1. The lower end of the central shaft is disengaged from the hub in the middle of the barrel's floor (VERY RARE!)

Why this happens:

If the package was turned upside down in transit, gravity could push the shaft out of the hub. The basket / shaft will then arrive disengaged from the hub and dangling in the barrel. If this happens, the ball bearing (a marble-sized steel ball) that sits inside the hub under the shaft may have come out, too.

How to fix it:

a) Make sure the ball bearing is inside the hub in the middle of the barrel's bottom. If it is not, locate the steel ball bearing and insert it into the hub. Do not wipe grease off the ball.
b) Loosen the nuts of two bolts that connect the top crossbar to the barrel. Lift the crossbar & shaft/basket slightly and insert the bottom end of the shaft into the hub. Re-tighten the nuts.

2. The hub in the center of the bottom (which holds the shaft) is out of square, or there's a dent/depression around the nut in the center of the bottom when viewed from outside.

Why this happens:

The main shaft/basket shifted during transit and pushed the central hub down a bit.

How to fix it:

a) Disconnect the crossbar from the top of the barrel (two bolts) and lift out the shaft/basket/crossbar. Do not wipe grease off the bottom of the shaft; take out the ball bearing that is inside the hub under the shaft, put it aside, don't wipe off the grease.
b) Put the extractor upside down on firm support (e.g., a piece of plywood). Give the nut in the bottom of the barrel a firm blow with a rubber mallet or dead-blow hammer and it pops back right into the correct position. (If you have no rubber mallet, you can use a hammer over a piece of wood.) Flip it right side up, re-insert the ball bearing, put the shaft/basket back in, and reconnect the crossbar. This repair works 100% of the time and only takes 10 minutes.

3. [MOTOR MODELS] The basket does not freely rotate / The motor can't spin the basket.

Why this happens:

Make sure the green plastic handle is turned at 90° to the crossbar, across the plexiglass cover. If the motor still does not spin, check as follows: The top of the main shaft (on which the basket is hung) goes into a coupler which goes through a hole in the top crossbar. That coupler should not touch the edge of the hole. If the package traveled on its side, the motor may have gone out of alignment and the coupler is rubbing the edge of the hole in the crossbar.

How to fix it:

a) Loosen two nuts that attach the motor assembly to the crossbar (the nuts are on the *underside* of the crossbar).
b) Shift the motor slightly so the coupler is centered in the hole and does not touch the sides of the hole (feel with finger or use a mirror to see it). Retighten the two nuts. Done!

PLEASE REUSE OR RECYCLE THE PLYWOOD CRATE
The crate has enough plywood to build two swarm traps!
Otherwise please recycle if possible. Many recycling centers accept plywood and OSB to turn into mulch; some municipalities require that metal staples be removed form the wood before recycling.

v. 202504
EXTRACTOR

Horizontal Hive
You can keep bees, naturally!

LAYENS UNIVERSAL EXTRACTOR

3 OR 4 LAYENS FRAMES ~ MADE IN ITALY

HorizontalHive.com

CAUTION! SHARP EDGES! Like most steel machines, this extractor has some **SHARP EDGES. Use gloves when moving the extractor and handle carefully to avoid cuts and scratches.**

ASSEMBLY & SET UP

- Attach the legs (*motor model:* also attach the control box, which is shipped in a separate package) – as per the full-color instructions sheet included with this extractor.

- Transparent plexiglass covers: attach using the bolts and nuts provided.

- *Manual model:* connect the handle using the threaded rod and L-shape key in the hardware pack. Secure with a nut. Do not overtighten – the handle should swivel freely as you turn it.

- **IMPORTANT NOTE: the basket depth is preset at the factory to extract Layens frames. To extract Langstroth frames** loosen two set screws that attach the basket to the central shaft (use 4-mm Allen wrench, not included), slide the basket slightly down and retighten the screws. You only need to do that once and the extractor will then extract both Layens and Langstroth frames without further adjustment.

- **MOTOR EXTRACTORS – IMPORTANT**
  - works ONLY WITH 110 V!
  - TO START: close the plexiglass cover • turn the green lever 90 degrees • turn controller switch on • press Enable/Stop (green and red lights solid on) • press "+" button until the cage starts rotating (on first use, you may have to press "+" 15 times or more!). Several seconds between pressing "+" recommended to not overload the controller.
  - TO STOP: decrease speed pressing "–" until the basket stops. Several seconds recommended between each pressing of "–". NOTE: DO NOT use the "Stop" button for stopping the extractor – this is only for emergency and is hard on the brake.
  - please refer to the full-color instructions sheet on motor operation for details.
  - motor will only run when the green plastic safety handle is turned at 90 degrees to the crossbar, across the plexiglass cover as shown by an arrow on the picture on the previous page. This is to prevent accidental opening of the cover when the basket spins.

- **MANUAL EXTRACTORS – Equipped with safety handle**
  - Push the handle slightly in (toward the center of the barrel) to engage the gears. If you let it go when the basket is spinning, the handle will disengage from the gears and will be hanging without rotation, while the basket continues spinning. Nice!
  - If you dislike this feature, you can remove the spring that disengages the handle, and secure the handle in the engaged position with some duct tape or even glue.

SWITCHING BETWEEN MOTOR AND MANUAL MODELS

- **HANDCRANK >>> MOTOR.** To motorize a handcrank extractor you already have, buy the original Italy-made motor & controller from HorizontalHive.com Replacement is very easy: remove the bolts attaching the handcrank assembly to the top cross bar and attach the motor to the same holes using the same bolts. Contact us for pricing.

- **MOTOR >>> HANDCRANK.** To operate your motor extractor without electricity, purchase the handcrank assembly from HorizontalHive.com and attach it to the crossbar after removing the motor. Contact us for pricing.

- **Parts for your extractor** are available from HorizontalHive.com

RECOMMENDED EXTRACTING SETUP

- Put a honey frame on the Uncapping Rack attached to the Tray to catch dripping honey.

- Remove cappings (thin layer of wax covering the cells with honey) with the Uncapping Fork (our recommended tool), or with an Uncapping Roller. The Fork is slower but harvests all the cappings (we use and sell them as a yummy natural alternative to chewing gum). The Roller is quicker, but it just tears up the cappings and they will clog up the Strainer (see below) much faster during extraction. Put the uncapped frame into the extractor.

- Put a 5-gallon bucket with a Valve ("Honey Gate") installed and covered with a Double-Sieve Strainer under the open honey valve of the extractor.

- When the bucket is full, bottle honey using the Valve on the bucket.

All the tools above are available from HorizontalHive.com

- TIP: If a substantial part of your honeycomb is uncapped, carefully spin out uncapped nectar/honey at low speed, drain, then proceed to uncapping and extracting as usual.

EXTRACTING – TIPS FOR SUCCESSFUL USE

- **WARM ROOM.** Heat the combs and the room to 75°F for at least 12 hrs before and during the extraction. If the comb is colder, it takes longer to spin out the honey, and the wax is so rigid it may crack. Warm honey flows more easily, resulting in *much* quicker extraction and no comb breakage. (Typically 6 minutes of spinning at 70°F, but only 3 minutes at 80°F.) But if the room/combs are *too warm* (say 90°F), the wax softens and combs become damaged during extraction. So 75-80°F is ideal, I would not go lower than 70°F or higher than 85°F.

- **LOAD COMBS OF SIMILAR WEIGHT.** This prevents the extractor from shaking or walking at high speed.

- **SLOW – FLIP FRAMES – SLOW – FAST – FLIP – FAST.** 1) Empty most of the honey from one side at *very low speed*. 2) Flip the frames, go slow then fast to fully empty the second side. 3) Flip again, go fast to finish extracting the first side. Following this sequence allows extracting even the most fragile combs and even foundationless frames without breakage. If you were to go high speed on the first side while the other side is full of honey, the centrifugal force would damage (crack or blow out) the comb.

- **EXTRACTION IS COMPLETE** when the basket is rotating at high speed but you don't see honey drops "rain" on the wall of the barrel.

- **EXTRACT WITH OPEN HONEY GATE.** Do not allow honey to accumulate at the bottom of the extractor. If honey reaches the point where the shaft goes into the hub in the middle of the bottom, the rotation of the shaft will push honey into the hub and displace the machine grease in there, which will ooze out and contaminate your honey.

- **IF YOUR COMB CRACKS OR BLOWS OUT during extraction:**

    1) Follow the extraction sequence described above.

2) Keep room/comb temperature around 75-80°F (in the 75°F to 85°F range). Higher temperature damages comb because wax gets too soft, lower temperature – because wax is too stiff.

3) Don't spin too fast. Increased speed puts more stress on the comb, but maximum speed is usually not necessary for complete extraction.

4) New comb (white / light yellow) is more fragile than old dark comb – so extract freshly built combs at ideal temperature and not the maximum speed.

5) Use full sheets of foundation – it makes for stronger comb. Be more careful when extracting foundationless frames (when you started with less than a full sheet of foundation) – on these, the comb should be attached to the frame at the top and most of both sides to be extracted without breakage; also go a bit slower.

6) Extract frames soon after pulling them from the hive. Some honeys (e.g., rape) crystallize quickly in the comb and would be difficult or impossible to extract later.

- **CLEAN WITH WARM WATER** after use and dry out before storing. If you remove the basket for cleaning, make sure the ball bearing is in the hub under the shaft and apply some food-grade machine grease to the bearing before reinserting the shaft/basket assembly.

- **LUBRICATION**

  - Motor extractors: the gear box is sealed and does not require lubrication.

  - Manual extractors: you don't need to lubricate gears for the first 3-4 years. After that, open the green gear box periodically by removing the little screws and check that the grease is well smeared over the gears. If necessary, add some food-grade machine grease.

FEATURES WE LOVE

- Stainless steel throughout. Both the tank and the rotating basket are made of high-quality durable stainless steel.
- Truly universal design. This is a truly universal model, a must-have for anyone seeking the freedom of keeping bees in any hive model of your choice. Three-framer accepts 3 Layens frames, 6 Layens half-frames (one under the other on each side), 3 Deep Langstroth frames, 6 Medium Langstroth frames, 6 Shallow Langstroth frames, 3 Jumbo Dadant frames, and many others! And it's all using the same basket; you don't need to swap baskets when switching from one frame size to another.
- Well balanced.
- Durable metal gears.
- You can see inside. Transparent plexiglass cover – see honey fly out of the comb.
- Tangential design for quick and complete extraction.
- Electric brake on motor extractors stops the rotation fast when the extraction is complete.
- Easy to clean. The barrel is big enough for you to reach with your arm between the basket and the barrel & clean everywhere without having to take the basket out. Huge improvement and time saver.
- Large barrel also means there is greater centrifugal force so the combs are emptied more completely.
- Legs and the honey gate valve included with all extractors.
- Easy assembly. Attach legs, honey valve, handle (or motor and controller box), and plexiglass covers using provided hardware.
- Made in Italy – fine European workmanship and intelligently engineered.

With best wishes to you and your bees ***— Dr Leo Sharashkin***, **Horizontal Hive.com**