HIWASSEE PRODUCTS

CONTINUOUS FLOW BIO-EXTRACTOR X100

OPERATING INSTRUCTIONS & USER MANUAL

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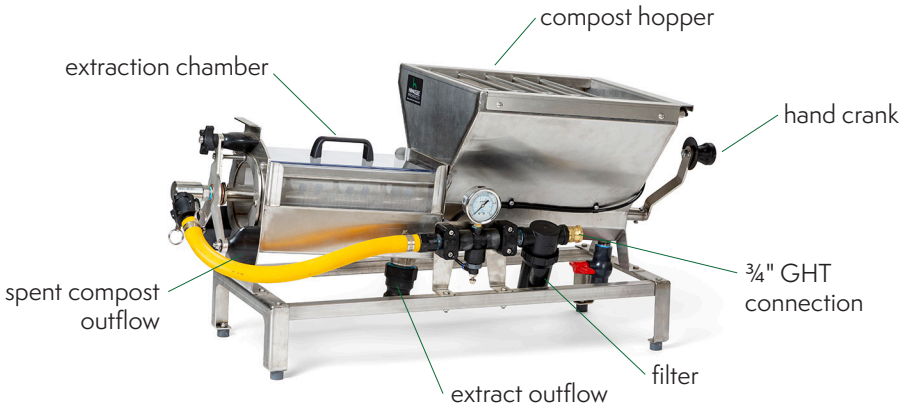
⚠WARNING

- Thoroughly read and understand the information in this product manual before attempting to use this product. If the procedures and instructions in this product manual are not followed, serious injury could occur.
- Do not use product for any purpose other than its intended use.
- Never remove guard on compost hopper.
- Never reach into hopper while auger is turning.
- An adult must be present at all times during operation of the compost extractor.
- The extractor must be on a level and firm surface during operation.



Product Specifications

Inlet & Discharge Hose Connection Sizes

- Water supply connections – female ¾" GHT garden hose.
- Extract discharge connection – 1.5" male camlock.

Dimensions: L 42" x W 15" x H 20"

Weight: 51 lbs

Extract output: 250 gal/hour

Hopper capacity: 6 gallons

Shipping Dimensions: L 41" x W 18" x H 24", 63 Lbs. Ships via UPS

Initial Assembly

Figure 4a: Remove the cotter pin and clevis pin from the back of the auger and slide the crank onto the shaft. Reinsert the pin through the crank and auger shaft and replace the cotter pin.

If the hole in the hand crank and the auger shaft do not line up, make sure that the auger is all the way back in the extractor by pushing on the rotating swivel union at the front of the extractor.

Note: the rubber seal around the back of the shaft should be held in place by the hand crank once the crank is installed.

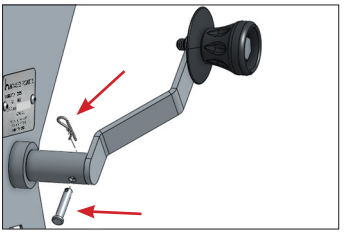


Figure 4a

Operating instructions

Compost Material

Figure 4b: Input material must be screened to ¾" particle size.

NOTICE **To avoid damaging the extraction screen or jamming the auger, do not feed large rocks, sticks or other hard objects into the extractor.**

Biologically complete[1] compost is recommended.

Figure 4b

Water Supply

The water supply must have adequate flow to maintain a minimum of 40 PSI in the extractor. Do not operate the extractor at pressures above 65 PSI. If using a booster pump to provide adequate water pressure, flow to the pump must be at least 4.5 GPM.

Water quality is crucial. Ensure you have a reliable source of clean water. Chlorine free and Chloramine free water with a total hardness below 75 ppm ($CaCO_3$ ppm) is ideal. Total hardness up to 150 is acceptable but a filter system is recommended if your water exceeds this.

1 Compost that has sufficient diversity of beneficial microorganisms

Water Agitation in Hopper

Figure 5a: The compost hopper has an agitation feature that distributes water along the sides of the hopper. The water acts as a lubricant and prevents bridging in the hopper.

Figure 5b: The water agitation is controlled by the flow control valve. Open the valve enough so that water sprays along both sides of the hopper.

Note: When agitation water is set correctly the compost will absorb it, and carry it into the extraction chamber. Reduce the agitation flow if water floods the hopper.

Figure 5a

Figure 5b

Extraction

Figure 5c: Before extraction, ensure the extractor is clean and rinsed to remove any larger sediment or pieces of compost, and that the drainage valve is closed.

Loading

Before loading the hopper, check that the water agitation is set correctly.

1. Measure compost.
   a. A 5-gallon bucket is recommended for measuring and loading.
   b. The recommended ratio is 1 lb compost to 5 gallons of water.
2. **Figure 5d:** Pour compost into the hopper.
3. Open water valve to allow water to the extraction chamber.
4. Check that the pressure gauge is reading 40 PSI.
5. When ready, turn the auger with the hand crank at your desired speed. For a 1:5 compost to water ratio, a speed of 4–5 RPM is recommended. See *Auger Speed*.
6. Periodically check the pressure gauge to make sure 40 PSI is maintained.

Figure 5c

Figure 5d

Auger Speed:

By adjusting the speed at which you turn the auger you can create an extract concentration that fits your application.

Since bulk density of compost varies depending on moisture content and other factors, it is good to weigh a small amount of compost and run a small batch of extract while timing how fast the auger moves your compost into the extraction chamber.

The expected time to empty the hopper is found by multiplying the lbs. of compost loaded into the hopper by your desired dilution and dividing that by the extractor's flow rate of 4.5 GPM. **See examples.**

For a 1:3 dilution, 5-6 RPM (10-12 seconds per revolution) is a good starting point (the ratio is pounds of compost to gallons of water).

Timing a larger amount of compost will give you better accuracy. We recommend weighing the next few buckets of compost and timing how long it takes to run through. This will double check that you are getting the dilution you want.

Note: If the PSI is over 40, the flow rate of the extractor will change. In situations where the PSI is high because of a pressurized water supply, we recommend timing flow and using the new flow rate to calculate the dilution. For low PSI see troubleshooting section.

Scan for setting auger speed video

Examples:
1:2 ratio = 10 lbs. in 4:26 (10x2÷4.5)
1:3 ratio = 10 lbs. in 6:40
1:4 ratio = 10 lbs. in 8:53
1:5 ratio = 10 lbs. in 11:07

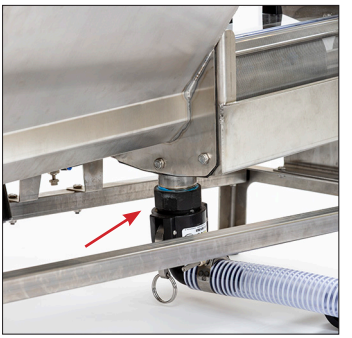


Figure 6a

Extract Discharge

Figure 6a: If desired, attach the supplied 1.5" hose to the camlock connector on the outflow of the catch basin and run it into a receptacle of your choosing.

Figure 6b: Ensure adequate drop in the outflow line. Inadequate drop will cause extract to flow back into the machine and flood the compost hopper.

Figure 6b

Cleaning

To prevent a build-up of biofilm[2], it is important to clean the Compost Extractor after use.

To clean:

- Remove extractor from above extract catch basin, or remove discharge hose from receptacle.
- Run water through the extractor while turning the auger. This will flush out any remaining extract and clear out remaining compost.
- Remove the clear plastic lid covering the extraction chamber.
- Open the drain valve and spray out the remaining compost and sediment.
    - The valve at the back under the compost hopper may become plugged. A short spray of water from the bottom of the valve up into the hopper is usually enough to remove the material preventing the hopper from draining.
- **Figure 7a:** For thorough cleaning, disconnect the hose from the auger. Place the cap over the auger inlet, and the plug into the auger hose. This will prevent debris from entering the auger and plogging the spray tips.
- **Figure 7b:** Once the hose is removed and the cap and plug are in place, remove the screen and spray it off (see p. 8 for screen installation and removal instructions).
- **Figure 7c:** During rinsing, the hopper drain valve can be opened to allow remaining sediment to be rinsed out. If it is blocked, a short spray of water from the bottom of the valve up into the compost hopper is usually enough to remove the material preventing the hopper from draining.
- When the catch basin and hopper are empty and clean, close the drain valve and replace the lid.
- **Figure 7d:** Turn on the water supply again and thoroughly rinse the extractor.

Figure 7a

Figure 7b

Figure 7c

Figure 7d

2 Biofilm is a microscopic layer of biology which sticks to surfaces. If left uncleaned, this layer can harbor pathogens.

Screen Installation

The design of the extractor allows for simple tool-free screen installation and removal.

1. Start with the lid removed and the auger stationary.
2. Check that the back of the catch basin is clean and free of sediment.
3. **Figure 8a:** Loosen the green knob and swing the locating wings out of the way. Slide the screen in while supporting the auger.
   - Note that the small end of the screen goes in first and the two holes in the front of the screen are horizontal to each other.
   - **Figure 8b:** The two holes on the front of the screen serve as locators and fit over the two bolt heads at the front.
4. Once the screen is located on the bolts at the front, fit the screen into the indentation at the back of the catch basin.
5. **Figure 8c:** Swing the wings back in place around the bronze bushing and tighten the knob.

   Note: If the left wing does not swing into place, check that the screen is inserted fully into the back of the catch basin. The locating wings must be flush with each other, and the bolt (indicated) on the left wing must be pushing against the front of the screen, holding it tight to the back of the catch basin.

NOTICE **Failure to insert the screen properly will result in damage to the screen.**

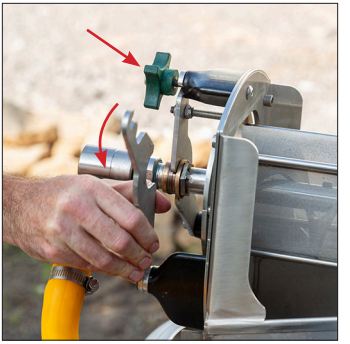


Figure8a

Figure 8b

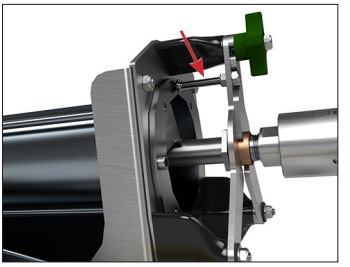


Figure 8c

Screen Removal

For screen removal, follow the screen installation instructions in reverse. Slide the screen off the auger and out of the machine while supporting the auger. This will allow the screen to move freely and prevent damaging it.

Bio-Extractor Storage

It is preferable to store the Bio-Extractor in a location that will not freeze. If there is any chance of freezing, all water must be drained from the machine, and the filter should be emptied.

NOTICE **Improper storage could permanently damage components. Damage occurring from improper storage is not covered by the warranty.**

Service Requirements

Filter

Figure 9a: Periodically clean the filter by unscrewing and emptying the contents. The filter is located by the water supply.

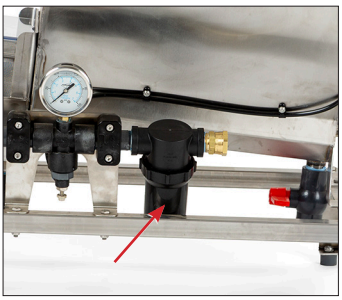


Figure 9a

Troubleshooting

Low water pressure

If water pressure drops below 38 PSI:

- Check and clean the filter, see service requirements.
- Check supply line and confirm that adequate supply is present (see Water Supply).

High water pressure

- To compensate for high pressure on the water supply, a pressure regulator can be installed. If necessary, call and speak to Hiwassee Products technical support.

Too much water in compost hopper:

- Check that the water agitation is set correctly and turn down flow as much as possible.
- Open the valve just enough so that water sprays along both sides of the hopper.

Jammed Auger:

- Turn the auger in reverse, either by hand or using a wrench on the hex drive at the front of the auger to rotate the auger back and forth until the auger is free.
- If issues persist, call technical support.

Leaking fittings

- For threaded fittings, reassemble with thread sealant if necessary (do not overtighten plastic fittings).
- If fittings still leak, call technical support.

Any other problems

Call technical support.

Materials

- Hardware items (nuts, bolts, screws, etc) are stainless steel.
- All other metal components are 304 Stainless Steel.
- Plastic components are injection molded from a variety of industrial resins.
- Most valves and fittings are manufactured by Banjo from durable polypropylene.

User Modifications

⚠WARNING To prevent serious injury do not modify or alter Hiwassee Products Compost Extractor, products or components. Hiwassee Products does not accept responsibility for any modifications or alterations made to our components or products after they leave our premises. Customers modifying or altering our components or products do so at their own risk.

Additional Information:

Visit our website for full pump user manuals.

https://www.hiwasseeproducts.com/blog/bio-extractor-manuals

Scan for pump user manuals

Warranty

Visit our website for warranty information:

https://www.hiwasseeproducts.com/terms-conditions

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