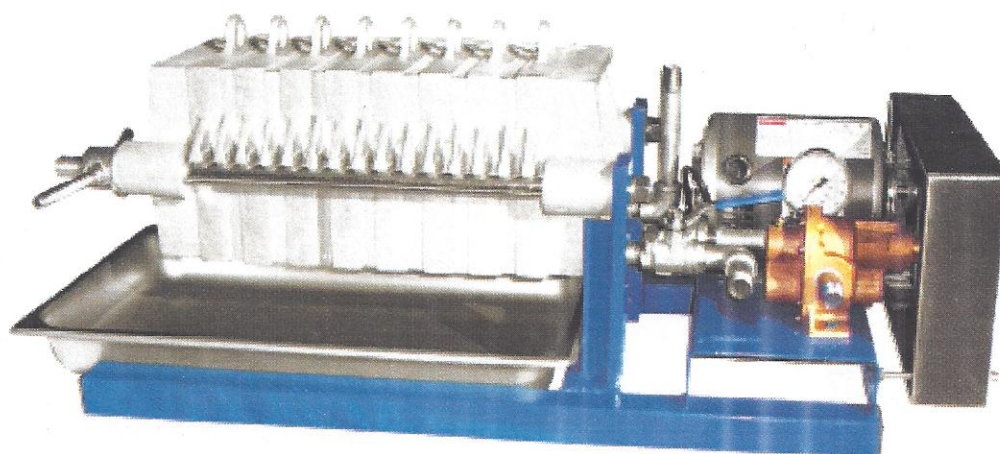




# Filter Press Instruction Manual



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## **Wes-Fab Filter Press Instruction Manual**

### **Introduction**

This Wes-Fab Filter Press is designed primarily for use in the Maple Syrup Industry. It can, however, be used in many filtering applications, such as honey, beer or wine processing. The filter plates are constructed of light weight aluminum for low maintenance and fast heating. The filter allows thorough and rapid filtering, giving your syrup a sparkle and a better taste.

To obtain a final product of clear maple syrup, filtering is essential. The most efficient and effective way is to use a pressure filter.

### **Principals of Operation**

The pressure filter uses a special paper, which traps the sand particles, and a filter aid powder, which is added to the liquid before going through the press to hold the trapped sand in suspension. The filter aid must be used in the process or the papers will plug immediately. Hot syrup is pumped into the interior of the plates and frames of the press. The flow continues through the filter paper and exits the press. The dirt, sugar sand and filter aid powder are collected against the filter paper inside the frame.



## The Operation of Filtering Syrup

Before the liquid is filtered, some preparation is necessary.

### Assemble the Press:

Operating a filter press is very straight forward. A single stage of the filter consists of a sheet of filter paper sandwiched between a frame plate and a backer plate. (See Figure 1) Hot syrup is pumped into the interior of the frame plate through holes A and B. The flow continues through the filter paper, onto the backer plate grid, and exits to hole D of the backer plate via the smaller hole C. The filtered dirt collects against the filter paper inside the frame plate. Each plate and frame fills one after the other in succession.

Because of the previously described flow path, proper assembly of the filter press is crucial for alignment of the syrup flow holes and correct operation of the press. Figure 1 shows an expanded assembly diagram. Starting at the fixed head end, the press is assembled as follows:

1. Place one filter paper over the head, lining up the holes.
2. With locating knobs on left (facing the head block) install frame plate.
3. Place one filter paper over the frame plate.
4. With locating knobs on left, install backer plate.
5. Repeat steps 2 through 4 for the next 6 stages.
6. Install final filter paper.
7. Install end block.
8. Place washers on the threaded rods, screw on wing nuts and hand tighten. Note that the paper filters also act as gaskets, so some seepage will normally occur during operation.

Note: When assembling the filter press be careful to properly align the plate locating knobs to the left (facing the head block). The reversal of only one element can adversely affect the flow pattern and result in partially filtered, cloudy syrup.

### Heat The Syrup:

The syrup must be heated to approximately 195 degrees F. Cold liquid cannot be filtered.

Next, an amount of filter aid (diatomaceous earth) should be mixed into the hot liquid. Filter aid imparts no taste and is completely filtered out of the liquid. The function of the filter aid is to act as an additional filtering layer as it accumulates on the filter papers allowing more clean syrup to pass through the papers. The amount of filter aid used depends primarily on desired grade of syrup, the amount of suspended solids, the temperature of the syrup and the volume of syrup. A general guideline is to use 1 to 3 cups of filter aid powder for every 5 gallons of liquid. This amount can be adjusted to suit the application, adding additional filter aid for syrup with more suspended solids and reducing the amount for cleaner syrup.

The filter aid should be added near the outlet of the finishing pan and stirred completely. Add the filter aid slowly and continue to mix until the filter press is started. (The filter aid powder can settle out if not stirred.)

### **Start the Press**

Following syrup preparation, the press is ready for operation. If the press is equipped with an electrically driven gear pump, make sure the pump power switch is off and plug the power cord into a 110 VAC grounded outlet.

Place the inlet hose into the syrup to be filtered and the outlet hose into a suitable container to receive the filtered syrup. To assure the pump properly primes, place the pump at or below the level of the syrup pan.

Start the pump and allow the syrup to enter the filter.

**Caution!** Do not run the gear pump dry. This will significantly shorten the life of the pump.

If the filter is equipped with an air driven diaphragm type pump, the pump is started by slightly cracking the pressure regulator to start, and slowly increasing the pressure to the operating pumping rate. When the syrup



appears at the outlet, stop the pump for about a minute to allow the press plates to heat up. Restart the pump and continue until the holding pan is empty, stirring the liquid as needed. You may continue filtering until the pressure gauge reads approximately 50 pounds. At this point the frames will be full or the papers will be plugged. The press must be cleaned and new papers installed in order to filter the next batch. (Note: the press must also be cleaned for re-use if the frames become too cool before the next batch of syrup is ready to be filtered.)

Before disassembly, run  $\frac{1}{2}$  gallon hot water through the filter press or before disassembling to flush the pump of syrup. (This amount of water is approximate – more or less may be used.) This sweet water may be saved and added when finishing the next batch of syrup.

### **Disassembly and Cleaning**

The press is disassembled for cleaning between batches by loosening the wing nuts enough to allow free movement of the plates and frames. The syrup in the press will drain into the drip pan and can be filtered with the next batch.

The frames can be lifted out and cleaned with **hot water only**. The filter papers should be discarded and new ones used for each new batch.

### **Do's and Don'ts**

The Wes-Fab Filter Press is designed for a long, trouble-free life. To maximize the life and effectiveness of the filter, some simple rules should be observed.

- DO:**
- Do pump hot water through the press with papers before using each season.
  - Do clean thoroughly after use, using hot water only.
  - Do use adequate amounts of filter aid. This inexpensive substance extends the life of the filter papers, improves the filtering action and leaves no taste or cloudy residue. More is better than less.
  - Do use only food grade filter aid from a reliable source.
  - Do lubricate threads on rods periodically with vegetable oil or food grade grease.

**Don'ts:**

- Don't run the pump dry. The bronze gear pump is the primary wear element and running it dry will shorten its life. Units with a diaphragm pump are less sensitive to running dry, but it should always be avoided for extended periods of time.
- Don't use anything other than hot water to clean the unit.
- Don't attempt to filter cold syrup.

## LIMITED WARRANTY

The Wes-Fab Filter Press is warranted against defects in workmanship for 90 days from Date of Purchase. If this product is found to be defective, Wes-Fab's entire liability and your exclusive remedy is replacement or repair of the filter press at Wes-Fab's option and no charge to you, provided that the Filter Press has not been modified or damaged through misuse, abuse, accident, neglect, or mishandling.

Wes-Fab shall not be liable for any direct, consequential or incidental loss or damage. The purchaser or user agrees to this warranty by purchasing or using the Filter Press.

## Manufacturer Information

For replacement parts, repairs or other information send inquiries to:



MADE IN THE U.S.A.

**14420 N. 12<sup>th</sup> Ave.**

**Merrill, WI 54452**

**Phone Number 715-536-0501**



