DESCRIPTION / WORKING PRINCIPLE

A maple cream mixer allows maple syrup transformation in maple cream. For that, maple syrup must be evaporated to reach 84 Brix degree. The boiling point is 12°C/21.6°F above boiling point of water – the boiling point is adjusted for atmospheric pressure. Inverted sugar will also have an impact on the syrup boiling point. If syrup contains more than 2% inverted sugar it will be harder to make maple cream. Maple cream will be less stable if it contains too much inverted sugar (faster phase separation).

The rotary gear pump, located under the funnel, will recirculate cooked syrup in the stainless pipe and return it by the goose neck into the funnel. The mix will be continuous, uniform.

After a few minutes you will get a delicious spreadable maple cream.

*Enjoy your maple cream or “Bonne dégustation”!!!!*
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION / WORKING PRINCIPLE</td>
<td>2</td>
</tr>
<tr>
<td>COMPONENTS</td>
<td>4</td>
</tr>
<tr>
<td>OPERATION &amp; INSTALLATION</td>
<td>5</td>
</tr>
<tr>
<td>WHICH SYRUP SHOULD BE USED?</td>
<td>5</td>
</tr>
<tr>
<td>CLEANING BEFORE USE</td>
<td>5</td>
</tr>
<tr>
<td>COOKING EQUIPMENT</td>
<td>5</td>
</tr>
<tr>
<td>PREPARING A COOLING BATH</td>
<td>6</td>
</tr>
<tr>
<td>SYRUP PREPARATION</td>
<td>6</td>
</tr>
<tr>
<td>USING THE MAPLE CREAM MIXER</td>
<td>7</td>
</tr>
<tr>
<td>MAINTENANCE</td>
<td>7</td>
</tr>
<tr>
<td>TROUBLESHOOTING</td>
<td>8</td>
</tr>
</tbody>
</table>
IMPORTANT: All values are benchmark only. They are guidelines but are not absolute values. Making value added maple products is an art. It is up to you to develop your own methodology to get an optimum product that will meet your expectations.

OPERATION & INSTALLATION
Install the cream mixer on a solid and level surface. There is no need to attach it to the surface. IT IS IMPORTANT, when first using the mixer, to wash all the components that may be in contact with maple syrup.

Use hot water (not boiling water) with soap and rinse thoroughly with hot water. You can also add the equivalent of one cup of commercial white vinegar per gallon (4L) of soapy solution. Dry with a clean soft cloth.

WHICH SYRUP SHOULD BE USED?
It is recommended to use syrup with the proper invert sugar content. It is easier to make maple cream when the invert sugar content is below 1%, also its shelf life will be longer. The higher the invert sugar content the harder it will be to make a rich and creamy spread. Invert sugar content shall be under 3%, if above it can even be impossible to make maple cream.

Use clear syrup with high percentage of light transmittance (60-75%).

CLEANING BEFORE USE
ALWAYS make sure your equipment is clean before use, clean it thoroughly after use.

Pour hot water in the funnel up to about 1” of the rim. Start the mixer motor with the red button on the motor. 3 to 5 minutes after the water has started circulating in the system, open the three-way valve to drain the water.

COOKING EQUIPMENT
Ideally cook syrup on a propane or natural gas stove. Those types of stoves provide the best heat distribution. The candy thermometer you will use should be as accurate as possible, preferably with a half-degree precision reading (100-180°C / 200-300°F). Always do your readings at the same place.
PREPARING A COOLING BATH

Different techniques can be used. H2O Innovation recommends the use of a cooling bath. The following are to be considered:

- Cooling water level must be at least the same as the syrup level in your cooking pot;
- Uniform cooling around your syrup container is important (do not forget the bottom of the pot). For example, you can use a raised grate in the bottom of your cooling bath to slightly elevate your container and promote the flow of water around it;
- You can also add ice or snow to the water to speed up the cooling;
- Change water as needed.

SYRUP PREPARATION

The height of the syrup in the cooking pot should not exceed 2/3 of its height. In that order of idea, you should not put more than 2.5-3 gallons (10-12 liters) in a 5-gallon pot (18 liters). To control boiling, before pouring syrup into the pot, you can coat the pot with a thin layer of fat. Use defoaming agent sparingly. Never use product that may contain allergens.

Pour the syrup into the pan. Use 3 gallons (11-12 liters) of syrup for the 3-gallon mixer, and 4 gallons (15-16 liters) for the 4-gallon mixer. Put a calibrated thermometer in the syrup.

To reach a Brix degree of 84, you must boil your syrup about 21 to 23 °f above boiling point of water. Temperature values are based on the percentage of invert sugar in your maple syrup.

<table>
<thead>
<tr>
<th>Syrup invert sugar content %</th>
<th>Temperature rise according to boiling point of water</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>Less than 1%</td>
<td>11.5</td>
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<tr>
<td>More than 1% but less than 4%</td>
<td>12</td>
</tr>
</tbody>
</table>

It is recommended to use a syrup containing less than 3% of invert sugar. Never use syrup containing 4% or more of invert sugar.

The temperature will increase slightly once the fire is turned off. Knowing that, you can turn off the heat source 0.5 °F before the temperature has been reached. Let the syrup rest until the boiling has stopped. Wipe the sides of the pot with a clean damp cloth to remove any residue. Spray some water on the surface to prevent crystallization.

IMMEDIATELY place the pot in the cooling bath. Avoid stirring and/or agitating the container. Leave the thermometer in place. The ideal temperature of the product to be put in the mixer is between 68 and 86°F (20 and 30 °C).
**USING THE MAPLE CREAM MIXER**

NOTE: If your syrup has hardened, you can soften it in a hot water bath for one or two minutes.

- Ensure the three-way valve is in the right position to avoid any spills.
- Pour syrup in the mixer funnel.
- Start the mixer using the red start button next to the motor.
- As soon as the syrup is returning into the funnel by the goose neck, continuously scrape the walls of the funnel using a spatula.
- Carry out this movement to direct the syrup towards the base of the funnel, towards the pump.
- Product is ready when there are no more syrup filaments in it and has a creamy, well mixed appearance. Do not wait until the cream is white because it will be harder to put in container. Maple cream will whiten by cooling.
- Open the three-way valve and fill the container.
- When the funnel is empty, close the three-way valve, place a container below the goose neck to catch the cream that is still in the pipe.
- You can move on to the next batch.

NOTE: Mixing time will vary. We can consider between 5 to 7 minutes for the first batch. However, this is visually that you can see that your maple cream is ready. It should also be noted that, if you make more than one batch, the mixing time for the following batch will be less as the mixer will already contain cream residue.

**MAINTENANCE**

The required maintenance for your mixer is only to keep it clean. Pour hot water in the funnel up to about 1” of the rim. Start the mixer motor with the red button on the motor. Allow the mixer to run until all sugar is dissolved. 3 to 5 minutes after the water has started circulating in the system, open the three-way valve to drain the water. Rinse again with warm water, wipe your equipment with a soft, clean cloth. Leave the lid on your funnel to avoid dirt and/or foreign bodies from entering the pump.

For prolonged storage, or if needed, it is suggested to disassemble the mixer to properly clean individually each part.

Never use abrasives and/or abrasive cleansers.
TROUBLESHOOTING

Your H2O cream machine has been tested in factory. Check when the appliance is first switched on (cleaning) that the soapy water is properly pumped into the funnel. If this is not the case it is possible that the motor rotation direction has been reversed. If necessary, reverse the red wire with the black wire in the electrical box located on the pump motor.

Consult the nameplate on the motor to validate connections.
Example bellow.

NOISY PUMP:

- About every 15 hours of operation grease the pump with food grade grease. See picture below:
MOTOR IS RUNNING BUT THERE IS NO OR LITTLE SUCTION IN THE MIXER:

- Check motor rotation direction reverse the connections if necessary.
- Pump gears are too worn, replace the pump.

MOTOR IS RUNNING BUT THE SYRUP IS NOT TURNING INTO MAPLE CREAM:

- Syrup not cooked enough. Empty the mixer. Dilute syrup with hot water and cook again. Verify thermometer accuracy, if it is not accurate change it.
- Verify invert sugar content, beyond 4 it is impossible to make maple cream. At certain invert sugar content, it is difficult to make maple cream.
- Unappropriated ambient air condition, when the air is too humid, the sugar will not crystallize.

SYRUP SOLIDIFIED IN MIXER

- Do not wait too long before opening the three-way valve as it will be harder to get out the maple cream.
- Overcooked syrup, empty the mixer. Dilute syrup with hot water and cook again to reach the appropriate temperature.
WARNING

Before first use

To remove any traces of packaging debris, manufacturing debris and residual oils:

IT IS IMPORTANT, when first using the mixer, to wash all frames, plates, stainless steel pipes, fittings and valves with soapy water and then to rinse thoroughly with hot water. You can also add the equivalent of one cup of commercial white vinegar per gallon (4L) of soapy solution.