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M005531 WATER-JACKETED ELECTROMELT



Advantages

Description/Function

Water-jacketed for ease of operation and precise temperature control

Large Capacity* (Approximately 15-25 pounds of melted wax per hour--Cappings from 1 to 2 barrels of honey per hour)

1 Step Cappings Handling (Uncap directly into unit with any uncapper [knife cut is more efficient than flail uncapping]--and take excellent wax from one outlet and 120°F or less honey from another.)

Optional Equipment to increase capacity and reduce labor

1) Rake System - continually rakes slum to one end of melter and speeds melting process

Fast Start Up (15 to 30 minutes from

Maintenance

Replacement Parts

Features

Quality Standard Features Make the Difference

solid wax around grid to full operation)

Thermostatically Controlled (Adjust melting temperature and water temperature for precise control)

Economical (6900 watt melting grid and 4500 watt immersion heater - approximately \$.75 per hour operating cost at maximum capacity if paying \$.08 per kilowatt hour)

Ease of Use (Eliminates need for steam and steam hoses-No water-No mess)

Eliminates spinning systems

*Operators may get more or less capacity due to operating conditions such as comb condition, honey temperature, depth of capping cut, pace of uncapping, slum removal frequency, etc.

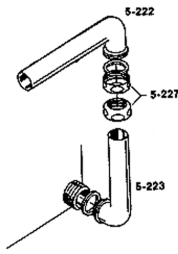
Specifications

Precautions

Dadant Mini Melter

Assembly

1. Completely unpack the Mini Melter and identify:
1 melting grid,
1 uncapping cross bar,
1 small perforated screen,
1 large perforated screen,
1 adjustable honey outlet assembly,
1 1700W immersion heater and
1 elbow/nut assembly
2. A third screen should be located in the honey baffle/honey outlet of the tank.
3. Assemble the adjustable honey outlet tube as shown in the diagram and attach to the tank.
4. If uncapping with a hand knife, attach the uncapping cross bar to the exposed edges of the tank and tank baffle respectively. (Bar is not needed if power uncapping.)



5. Place grid in tank on grid rests (See photo on cover.)
6. Install small perforated screen over wax outlet. (This screen prevents foreign material from flowing through wax outlet.)
7. The large perforated screen is for slum removal.
8. In the tank water drain outlet, a 1" plug has already been installed.
9. Using a good pipe thread compound, install the immersion heater in the 1" female tank port.
10. The elbow/nut assembly with gasket is the water fill pipe. Attach it to the 1 1/2" pipe thread nipple extending from the tank and tighten in a vertical position.

Operation

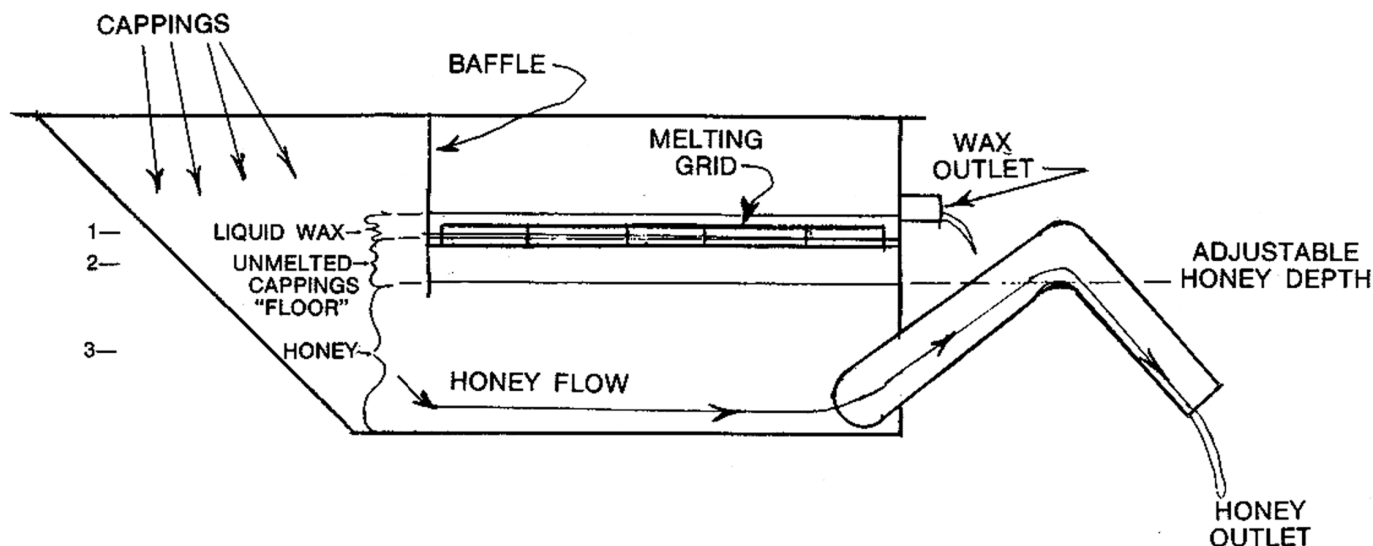
The cappings resulting from frames of honey being uncapped consist of honey, beeswax, and foreign material. Dadant's Mini Melter was designed to separate these cappings into pure honey, quality (undamaged) beeswax and foreign material (slum). When properly operated, best honey experts are unable to determine which honey is or is not melter honey, and wax tests show the highest quality wax. The cappings melter is a great labor saving piece of equipment as cappings are continually processed while uncapping is being done. At the day's end, all the day's cappings have been processed. The pure honey is in storage, the extra fine beeswax is in cakes, and the slum is barreled. No extra steps are required.

The cappings drop into the hopper area and flow under the melting grid. When the cappings begin to flow through the melter, separation of honey and wax occurs. The honey, being the heaviest, settles to the bottom of the tank and the wax particles and foreign material float on the honey. On those waterjacketed units, the heat from the warm water in the waterjacket, speeds this separation process. As the wax particles float on the honey, they come in contact with the melting grid and are melted. A pool or layer of melted wax entirely covers the melting grid. As the cappings float to the surface a great bulk of the wax particles are now melted by coming into contact with this layer of melted wax. As the quantity of melted wax increases, it flows out of a wax outlet. Meanwhile, the honey that has been separating from the wax flows along the bottom of the tank, under the honey baffle, and flows out of the melter through an adjustable honey outlet. This honey outlet maintains the honey level in the tank, thereby holding the unmelted wax particles up against the melting grid as they float on the honey. As the unmelted wax particles continue

to rise, the foreign material (slum) is carried upward and collects on top of the unmelted cappings just below or in the melted wax. The slum is periodically removed (usually once an hour) with the larger perforated screen that was supplied with the Mini Melter. Refer to the diagram and please note the liquid levels and visualize how the setting of the adjustable honey tube is the key to maintaining proper operation.

For most operating conditions, the honey outlet tube is adjusted to a level that allows honey to flow out of the tube when honey level in the tank is 1" below the bottom of the melting grid. This 1" allows for the layer of unmelted cappings to be maintained which in turn holds the foreign material (slum) up thus preventing the slum stain from filtering through and discoloring the honey. During operation, it is important to maintain this "floor" of unmelted cappings. This floor depth may be "felt" by pushing a thin board between the melting grid bars down through the liquid levels and "feeling" the depth of unmelted cappings by noting the resistance to pushing the board. The electric grids make heat control extremely easy as the electric grid has a very sensitive thermostat control that is easily adjusted. The heat supply should be regulated so as to keep a "floor" of unmelted cappings under the hot liquid wax yet keep the bottom of the tank from plugging with cappings. A continuous steady flow of cappings into the melter helps any melter work more easily. Jumpy operations are not as good, but the electric grid makes control of the heat precise and easy.

(Prolonged application of heat with no cappings flow can result in losing the "floor" of unmelted cappings allowing the slum to pass down through the honey and darken it. Excessive heat can also darken beeswax and eventually honey.)



By allowing the hot liquid wax to accumulate on top of the melting grid with a temperature of 170 - 210° F, the liquid wax actually does most of the melting. The honey never contacts the hot melter grid, but passes through the melter along the bottom of the tank. As a general rule, the honey flowing out of the melter should not exceed 125° F and may be as low as 95° F. A greater depth (floor) of unmelted cappings is obtained by pushing down the honey outlet pipe. This lowers the honey level in the tank leaving more room on top of the honey for unmelted cappings. With these new waterjacketed models, honey temperature can be precisely controlled by regulating water temperature. To flow all the hot liquid wax out of the tank at the end of the day's work, raise the honey overflow pipe up about one inch approximately an hour before uncapping stops, or add honey to bring up the honey level and flow the wax out of the unit.

By occasionally noting the "floor" of cappings while uncapping, the relationship between proper heat settings and good melter operation will be quickly understood. It will also be noted that a rather wide range exists thus making melting control very easy. Should uncapping be stopped for an extended period of time, the melting grid and water immersion heater thermostats may be turned down to prevent the loss of the "floor" of unmelted cappings. Conversely, if uncapping is at a very rapid pace, the thermostats may be set at higher temperatures to increase melting capacity. By noting approximate honey and wax temperatures and the "floor" of cappings, ultimate melter operation may be achieved and then maintained with only minimal attention. Being observant is the greatest asset to operating any piece of equipment, especially a melter.

Operating Instructions

1. On water jacketed models, always be sure the immersion heater in the water jacket is covered with water. Check Daily. Set the immersion heater to approximately 140° F and let the water begin warming.
2. Optional-To prevent cappings from sliding under the honey baffle during empty tank start-up, pour enough clean honey in the tank to obtain approximately a 4" depth of honey in the bottom of the tank.
3. Adjust the honey outlet to a level that would allow honey to flow from the unit at a level approximately 1" below the bottom of the melting grid.
4. Begin uncapping and uncap until the cappings begin to touch the melting grid.
5. Turn on your melting grid and set thermostat to about 200° F to begin the melting process.
6. Continue to uncap and build a layer of melted wax. This accumulation (depth) of melted wax will do most of the melting and honey will not contact the heating coils. Honey temperature coming out of the melter should be low enough to not darken the honey. Specific temperature cannot be given as nectar source is a factor in determining darkening temperature. As a general rule, honey temperature should not exceed 125° F. The honey outlet tube usually works best at $\frac{3}{4}$ " to 1" below the bottom of the melter grid elements and can be adjusted slightly for best operation. As the melter approaches full operation, honey will flow through the adjustable honey outlet tube and wax will flow from the wax outlet.
7. The key to successful operation of the Cappings Melter is to keep a floor of unmelted cappings under the liquid wax that is floating about the grid. A layer of slumgum will develop between liquid wax and the layer of unmelted cappings with the honey remaining on the

(Continued On Next Page)

cooler bottom of the melter. The floor of unmelted cappings under the hot liquid wax is necessary to hold up the slumgum accumulation as it melts. The slumgum accumulation should be scraped from the floor of unmelted cappings from time to time which will help speed up the melting. A perforated hand tool (slum rake) is provided to assist you. Some find it easiest to remove the melting grid, remove the slum, and replace the grid before the melted wax solidifies. The cappings floor can be tested periodically as described in the operation section. If there is no floor of unmelted cappings, cut back on the heat supply by turning the thermostat off, or speed up the volume of cappings entering the melter. If the incoming supply of cappings decreases, reduce the heat.

8. When uncapping is finished for the day, let the melter “catch up” and then turn off the melting grid and water jacket immersion heater. (To quicken start-up on the water jacketed model, the water jacket immersion heater may be turned on an hour or two before uncapping begins. Be sure enough water is in the tank.)
9. Thermostatically controlled electric heaters provide

fast start-up (usually 20-30 minutes). Local weather conditions and the moisture content of the honey may indicate the best method of operation.

In summary, the Mini Melter can be easily and precisely controlled. Honey temperature coming out of the melter should be 90°-120° and not over 125° F. Honey temperature is controlled by water temperature on the water jacketed models. Increasing water temperature increases melting capacity because honey/wax separation is faster. Melting grid temperature determines the beeswax quality and maintains the “floor” of cappings which floats the slum. Increasing melting grid temperature increases the melter capacity and vice-versa. Set grid temperature to corresponding uncapping speed. The thickness of the “floor of unmelted cappings” indicates the correctness of grid temperature. A rather wide latitude exists. Frequent slum raking and removal speeds melting. Monitoring honey temperature, while learning to use the Mini Melter speeds the learning process and increases understanding rapidly. After the melting process is understood and initial visual references are made, the melter can easily be operated with little attention required.

Precautions

Eleven Important Precautions

1. **Read all instructions.**
2. Always unplug the unit from the outlet when not in use and before cleaning.
3. Never have the unit unattended when plugged in or in operation.
4. Hot wax is always dangerous. Keep children away from unit during operation and keep floors, benches, and shelves in the area free from articles.
5. Never attempt to move the unit while wax is liquid. Splashed melted wax will cause burns.
6. Always use the unit as specified. Never use unit for other than intended use. Any use not recommended may cause hazards.
7. Never remove the clamps holding the heat sensor to the melting grid. Overheating could occur.
8. Do not touch the hot grid surfaces.
9. Do not allow the power cord to get pinched, touch hot surfaces or lay on the floor in a traveled area.
10. Never operate any electrical device with a damaged cord or plug.
11. Keep foreign material such as rags etc., out of the melter pan.

USA Parts Orders Only

Replacement Parts for M00549 Mini Melter

Part Number	Description	Part Number	Description
04-54921	Electric Grid	03-50223	1-1/4" x 6" Slip Joint Elbow
04-54906A	Wooden Cross Bar w/lag screw	04-54924	Hand Slum Rake perf. aluminum
03-50222	1-1/4" Quarter Bend		