OPERATING MASH RAKES

MB BREWHOUSES & MASH TUNS

Operating a mash tun effectively requires controlling three key variables:

- Mashing efficiency
- Extract consistency
- Time

To achieve this, it's essential to maintain a consistent grind and a steady grain-to-water ratio.

1. CONSISTENT GRIND

To ensure a consistent grind:

- Perform a sieve test on the milled grain after each mill gap adjustment or whenever the kernel size on the malt analysis changes.
- Note that a finer grind increases efficiency but reduces spargeability. In extreme cases, it may result in a stuck mash.

IMPORTANT NOTE: Never use the rakes to free a stuck mash, as this can damage the rakes or the motor. Instead, unstick the mash by underletting: use a pump to add water to the bottom of the mash tun, which will float the grain off the mash screen.

2. GRAIN-TO-WATER RATIO

The grain-to-water ratio is typically controlled by timing the pump and knowing the grain's weight. For example, if you are using 300 lbs of barley and want to use 1.5 quarts of water per pound, you would calculate:

300 lbs × 1.5 quarts/lb ÷ 4 quarts/gal = 112.5 gallons of water

Start by adding foundation water to cover the screen, then begin mashing in. If your pump delivers 225 gallons of water per hour, you would pump water for 30 minutes (225 pump rate/112.5 water needed = hours of water needed) and run your mill to process all the grain within the same time frame.

3. DOUGH-IN PROCESS

During dough-in:

- Run rakes in the forward direction at approximately 50% speed. The goal is to remove enough air so the mash settles properly.
- Be careful not to remove too much air, as this can result in a stuck mash. Experience will help you judge the right balance.
- Turn off the rakes as soon as there are no dry spots or dough balls in the mash.

4. STEP MASHING

For step mashing:

- Run the rakes at about 25% speed while adjusting the temperature. This ensures even heat distribution.
- Once the target temperature is reached, you can turn off the rakes during the rest period.

5. SPARGING AND MASH-OUT

After sparging, you will need to mash out (grain out):

⚠WARNING • *Never insert paddles or other objects into the mash while the rakes are running.*

1. **Drying the Grain:** Run the rakes forward at 25-50% speed to help dry the grain.
2. **Breaking Up the Grain:**
   WARING REMINDER: *Never insert paddles or other objects into the mash while the rakes are running.*
   Open the manway and run the rakes forward at approximately 25% speed to get the grain moving.
3. **Reversing the Rakes:** Once the grain is sufficiently broken up and forward movement is no longer effective, switch the rakes to run in reverse. Start at about 10% speed to get a feel for how the system responds.

FINAL NOTES

This process, combined with experience and careful adjustments, will optimize your mash tun operation.

ASSOCIATED PRODUCT SKU'S

These instruction are for the follow product SKU's:

- BHS1001
- BHS1001-1P
- BHS1001B
- BHS1002
- BHS1002-1P
- BHS1002B
- BHS1003
- BHS1003-1P
- BHS10035
- BHS10035-1P
- BHS10035B
- BHS10035GC
- BHS1003B
- BHS1005
- BHS1005-1P
- BHS1005B
- BHS1005GC
- BHS1007
- BHS1007B
- BHS1007GC
- BHS1010
- BHS1010B
- BHS1010GC
- BHS10002PLACE
- BHS10003PLACE
- PBE0007RP-MB
- PBE20035RPB-MB
- PBE2007RPB-MB
- PBE2010RP-MB
- PBE4004MR-MB
- PBE4008-MB