Standard Operating Procedure – Grain Mill Adjustment

Definitions:



Grain Mill – Apollo Machine 2 roller mill located in the grain room at XXXXX Brewing Company



Hopper – Grain containment vessel on top of mill, above rollers

EATON Safety Switch – Large on/off switch with red handle, on the wall behind and left of the mill

Roller – Knurled 8” steel roller for cracking/crushing grain

Parts Needed:

- Appropriate personal protective equipment (PPE) to be worn <u>at all times</u>
  - Gloves
  - Safety goggles
  - Close-toed shoes
- Two (2) Adjustable Wrenches
- Nylon or brass brush
- Gap Tool - found on top of Eaton Safety Switch in grain room

Process:

1. Turn EATON Safety switch to “off” position
   a. **Confirm Eaton Safety switch is fully in “off” position**
2. Remove protective bar in hopper, from above knurled rollers, by loosening and removing the two nuts and bolts on each end of the bar
3. Set protective bar, nuts, bolts and lock washers on top of the EATON Safety switch
4. Check gap between rollers with the gap tool (standard specification is <u>1.4mm</u>, per sieve testing)
   a. Move the gap tool side to side to check for any variance from left to right and up and down to check for variances in resistance
   b. **Correct resistance is when the rollers move slightly as gap tool is run up and down**



5. If gap or resistance is <u>not</u> consistent across the rollers, continue to step 6, otherwise proceed to step 11
6. Loosen set nuts on left and right side adjustment bolts
7. Loosen adjustment bolts
8. Use large adjustment bolt, in center, to correct gap width
   a. Turning the bolt to the right (tightening) closes the gap, turning left (loosening) opens the gap.
9. Refine gap, from side to side, with left and right adjustment bolts until gap width is consistent across the roller
10. Tighten the set nuts on the left and right adjustment bolts and re-check with gap tool to ensure gap has not changed
    a. If gap has changed, repeat steps 6-10
11. Clean magnets on the bottom of the protective bar with nylon or brass brush to remove any debris

12. Replace the protective bar, ensuring the bolts are on the interior of the hopper and the lock-washers and nuts are on the exterior of the hopper
13. Return the Eaton safety switch to the “on” position **only** when all steps are complete