

SOP: Brew Day

This SOP template provides step-by-step guidelines for preparing, operating, and shutting down the brewhouse safely and effectively. By following these procedures, the brewing team can maintain consistency across batches, protect equipment, and uphold the brewery's quality standards.

Preparation

- ☐ Turn on heat to HLT and adjust temperature on control panel to mash step temperature.
- ☐ Crush grain, check Ollie notes to see if any grain does not get mashed.
- ☐ Clean up grain area when finished.
- ☐ Gather water treatments to be added to mash tun for mash water.
- ☐ Set up Wort Grant and water hose.

Mashing

- ☐ Open valves from HLT to Mash Tun.
- ☐ Turn on water pump.
- ☐ Add water treatment ingredients to Mash Tun.
- ☐ Add crushed grain proportionately to Mash Tun as water fills the tank.
 - If using rice hulls, add those first.
 - Stir mash after each grain bucket addition to achieve uniform mash with no chunks of grain.
- ☐ Once all grain and water is mixed, open valves to Wort Grant.
- ☐ Set mash temp and RIMS temp on control panel, turn on wort pump add initial mash temp in Ollie.
 - If mash-in temp is low, set RIMS temperature 1 to 2 degrees higher than mash step temperature.
 - If mash-in temp is about right, set RIS to mash-in temperature.
- ☐ Fill up HLT with sparge water (*add 5 gallons to Ollie volume*).
- ☐ Observe wort level in Wort Grant and adjust RIMS tube valve accordingly to achieve a steady wort level in the Wort Grant a few inches above the outlet.
- ☐ Take wort sample at end of mash for mash pH and first runnings. Record mash pH in Ollie and write first runnings in the notes section of Ollie.
- ☐ Write down mash temperature notes in Ollie regarding average temperature throughout the mash.

Lautering

- ☐ Add acid to sparge water.
- ☐ Connect wort hose from wort pump to Kettle.
- ☐ Switch three-way valve on wort pump to transfer wort into the Kettle.
- ☐ Turn on heat to Kettle.
- ☐ Attach sparge arm to Mash Tun.
- ☐ Open valves from HLT to Mash Tun and turn on water pump.
- ☐ Adjust water-in valve on Mash Tun to keep sparge water 1"-2" above grain bed throughout sparge.
- ☐ Add non-acid water treatments to Kettle.
- ☐ Take sparge pH and final runnings sample about 5min before end of lauter. Record both in Ollie.
- ☐ Fill up Kettle to pre-boil volume in Ollie. Record actual pre-boil volume in Ollie.
- ☐ After Kettle is filled up, drain out remaining wort from Mash Tun and clean Wort Grant.
- ☐ Write length of lauter in Ollie under notes.
- ☐ Bag 3-4 garbage cans for spent grain.
- ☐ Scoop out grain from kettle in garbage cans and dispose.
- ☐ Rinse out Mash Tun of all grain and run cleaning cycle for 20min with hot caustic. Run water rinse cycle after until no caustic residue remains.
- ☐ Add 12 grams of Fermcap to Kettle prior to boil.

Boil

- ☐ Start Ollie boil timer when Kettle temperature reaches 210 F
- ☐ Gather and add ingredients to boil as needed.
- ☐ Sanitize Heat Exchanger and Fermenter (15 PAA cycle each, no water rinse), including oxygen stone assembly and transfer/dump manifold.
- ☐ Hook up blowoff bucket to fermenter.
- ☐ Hook up cart pump to Kettle for whirlpool. Use absolute out port on Kettle for pump connection.
- ☐ Set up hopback if needed.
- ☐ Hook up all hoses to Heat Exchanger, including oxygen.
- ☐ Hook up dump hose off transfer assembly.



Knock-Out/Transfer

- ☐ Turn off Kettle heat when boil timer expires. Add any 0 min boil ingredients necessary.
- ☐ Record post-boil volume in Ollie.
- ☐ Open valves to pump for whirlpool and run whirlpool for 5 min @ 1200 hz.
- ☐ After whirlpool, turn off pump and hook up to Heat Exchanger for transfer. Switch Kettle connection to the transfer port.
- ☐ Let wort rest for 30min before starting transfer.
- ☐ If brewing a double batch, mash-in second batch at this point.
- ☐ After rest, turn on tap water and cold water to Heat Exchanger. Open valves on Kettle, transfer pump, and dump line but keep fermenter valve closed.
- ☐ Plug fermenter temperature control to panel and set fermentation temperature. (usually 65F)
- ☐ Dump any residual PAA in lines. Close dump valve and open fermenter valve. Ensure blow-off valve on fermenter is open.
- ☐ Turn on oxygen tank and set flow meter to 2.5 L/min.
- ☐ Take sample of chilled wort and record Original Gravity in Ollie. Write in estimated pre-boil gravity in Ollie based on Original Gravity.
- ☐ Stop transfer when trub starts flowing out of Kettle.
- ☐ Turn off pump and close valve to Kettle and Fermenter.
- ☐ Estimate losses in Kettle/Heat Exchanger/Pump Leakage/Hop Back and calculate volume into fermenter and record in Ollie.

Cleanup

- ☐ Remove dump tube and attach CIP hose to dump valve. Remove hose from pump intake.
- ☐ Run water through transfer hoses/Heat Exchanger/pump to clear wort.
- ☐ Hook up CIP to Heat Exchanger wort inlet and cycle caustic (with O) through Heat Exchanger for 45 min. Attach air hose to oxygen stone for 5 seconds to clear stone.
- ☐ Rinse out Kettle.
- ☐ Disconnect and put away all water hoses and oxygen hose.
- ☐ After Heat exchanger cycle is done, rinse until no caustic residue remains.
- ☐ Hook up CIP to Kettle. Hook up transfer pump to Kettle outlet and turn pump to ~600 hz. Run caustic cycle on Kettle for 30 min or until Kettle is clean.
- ☐ Rinse Kettle until no caustic residue remains.
- ☐ Clean floors and put everything away.
- ☐ Perform cell count on yeast and pitch appropriate amount of yeast (vitality test for 2+ week old yeast. Do not use yeast older than 3 weeks).
- ☐ Complete Brew Sheet and hang on fermenter.

