Spike Conical Process Guide

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CONICAL PROCESS GUIDE

OXYGENATE

After you have transferred your wort from your boil kettle and chilled to yeast pitch temps, you are ready oxygenate.

Pro Tip: If you have warm groundwater and have issues with chilling your wort to pitch temps, transfer it into your conical and finish chilling using our TC-100 package and cold-water source.

1. Grab your carb stone and sanitize the inside and TC flange. Also sanitize the racking valve, clamp and gasket.
2. Attach the carb stone to the racking port.
3. Using the quick connect gas post on the carb stone, connect to your oxygen tank.

Pro Tip: We recommend using a red oxygen cylinder, which you can get at any hardware store.

4. Turn on the oxygen tank and open the racking valve, leaving open for 30 seconds – 1 minute. While you do this, make sure that the blow off hose at the top of the conical is inserted into your sanitizer bucket, so you don't create excess pressure in the conical.
5. Close the racking valve, turn off the oxygen, disconnect the oxygen tank and disconnect the carb stone.
6. Spray the outside of the butterfly valve down with sanitizer. Clean the carb stone by soaking it in Alkaline Brewery Wash or similar product.

Pro Tip: After the carb stone has soaked, rinse with warm water and attach the stone to your CO2 tank to push all residual wort and brewery wash out of the stone's porous body. Follow this with a spray with sanitizer.

7. After you oxygenate, you are ready to pitch your yeast and begin fermentation!

Pro Tip: Learn how to temp control **here.**

DUMP YEAST

Pro Tip: To dump the yeast, we recommend using our silicone tubing and either our tri clamp barb fitting or tri clamp quick connect fitting. For the quickest and easiest connection, we will use and recommend the quick connect fittings.

1. Sanitize the quick connect fittings and the bottom butterfly valve.
2. Connect the hose to the bottom 2" TC x QC fitting, leading to a drain or bucket.
3. Open your valve and drain until the liquid runs clear.
4. If you have pitched a large amount of yeast or had multiple hop additions in the fermenter, you may experience a stuck yeast dump limiting flow out of the conical.

Pro Tip: Open and close the butterfly valve a few times to break up the blockage.

Pro Tip: If the hose is still not flowing after opening/closing the butterfly valve, you can try adding pressure using our gas manifold bundle.

- Attach the gas manifold bundle to the 1.5" TC lid port, then connect to your CO2 tank via the gas post.
- Turn on the CO2 tank and set your regulator to about 5psi. Once the pressure gauge on the conical has reached 5psi, you can open/close the butterfly valve again. The added pressure should force the yeast and hops out of the conical.
- Turn off the CO2 tank and disconnect from the gas manifold. Relieve all pressure from the conical using the pressure relief valve and reconnect the blow off tube or blow off cane.

5. Once you've finished dumping the yeast, close the bottom butterfly valve and disconnect the hose and fitting. Make sure to spray everything down with sanitizer again.

Pro Tip: As an alternative to dumping your yeast, you can reuse by yeast harvesting. There are many ways to achieve this, including using a sight glass. Check out other tips on yeast harvesting in our Ask A Pro article found **here**.

COLD CRASH

Po Tip: When lowering your conical from higher fermentation temps to cold crash temps a vacuum will be created. When a vacuum is created inside your conical the sanitizer can actually be sucked up through the blow off and into your conical. Follow the steps below to avoid 'sanitizer suck back' from ruining your beer!

We recommend using our TC-100 temp control package and a cold-water source or glycol chiller to achieve appropriate cold crash temps (we recommend cold crashing to 38F).

1. Sanitize your valve and gas manifold.
2. Attach the gas manifold bundle to the 1.5" lid port on your conical
3. Connect your CO2 tank to the gas post on the manifold and add pressure until the conical gauge reaches 5psi.
    - This added pressure will prevent a vacuum from forming inside your tank as temps are lowered.
4. Turn off your CO2 tank and disconnect from the gas post.
5. To set your temp, press the down button on your controller until the 'SET' temp reads 38F.
6. This chilling process will take between 12-24 hours depending on the temperature of your cold water source, ambient temps, etc.

Po Tip: If you are using a glycol chiller, we recommend setting your chiller between 25-28F and using a 3:1 distilled water to propylene glycol mixture.

FORCE CARBONATE

After cold crashing, your tank will still be cold and still have your gas manifold attached holding 1-2psi of pressure. Attach your cleaned and sanitized carb stone to the racking port using a clamp and gasket.

Pro Tip: We recommend keeping your carb stone soaking in ABW for 12-24 hours and then rinsing thoroughly with water to clean before using it to force carbonate.

1. Ensure that your CO2 tank is OFF
2. Connect your CO2 tank to the carb stone.
3. Use the Spike Carb Chart to determine the amount of CO2 pressure needed based on your conical temperature and desired carbonation level.

Pro Tip: When using the Spike Carbonation Chart, ensure that the PSI from the chart matches the pressure gauge attached to the conical and not the CO2 regulator. The wetting pressure of your carb stone is about 4psi, so your CO2 regulator will be about 4psi higher than your conical pressure gauge.

4. Set your CO2 tank regulator about 4psi higher than the target pressure for your conical. This will account for the carb stone's wetting pressure.
5. Open your racking valve to allow pressure to start flowing. It usually takes about 5 minutes for the tank to reach full pressure. Leave your CO2 tank attached for 12-24 hours to achieve full carbonation.
6. Once fully carbonated, close your racking valve, turn off the CO2 tank and remove the carb stone. Clean the carb stone and spray the outside of the valve with sanitizer.

CAUTION: Always ensure your PRV is installed and opens properly before adding pressure. This will prevent your conical from ever over pressurizing.

CAUTION: Our gas manifold is not meant to be used as a spunding valve/for use during pressure fermentation. Our gas manifold with pressure release valve is a safety device; not a spunding valve. Pressure fermentation is dangerous as you are sealing a vessel that is creating additional pressure. We recommend using a standard blow off during primary fermentation and using the gas manifold after primary fermentation is completed.

CAUTION: Never place a valve or obstruction before the pressure release valve. This won't allow for gas to escape through the PRV and can cause an over pressurized situation.

PRESSURE TRANSFER

PRO TIP: Purge your cleaned and sanitized keg of oxygen before filling. To do so, connect your CO2 tank to the "IN" side of the keg and let the keg build pressure. Pull the pressure relief valve a few times to purge the keg of oxygen.

PRO TIP: When pressure transferring, keep the conical pressure gauge at roughly 5psi to help push the beer out. Use the gas manifold bundle to achieve this.

1. Using the pressure transfer kit, attach the hose with the 1.5" tri clamp to the racking port and connect the black ball lock to the "OUT" ball lock post on the keg.
2. Fill a bucket with sanitizer for use with a blow off. You can use the same bucket that you used previously for your blow off.
3. Open the racking valve. Beer will begin to flow into your keg.
4. Once the beer starts to flow, insert the bare end of the other hose in the blow off bucket and the gray ball lock to the "IN" ball lock post on the keg.
5. Once you see beer foam out of the blow off, you keg is full. Close the racking valve.
    - If a second keg is needed, repeat the process of purging, connecting and transferring the beer until your conical is empty.

Pro Tip: If you are using a racking arm, we recommend starting your transfer with the racking arm in the up position and you can slowly rotate the racking arm down until the wort no longer runs clear. The position of the racking arm can be determined by using the indicating post welded to it. To turn the racking arm loosen the clamp that attaches it to the conical by about 1 turn. Using the valve handle as leverage, you'll be able to slowly turn the racking arm to the desired position.

6. Once the conical is fully drained, close the racking valve, turn off your CO2, then disconnect your keg and the hoses form the CO2 source.
7. Purge all the pressure from your conical.

Pro Tip: To clean the closed pressure transfer hoses, hook them up to a pressurized keg filled with sanitizer for 30 seconds which will flush the lines clean.

Pro Tip: To clean the conical after fermentation you can dissemble the entire unit and soak in brewery wash or you can use our CIP ball following the steps in our knowledge base article here: https://spikebrewing.freshdesk.com/support/solutions/articles/35000049112-cip-procedure