



## TWO HEARTED ALE CLONE - 5 GALLONS

*Two Hearted Ale* is one of the defining American-style India Pale Ales. This beer is bursting with aromas ranging from pine resins to grapefruit notes from the use of 100% Centennial hops.

### REQUIRED EQUIPMENT

- 6.5 Gallon Brew Pot
- 6.5 Gallon Fermenter w/lid
- Mash Tun
- Hydrometer
- Wort Chiller
- Heat Source
- Thermometer
- No Rinse Sanitizer (Star-san)
- Long Spoon or Paddle
- Large Pitcher (1 gallon)
- Cleanser
- Air-lock
- Carboy (5 gallon or larger)

### Mash In:

Heat 4.5 gallons (17 liters) of water to 163 °F (73 °C). If using a cooler style mash tun, add one gallon of heated water to your tun and keep closed for 10 minutes. This is done to allow the mash tun to warm up, and avoid temperature loss. Once the tun has warmed, start mixing in the milled grains adding the remaining 3.5 gallons of water as necessary. The consistency of your mash should be that of slightly watery oatmeal.

### Mash Rest:

Once you have finished mashing in, it is time for the mash rest. **This will last for a total of 70 minutes, and consists of three parts.** Be sure to set a timer. This is also a good time to start preparing the sparge water.

1. Keep the mash at 150 °F for 45 minutes. Use a floating thermometer to monitor the mash temperature. Once your temperature has been reached, it is important to leave the mash tun closed. Continued opening/closing will cause you to lose temperature.
2. When the 45 minutes have passed, spend 15 minutes slowly ramping the temperature up to 170 °F. If using a cooler style mash tun add 2 gallons of boiling water.
3. Once you've reached 170 °F, let rest for the remaining 10 minutes.

### Recirculation/Vorlauf:

Once the mash rest has ended, recirculate your wort back into the mash tun. This builds up a bed of grain husks on top of your false bottom, which acts as a natural filter for small grain pieces. **Continue to recirculate until the wort is clear, with little to no bits of grain to be found.**

### Sparge:

Once you have clear wort it's time to fill your brew kettle. **Sparge with 175°F water, collect 6.5 gallons of wort.** Depending on your heating element getting 6.5 gallons of wort to a boil may take a while, so it's best to start heating as soon as you have wort in the kettle.

### INGREDIENTS (All Grain)

- 10 lbs. 2-Row Malt
  - 3 lbs. Pale Ale Malt
  - .50 lb. Caramel 40L
  - 1.25 oz. Centennial Hops (45 min.)
  - 1.25 oz. Centennial Hops (30 min.)
  - 3.5 oz. Centennial Hops (Dry Hop)
- Recommended yeasts:
- Imperial A07 Flagship Ale (Liquid)
  - OR
  - Safale US-05 (Dry)

### TARGET STATS

- Pre-boil Gravity: 1.050
- Original Gravity: 1.065
- Final Gravity: 1.010
- Alcohol: 7% ABV
- SRM: 10
- IBU: 55-60

### SANITATION

Sanitation is very critical in making good, clean beer. However, during the brew day your boil will take care of sanitizing your wort, kettle, and anything else you put in your wort. **After the boil is over, any item that will come in contact with the wort/beer needs to be sanitized.** This includes fermenters, airlocks, all racking and bottling equipment.

# BREW DAY PROCEDURE

**If using liquid yeast, bring to room temperature before use.**

**Boil: Be sure to leave the lid off your kettle while boiling.**

1. Set a timer for 75 minutes.
2. With 45 minutes left in your boil, add 1.25 oz. Centennial hops.
3. With 30 minutes left in your boil, add 1.25 oz. Centennial hops.

**Chill Wort**

At the end of the 75 minute boil, chill the wort to 68° - 74°. **Keep the lid on your pot when not stirring to avoid contaminants falling into your wort.**

**Sanitize**

While the wort is cooling, sanitize your fermenter, airlock, and any equipment needed to get your wort into the fermenter. This is also a good time to hydrate dry yeast if you're using it.

**Transfer wort**

Carefully pour your chilled wort into the fermenter, leaving most of the sludge behind. This is the one time when oxygen is your friend so don't be afraid to splash the wort into the fermenter.

**Pitch yeast**

Take a hydrometer sample of your wort once it's all mixed well with the water (a thief works best). Add your yeast to the fermenter and give everything a swirl with a sanitized spoon. Add your airlock to the top of your fermenter—fill the airlock half full with sanitizer.

## BREW LOG

Date of brew \_\_\_\_\_

Mash rest begin \_\_\_:\_\_\_ (time)

Kettle filled \_\_\_:\_\_\_

Boil start time \_\_\_:\_\_\_

First hop strike \_\_\_:\_\_\_ (30 min after boil start)

Second hop strike \_\_\_:\_\_\_ (15 min. after first hop strike)

End of boil \_\_\_:\_\_\_

Wort chilled \_\_\_:\_\_\_

Original Gravity (OG) \_\_\_\_\_ (target 1.065)

Fermentation Temperature \_\_\_\_\_ (target 68° to 74°)

Date of dry hop \_\_\_\_\_

Final Gravity (FG) \_\_\_\_\_ (target 1.010-1.012)

Packaging Date \_\_\_\_\_

### AERATION

The one time in the brewing process when you want oxygen introduced into your wort/beer is when pitching the yeast. The yeast cells use oxygen to aid in their growth at the early stages of fermentation. Once your wort is chilled and ready for yeast, give it a dose of oxygen by pouring, stirring, shaking or injecting in whatever ways are



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## FERMENTATION

Fermentation is the most critical step in beer production. Steady temperatures and a healthy pitch of the right amount of yeast are the best thing you can do to ensure proper fermentation. If you're using liquid yeast, a yeast starter will help ensure your yeast is healthy and ready to go. Consider researching yeast starters if you're not familiar with them. If you are using dry yeast, hydrate the yeast prior to using it for the same reasons. Always check the dates on your yeast to be sure it is as healthy as it can be and always keep yeast in a refrigerator for long term storage.

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Fermentation

Place your fermenter in a temperature-stable place that is in the 68° to 74° range. Within 48 hours, you should see fermentation activity evident by a foamy head on the beer. **Airlock activity should take place but is not always the best indicator of an active fermentation.** After a few days of active fermentation, things will subside considerably, but fermentation is not complete. The yeast is now cleaning up the off-flavors it created during the active phase. Be patient.

### Dry hop

On day 5 of fermentation, it's time to add the dry hopping. You can choose to dry hop directly into the fermenter or use a siphon to gently transfer the beer to a secondary fermenter (5 gallon carboy preferred).

### Packaging

After 2 weeks, the specific gravity of the beer should be below 1.020 and hopefully in the 1.012 range. If not, let sit for another week. **Let the gravity tell you when to bottle rather than the calendar.** Make a priming solution by mixing the priming sugar in with 2 cups of water and boiling for 3 minutes. Let the priming solution cool, and add to your bottling bucket. Gently siphon your beer into the bottling bucket using all sanitized equipment and carefully mix the beer and priming solution by gently stirring with a sanitized spoon. Fill your sanitized bottles with the bottle filler and cap with sanitized caps. Let the bottles carbonate at room temperature (the yeast has to ferment again, so 68-74 is best) for about two weeks. Chill & enjoy!

**(Original Gravity - Final Gravity) x 131.25 = ABV%**

( \_\_\_\_\_ - \_\_\_\_\_ ) x 131.25 = \_\_\_\_\_ %



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