THE GRAINFATHER
ALL GRAIN BREWING

CONICAL FERMENTER

Instructions

CONTENTS

PRODUCT NAME: CONICAL FERMENTER
Rated 12V ⎓ 2.75A max
Power Adapter 100 - 240V ~ 50/60Hz
Made in China

WHAT'S IN THE BOX?:

AIRLOCK

RUBBER BUNG

FERMENTER LID

FERMENTER BODY

5 CM (2") TRI CLAMP

CONE PLUG SEAL

CONE PLUG

DIGITAL TEMPERATURE DISPLAY

ALSO:
POWER ADAPTER AND WALL PLUG
2 M (6.5 FT) M12-3PIN POWER CORD

fig. **1**

THE GRAINFATHER
ALL GRAIN BREWING
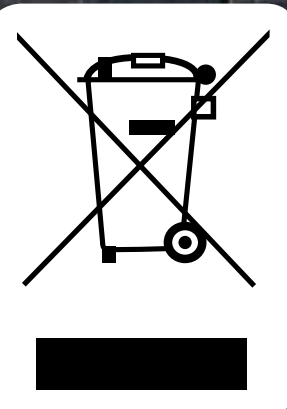
ANATOMY/ SCHEMATICS

1. Glycol In self sealing coupler
2. Airlock
3. Rubber bung
4. Fermenter lid
5. Fermenter lid clips
6. Handle
7. Cooling sleeve connection
8. 304 stainless steel body
9. Controller mounting bracket
10. Digital temperature controller (replace digital display with this controller)
11. Ferrule cone connection
12. Fermenter base
13. Dual valve tap
14. Glycol Out self sealing coupler
15. Fermenter power cord
16. Glycol chiller handle
17. Glycol chiller cap
18. Glycol chiller controls
19. Glycol chiller controller/display
20. Air cooling vents
21. 303 stainless steel casing
22. Castor steering wheels
23. Inline wheels

conical fermenter

glycol chiller
(coming soon)

FERMENT LIKE NEVER BEFORE.

THE GRAINFATHER CONICAL FERMENTER GIVES THE BREWER PROFESSIONAL FERMENTATION CONTROL, JUST LIKE THE COMMERCIAL BREWERIES.

FERMENTATION IS ARGUABLY THE MOST IMPORTANT PART OF PRODUCING A GOOD QUALITY BEER. A GOOD FERMENTATION ENVIRONMENT HAS A CONSISTENT CONTROLLED TEMPERATURE BASE, EXPOSURE TO OXYGEN IS MINIMISED, AND THE FERMENTER IS CLEAN AND STERILE.

THE GRAINFATHER CONICAL FERMENTER PROVIDES YOU WITH A MODULAR SYSTEM FOR ALL OF THIS AND MORE.

FERMENTING WITH THE
## STANDARD FERMENTER

SAFETY INFORMATION

1. Read all instructions before use.
2. Do not touch hot surfaces. Use handles or knobs.
3. To protect against fire, electric shock and injury to persons, do not immerse cord or plugs in water or other liquid.
4. Close supervision is necessary when any appliance is used by or near children.
5. Unplug from outlet when not in use and before cleaning. Allow to cool before putting on or taking off parts, and before cleaning the appliance.
6. Do not operate any appliance with a damaged cord or plug or if the appliance malfunctions, or has been damaged in any manner. Return appliance to your nearest retail service provider for examination, repair or adjustment.
7. The use of accessory attachments not recommended by the appliance manufacturer may result in fire, electric shock or injury to persons.
8. Do not use outdoors.
9. Do not let cord hang over edge of table or counter, or touch hot surfaces.
10. Do not place on or near a hot gas or electric burner, or in a heated oven.
11. Do not use the appliance for other than intended use.

SETUP & CLEANING

- Unpack the fermenter and all parts, remove the protective packaging.
- Make sure the tri clamp on the bottom of the fermenter is securely fastened by tightening the tri clamp nut.
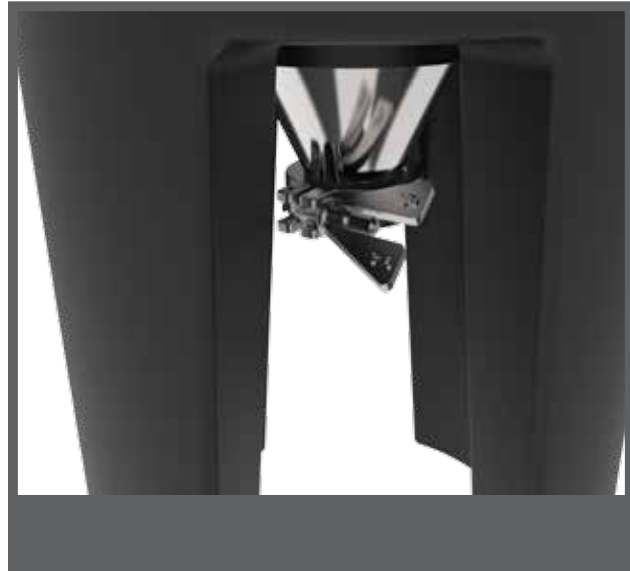
- Plug the 2 m (6.6 ft) power cord into the back of the fermenter.

- Plug the other end of this power cord into the power adapter, this then plugs into the wall, but do not switch the power on at the wall until you want to heat the fermenter.

- Attach the digital temperature display by clipping it into the bracket on the front of the fermenter. A magnet will secure this.

attach

- Push the rubber bung into the hole in the fermenter lid. Then push the airlock into the holes in the rubber bung. This airlock is to stop anything from entering the fermenter during fermentation.
- Fill the fermenter halfway with water and add Mangrove Jack's Cold Water Cleaner Detergent.
- Scrub the sides of the fermenter and the lid with the clean water. Make sure to scrub all surfaces.
- Empty the water and rinse the fermenter with fresh clean water.
- Then use the Mangrove Jack's No Rinse Steriliser.

USAGE

- Fill your fermenter as normal by syphon or counter flow wort chiller if using the Grainfather All in One Brewing System.
- Secure lid and ensure airlock is in place in the lid.
- Plug the fermenter in to power only when you are ready to heat.
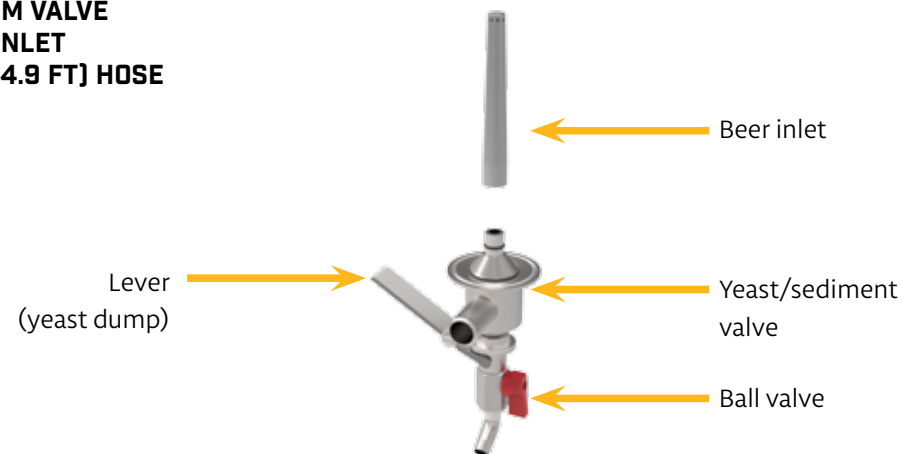
For more on heating see p.11

fill your fermenter

COLLECTING & TRANSFERRING

ATTACHING AND USING THE DUAL VALVE TAP (SOLD SEPARATELY)

INCLUDES:
- **BOTTOM VALVE**
- **BEER INLET**
- **1.5 M (4.9 FT) HOSE**

Beer inlet

Lever
(yeast dump)

Yeast/sediment
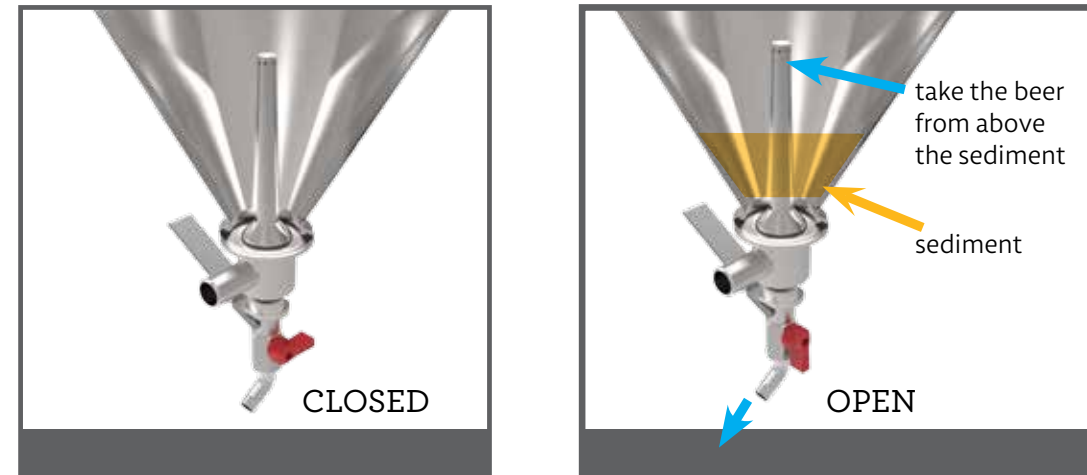valve

Ball valve

HOW DOES IT WORK?

The dual valve tap on the bottom of the fermenter uses a new innovative 'valve within a valve' design to allow you to both dump sediment from the beer, and take samples/transfer the beer. This is the first time a valve like this has been used in either of the homebrew or commercial areas.

- The large opening on the valve facing out at a 90 degree angle is where the yeast/sediment is removed. This opening is large enough to ensure none of the sediment 'clogs' it (provided the sediment is removed on a regular basis of 2-3 days). This part opens and closes with a spring loaded lever on the side of the valve to ensure minimal beer wastage.
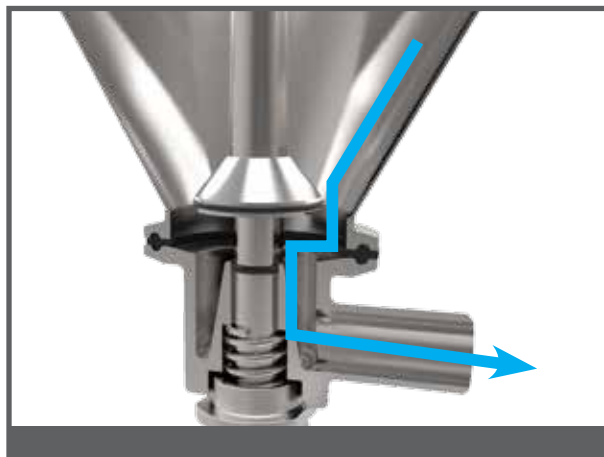
- The opening at the bottom is for taking beer samples while fermenting and also for transferring the beer once it has finished fermenting. This valve has a beer inlet piece that attaches to the top of it; this is where it takes the beer from. There are 2 different heights to select from.
  1. 110 mm - This is for most of the beers being made and is included in the valve.
  2. 150 mm - This is when using a lot of dry hops (200 g (7 oz) +) (sold separately).
- This beer inlet part is designed to sit above the yeast sediment so that it always takes a clean and clear sample.

take the beer
from above
the sediment

sediment

CLOSED   OPEN

SETUP & CLEANING

- Assemble the valve and beer inlet and attach the valve to the bottom of the fermenter by inserting the ferrule seal, then using the tri clamp to tighten it.
- Fill the fermenter with some water and Mangrove Jack's Cleaner Detergent. Use the lever to open the "yeast dump" letting the water run through this to ensure all internal parts are clean. Do the same with the ball valve.
- Repeat with Mangrove Jack's No Rinse Steriliser.

USAGE

It is good practice to dump dead yeast every 2-3 days during fermentation to prevent the yeast from clogging the valve.
  1. To dump the yeast, open the yeast dump valve slowly. Collect the dead yeast and sediment in a vessel. Keep the valve open until the liquid coming out is clear before closing. You should usually dump about 300 ml (10 US fl oz).
  2. To harvest the yeast, it is best to take the final sample of yeast that you dumped after fermentation has finished.
- The beer valve can be used at any point during fermentation to collect samples to test the gravity of the beer. To do this, open the ball valve and collect the beer in an appropriate vessel.
- The valve can also be used to transfer the beer after fermentation, simply by conneting a hose (10 mm (0.4") inner diameter) to the opening and opening the ball valve.
- When adding dry hops, it is best to not dump the dry hops. Allow them to sit in the beer for as long as the recipe states, then transfer the beer.

See online for the amount of dry hops that can be added to the beer inlet.

NOTE: Always give the valve a good clean after fermentation. It is best to disassemble the parts and clean them, then reassemble. The entire valve can be disassembled for cleaning. Remember to sterilise before next use.

STANDARD HEATING

In the cavity of the fermenter between the outer body and cone sits a 30W, 12V heating element. Unlike standard heating elements/sources that directly heat liquid, this is designed to heat the environment in between the double walls of the fermenter surrounding the liquid, which in turn heats the liquid. It is similar to controlling the temperature in a temperature controlled room. This way, the beer is not heating at a single small point, rather, it is evenly and gently heated and much better for the yeast.

Heating generated from this point

See chart online for ideal heating times and temperatures.

HEATING WITHOUT USING THE DIGITAL TEMPERATURE CONTROLLER

If you do not have the Digital Temperature Controller (sold separately), you are still able to use the integrated heater in the fermenter. The standard unit comes with a digital temperature display (easily snaps in place using magnets and pogo pins) that displays the temperature the fermenter is at. Due to the way the fermenter is designed, once the fermenter is at the correct temperature the heater can be turned off and the double insulated walls will keep this heat for many hours.

- To turn the heater on, simply plug the power cord into the wall (turning on the wall power).
- The heater will be on for as long as the fermenter is plugged into power.
- With 20 L (5.3 US Gal) of liquid, the fermenter will heat at a rate of approx 1°C (1.8°F) per hour up to a maximum of 12°C (21.5°F) above ambient.
- When you reach the target temperature, turn the power off.

CONTROLLED HEATING & COOLING

In between the two stainless steel surfaces is a 10 mm (0.4") thick layer of polyurethane foam insulation. This is what keeps the liquid in the fermenter at a constant stable temperature that does not get influenced by any outside environmental changes.

The double insulated stainless steel walls provide three very important functions for heating and cooling.
1. It houses the cooling sleeve that glycol runs through to cool the liquid in the fermenter to 4°C (39°F) in 3.5 hours.
2. It provides a 'cavity' which when heated up creates an artificial environment so that the liquid in the fermenter can heat up gently without direct applied heat, in cold temperatures which is much better for the yeast.
3. It provides far superior insulation that cannot be achieved by a standard insulation jacket.

Outer wall - stainless steel

Insulation - polyurethane

Inner wall - stainless steel

Cooling sleeve
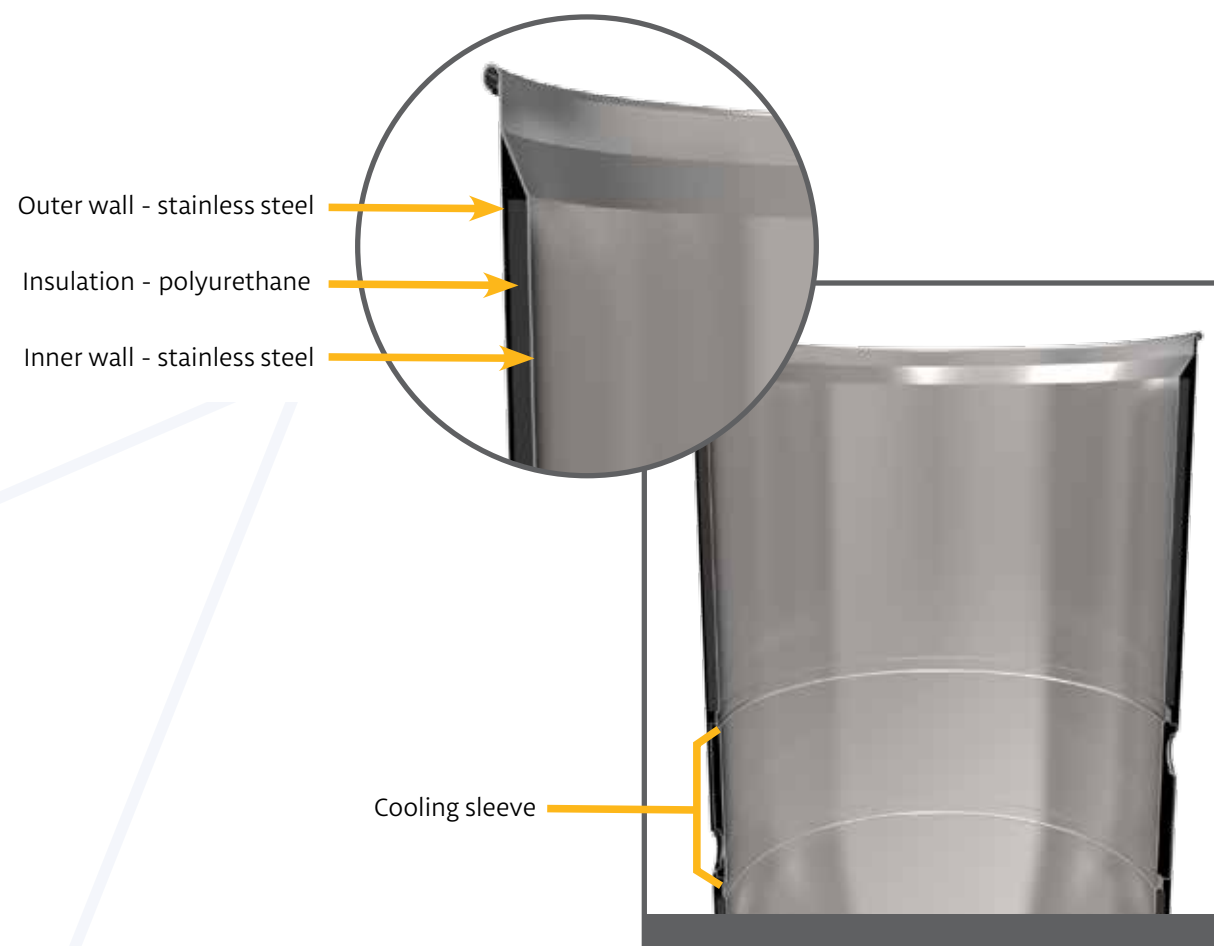
ATTACHING AND USING THE DIGITAL TEMPERATURE CONTROLLER (SOLD SEPARATELY)

Easily snaps in place using magnets and pogo pins and allows you to accurately dial in a temperature, and even set a temperature schedule. Pogo pins are used as connections as well as a magnet. The controller is loaded with software that makes fermenting incredibly easy.

• Simply snap the controller into place onto the fermenter body.

attach
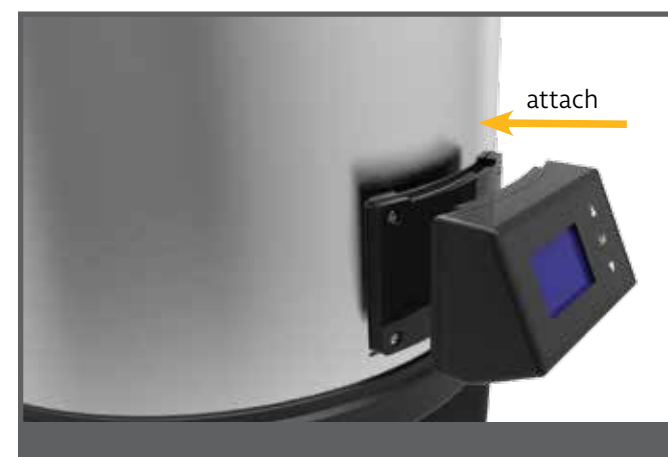
• Set your temperature and schedule, eg heat the temperature to 18°C (64.4°F) and keep it there for 3 days. See chart online for ideal heating times and temperatures.

For setting a schedule and other options on the controller, see below.

MAIN/DEFAULT SCREEN

This screen shows the current temperature, target temperature, unit symbol (Celsius or Fahrenheit), current temperature control status (Heating/Cooling/Off), and, if there is currently a profile running, it displays the profile information.

On this screen you can do the following:
• Press up/down buttons to adjust the target temperature.
• Press the Set button to enter the menu.

MENU SCREEN

This screen shows the main menu options:
• Profiles (or Profile Options if a profile is running).
• Settings.

Here you can use the up/down buttons to move the cursor, and press the Set button to select an option.

SETTINGS SCREEN

This is where you can adjust the settings parameter. Use up/down buttons to navigate to the setting you want to change, then press set to toggle to change. For the hysteresis, press Set to toggle to edit mode and it will start flashing, then use up/down buttons to change value, then press Set again to toggle to edit finish.

In Settings you have options for:
• Units available: Metric/Imperial.
• Hysteresis (margin of temperature variation allowed before the temperature control turns back on): 0.1-2.0°C (32.2-35.6°F) adjustment .
• Mode: Heat/Cool (default), Heat Only, Cool Only, Off.
• Auto Proceed: The global setting is YES by default. If it is set to NO then you can choose to manually proceed to the next profile step if the indivual profile auto proceed setting is YES.

PROFILES SCREEN

The profile screen shows the 4 built-in profiles:

1. Ale – 2 step profile, set up with default ale profile values, and allows you to edit the time/temperature of each step and auto proceed for step 1.
2. Lager - 4 step profile, set up with default lager profile values, and allows you to edit the time and temperature of each step and has auto proceed option for steps 1-3.
3. Custom 1 – you can specify amount of steps (up to 5), edit all values as above.
4. Custom 2 – same as custom 1.

Any changes made to profiles or settings are stored to its memory and the controller will remember changes even if it is turned off and then on again.

In the profile screen, you can navigate to any of the profiles. If you press Set, it will give the option to either brew or edit the profile.

- If you select Brew, the controller will set the profile step 1 temperature and start the timer. If auto proceed is set to YES, once the timer is finished the controller will change the temperature to the next step and start the timer for the next step until all steps are complete. If global auto proceed is false and the step's auto proceed is off, the controller will display the interaction screen when timer finishes and wait for user to manually proceed to the next step.

- If you select Edit, you will navigate through each step which will allow you to change the step values.

PROFILE OPTIONS SCREEN

If a profile is already running and you go to the Menu, there will be an option for Profile Options. This will allow you to cancel the profile, extend the current step time, or manually proceed to the next step.

GLYCOL CHILLER (SOLD SEPARATELY) - COMING SOON

The Conical Fermenter Glycol Chiller fully integrates into the Conical Fermenter and Digital Temperature Controller, and gives you the ability to cold crash and lager.
The glycol chiller connects to the hidden stainless steel sleeve inside the double walled fermenter and runs glycol through it to cool the stainless steel and therefore your wort down to your dialed in temperature on your controller. You can connect up to four fermenters at once, and program in different temperatures and fermenting schedules for each.

The cooling sleeve has two holes, one on each side, glycol entry (lower hole) and exit (upper hole) points. Self sealing couplers, which can be quickly connected and disconnected, allow the liquid glycol to travel in and out of the fermenter without spillage.

As the cooling sleeve never comes into contact with the wort/beer and is never seen by you, it is not something that needs to be cleaned or sterilised, meaning your beer is never compromised.

Using glycol means you can cool your wort down to 4°C (39°F) and have the chiller at -5°C (23°F) as the lowest temperature. Simply enter your desired temperature into your fermenter and the chiller at 10°C (50°F) below that to achieve the most efficient cooling.