



Reflux Still

User Instruction Manual



Designed & Engineered by Keg King

Warnings and General Safety



Please read the entire manual before operating.



WARNINGS

- **RISK OF FIRE!** Stills can produce highly flammable liquids and vapour.
- **ALWAYS** operate in a well-ventilated area away from naked flames
- **NEVER** leave your still unattended when in operation.
- Keep a fire extinguisher on hand.
Foam, dry powder, sand, or CO2 variety extinguishers will be suitable.
- Use a certified, approved boiler.
- **DO NOT** boil your boiler's wash dry.
- **RISK OF BURNS!** - During and after operation, **DO NOT** touch the Reflux Still or the boiler's metal parts without gloves.
- **RISK OF BURNS!** – **NEVER** overfill the boiler.
Overfilled boilers may eject boiling liquid.
- To avoid a vacuum effect when in operation, **DO NOT** distil above 40% ABV.
- Clean up spills immediately and thoroughly with appropriate absorbent materials ensuring to mop with excess water. Shut off all possible sources of ignition.
- Air drafts will affect distillation efficiency. (And output consistency)

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Keg King



Whether you're a brewer or someone wanting to put drinks on tap in your own home, cafe or office, Keg King offers beverage creation and keg dispense solutions for amateurs and pros!

We don't just sell products, we innovate, design, and manufacture our equipment to bring your beverage ambitions to life!

Our brands include:

- King Kegs, our Australian Made P.E.T. kegs
- Apollo P.E.T. Pressure Fermenters & Unitanks
- KegMaster™ Kegerators
- Atomic 15 Brewery Cleaners
- UltraTap Twist FC Faucets
- Spundy spunding valves
- the KegMaster™ Solstice Fridge
- and more!

Check the resellers map on our website to find where our products are available in North America, the United Kingdom, Europe, Australia, New Zealand and South Africa.

<https://www.kegking.com.au/retailers>

Since 2009, Keg King's mission is to make the best brewing & dispensing equipment in the world!

Check out our helpful instructional videos on the **Keg King YouTube Channel**

<https://www.youtube.com/c/KegKingvideos>

Enjoy your Keg King Reflux Still!

Introduction

Keg King Stills are perfect for anyone wanting to produce clean, pure distillates.

To use this product, you will require a boiler unit with a condensing lid.

Ensure your boiler unit is certified and approved for use in your region or country.

For best performance and safe operation, it is IMPORTANT that you read these instructions thoroughly.



NOTE: Distilling spirits can be unlawful in some regions. Please check your area's laws and regulations before you begin.

Please check our web site product pages for updated versions of Instruction Manuals.

<https://www.kegking.com.au/>

The Keg King Difference

Cleaner – Better – Ditch the Brass

Keg King stills are manufactured for a higher level of performance and quality that is built to last. We use only **copper and stainless-steel** in the construction to achieve a cleaner, more sanitary still.

Users will note the welding between the copper and stainless parts is superior to cheaper still designs.

Our tri-clover compatible bottom is easy to mount on almost any 47mm wide hole in a condensing lid.

The new stainless steel universal posts are suitable for garden hoses and disconnects making the still easier to cool with simple garden variety hoses.

The new Double helix copper condenser coil will provide users with a fast-cooling maximum efficiency.

Lead free silver soldering ensures the stills remain food safe.

Our materials and construction provide a super smooth surface inside for efficient passage and collection of vapor and liquids.

For greater efficiencies check out our optional tri-clover extension.



Features

- Manufactured from copper, stainless-steel, and lead-free silver solder
- Tri-clover or threaded condensing lid mounting options
- A double-helix copper condenser coil, providing fast-cooling efficiency
- Stainless-steel universal “garden hose” connection posts that accept both Liquid disconnects and 12mm garden hose fittings

Unboxing

Please check that the unit is free of damage.

Included Items



The Keg King Reflux Still



A Digital Thermometer

Additional Required Items (not included)

A Boiler such as



[35L Boiler - 2300W](#)
(comes with suitable condensing lid)
Keg King part code 5113

OR



[50L Guten Brewery System](#)
(comes with suitable condensing lid)
Keg King part code 8013

A Condensing Lid



[Lid for Turbo Boiler - 47mm hole](#)
SKU RET8166

A Collection Flask



[5L Conical Flask](#)
SKU 6165

A Silicone lid Seal



[Silicone Seal for Turbo Boiler Lid](#)
SKU RET9217

Optional Extras (not included)

Liquid Connections



Premium Barbed Liquid Ball Lock Disconnect

(SKU 8275)

Available with either a Barb or MFL these will block any flow through the tubing when disconnected.



Duo Quick Disconnect

(SKU 12814/12807)

Easily disconnect two lines at the same time. Disconnects dry on both sides to minimize mess.



Hose Connector With Ball Valve

(SKU 10133)

This disconnect adds a convenient ball valve to the cooling loop, making for easy flow adjustments at the head.



Silicone Tube

10mm x 6mm
(SKU 10858)

This silicone hose fits over the spout of the still perfectly, making for an easy way to get your distillate into your container



Heavy Duty Silicone Tube Hose

18.5mm x 12.5mm
(SKU 5496)

This heavy duty silicone hose is much more durable than the typical garden hose. Fits nicely into a standard garden hose quick-connect



2 inch Tri Clover Silicone O-ring Beaded Seal Single Sided

(SKU RET6582)

Replacement triclamp seal

Getting to Know the Unit



1. Cooling water inlet & outlet – standard garden hose or Liquid disconnect (SKU 8275) connections.
2. Thermowell
3. Thermometer
4. Distillate outlet (6mm)
5. Tri-Clover mount for tri-clover condensing lids
6. Silicone washer
7. Threaded insert for non-tri-clover condensing lids
8. Stainless steel Needle Valve

Initial Set Up

NOTE: Before using for the first time, the Reflux Still needs rinsing to wash out any unwanted manufacturing oils or material. Turn the Still upside-down and run plenty of warm water through the internal surfaces.

You will first need a boiler unit with suitable condensing lid to attach the Reflux Still to. We recommend our easy-to-use 35L 2300W Boiler, which includes a suitable condensing lid with mounting hole.

Our Brewery systems are also suitable as boiling units when fitted with condensing lids.

The condensing lid requires a 47mm diameter mounting hole for attaching the Reflux Still to.

Alternatively, using the tri-clover mount, with a tri-clover seal and clamp, the Reflux Still can be mounted onto 2inch tri-clover equipment.

Check that your lid has a silicone seal between the lid and the boiler lip, to ensure vapor does not escape from under the lid.

Assembly

1. Unscrew the threaded insert (7) with silicon washer (6) from the base of the Still. Insert the threaded insert through the silicon washer and through the underside of the condenser lid (as illustrated left) and screw the threaded insert securely back into the base of the Still.

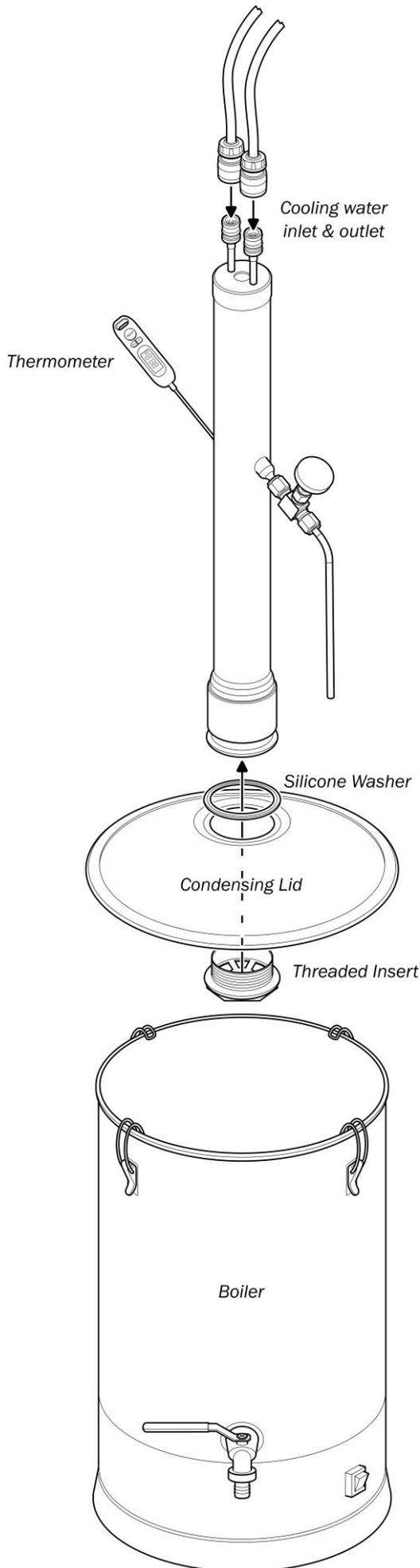
Please note that the copper outlets may be bend in order to accommodate your set up. Please be careful when doing so: be gentle and do it when the still head is cold.

2. Place the boiler on a secure, stable, heatproof surface where there is convenient access to water hoses for the cooling water supply and drainage.

3. Place the condenser lid (with attached Still) on top of the boiler and clamp in place with the boiler's clips, ensuring the lid's silicon is seated properly.

4. Connect hoses to the cooling water inlet and outlet with standard garden hose connections (available from hardware stores). It does not matter which connection is the inlet or outlet. Connect the inlet hose to an appropriate water source that can supply adequate flow (approximately 1.5 liters per minute). Ensure that the other end of the outlet hose will run cooling water to a suitable draining point, i.e. a drain, water tank, sink etc.

5. Insert the thermometer into the Reflux Still's thermowell as shown in the diagram. The thermowell might be tight, but the thermometer should be inserted about 4 cm.



Operation

1. Put your wash into your boiler. Never fill your boiler right to the top. A minimum of 15% head space is required to prevent the wash bubbling up the reflux column. When pouring your wash into the boiler try to limit the amount of yeast that enters the boiler as yeast creates unwanted off flavors
2. At this stage you can add Distilling conditioner (SKU RET0603) or a knob of butter to help prevent puking, where the wash bubbles up the still column.
3. Test water connections for leaks by carefully starting the water flow. Fix any leaks before proceeding.
4. Test the water flow rate by collecting water from the outlet for 20 seconds. Adjust flow and repeat as necessary, aiming for approximately 500ml of water per 20 seconds for cooling water under 20C.
5. Make sure the Needle Valve is fully closed.
6. Power on your boiler.
7. Keep an eye on the temperature as the wash heats up. The column should start to heat up at some point after the wash reaches 78C. The exact temperature will depend on the concentration of the wash.
8. The column temperature will rise quickly, so be ready.
9. Once the temperature of the column starts to rise, check the temperature of the cooling water outlet. If the temperature is too high, increase the cooling water flow rate.
10. Slowly open the needle valve and collect the distillate in a separate container until it stops smelling like nail polish remover. **Discard this part. It could be poisonous.**
11. Keep collecting the output in your main container. You want to collect at a rate that keeps the Temperature on the thermometer consistent. If the temperature reading drops, you are pulling of distillate too fast. The ethanol coming off the still should be about 92%
12. When the temperature of the still head increases, you will have collected all that is worth collecting. switch off the boiler and wait for it to cool below 90C before turning off the cooling water.
13. Once both the boiler and Still have cooled down, follow the “Cleaning and Maintenance” instructions below to keep the equipment in good working order.

Cleaning and Maintenance

After the distilling is completed, it is important to rinse out the boiler and the inside of the Still, as the liquid being distilled can be corrosive.

Once the boiler and Still Head have cooled down...

1. Disconnect the hoses and drain them of carefully.
2. Power off the thermometer. Remove it from the still. Store in a safe place.
3. Remove the condenser lid and attached Still Head from the boiler.
4. Rinse the Still Head by running hot tap water through it, making sure that water exits through the holes near the cooling water connections.
5. Make sure the Still Head is drained and dry before storing.
6. Disconnect the boiler's power cord.
7. Remove the remaining liquid from the boiler, dispose of the liquid responsibly.
8. Rinse out the boiler with warm tap water, using a cloth to wipe it. DO NOT use a scourer or any form of abrasive cleaner.
9. If necessary, use some Sodium Percarbonate for cleaning stainless-steel boilers. Rinse with warm water after soaking with Sodium Percarbonate.
10. Allow to drain and dry before storing.

If not cleaned properly, your next distillation may produce blue liquid and/or crystals.

If this happens.

1. Using a ratio of 13g per liter of warm water, make enough Citric Acid to submerge the Still Head in a large plastic container.
2. Let the Still Head soak for 30 minutes.
3. Rinse the Still Head with hot tap water for 5 minutes.
4. Make sure the Still Head is drained and dry before storing.

Specifications

Name: KEG KING Reflux Still

Material: 304 Stainless Steel and Pure Copper

Net Weight: ~2kg

Product packaging Size: 660*460*260mm

Bottom Connection: 2" Tri clamp with threaded bulkhead

Bottom Thread clearance hole: 47mm

Thermowell Size: 3.5mm max (1/8")

Liquid Connections: 13mm Garden hose fitting (SKU 10133) or Liquid disconnect (SKU 8275)

Overall height: 560mm

Still Diameter: 50mm

Collection spout OD: 6mm

Troubleshooting

By following this troubleshooting guide, you can address common issues that may arise when using pot and reflux stills on the Keg King 2300 Watt 35L boilers. Remember, distillation can be a complex process, and it often requires experimentation and adjustments to achieve the desired results. Always prioritize safety and follow local regulations and laws when engaging in home distillation.

Issue	Remedy
Poor Distillation Output	<p>Ensure Proper Seal: Check all connections and seals in the still setup to ensure there are no leaks. Leaks can result in vapor loss and inefficiency.</p> <p>Adjust Heat Input: Increase or decrease the heat input to achieve the desired distillation rate. Experiment with different power settings to find the optimal balance.</p> <p>For reflux stills, adjust the ratio of liquid returning to the column to vapor rising through the column. This will affect the purity of the final product.</p>
Overheating or Boiling Issues	<p>Heat Control: Adjust the power setting on the boiler to regulate the heat input. Start with a lower setting and gradually increase if needed.</p> <p>Cooling: Ensure the condenser is functioning properly and effectively cooling the vapor. Clean the condenser if necessary.</p> <p>Foaming Control: Use antifoaming agents or control the foaming by adjusting the heat input or using additives like copper mesh or ceramic boiling stones.</p>
No Distillate Production	<p>Check Water Supply: Make sure the cooling water supply to the condenser is sufficient and the water flow rate is appropriate.</p> <p>Clogged Piping or Condenser: Inspect the piping and condenser for any clogs or obstructions. Clean them if necessary.</p> <p>Ensure the still is not blocked. A blocked vent can create a vacuum and impede distillate production.</p>
Unpleasant Smells or Off-Flavors	<p>Cleaning and Sanitization: Thoroughly clean and sanitize all parts of the still before each distillation run. Residual impurities can affect the flavor and aroma of the final product.</p> <p>Discard Initial Output: For pot stills, discard the initial distillate (foreshots) that may contain volatile compounds. Collect the main distillate for consumption.</p> <p>Heads, Hearts, Tails Separation: In reflux stills, separate the distillate into heads, hearts, and tails, discarding the heads and tails to obtain the desired flavor profile.</p>