DUAL HEAD FILLER MANUAL

KEG828-MB

IMPORTANT SAFETY INFORMATION

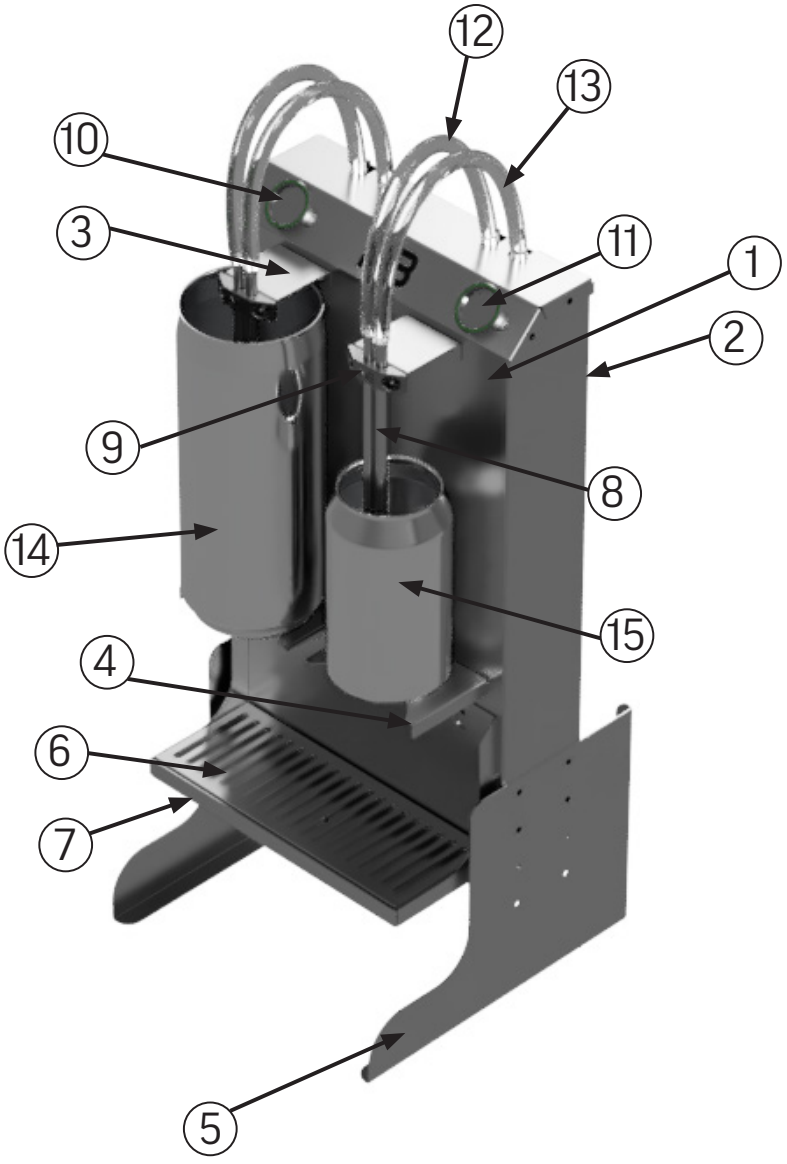
Please read this entire instruction manual for important safety information prior to the use of your Dual Head Filler.

⚠WARNING Failure to follow these warnings could result in serious injury or damage to the machine.

General Precautions:

Water & Electricity: While the housing has been designed to repel water and drain any water from the interior, it should not be sprayed with a hose or immersed. The housing has a low-voltage DC supply for safety.

Parts List	
Item	Description
1	Front
2	Back
3	Filler Clip x 2
4	Can Foot x 2
5	Body Foot x 2
6	Drip Tray Insert
7	Drip Tray
8	Fill Tubes x 4
9	Tube Holder x2
10	Left Operating Button
11	Right Operating Button
12	Beer Tubing
13	CO^2 Tubing
14	Crowler Can
15	12 oz can



NOTE: Below is a quick start guide to operate the machine quickly. Please read the manual first to understand the full use of the product.

QUICK START GUIDE

1. Setup

- **Plug** in the machine**.**
- **Connect** CO_2 and beer lines (beer to left/right, CO_2 to center).
- **Adjust feet/drip tray** for your can size if needed.
- **Position fill tubes** ~¼" above can bottom. (Adjust only for different can sizes as needed.)

2. Programming for New Can Size

- **Turn on** the unit and let it initialize (button turns red, then flashes green).
- **Place can** on the can foot.
- **Set CO_2 purge:**
  - Press and hold button (flashes blue) for desired purge time (e.g., 3 sec @ 3 psi for 12oz can).
  - Release button (flashes yellow).
- **Set Fill Height:**
  - Press and hold button (flashes yellow) until can is filled to desired level.
  - Release button (solid green = programmed).
- **Repeat** above steps for the second fill head if needed.

3. Sanitizing

- Connect keg of sanitizer.
- Press button once to run a sanitize cycle (if already programmed).
- Rinse out with clean water after use.

4. Filling Cans

- **Ensure beer is cold** (minimize foaming).
- **Purge & fill:** Press button once to purge and fill can.
- **Seam can** as soon as foam forms and lid floats.
- **Repeat** for next can.

Note: Pressing button while filling can will cancel the filling process

5. Indicator Light Meanings

- **Solid Red:** Initializing
- **Flashing Green:** Ready to program
- **Flashing Blue:** CO_2 purge programming
- **Flashing Yellow:** Fill height programming
- **Solid Green:** Ready to fill
- **Solid Blue:** CO_2 purging
- **Solid Yellow:** Filling
- Replace tubing if cleaning does not restore flow.

6. Cleaning After Use

- **Run a fill cycle** with water or line cleaner to clear lines.
- **Remove and clean** drip tray, fill tubes, and CO_2 tubes.
- **Store dry** (Do not use caustic cleaners on CO_2 side.)

7. Common Troubleshooting

- **Foaming:** Beer too warm, pressure too high, flow too fast.
- **No lights:** Check power.
- **Persistent red light:** Unplug 1 minute to reset.
- **CO_2 leaks:** Lower purge CO_2 pressure.

Note:

- Always ensure all fittings are tight to prevent oxygen pick-up.
- Only reprogram for different can sizes or fill heights.
- Replace tubing if cleaning does not restore flow.

INTRODUCTION

Thank you for purchasing your Orthos Dual Head Filler! With a little care, this unit should last a lifetime of home or taproom use. The Orthos Dual Head Filler is a versatile and precise piece of equipment, designed to fill cans of any size up to 32 oz crowler size. One of the key features is it's repeatable fill height, which allows for an accuracy of 0.1 inches. This ensures that each can is filled to the exact same level, every time.

Before filling, the filler will automatically purge your can, ensuring that it is oxygen-free and ready to be filled. The Orthos Dual Head Filler also has independent heads that allow for even greater versatility. You can use one head to fill one size of a can and the other head to fill a different size of a can in the same run!

FEATURES

- Dual head
- Adjustable purge time
- Adjustable fill height
- Water resistant controls
- Two high definition color displays
- Easy to clean
- Mount it on your wall or attach it to a table
- 16V DC Operation from the supplied wall converter

ASSEMBLY

1. To mount the filler on a wall, install two screws on the wall 4" apart. These will key into the keyhole slots. To remove, simply lift off the screws.

2. If you plan to use the filler on a table, attach the feet with the supplied screws (use 4 for each side) to keep the unit securely in place during use. There are three positions to choose from for the feet:
   - **A.** 12 oz Can = Upper Holes
   - **B.** 12 oz & 16 oz Can = Middle Holes
   - **C.** 12 oz & 16 oz Can & Crowler = Lower Holes

3. Install the drip tray with the large screws. There are three positions corresponding to the feet positions:
   - **A.** 12 oz Can = Upper Holes
   - **B.** 12 oz & 16 oz Can = Middle Holes
   - **C.** 12 oz & 16 oz Can & Crowler = Lower Holes

4. On the bottom of the filler, there are three quick connects. To use one keg, use a Y fitting, or for two kegs, simply connect two kegs to the left & right beer in. (Optional 90 degree fittings are supplied for the hoses and power connector if desired). Connect CO2 to the center fitting.

5. To properly drain the drip tray, attach a ½" drain hose to the drip tray and run to a floor drain or to a bucket. Alternately, the drain can be plugged and the drip tray removed and emptied as needed.

6. To adjust the height of the fill tubes, loosen the screws holding the filler clip and slide the tubes up and down. The proper height is about 1/4" above the bottom of the can. Then, practice installing and removing a can. Position the fill tubes as close to the bottom of the can as possible without requiring excessive tilting of the can during removal, spilling any precious beer. Once you have achieved the desired height, there is no need for further adjustments to be made

7. Finally, plug the unit in to begin using it.

ADJUSTING FOR CAN SIZE

The Orthos Filler is versatile and can fill a wide range of cans. The feet and drip tray feature adjustable heights, eliminating the need to adjust filler tube heights for different cans. The primary consideration for can height is the ability to remove it from the filler without spillage. Customize the drip tray to the minimum required height to prevent beer spillage when removing the largest can, with preset positions for 12 oz, 16 oz, and Crowler cans.

Additionally, while the drip tray offers flexibility for larger cans, adjusting to the largest can you use will result in the minimum Orthos height. If utilizing the feet, lower them enough to enable the drain tube to exit the drip tray. It's unnecessary to make adjustments for each can; simply assemble the machine based on the dimensions of the largest can you intend to use.

PRE-USE CLEANING

1. Examine the tubing to ensure it is not contaminated. Replace if contaminated.

2. Run the filler from the Orthos to a keg filled with brewer's sanitizer and place the desired can on the can foot.

3. You will need to program the Orthos to initially sanitize.

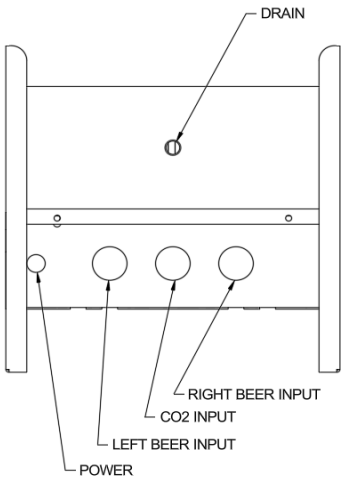
4. Plug in the Orthos, the buttons will light up Red signifying that the Orthos is initializing. It will then Flash Green, meaning you must program it.
5. Press and hold the button for about 3 seconds, it will Flash Blue. Once the button is released, it will Flash Yellow.
6. Place your desired can in place to catch the sanitizer.
7. Press and hold the Flashing Yellow button until the sanitizer reaches the can height and then release.
8. The button will turn Solid Green signifying that the Orthos has been programmed.
9. Repeat for the other side.
NOTE: Please follow your sanitizer's recommended steps for contact time.
NOTE: You do not need to reprogram the Orthos for every sanitization if you plan on using the same size can for future uses. Simply plug in the Orthos, hook up a keg full of sanitization & press the button once to run a fill cycle. Then begin the can filling process.

PURGE & FILL HEIGHT SETUP

1. After your very first sanitizing process, connect your CO_2 and beer.
2. Press and hold the button for 5 seconds to reprogram the Orthos to set the beer fill height. The button will return to Flashing Green to show it is ready for programming.
3. Press and hold the button for the desired purge time, it will Flash Blue. A good starting point is 3 seconds at 3 psi for a 12 oz can.
4. Once the button is released, it will Flash Yellow.
5. Press and hold the button until the can reaches the desired fill height and then release.
6. Once the button is released, the filler will turn Solid Green, indicating that the purge and fill height have been successfully programmed.
7. Repeat for the other side. The two sides can operate and reset independently.
NOTE: If you want to stop the fill in the middle of a purge or fill, simply press the button once. This will not reset the program, only stop the fill.
NOTE: For best results, we recommend reprogramming the Orthos if you plan on using different style or carbonation level of beer.

BEER AND CO_2 SETUP

1. Before the canning process, ensure the beer is as cold as possible. Most foaming issues can be cured by keeping the beer cold and slowing the flow rate.
2. Push the beer slowly and at a lower pressure than the carbonation pressure (about 5 PSI is a good place to start).
3. The purge CO_2 should be at about 3 PSI. If the CO_2 does not shut off fully, lower the purge pressure. This can be checked by placing a glass of water over the CO_2 tube and seeing if it bubbles when the CO_2 should be off.



BOTTOM VIEW

OPERATION

The goal of filling cans is to pick up as little oxygen as possible. It is very important that all fittings from the keg to the can are secure. Even fittings that don't leak beer can allow oxygen ingress. The perfect fill level includes a small amount of small bubble foam, and the lid should lightly float on the foam before the seaming process. This method ensures as little O_2 pickup as possible.

To enhance production efficiency, it's recommended to start filling the next can while the current one is undergoing seaming. The most efficient production occurs when both heads are operational, with one slightly trailing the other. To establish a seamless rhythm, begin by filling two cans. Place the first can on the seamer, initiate the filling of another can, seam the first can, start filling a third can and then seam the second can. This process will help establish a smooth and efficient workflow.

INDICATOR MEANINGS

- Solid Red – Initializing
- Flashing Green – Ready for programming, nothing set
- Flashing Blue – CO_2 Programming in progress
- Flashing Yellow – Beer Programming in progress
- Solid Green – Programming set ready to start
- Solid Blue – CO_2 purge in progress
- Solid Yellow – Beer fill in progress

POST USE CLEANING

1. After use, run a fill cycle on each side of the filler from a keg of water or beer line cleaner to clear out any remaining beer.
2. Remove and wash the drip tray.
3. Remove the stainless fill and CO_2 tubes and clean with a brush.
4. If you have lowered the pressure of the keg for bottling, make sure to bring it back up to the chart CO_2 pressure to make sure the remaining beer does not lose carbonation.

NOTE: Do not use caustic cleaners on the CO_2 side of the system. The CO_2 side should remain liquid-free in use but if you must clean it, rinse with Star San from a keg and purge with CO_2. Remove the CO_2 hose from the pressure sensor before cleaning. Be careful to not remove the sensor from the board.

NOTE: The tubing is easy to replace and should be replaced any time cleaning is not sufficient.

MAINTENANCE

You may use beer line cleaner on this filler. Store dry. If the beer tubing needs to be replaced, please order tubing D1706S. If the CO_2 tubing needs to be replaced, please order tubing D1706S. Note, there is ½" of R316 tubing on each pressure sensor. Wipe surfaces with a clean cloth. Do not submerge.

REPLACING TUBING

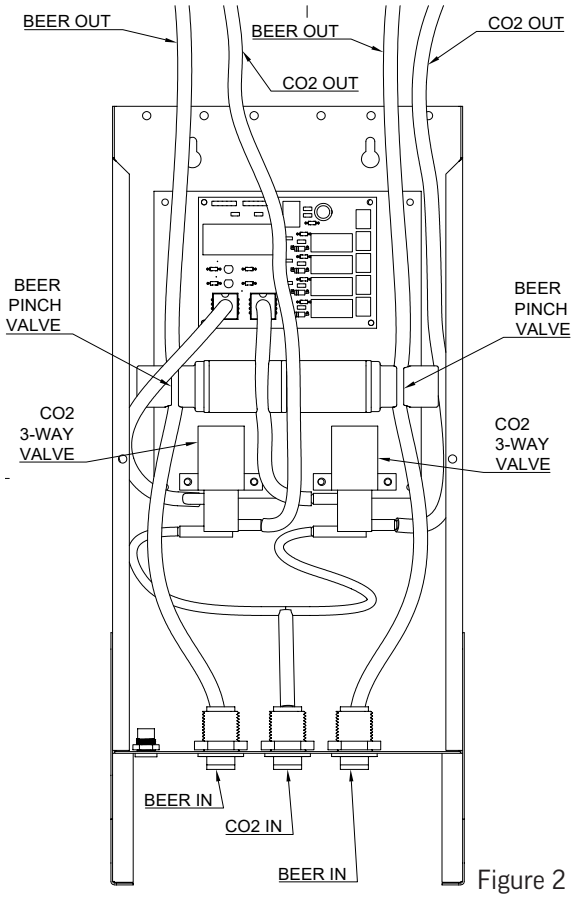


Figure 2

1. If wall mounted, remove the unit from the wall. The feet do not need to be removed if table mounted.
2. Remove the drip tray.
3. Remove the two screws from the front just above the can holders.
4. Remove the 6 screws from the back.
5. Remove the 2 screws from each side.
6. Remove the 3 screws from the bottom.
7. Pull the bottom of the front cover toward you and lift it till you can see inside.
8. Unplug the button wiring from the board.
9. Set the front aside.
10. Replace the pinch tube by pushing on the end of the valve to hold the valve open.
11. Replace the CO2 tubing if needed. See Figure 3 for the pressure sensor location.
12. Install the switch wiring.
13. Install the front cover.
14. Install the screws.
15. Hang the unit if wall mounted.

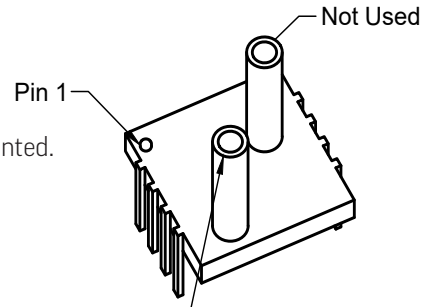


Figure 3

TROUBLESHOOTING

Reason	Solutions
Foaming beer	Beer is not cold enough. Keg pressure is too high. Flow rate is too high.
The buttons don't light up	Plug the unit in.
The buttons stay red	Unplug for 1 minute to start reboot. Call Customer Service for assistance if still facing issues.
CO_2 leaks into can during fill or when the machine is idle	Lower the purge CO_2 pressure.
Beer shuts off without filling	Pressure sense tubing on the wrong port. Programming was erased.

Reason	Solutions
Unit Flashs Red	Unplug, wait 3 seconds and plug in again Check the Pessure sensors are fully seated in the board (V1 Only)
Unit Skips Fill Cycle	Lower CO2 pressure for purge. If you place a glass of water in the fill location no CO2 should leak out the CO2 port. If it does, the CO2 Pressure is too high
Beer foams excessively	Make sure the keg and line is as cold as possible - fill more slowly The wrong head is connected to the wrong button - reverse the pinch valve wiring to the board.

UPGRADING

In order to upgrade your Orthos you will need to open the case and connect to the USB port on the daughter board. The latest update package is available on the Orthos page on morebeer.com or customer service can give you a link. The cable is a USB type A to USB micro A. It is important you have a data cable and not a charge only cable. The charge only cables do not have all the wires. You will also need a Windows machine. Do not plug in the orthos yet. We need to find the port number when we plug it in.

First we will put the software where the code can find it.

- Unzip the supplied file into C:\Orthos by right clicking on the zip file and selecting extract all
- It will ask for a file location enter C:\Orthos and hit Extract

Now we will find the COM port of the Orthos

- Type "Device Manager" into the windows search bar.
- Expand Ports (COM & LPT)
- Notice what ports are being used.
- Plug in the Orthos and write down what port is created. You will need this information in the next step.

Now we will run the code and upload the hex file.

- Type "CMD" into the windows search bar.
- In the Command Prompt window type "cd C:\Orthos"
- Type "update.bat 3" replace 3 with your com port you found above.
- or if you have reversed buttons, type "update.r.bat 3" replace 3 with your com port you found above.
- The program will upload the new Orthos version to your device and then exit. It creates a file named results.txt
- Open this file with Notepad and make sure it completed without errors.

If you get stuck, please reach out to our customer service team at 1-800-600-0033.

Files included:

Orthos.1.1.2.ino.hex - The Orthos software

Orthos.1.1.2.r.ino.hex - The Orthos software with reversed buttons

avrdude.conf - A configuration file for AVRdude

avrdude.exe - the software that burns the hex file

README.txt - This file

update.bat - The lines of code to configure AVRdude and start the update process

update.r.bat - The lines of code to configure AVRdude and start the update process for reversed buttons

Change Log.txt - Documents the changes between revisions

The AVRDude license (GNU General Public License v2.0) can be read here:

https://github.com/avrdudes/avrdude/blob/main/COPYING

FAQ

How long does this take?
A successful run takes about 30 seconds. You will see the flashing yellow light turn off, when it starts blinking again, it is complete.

What if the flashing light does not stop blinking?
Make sure nothing else is using that port, like an open Arduino IDE.

What if it takes too long and fails?
Try unplugging the arduino for a few seconds and try again.

What does the results file contain on a successful run?
Sample successful output:

Avrdude version 7.3-20240812 (cd956e82)

Copyright see https://github.com/avrdudes/avrdude/blob/main/AUTHORS

System wide configuration file is c:\Orthos\avrdude.conf

Touching serial port COM3 at 1200 baud

Waiting for new port... using same port COM13

Using port : COM3

Using programmer : jtag2updi

Programmer baud rate : 115200

AVR part : ATmega4809

Programming modes : SPM, UPDI

Programmer type : JTAGMKII_UPDI

Description : JTAGv2 to UPDI bridge

Main MCU HW version : 1

Main MCU FW version : 1.07

Sec. MCU HW version : 1

Sec. MCU FW version : 6.07

Serial number : 00:00:00:00:00:00

Silicon revision: 0.1

AVR device initialized and ready to accept instructions

Device signature = 1E 96 51 (ATmega4809)

Erased chip

Processing -U flash:w:Orthos_1.1.2.ino.hex:i

Reading 16784 bytes for flash from input file Orthos_1.1.2.ino.hex

in 1 section [0, 0x418f]: 132 pages and 112 pad bytes

Writing 16784 bytes to flash

Writing | ## | 100% 12.39s

Reading | ## | 100% 2.42s

16784 bytes of flash verified

Processing -U fuse2:w:0x01:m

Reading 1 byte for fuse2/osccfg from input file 0x01

in 1 section [0, 0]

Writing 1 byte (0x01) to fuse2/osccfg, 1 byte written, 1 verified

Processing -U fuse5:w:0xC9:m
Reading 1 byte for fuse5/syscfg0 from input file 0xC9
in 1 section [0, 0]
Writing 1 byte (0xC9) to fuse5/syscfg0, 1 byte written, 1 verified

Processing -U fuse8:w:0x00:m
Reading 1 byte for fuse8/bootend from input file 0x00
in 1 section [0, 0]
Writing 1 byte (0x00) to fuse8/bootend, 1 byte written, 1 verified

Avrdude done. Thank you.