# duo

by Coffee Crafters

## Commercial Fluid Bed Electric Coffee Roaster · Owner's Manual

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SECTION 1

# Introduction

## About Coffee Crafters

Coffee Crafters manufactures all-electric fluid bed coffee roasters in Post Falls, Idaho. Since 2012, we have helped new and growing roasters get into the business with equipment that is affordable, easy to operate, and easy to maintain — built 100% in the USA.

### Our Team

Jason Scott — Owner and President. Jason is the founder of Hermetheus Coffee, a roastery in the Kansas City area that he built on a Coffee Crafters Artisan 6. He began working with the Coffee Crafters team in 2022 on the Hermetheus Co-Pilot automation system and purchased Coffee Crafters from Ken Lathrop in 2025.

Chris Hammock — Chief Engineer and co-owner. Chris designed every roaster in the current Coffee Crafters lineup, including the DUO. He has led all engineering and product development since 2021.

Bryce Bull — Vice President in charge of Sales, Marketing, and Customer Service. Bryce is the longest-tenured member of the team and serves as the primary voice for customers. If you call or email Coffee Crafters, Bryce is most likely who you will hear from first.

Angela — Shipping and Fulfillment. Angela coordinates all outbound shipments and handles logistics for new roaster orders.

## A Letter from the President of Coffee Crafters

Your new DUO is the first roaster to carry a piece of Coffee Crafters history and a piece of our future in the same machine. The roast chamber is the same proven design Ken Lathrop built this company on back in 2012 — battle-tested, forgiving, and a genuine pleasure to roast on.

**Here is what is new in the DUO:**

- A brushless loft motor with RPM regulation and a significantly longer service life — the most advanced motor we have ever put on a roaster
- AirSense safety, which cuts power to the heating elements the moment it detects inadequate loft airflow
- An integrated Power Console displaying real-time line voltage, watts and amps in use, and lifetime kilowatt-hour consumption

Like every roaster we make, the DUO is easy to install, easy to operate, easy to maintain, affordable, and 100% designed and built in our factory in Post Falls, Idaho.

I was a Coffee Crafters customer long before I took the reins here. I built Hermetheus Coffee, a roastery in the Kansas City area, on a trusty Artisan 6. In 2022, I started working with the Coffee Crafters team on the Co-Pilot automation, and when Ken decided to retire, he asked me to carry the company forward.

Chris Hammock, who designed every roaster in our current lineup including the DUO, is still here as my partner and leads engineering. Bryce Bull, our vice president, is the voice most of our long-time customers already know and is still the person you will likely speak with when you call. In fact, aside from Ken's retirement, every person who was here before the transition is still here today.

That matters, because at Coffee Crafters, support is not an afterthought. Over a decade in, we are still the shop where you can reach the engineer or the owner any day of the week. Check out our YouTube channel for roasting and marketing guidance, reach out any time, and know that we are invested in your success.

Welcome aboard. Roasting made easy starts now.

**Jason Scott**
President, Coffee Crafters

## Important Safety Information

Read this entire manual before installing or using your DUO, and keep it near the roaster for anyone who operates it. Coffee roasting uses high heat and produces chaff, smoke, and oils that can catch fire. Following these instructions keeps you, your space, and your roaster safe.

### Safety Messages in This Manual

Safety messages in this manual follow the ANSI Z535 format. The ⚠ safety alert symbol means a personal injury hazard. Obey every safety message that follows this symbol.

| | |
|---|---|
| ⚠ **DANGER** | Indicates a hazardous situation that will result in death or serious injury if not avoided. |
| ⚠ **WARNING** | Indicates a hazardous situation that could result in death or serious injury if not avoided. |
| ⚠ **CAUTION** | Indicates a hazardous situation that could result in minor or moderate injury if not avoided. |
| ***NOTICE*** | Indicates information about preventing damage to the roaster or your property. No personal injury hazard. |
| **SAFETY INSTRUCTIONS** | Indicates steps or procedures for safe operation. |

### Key Hazards

| | |
|---|---|
| ⚠ **WARNING** | **Fire hazard.** Beans, chaff, and roasting oils can ignite. A fire can spread into the exhaust ducting and the building.<br>• Never leave the roaster unattended while it is on.<br>• Always run the exhaust blower whenever the roaster is on. Never roast with the blower off.<br>• Empty the chaff collector before it is 50% full.<br>• Clean the exhaust ducting at least once a year, and more often with heavy use.<br>• Keep a fire extinguisher rated for the space within reach whenever the roaster is running.<br>• Know the fire procedure in Section 4 before your first roast. |

| | |
|---|---|
| ⚠ **WARNING** | **Electric shock hazard.** This roaster runs on high-voltage power. Contact with live parts can kill.<br>• Have a licensed electrician install the circuit, receptacle, or hardwired connection to local electrical code.<br>• Use only a properly grounded supply that matches the Specifications in this manual.<br>• Turn off and unplug the roaster, or switch off its breaker, before cleaning, servicing, or opening any panel. |

| | |
|---|---|
| ⚠ **WARNING** | **Exhaust hazard.** Roasting smoke contains carbon monoxide and other combustion byproducts.<br>• Vent the exhaust outdoors through metal ducting as described in Assembly & Installation.<br>• Never vent into a room, attic, crawl space, or another building exhaust system.<br>• Follow your local mechanical and fire codes (see Exhaust & Ventilation Codes in Section 6). |
| ⚠ **CAUTION** | **Burn hazard.** The roast chamber, hood, glass, exhaust parts, and freshly roasted beans get hot enough to burn skin.<br>• Do not touch hot surfaces during or right after roasting.<br>• Let the roaster cool before cleaning.<br>• Keep children and pets away from the roaster while it is in use or cooling. |
| ***NOTICE*** | Use the roaster only for roasting coffee beans. Do not modify the roaster or bypass its safety interlocks. Using parts other than Coffee Crafters replacement parts can damage the roaster and void the warranty. |

SECTION 2

# Warranty & Guarantee

## DUO Roaster Warranty

Your DUO Roaster has been manufactured and tested to the highest quality standards by Coffee Crafters. This Limited Warranty covers defects in material or workmanship on new DUO Roasters. The warranty extends to the original purchaser only and is non-transferable. Only customers purchasing roasters directly from Coffee Crafters may obtain coverage under this limited warranty.

Under normal installation per Coffee Crafters instructions, use, service, and maintenance, for a period of one year from the original purchase date, Coffee Crafters will replace, at no charge, any product or part of the product that proves defective due to improper workmanship or material.

The warranties expressed above are the ONLY warranties provided by the manufacturer. These warranties give you specific legal rights, and you may also have other rights which vary from state to state.

## What Is Not Covered

- Damage resulting from improper installation or maintenance
- Any repair, modification, alteration, or adjustment not authorized by the manufacturer
- Misuse, abuse, accidents, unreasonable use, or acts of God
- Incorrect electric current or voltage
- Improper setting of any control
- Use of risers or pedestals not authorized by the manufacturer
- Products returned with removed, damaged, or tampered labels, equipment, or alterations
- Products where original serial numbers have been removed, altered, or cannot be readily determined
- Chaff filters (consumable items)
- Products purchased for use other than roasting coffee
- Any food loss due to product failures
- Travel and transportation expenses for product service
- Consequential or incidental damages

## If You Need Service

- See the Maintenance & Troubleshooting section of this manual
- Visit our YouTube channel for maintenance and troubleshooting videos on fixing and replacing roaster parts

- If you are still having issues, give us a call or send us an email so we can work through it with you.

**CONTACT** Phone: (509) 228-6916 · Email: info@coffeecrafters.com

## 30-Day Money-Back Guarantee

We want you to be fully satisfied with every item you purchase from Coffee Crafters. If you are not satisfied with an item, you may return it within 30 days of delivery for a full refund of the purchase price, minus shipping, handling, or other additional charges. The item must be returned in new condition, in its original boxes, and with all paperwork, parts, and accessories to ensure full credit.

## Return Instructions

For tracking and insurance purposes, all returns must be shipped to Coffee Crafters.

- Contact Coffee Crafters Customer Service at (509) 228-6916 to begin the return process
- Pack the item securely in the original package if possible. Enclose the return portion of the original packing slip
- All products must be returned in excellent condition, in original boxes, and with all paperwork, parts, and accessories
- All return shipping charges must be prepaid. We cannot accept C.O.D.
- Keep the return tracking number from your package to confirm it arrives at the warehouse
- Expect a refund in the original form of payment within 10–15 business days of our receiving your return. Shipping costs are not refundable

## Damaged or Defective Items

If your roaster arrives and the outer packaging shows visible damage — crushed corners, punctures, or significant deformation — do not sign for the delivery. Refuse the shipment and contact Coffee Crafters immediately at (509) 228-6916. Signing for a visibly damaged shipment may affect your ability to file a claim.

If damage is discovered after delivery, contact Coffee Crafters Customer Service at (509) 228-6916 as soon as possible. Please have your order number, item number, and tracking number from your original confirmation email ready. We will also need your email address and phone number.

We will make every reasonable effort to assist you with your return. If you do not contact Customer Service first, you are responsible for all return shipping charges. A defective item from shipping may be repaired or replaced within 90 days of purchase under the Coffee Crafters Warranty.

SECTION 3

# Cleaning & Sanitation Guide

**Cleaning Introduction:**

This document provides manufacturer-recommended cleaning and sanitation procedures for Coffee Crafters fluid bed air roasting systems. It covers the roasting chamber, bean cooling tray, chaff handling components, and associated bean-handling surfaces. It is intended to support a customer's written sanitation program and to respond to a local health department's request for equipment-specific cleaning guidance.

These procedures apply to all Coffee Crafters roasters.

**Food Equipment Sanitation & Your Health Department:**

If you roast for a coffee shop, café, or other licensed food business, your local health department may review your roaster before you open or during an inspection. Here is what they usually ask for.

**NSF certification.** Coffee Crafters roasters are **not** certified to NSF/ANSI 4 or any other NSF food-equipment standard. Many health departments follow the FDA Food Code, which treats equipment certified by an ANSI-accredited program as automatically acceptable. Equipment without that certification can still be approved, but the inspector may review how it is built and cleaned. Ask your health department early, before you finalize your plan review.

**What to give your inspector:**

- **This manual,** especially this Cleaning & Sanitation Guide and its Cleaning Log.
- **Food-contact materials:** roast chamber — 304 stainless steel, 12 and 16 gauge; viewing glass — borosilicate glass; bean cooling tray — 304 stainless steel, 18 gauge; green bean hopper and loading chute — 304 stainless steel, 20 gauge.
- **Electrical safety listing:** UL listed, UL File No. 139055, as shown on the roaster's data plate.
- **Your cleaning schedule:** how often you clean depends on how much and how often you roast. Use the frequency listed for each component in this guide and adjust it to your roasting volume.

**Good practice for a food business:**

- Keep green coffee storage, roasting, and packaging areas clean and separate from chemicals.
- Use only food-safe cleaners on food-contact surfaces, and rinse as directed.
- Keep the Cleaning Log current. It is the easiest way to show an inspector your routine.

**General Safety Precautions:**

- Always power down, lock out, and allow the unit to cool to a safe handling temperature before opening any panel, tray, or collector.
- Never spray water or use wet cleaning methods on the control panel, motor housing, heating elements, or other electrical components.
- Use a HEPA-filtered vacuum or dry brushing for chaff and dust removal — avoid compressed air, which aerosolizes fine combustible dust.
- Do not use chlorinated cleaners, steel wool, or abrasive pads on the roast chamber interior or cooling tray screen; these can damage surfaces and leave residue that affects roast flavor.
- Wear appropriate PPE (gloves, eye protection, and a dust mask/respirator when cleaning chaff collection areas) per your facility's safety program.

**Procedures by Component**

## Roasting Chamber / Hopper

### Why it matters

The DUO's fluid-bed design suspends beans in a high-velocity heated air stream rather than tumbling them against a drum wall, and that same air stream carries most chaff onward to the cyclone during the roast itself — so the hopper doesn't accumulate chaff the way a drum does. What it does accumulate over time is a film of roasted-bean oil and fines on the hopper walls, perforated basket/screen, and air distribution plate. That buildup gradually changes airflow and heat transfer, which shows up first as roast-to-roast drift (batch times or profiles no longer matching) before it becomes a housekeeping problem.

### Frequency

Full hopper teardown and interior cleaning approximately every 5,000 lbs of coffee roasted (or sooner if you notice airflow/roast-time drift, which is usually the earliest sign buildup has reached the distribution plate). Between teardowns: a quick visual/airflow check at your normal service interval, and exterior/access-point wipe-down as needed — no interim disassembly required.

### Procedure

- Power down, lock out, and allow the full system to cool to a safe handling temperature before beginning teardown.
- Remove the probe and thermometer from the hopper and set aside.
- Dry-brush loose chaff and fines from all interior surfaces, then wipe down oil film with a lightly dampened food-safe cloth; use a food-equipment-safe degreaser per the product label on heavier buildup, then wipe dry.
    - For a deeper cleaning, soak the hopper in hot water and dish soap or Cafiza (a food-grade espresso machine cleaner) then scrub with a plastic dish brush.
- Inspect the perforated basket/screen and distribution plate for blocked holes and clear them — partial blockage is what drives most of the airflow drift between cleanings.
- Reassemble the probe and thermometer to the hopper.

### Tools & materials

Dry brush, lint-free cloths, food-equipment-safe degreaser (non-chlorinated), service manual for your specific model.

### Cautions

- This is a scheduled-downtime job, not something to start mid-shift — budget the time the teardown actually takes on your model.
- Track roast count or throughput (e.g., a running lb total since last teardown) so the ~5,000 lb interval doesn't rely on memory alone — the cleaning log at the end of this section works well for this.

## Bean Cooling Tray

### Why it matters

This is the highest-priority food-contact surface in the system: beans land here immediately after roasting with no further heat treatment, and the screen accumulates chaff dust, bean fragments, and potential insect activity.

### Frequency

Brush/vacuum chaff after every batch or at end of shift, whichever is more frequent. Full wash-down of the tray and screen daily during operation.

### Procedure

- Power down and allow the tray to cool.
- Remove loose chaff and fines with a HEPA-filtered vacuum or brush.
- Detach the screen (if removable) and wash with warm water and a food-safe detergent; rinse and air-dry completely before reinstalling.
- Wipe the tray surface with a food-safe sanitizing solution; allow to air-dry.
- Check underneath the tray and around the cooling fan intake for accumulated chaff and clear it.

### Tools & materials

HEPA vacuum, food-safe detergent, food-contact-surface sanitizer, lint-free cloths.

## Chaff Collector, Cyclone & Exhaust Ductwork

### Why it matters

In a fluid-bed roaster, this is where most chaff actually ends up — the air stream carries it out of the roasting chamber continuously during the roast rather than leaving it to sit in a drum. That makes this the primary chaff pathway to keep clear. It's not a food-contact surface, but chaff and fine dust here are a combustion hazard and a pest attractant, and a partially blocked cyclone or duct can itself become the airflow problem that shows up as chamber drift.

### Frequency

Empty the chaff collection bin daily (or more often at high volume). Inspect and clean cyclone interior and duct joints weekly.

### Procedure

- Confirm the system is powered down and cool before opening the collector.
- Empty the chaff bin into a covered, non-combustible container; dispose of per local fire code.
- Vacuum or brush accumulated chaff from the cyclone body and accessible duct sections.
- Inspect duct joints/seals for chaff accumulation and leaks; clean and reseal as needed.
- Replace or clean filters as needed.

### Tools & materials

HEPA vacuum, brush, covered non-combustible waste container.

### Cautions

- Chaff is combustible — never use compressed air, and keep collected chaff away from ignition sources.
- Follow your local fire marshal's requirements for chaff/dust disposal frequency if applicable.

## Green Bean Hopper & Loading Chute

**Why it matters**

Holds raw (unroasted) green beans, which carry field/warehouse dust and occasional foreign material. Not heat-treated at this stage, so good housekeeping here prevents contamination carrying into the roast.

**Frequency**

Visual inspection before each load; full wipe-down and debris removal weekly.

**Procedure**

- Empty the hopper and remove any dust, chaff, or foreign material (stones, twigs) from the bottom and walls.
- Wipe interior surfaces with a dry cloth; use a lightly dampened food-safe cloth for dust film, then dry completely before reloading beans.
- Check the loading chute and any gates or valves for residue buildup and clear as needed.

## Cleaning Log

| Date | Component | Performed by | Observations / corrective action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

## Notes

- This document is manufacturer guidance and a starting point — the operator's food safety/sanitation program should ultimately be reviewed and finalized with their local health authority.
- Adjust frequencies upward for high-volume operations or when roasting particularly oily/dark profiles, which accelerate residue buildup.

SECTION 4

# What to Do If You Have a Fire

Fires in a coffee roaster are rare, but they can happen, especially if chaff is allowed to build up in the chaff bag or cyclone, the ducting, or around the roaster. Read this page before your first roast so you already know the order of these steps. In an emergency you will not have time to look them up.

⚠ **WARNING** **Follow these steps in order. Turning the exhaust blower off FIRST is what stops the fire from spreading — every other step depends on it.**

## Emergency Procedure

1. **Turn off the exhaust blower first.**
   The blower pulls air through the roaster and the ductwork. Leaving it running feeds the fire with oxygen and pushes flames and embers down the exhaust run. Shut it off before you do anything else.
2. **Dump the beans into the bean cooler and shut down the roaster.**
   Getting the burning beans out of the roast chamber removes the fuel. Then turn off the heating element and the system power switch.
3. **Turn off the breaker.**
   Cut power to the roaster at the breaker panel. This removes the ignition source and makes the machine safe to approach.
4. **Use a fire extinguisher if necessary.**
   If the fire has not gone out on its own once the airflow, fuel, and power are removed, use a fire extinguisher rated for the space. Keep one within reach of the roaster at all times.
5. **Call the fire department if needed.**
   If the fire is spreading, has moved into the ductwork or the building structure, or you cannot put it out quickly, get clear and call the fire department. Do not stay to fight a fire you are not able to control.

## After a Fire

Do not roast again until the roaster, the chaff collection system, and the entire exhaust run have been inspected. Fire commonly travels into the ducting, and damage there is not always visible from the roasting area. Contact Coffee Crafters before returning the machine to service so we can help you check it over.

SECTION 5

# Specifications

| MAX BATCH | ROAST TIME | HOURLY OUTPUT |
|---|---|---|
| 2 lbs | 8–14 min | 10 lbs/hr |

DUO system includes integrated bean cooler. Optional equipment: chaff cyclone and exhaust blower sold separately.

| PERFORMANCE | |
|---|---|
| **Batch Size** | 200g to 2 lbs. |
| **Roaster Production** | 10 lbs. per hour |
| **Roast Time** | 8–14 minutes (based on batch size and roast level) |
| **Roaster Heat** | 3,550 watts |
| **Power Console** | Real-time readings: wattage, voltage, amperage, and lifetime kWh |
| **Bean Temperature** | Digital thermometer included |

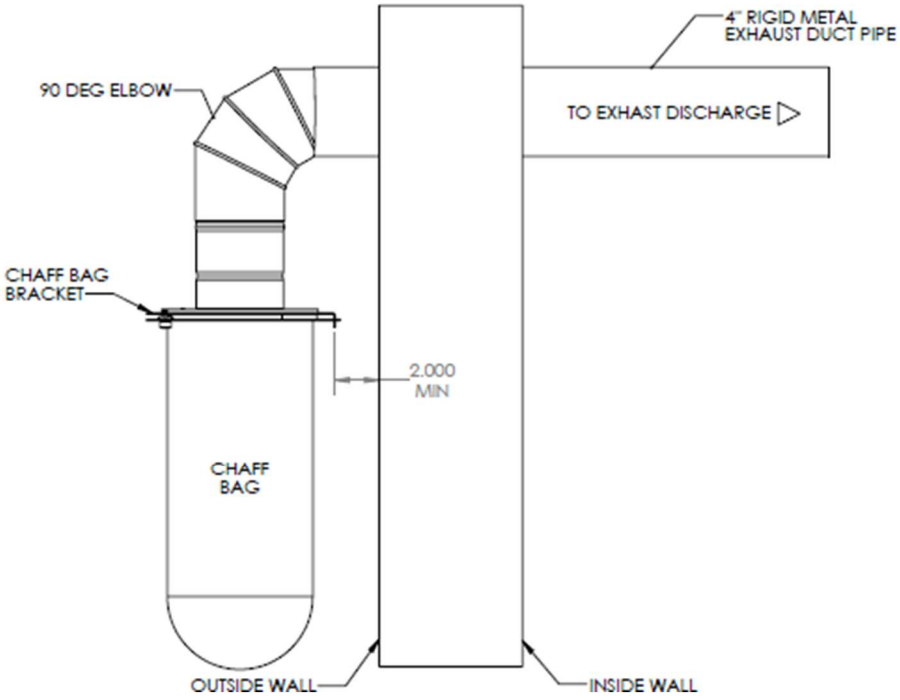
| POWER & VENTING | |
|---|---|
| **Roaster Power (US)** | 20-amp, 240V single phase |
| **Roaster Power (International)** | 20-amp, 220V single phase |
| **Electricity Usage** | 0.3–0.6 kWh per pound (varies by load size) |
| **Venting** | Standard 4" rigid metal ducting with 4" discharge |
| **Chaff Collection** | Outdoor chaff collector fitting and bag included |

| CERTIFICATIONS | |
|---|---|
| **Listings** | UL · cUL |

# Chaff Collection Options

The DUO is compatible with two chaff collection configurations. The outdoor chaff bag comes standard with the purchase of a DUO roaster. The cyclone is an optional addition that removes the need for the chaff bag and instead collects the chaff in a drawer underneath the cyclone.

## Standard Outdoor Chaff Bag




The DUO ships with an outdoor chaff collector fitting and bag. In this configuration, chaff is carried through the exhaust duct and collected in the bag at the outdoor vent termination. This is the simplest setup and requires no additional equipment.

- No additional equipment required
- Chaff bag mounts at the outdoor duct termination
- Inspect and empty the bag regularly — a full bag reduces exhaust airflow

**⚠ WARNING** **Chaff bags and cyclone drawers can catch fire when they are allowed to fill with chaff dust or are not cleaned regularly. Inspect and empty the bag or drawer every time you roast, and never let chaff build up near the roaster.**

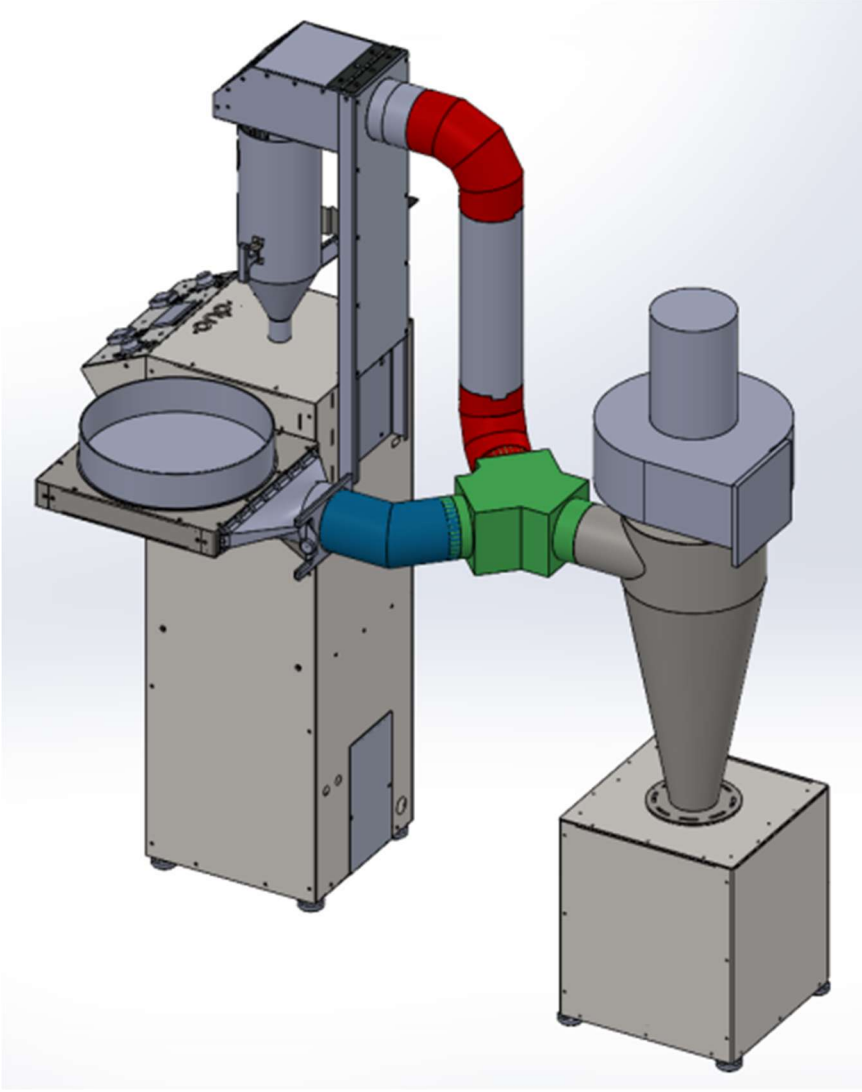
## Optional Chaff Cyclone (Indoor)

The optional chaff cyclone separates chaff from the exhaust stream before it reaches the blower and duct run. This is the preferred option for high-volume roasting or installations where regular outdoor bag maintenance is inconvenient.

- Collects chaff indoors in a drawer for easy disposal
- Reduces chaff load on the outdoor vent and bag
- Recommended for operators roasting more than 20 lbs. per day

Before you secure the blower to the top of the cyclone, you must next attach the flange to the discharge side of the blower (the square hole on top). Included in the blower box is the flange, a rubber gasket and a hardware kit. Place the gasket and flange over the discharge hole, lining up the smaller round holes with the ones on the blower. Use the hardware included in the kit to tightly secure the flange to the blower.

The Chaff Cyclone will be installed as shown in the picture below. The exhaust blower will be secured to the top of the cyclone and the wye duct will attach to the intake on the side. Use the provided silicone coupler to help connect the wye duct to the intake side of the cyclone. All ducts should be 4-inch and either rigid or semi-rigid.



SECTION 6

# Assembly & Installation

## Assembly Introduction

Your DUO roaster arrives mostly assembled. The following instructions will walk you through the remaining steps. Your roaster ships in two standard boxes. If you ordered the optional chaff cyclone or exhaust blower, those arrive in separate boxes.

### Choosing a Location

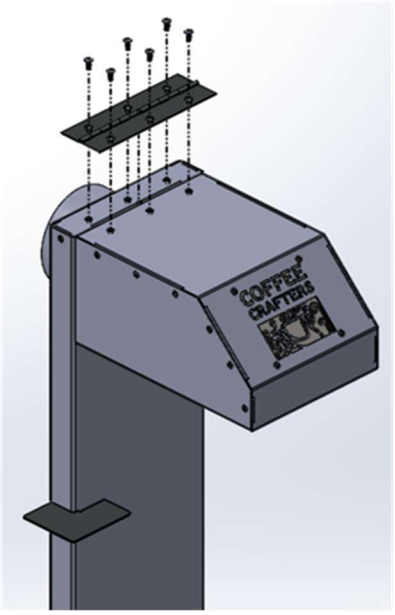
Before assembly, select a suitable location for the roaster and blower system. The blower system can be installed anywhere within 10 feet of the roaster — including on the other side of a wall, which some operators prefer if noise is a concern.

The customer must supply 4-inch rigid or semi-rigid ducting throughout the entire venting/ducting run. No flex ducting allowed. If you place the blower in a different location, additional vent pipe and fittings will be required. Check your local codes for venting requirements.

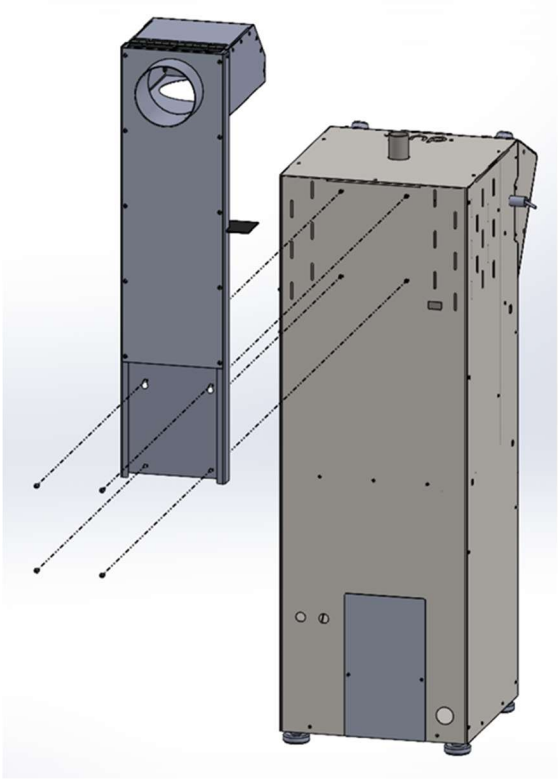
| | |
|---|---|
| **NOTE** | When correctly installed, the exhaust temperature will not exceed 170°F. |
| **NOTE** | In lieu of a traditional hardware kit, we have installed the hardware needed for assembly to the parts they will be assembled to. When attaching the parts as per the instructions below, first remove the hardware and then re-install as instructed. |

| | |
|---|---|
| ⚠ **CAUTION** | The roaster must be positioned on a flat, smooth surface — do not install on carpeting. Leave at least a 4-inch gap between the back vent pipes and the wall. |

## Mast & Hood Attachment



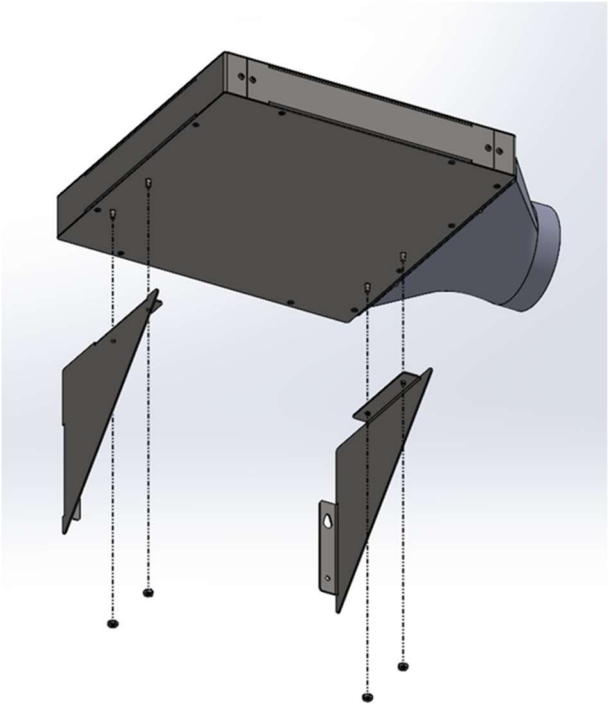

Attach the Hood to the Mast Hinge using the three (3) of the 8/32 screws located on the hood. The hinge is already installed on the mast and does not need to be removed.



Attach the assembled mast to the back of the roaster using four (4) of the 8/32 screws.

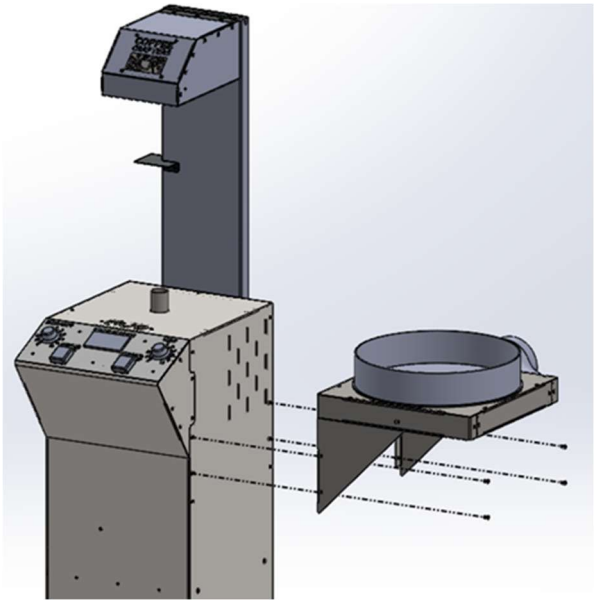
Install Tip: Remove the bottom two screws but only loosen the top two screws. The holes for the top screws are cut to allow you to hang the mast on the top screws and make it easier to install.

## Bean Cooler Setup



Attach the support brackets to the bean cooler using the four (4), 8/32 keps nuts located inside the bean cooler.

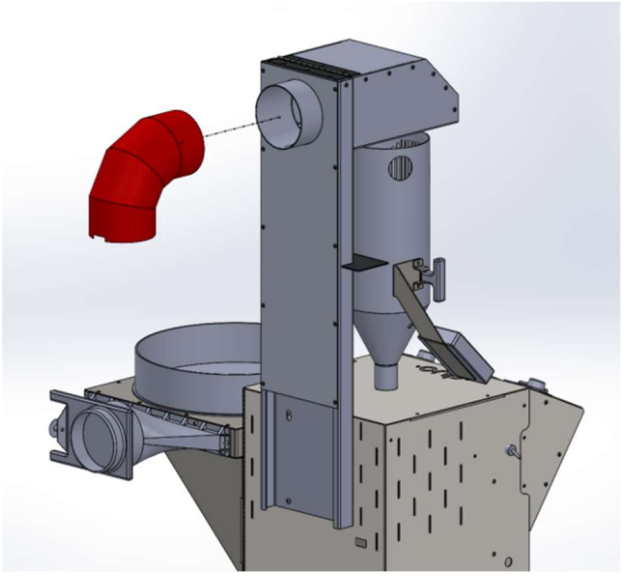
Please note: The keps nuts are the only assembly hardware not located on the part itself. They are instead located in a small hardware kit inside the bean cooler.



Attach the bean cooler to the roaster using four (4) of the 8/32 screws located on the roaster body.

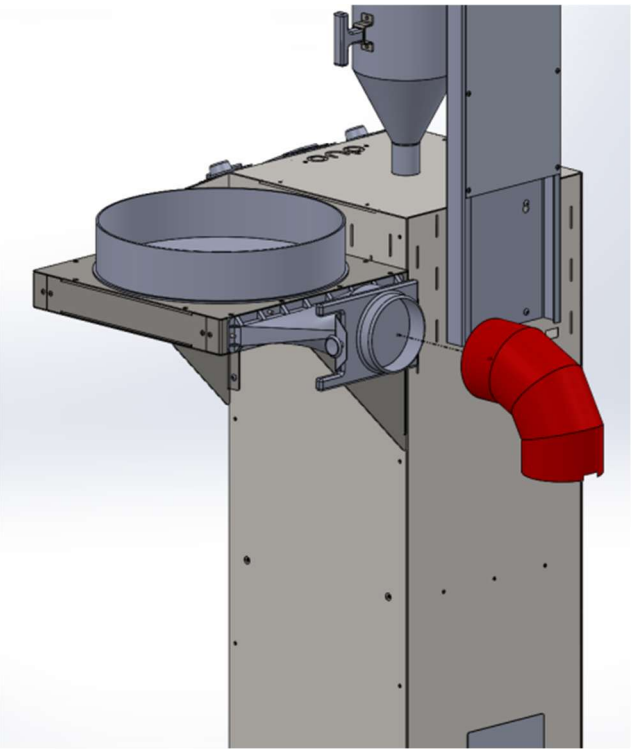
Install Tip: Only loosen the top screws.

## Attaching the Exhaust Hose



Attach one 90-degree elbow to the top of the mast. Use a self-tapping screw or high temperature ducting tape if needed.

## Cooling & Chaff System



Attach the bean cooler blast gate to the reducer on the back of the bean cooler. You do not need to secure the blast gate with a screw, but you can if needed.

Attach one 90-degree elbow to the bean cooler blast gate. Use a self-tapping screw or high temperature ducting tape if needed.

## Ventilation Installation

The DUO roaster must be exhausted in accordance with the manufacturer's instructions in this manual. The roaster exhaust system must be completely independent of all other systems.

### Exhaust & Ventilation Codes

⚠ **WARNING**

**Fire hazard.** An exhaust system that is installed incorrectly or not kept clean can carry a roaster fire into walls, ceilings, and the rest of the building. Install and maintain your exhaust system to these instructions and to every code that applies where you roast.

The instructions in this manual are the minimum for safe operation. Your local codes may require more. Before you install, contact your local building department or fire marshal, called the Authority Having Jurisdiction (AHJ). The AHJ decides which codes apply to your roaster and whether you need a permit or inspection.

Codes your AHJ may apply include:

- **NFPA 96,** Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations (current edition 2024). This is the main U.S. fire standard for commercial cooking exhaust ducts, fans, and clearances, and some jurisdictions apply it to coffee roasting.
- **Your local mechanical code,** usually the International Mechanical Code (IMC) or Uniform Mechanical Code (UMC) as adopted by your state or city.
- **Your local fire code,** usually the International Fire Code (IFC) or NFPA 1.
- **The International Building Code (IBC)** for any duct that passes through a fire-rated wall, floor, or ceiling.
- **Your regional air quality agency.** Some agencies require a permit or registration for coffee roasters, depending on batch size and pounds roasted per day.

Whatever codes apply, these rules always do:

1. Vent the roaster exhaust outdoors — never into a room, attic, crawl space, chimney, or another exhaust system.
2. Keep the roaster exhaust system completely separate from any other ventilation or exhaust system.
3. Use metal ducting only, as listed for your model, and seal all joints on the pressurized discharge side.
4. Keep ducting away from combustible materials, or use the clearance or protection your AHJ requires.
5. Provide cleanout access along the full duct run, from the blower discharge to the outside termination.
6. Inspect and clean the ductwork at least once a year, and more often with heavy use. Record each cleaning in the Cleaning Log.

In a commercial building, have a licensed mechanical contractor design and install the exhaust system, and tell your landlord and insurer before you install.

### Exhaust Penetrations

Any wall or ceiling penetration of ducts that transfer roaster exhaust must meet the International Building Code fire-resistance rating and cannot be located within any fire-blocking or draft-stopping area, unless the ductwork is constructed of galvanized steel or aluminum per IBC Section 603.3.

- Fire-blocking prevents the movement of flame, smoke, and gases through concealed spaces, primarily addressing vertical movement
- Draft-stopping prevents the movement of smoke and gases through concealed spaces, primarily addressing horizontal movement

### Cleanout

All ducting from the blower discharge to the outlet terminal must provide a means for cleanout. Exhaust-duct cleaning is required for all coffee-roasting installations. Inspect exhaust tubing frequently — clean or replace when excessive buildup is present.

### Maximum Run Lengths

| DUCT DIAMETER | |
|---|---|
| **4" exhaust duct (discharge)** | Maximum 25 ft from blower to outlet terminal |

| | |
|---|---|
| **NOTE** | Only 4-inch rigid or semi-rigid ducting should be used on the discharge side. For every 90° bend in the exhaust duct path, deduct 5 ft from the maximum. Example: a 4" duct path with two 90° bends has a maximum run length of 15 ft. |

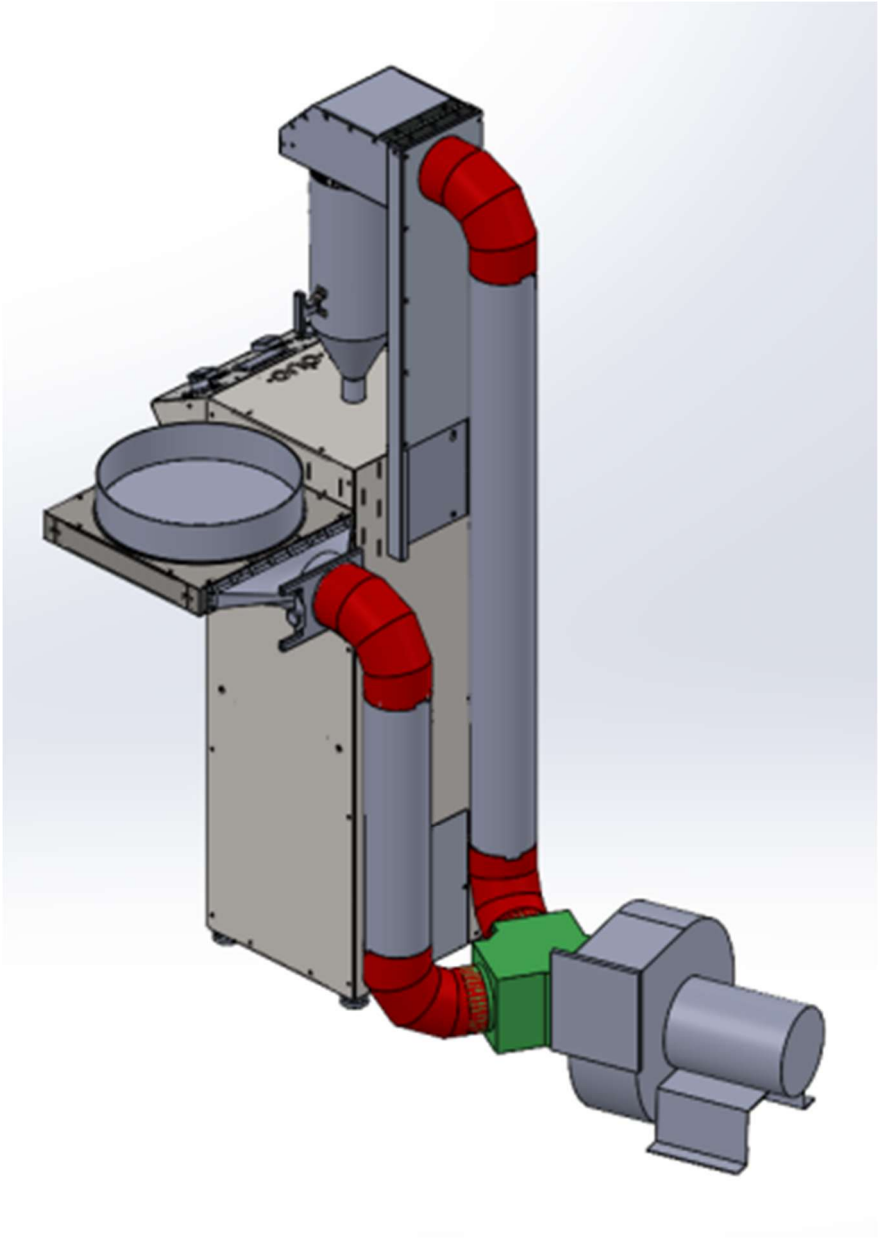
### Ducting Rules

- Blower intake to roaster: USE ONLY RIGID or SEMI-RIGID 4" ducting
- Blower discharge to outlet: USE ONLY RIGID or SEMI-RIGID 4" ducting
- Exhaust gas temperature must not exceed 170°F (77°C)

## Ducting Diagram:

Coffee Crafters does not provide the ducting needed to vent the roaster. These are common ducting pieces that can easily be found at your local hardware store.

The 4x4x4 wye duct fitting for the intake side of the exhaust blower is shown in GREEN. The RED pieces are elbow fittings. Long rigid or semi-rigid ducting will be needed to connect all the ductwork together. Measure and cut to length as needed.



## Thermometer

Your thermometer mounts to the thermometer bracket above the left handle. The digital thermometer features a large display for a clear bean-temperature reading.

- Select the ON position to power the unit on
- Select the OFF position to power the unit off

The thermometer ships with the battery and thermocouple probe installed and tested. Velcro has been applied to the back of the unit. To install, remove the plastic backing from the Velcro and press the unit onto the bracket — the bottom of the thermometer should sit even with the bottom of the bracket. Insert the probe wire into the bottom of the readout.

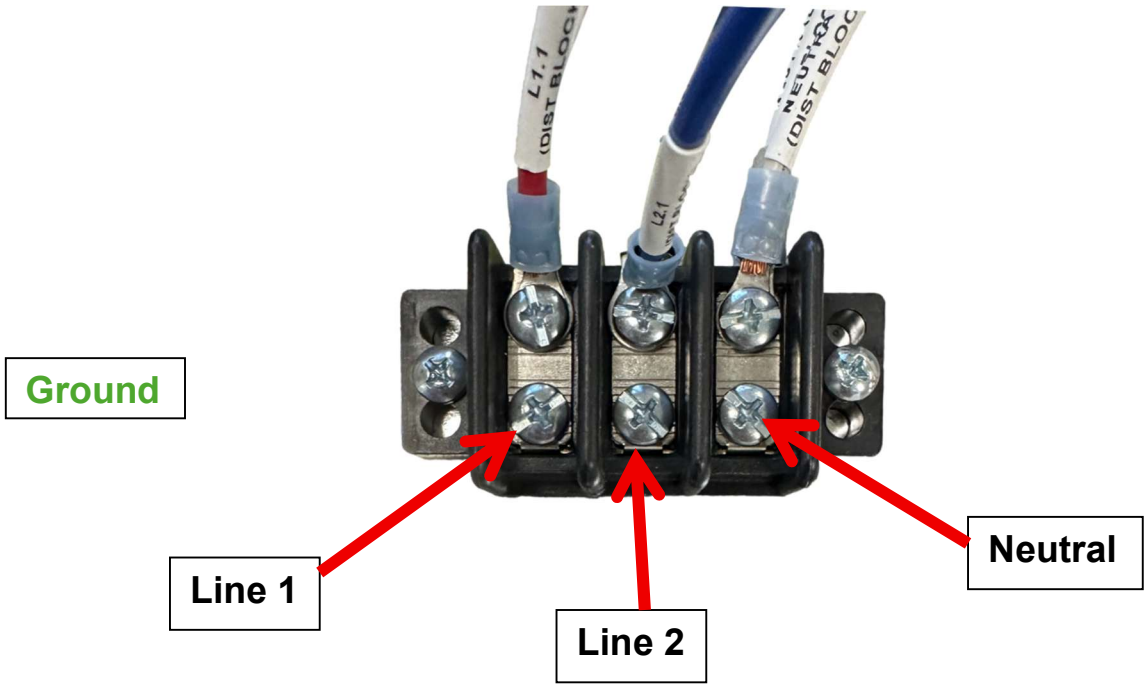
This thermometer comes with a tiny screwdriver on a keychain that can be used to calibrate the readout. If you ever feel like the temperature readout is incorrect, simply put the screwdriver into the "H" hole and turn the reading up or down as needed.

For example: First crack should happen around 400 degrees F. If you hear first crack and the temperature is reading 380 degrees, then turn the reading up to 400 degrees and you'll be back on track.

### Helpful Tips

- Rinse and completely dry your hopper and bean-cooler tray before the first use
- Before your first batch, preheat the roaster for 5–10 minutes on high heat with loft set low. This seasons the chamber and ensures stable temperatures from the start
- Attaching a small lamp to your hopper exhaust tube and shining it into the hopper can help you visualize the roast. Do NOT push the lamp head through the chaff-guard hole — it will melt

## Installing the Electrical Cable




The roaster must be connected to a 20-amp, 240-volt dedicated breaker. Consult your local electrical codes for proper wire installation. The power distribution block access cover is located on the back of the roaster.

| ⚠ WARNING | **Improper electrical installation is a fire and shock hazard. This connection must be made by a licensed electrician on a dedicated circuit. Loose or incorrect wiring at the distribution block can overheat and start a fire — do not operate the roaster until the connection has been inspected and confirmed correct.** |
|---|---|

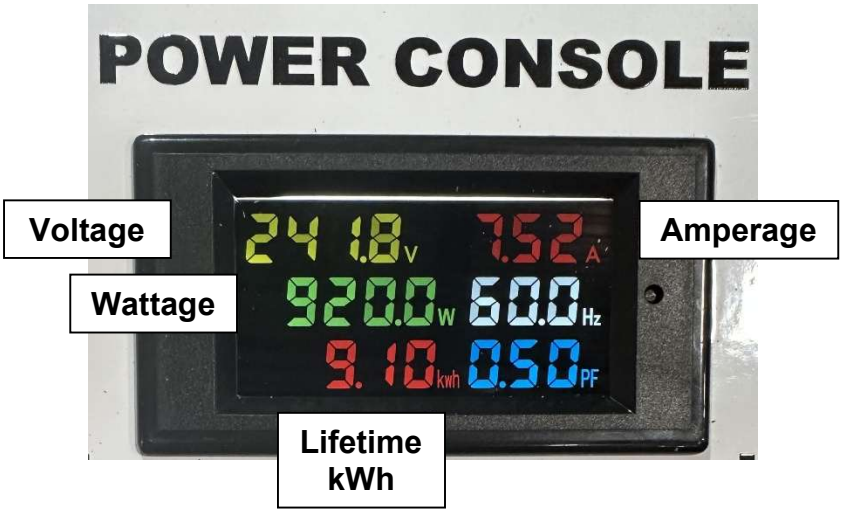
| DISTRIBUTION BLOCK | CONNECTION |
|---|---|
| **Line 1** | Hot leg 1 (240V single phase) |
| **Line 2** | Hot leg 2 (240V single phase) |
| **Neutral** | Neutral conductor |
| **Ground** | Equipment grounding conductor |

| NOTE | A complete wiring diagram is available in the Maintenance & Troubleshooting section of this manual. |
|---|---|

| READY | Assembly is complete. Proceed to the Power Console section, then indoor roasting instructions. |
|---|---|

## Power Console

The DUO features an integrated Power Console on the front control panel. It provides real-time electrical readings so you can monitor your roaster's performance and diagnose issues without additional equipment.




| POWER CONSOLE READINGS | |
|---|---|
| **Voltage** | Displays live line voltage. Under load, you should see approximately 230–240V (US). A reading significantly below 230V indicates a wiring or supply issue. |
| **Watts** | Displays power consumption of the heating element in real time. Useful for confirming the heating element is operating correctly and for estimating energy use per roast. |
| **Amps** | Displays current draw. Useful for verifying the roaster is within the rated amperage for your breaker. |
| **Lifetime kWh** | Cumulative kilowatt-hours consumed by this roaster since first use. Useful for tracking energy costs over time. |

**NOTE** If the voltage reading under load is more than 10V below your expected line voltage, contact a licensed electrician to inspect your wiring before continuing to use the roaster.

## Installing the Hermetheus Co-Pilot (Optional)

The Hermetheus Co-Pilot is an optional automation accessory that connects to the DUO and interfaces with Artisan roasting software to automate heat and loft control during a roast profile.

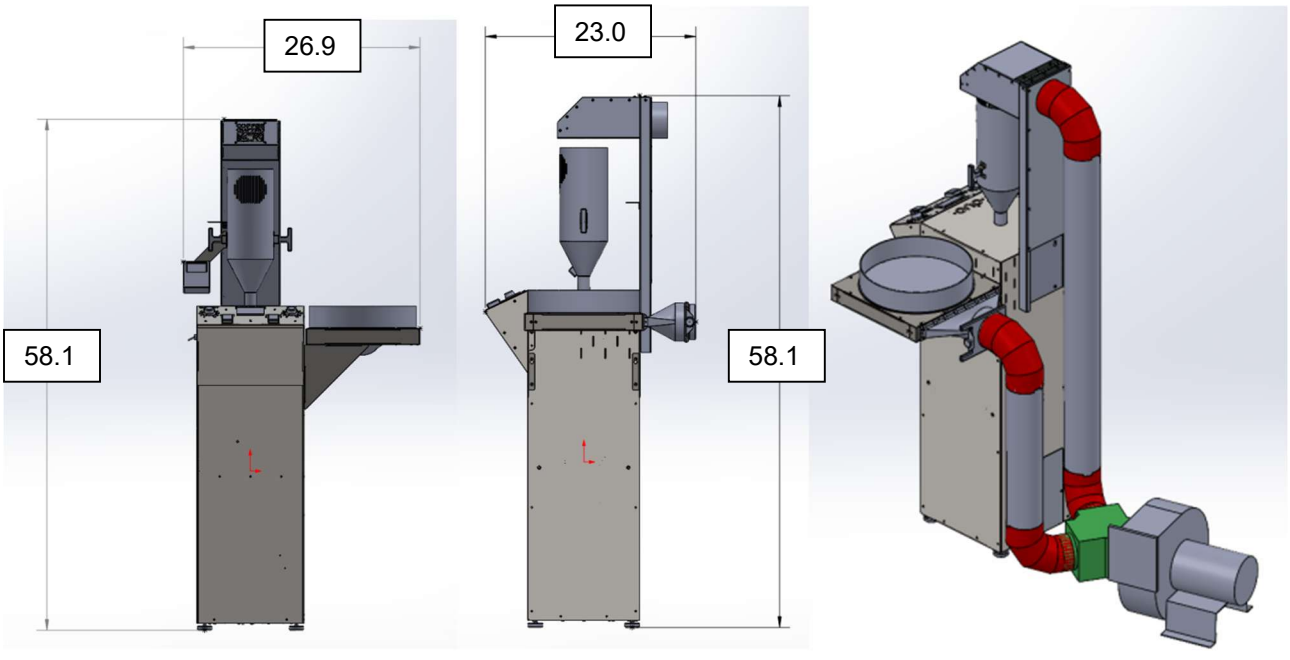
The Hermetheus Co-pilot comes with two screws that secure it to the roast body's left panel. Look for the two open screw holes near the AUTO/MANUAL switch and secure the device to the roaster.

Next, you will see a wire sticking out of a hole next to the device. Plug this wire into the device as shown in the separate co-pilot instructions.

Refer to the separate instructions for installing the software and connecting the device to your computer.

| | |
|---|---|
| **NOTE** | For Co-Pilot troubleshooting and setup support, visit the Hermetheus website or contact Coffee Crafters Customer Service. |

## Final Assembly (measured in inches)



SECTION 7

# Indoor Roasting

Before roasting your first batch, familiarize yourself with safe operating practices. Treat the DUO the same way you would treat a cook-top range. During roasting, your hopper gets as hot as any pot on your stove, and the air roasting your coffee reaches temperatures over 600°F.

| | |
|---|---|
| ⚠ WARNING | **Coffee roasting produces heat, chaff dust, and hot oil residue — all fire risks if the equipment is misused or poorly maintained. Keep the area around the roaster clear of combustible materials, never operate in an enclosed space without proper ventilation, and keep a fire extinguisher rated for the space nearby whenever the roaster is running.** |

| | |
|---|---|
| ⚠ WARNING | **Never leave your roaster unattended while roasting. If you lose your bean loft, you will ruin your batch and may damage the roaster. Coffee beans can catch fire if they stop circulating.** |

## Roast Coffee in 6 Easy Steps (Manual Mode)

These instructions are for roasting in manual mode. Roasting with the optional Hermetheus Co-Pilot follows a different process — separate Co-Pilot instructions ship with units that include the Co-Pilot accessory.

### Step 1 — Check the Chaff Bag or Cyclone Drawer

Ensure the bag or cyclone drawer is secured in place and empty before roasting. NEVER open the chaff drawer/collector while the blower is running. This may cause the chaff to evacuate through the ducts and be vented outside.

### Step 2 — Turn On the Exhaust Blower

Flip the ON/OFF switch on your blower to ON to start the flow of air for venting.

| | |
|---|---|
| ⚠ WARNING | **Do not operate your roaster without using the recommended type of exhaust blower. This will void your warranty and is a fire hazard.** |

### Step 3 — Load Beans in the Hopper

Lift the exhaust hood out of the way to pour beans into the hopper. Make sure your air-loft adjustment is OFF before pouring.

### Step 4 — Turn On System Power

The system power switch is the red switch on the left side of the control panel. As a safety feature, the heating element cannot be turned on while the system power switch is in the off position. Never turn the

system power on until the bean-loft knob is turned all the way down to 0. This prevents beans from being blown out of the hopper.

## Step 5 — Set the Bean Loft

The BEAN LOFT knob is marked from 0 (low) to 10 (high). Slowly turn up the air by rotating the knob clockwise. Practice this several times before turning on the heat so you become familiar with the feel of lofting beans.

| | |
|---|---|
| **NOTE** | Aim for a loft of 2–3 inches above the bean bed. The lower the loft, the better the heat transfer. |
| ⚠ **CAUTION** | Never let the beans stop lofting with the heating element on. You will burn your beans and may damage your roaster. |
| ⚠ **WARNING** | **In the event of a loft motor failure (including a complete power outage), immediately turn OFF the roaster power and dump the coffee beans into the cooling tray.** |

## Step 6 — Turn On the Heating Element

Turn on the HEATING ELEMENT switch. Use the HEAT knob on the right side of the control panel to set the heat for your batch size.

## Roasting Recommendations

The LOFT and HEAT settings you will use on your roaster vary due to the nature of available power to a specific setup. The following is a guideline to help get you started, but you should ultimately find the right settings for your specific setup as you become more familiar with using the machine.

LOFT SETTING:

- You always want to maintain a loft setting that allows the beans to loft about 2-3 inches from the bean bed. This initial setting will vary based on batch size.
- As the beans are roasted, they will get larger and lighter. Therefore, you will need to monitor the loft and turn down the setting as needed throughout the roast.
- Please note: The Hermetheus Co-Pilot does not control the loft setting and you will always need to adjust this manually.

HEAT SETTING:

- Instead of our traditional Temperature Controller that would give you the Roast Air Temperature, the Power Console will give you the live wattage reading to tell you exactly how much power is going to the heating element. Again, the actual setting may vary from roaster to roaster, but maintaining watts will allow you to maintain heat.
- The following settings are recommendations based on testing the DUO roaster at the Coffee Crafters warehouse. Use these as a starting point and adjust as needed.
    - ½ pound: 2,500 watts
    - 1 pound: 3,000 watts
    - 1 ½ pounds: 3,250 watts
    - 2 pounds: 3,550 watts (max power)

| | |
|---|---|
| **NOTE** | *These are very generalized recommendations only and vary based on altitude, humidity, line voltage, bean density, and ambient air temperature. ALWAYS set your loft level by sight, ensuring bean movement at all times.<br>**If roasting below a 1/2 lb batch, the bean temperature may not read accurately. |

## Cooling the Beans

Coffee beans must be cooled quickly after they reach your desired bean temperature. As the roast progresses, you can watch color development through the hopper.

- Turn off the heating-element switch
- Leave the loft air running to cool the roaster. If this is your last roast of the day, allow the roaster to cool for a few minutes before turning it off. Otherwise, refer to the Back-to-Back Roasting section below.
- Pull the cooling tray knob open on the bean cooler *before* dumping the roasted beans.
- Lift the exhaust hood out of the way
- Put on oven gloves. Grasp the hopper handles firmly and lift straight up to clear the roast-air chimney. Treat the hopper like any hot pan on your stove
- Pour the beans into the cooling tray. Turn the hopper completely upside down and shake to make sure no beans remain. Return the hopper to the roast-air chimney
- Stir the beans occasionally to distribute them evenly out to the edges. Check for any rocks or foreign objects. Cooling takes about 1 minute for smaller loads and about 2-3 minutes for larger loads
- Once beans are cool, pour them out of the tray and close the blast gate

| | |
|---|---|
| ⚠ **CAUTION** | If you touch the hopper with your bare skin you will get burned. Always use oven gloves when handling the hopper. |

| | |
|---|---|
| ⚠ **CAUTION** | Never place the hot hopper anywhere but back on its position on the roaster. |

| | |
|---|---|
| ⚠ **WARNING** | **Leave the loft motor running while dumping the beans. Failure to do so may damage the roaster and is a fire hazard.** |

### Back-to-Back Roasting

You can roast back-to-back on the DUO. As soon as you dump the beans into the cooler, you can load your next batch of green beans and start the next roast cycle.

SECTION 8

# Coffee Bean Education

## Proper Storage of Green Coffee Beans

The two most important variables for storing green beans are humidity and temperature. Green beans store well for over two years when kept properly.

### Good Practices

- Store beans at a stable temperature between 50°F and 85°F. If the temperature is comfortable for you, it is comfortable for your beans
- Keep beans off the ground — store on a pallet. This promotes air circulation and prevents condensation
- Keep beans away from pets
- Keep beans away from sinks and water sources
- For smaller quantities, food-grade buckets with gamma-seal lids work well and provide an airtight seal
- Vacuum-sealed bags are an excellent, though more expensive, option — packed beans require less monitoring because they are not exposed to oxygen or atmospheric moisture

### Things to Avoid

- High humidity
- Significant temperature swings
- Direct sunlight

SECTION 9

# Maintenance & Troubleshooting

Your roaster requires periodic maintenance and cleaning. The exact schedule will depend on the volume of coffee you roast and how dark you roast your beans (because darker roasts produce significantly more smoke and oil residue). Regular cleaning reduces fire risk and maintains roasting efficiency.

All wiring is color-coded and labeled, and videos demonstrating how to replace most serviceable components are available on the Coffee Crafters YouTube channel. Your serial number is located on the rear panel of the roaster near the bottom — we may ask for it during the troubleshooting process.

## Maintenance

### Chaff Bags and Chaff Cyclone

Inspect the condition of the chaff bag every time you roast. Suction works best when the bag is less than half full and clean. Empty your bag often. When the bag becomes heavily coated in chaff dust, replace it with a clean one. Dirty chaff bags can be washed with mild detergent and fully air-dried before reuse.

If you purchased the optional chaff cyclone, vacuum any excess debris from the unit as needed.

⚠ **WARNING** **Chaff bags and cyclone drawers can catch fire when they are allowed to fill with chaff dust or are not cleaned regularly. Inspect and empty the bag or drawer every time you roast, and never let chaff build up near the roaster.**

### Roast Hopper

Soak the hopper in hot water and dish soap and use a soft brush to remove debris. Rinse and dry thoroughly. Do not allow water to drip into the heat chamber after washing the hopper. Replace the thermometer and probe.

For a deeper cleaning, use Cafiza — a food-grade espresso machine cleaner available on Amazon. Soak per package instructions, then rinse thoroughly.

### Bean Cooling Basket

With regular use — especially with darker roasts — you will notice oil buildup inside your cooling basket. Remove the tray and wash with warm soapy water, rinsing and drying thoroughly. While the basket is out, vacuum any debris from the cooling void under the tray, then wipe the area with a damp cloth.

### Exhaust Hood

On the underside of the hood, chaff collects on the hardware that attaches the hood to the exhaust tube. Wipe the inside of the hood with a damp towel to remove chaff buildup. You can also remove the hopper exhaust mast for cleaning if needed.

### Exhaust Tubing

Your exhaust system should use rigid or semi-rigid ducting throughout. DO NOT use flexible dryer ducting. You will need to run a brush through the interior of the exhaust tubing periodically. If you have elbows in your exhaust line, you may need to take apart the line to clean it fully. After cleaning the ducting, inspect the inside of your blower before reassembling. Brush each fin on the inside of the blower. Once reassembled, turning on the blower will blow out any remaining debris.

When the inside of the ducting is completely coated with dark coffee residue, it is time to clean or replace it.

⚠ **WARNING** **Dirty exhaust systems cause fires. Always unplug the exhaust blower before performing any cleaning or maintenance on the exhaust tubing.**

### Exterior Surfaces

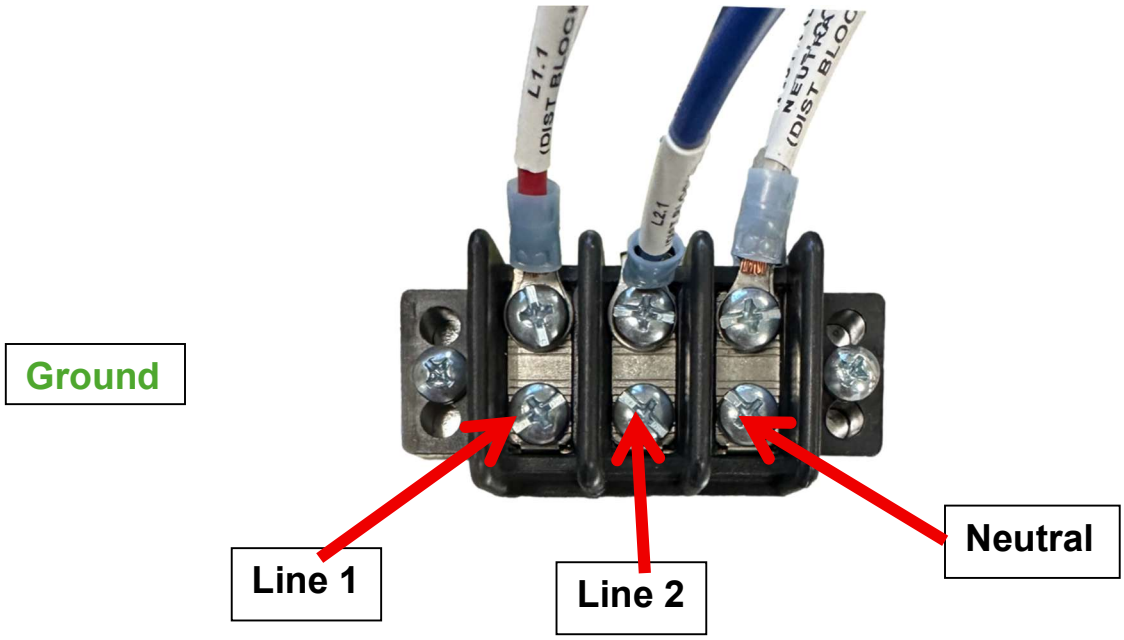
Wipe the exterior with a damp cloth. Never use an overly wet towel near the lid — excess liquid can damage electrical components. The body of the roaster can be cleaned with a damp cloth or mild detergent, such as window cleaner. Do not use industrial spray cleaners or degreasers on your roaster.

## Troubleshooting

⚠ **WARNING** **Always unplug the roaster and let all components cool before removing any panel or working on internal wiring, switches, or the heating element. Working on the roaster while it is powered on or still hot is a fire and shock hazard. If you are not comfortable performing electrical troubleshooting, contact Coffee Crafters or a licensed electrician.**

### No Power on the Roaster

| PROBLEM | CAUSE(S) | SOLUTION |
|---|---|---|
| Power Console and switch lights are off | • Breaker on your panel has tripped<br>• Power cord wire is loose or installed incorrectly<br>• Power wire behind System Power Switch is loose | • Check that the breaker is in the ON position<br>• Make sure all 4 wires on the power cord are wired into the correct terminals on the power distribution block on the back of the roaster.<br>• Remove the control panel and check that the power wire is plugged into the back of the System Power Switch. |




### System Power Switch ON but No Display on Power Console

| PROBLEM | CAUSE(S) | SOLUTION |
|---|---|---|
| System Power Switch is in the ON position, but no power to the Power Console | • Loose wires behind the Power Console | • Remove the control panel and check that both PCL1 and PCL2 wires are plugged into the back of the Power Console (see Figure 1.2). If the wires are plugged in correctly and you still have no power, replace the Power Console. |

### No Loft — Power Console and System Power Switch Are ON

**DIAGNOSTIC STEPS**

- **Check the voltage reading on the Power Console.**
  **If the Power Console shows 240 volts:**
- Check the Loft Motor Controller. Make sure the wires going to the loft motor and potentiometer are plugged into the controller (see Figure 1.6).
- Make sure the three power control wires are secured in the green housing (see Figure 1.2).
- Use a voltage meter to test the voltage at the Controller. (120v for US (220/230v INTL), Terminal 2&3). See Figure 1.6
- If your motor is still not running, please call the office and we can troubleshoot with you over the phone. 509-228-6916

## Loft Motor Running but No Heat (Please note: The heating element will not turn on if the loft motor is not running)

**DIAGNOSTIC STEPS**

**If the Power Console shows ~240 volts and ZERO watts:**

- **Check whether the Heating Element Switch light is ON.**
  **If the switch light is OFF:**
- Turn loft to 10. If the heat comes on, then there may be an obstruction in the Pressure Switch Hose.
- Remove the right-body panel (remove bean cooler first) and ensure the hose is clear of obstruction and connected to both the Pressure Switch and the air box. You can also remove the hose and blow it out with compressed air.
- If the Heating Element Switch light is still OFF after checking the hose, please refer to the Pressure Switch Adjustment video on our YouTube channel.
- **If the switch light is ON, check the Contactor.**
  The Heating Element Switch is connected to a Contactor that makes an audible "click" when the switch is turned ON. This is also a good time to do a visual check on the toggle switch to make sure it is in MANUAL.
- If you do NOT hear a click when turning the Heating Element switch ON, replace the Contactor.
- If you DO hear a click, the issue is likely a bad SSR or potentiometer (the component under the heat knob). Replace both, or use the multimeter to test each part to determine the faulty component.
- **If the above steps do not resolve the issue, you may have a bad Heating Element.**
- Remove the heating element from the roaster and do a visual inspection of the coil and wire connections.
- If the element looks in good condition, call Coffee Crafters so we can troubleshoot further with you.

## Power Console Reads ~240V and Zero Amps/Watts (Except kWh)

| PROBLEM | CAUSE(S) | SOLUTION |
|---|---|---|
| Roaster is functioning normally, but Power Console wattage and amperage both read ZERO | • Current Transformer wires are disconnected or loose<br>• Faulty Current Transformer | • Check the wires from the Current Transformer to the back of the Power Console and make sure they are plugged in securely<br>• If the wires are installed correctly and readings are still zero, replace the Current Transformer |

## Roaster Has Low Heat

**NOTE** Ambient air temperature will affect roaster performance below 60°F, resulting in longer roast times. If your roasting space is cold, warm it up with a space heater for a few minutes before starting.

**DIAGNOSTIC STEPS**

1. **Check the Voltage and Wattage on the Power Console. With the HEAT setting at 10, you should see approximately 240V and 3,550 watts.**
   **If the voltage reading is low:**

- The most likely cause is low voltage available to the building, either from other appliances running simultaneously or from the power grid during peak hours. You may be able to improve performance by roasting at off-peak times. Unfortunately, grid voltage is outside our control.

  **If the voltage reading is normal but the amperage reading is low:**
- You may have a bad potentiometer or SSR-25. Replace both, or use the multimeter to test each part to determine the faulty component.

## Smoke and Chaff Not Being Vented Through Ducting

**DIAGNOSTIC STEPS**

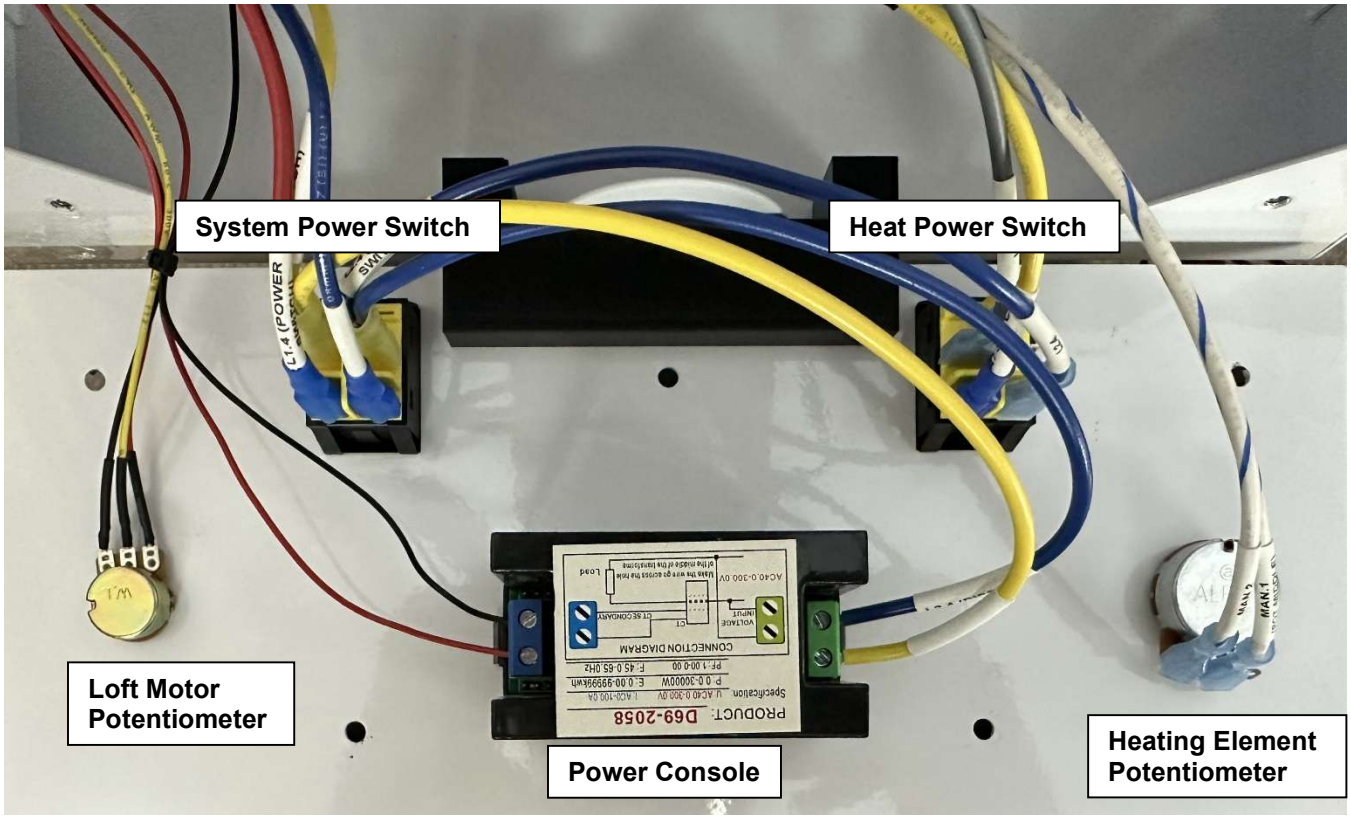
1. Check that all seams on your ducting run are sealed with high-temperature tape.
2. Check for obstructions in the ducting run.
   The most common obstruction is a duct cap at the outdoor termination point. These caps can have internal screens that collect debris and clog over time. If your cap has a screen, remove the screen before reinstalling the cap.
3. If ducting and seams are clear, the Exhaust Blower may be failing.
   Blowers can wear over time and produce less airflow. Unfortunately, service parts for the exhaust blower are not available — the best solution is to purchase a replacement blower. Contact Coffee Crafters for a compatible replacement.

## Figures

The figures below show internal component locations and wiring connections inside the roaster. All wiring on the machine is color-coded and labeled.

### Figure 1.1 — Lid Up, Wiring Exposed

This image shows the back of the Control Panel facing towards the front of the roaster.




### Figure 1.2 — Power Console Wiring Beneath the Lid

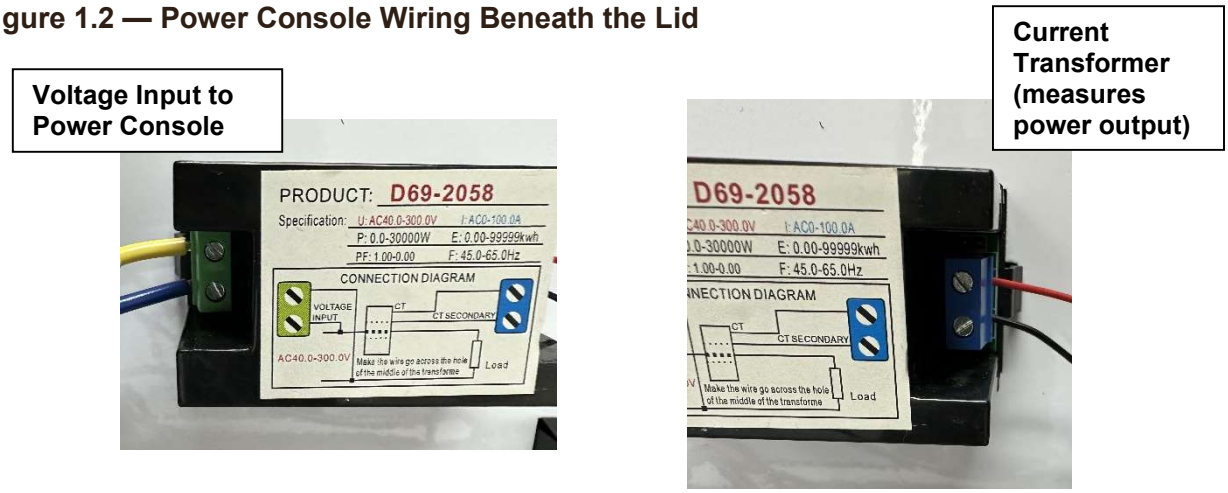


**Figure 1.3 — Electrical Panel (SSR-25, Loft Motor Controller, Contactor, Pressure Switch, Power Distribution Block)**

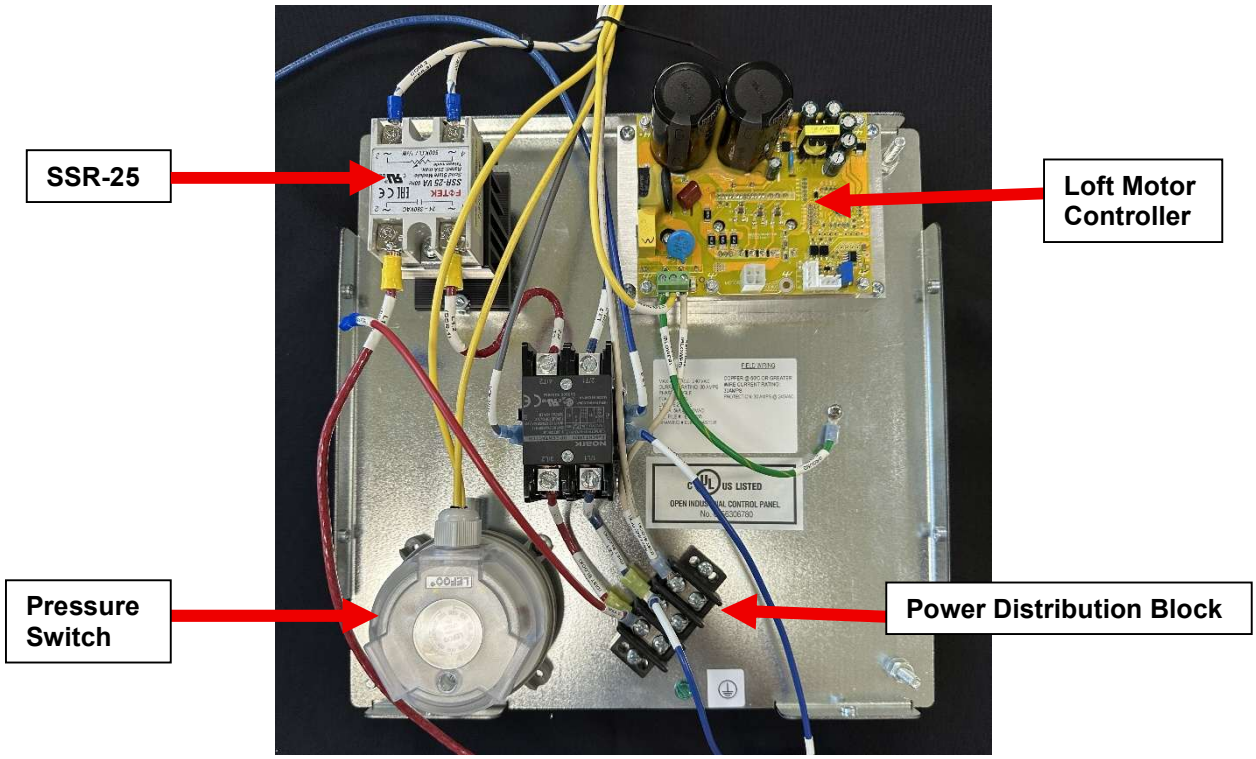
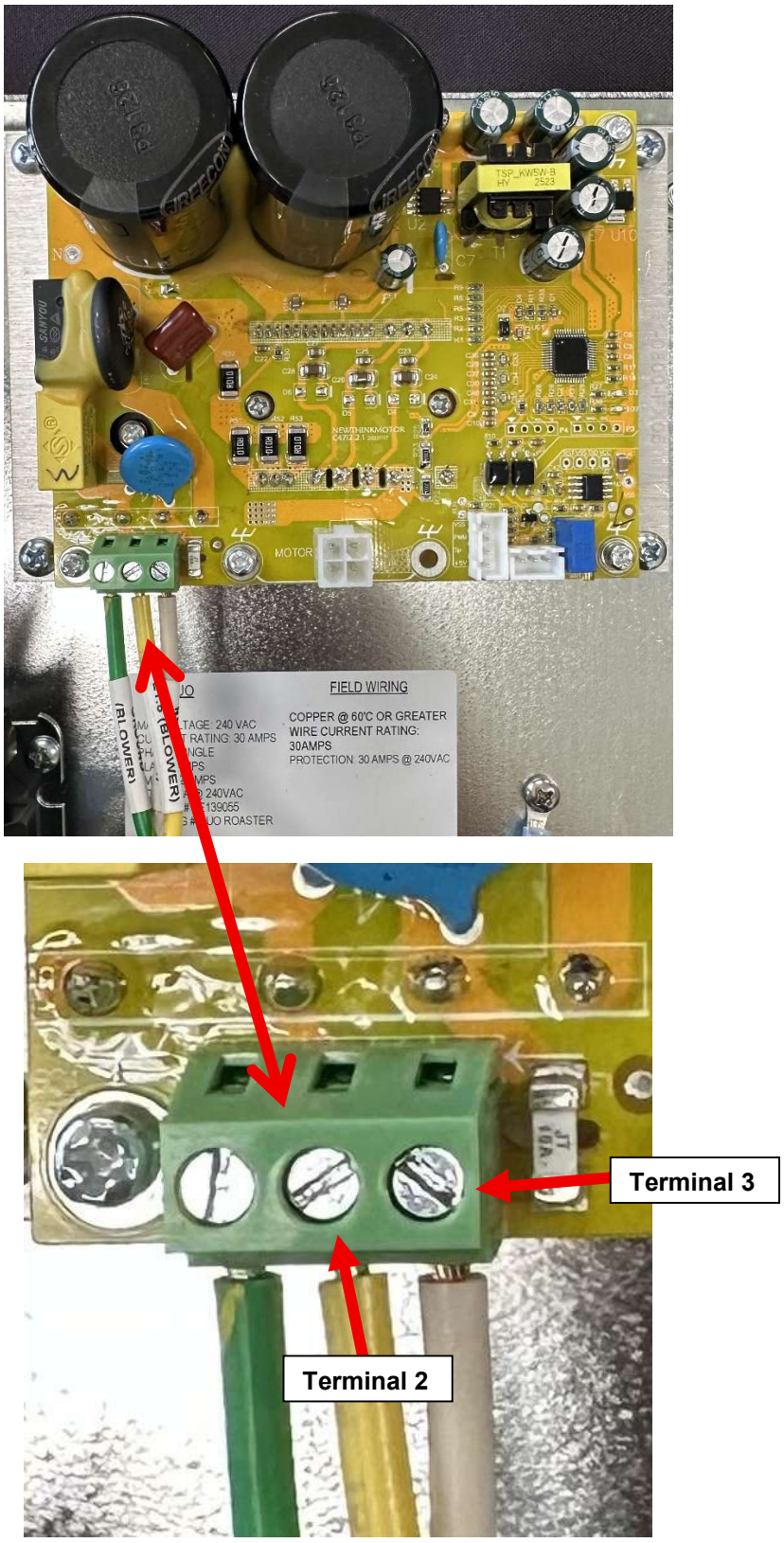


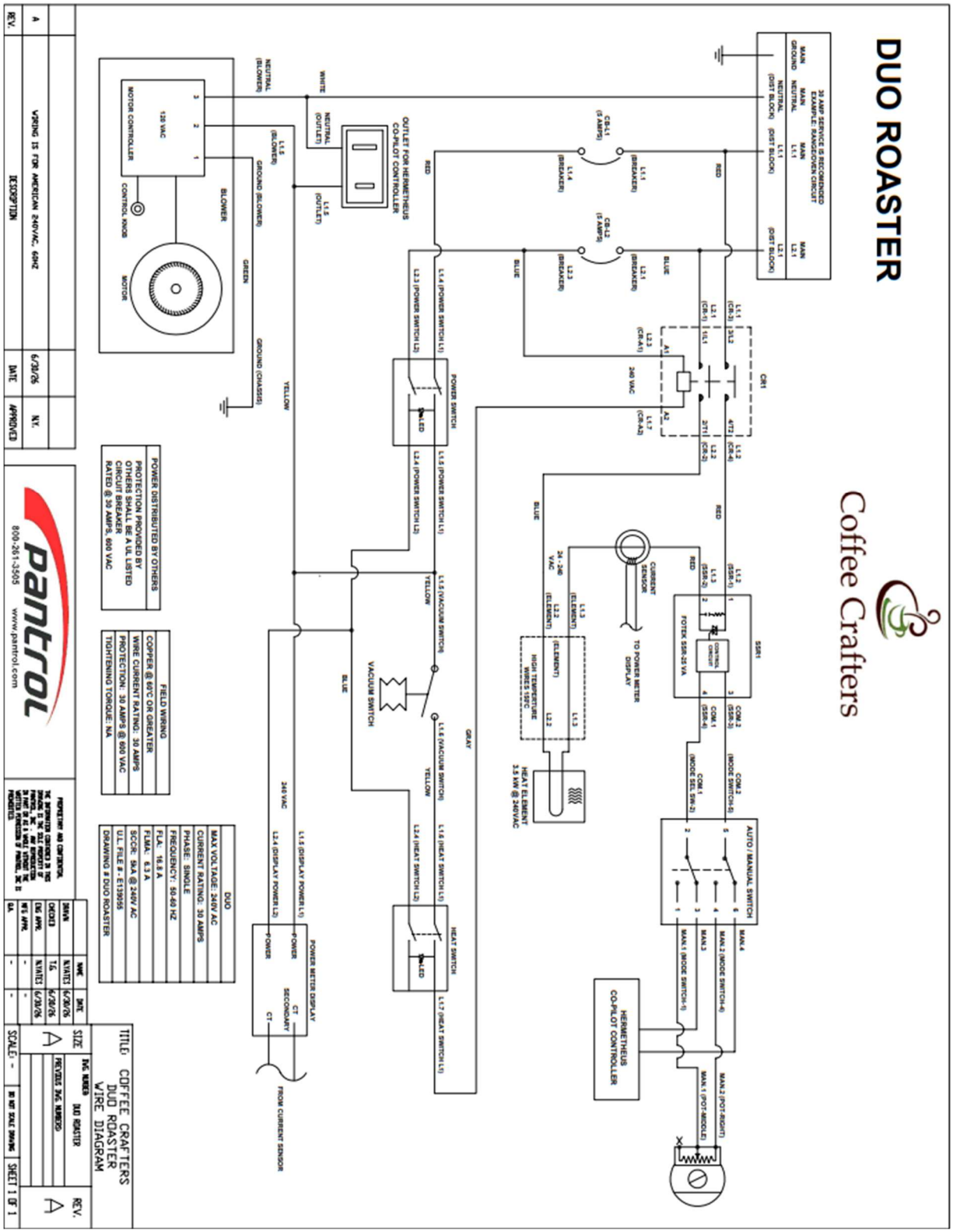

**Figure 1.4 — SSR-25 Connections**

Potentiometer connections are on terminals 3 and 4. Power connections are on terminals 1 and 2.

**Figure 1.5 — Contactor**

**Figure 1.6 — Loft Motor Controller**



## Wiring Diagram — North American (240V, 20A Single Phase)

The wiring diagram below is the official document from Pantrol, our UL- and cUL-certified wiring partner, for North American DUO installations.