

DIEDRICHTM

ROASTERS



DR-25 ROASTER GUIDE

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1. DR-25 ROASTER TECHNICAL DATA

This section contains a table, on the next pages, with technical information applicable to both a DR-25 Manual roaster and a DR-25 Auto roaster. Information in this table is subject to change.

DR-25 Roaster Information	Technical Data
Green coffee capacity, min-max	34 - 55 lb.; 12.5 - 25 kg
Dimensions ¹ , maximum L x W ¹ x H ⁴	9'1" x 5'8" x 8'9"; 2769 x 1727 x 2667 mm
Crated shipping weight (approximate)	Actual shipping weight may vary
Roaster, Main Electrical Panel Cooling Bin	2200 lbs
Roast Air Cyclone	490 lbs
Green Bean Funnel & Loader	450 lbs
Destoner	420 lbs
Shipping crate size, L x W x H	
Roaster and main electrical panel	96" x 48" x 88"
Roast Air Cyclone	38" x 39" x 84"
Green Bean Funnel & Loader	67" x 39" x 46"
Destoner	26" x 45" x 80"
Full batch roast time to 440F (227C)	Approximately 15 minutes
Hourly output ² (Four 15 minute roasts)	220 lb/hr.; 100 kg/hr.
Roast Air, maximum	340 scmh
Cooling Bin Air, maximum	950 scmh
Roast Air Cyclone outlet diameter	8 in; 203 mm
Cooling Bin Blower outlet diameter	8 in; 203 mm
Loader Exhaust Air, maximum	136 cfm
Loader Exhaust diameter	2 in
Destoner Exhaust Air, maximum	136 cfm
Destoner Exhaust diameter	2 in
Temperature high limit	475F/246C burner off, 485F/252C pilot off
Water Pressure	40 - 70 psi; 2757-4826 mbar
Water Connection	¼ inch female NPT on the roaster
Water flow to roaster at 40 psi/2.8 bar	1.5 gallons per minute; 5.7 liters per minute
Water flow to chaff barrel at 40psi	1.5 gallons per minute; 5.7 liters per minute
Gas Information	
Gas Types (others if pre-approved)	Liquid Propane (LP) or Natural Gas (NG)
Maximum consumption	150,000 BTU/hr.; 44 kW
Typical consumption per roast ³	28,000 BTU/roast; 8.21 Kwh/roast
Inlet Pressure LP	1-2 PSI; 69-138 mbar
Inlet Pressure NG	1-2 PSI; 69-138 mbar
Inlet gas supply connection	½ in female NPT on the roaster
Continued on the next page	

¹ Dimensions rounded to the nearest inch. Maximum width is with HMI arm fully extended. See Figure 5: Top View.

² Hourly "green" coffee output. Thus, the weight has not been corrected for moisture loss.

³ Based on a 15 minute roast to 440F.

⁴ Maximum height is with the optional loader attached. See Figure 9: Isometric View – Full System.

Electrical Information	
Volts AC	200-240V 1PH
Frequencies	50Hz or 60Hz
Full Load Amps; <u>Roaster without loader</u> Full Load Amps (FLA) at voltages other than what is shown will differ some.	11.8 Amps at 230V 1PH 50/60Hz
Full Load Amps; <u>Roaster with loader</u> Full Load Amps (FLA) at voltages other than what is shown will differ some.	19.6 Amps at 230V 1PH 50/60Hz
Main Breaker size; (The same for Roaster with or without loader)	25 Amps at 230V 1PH 50/60Hz 50

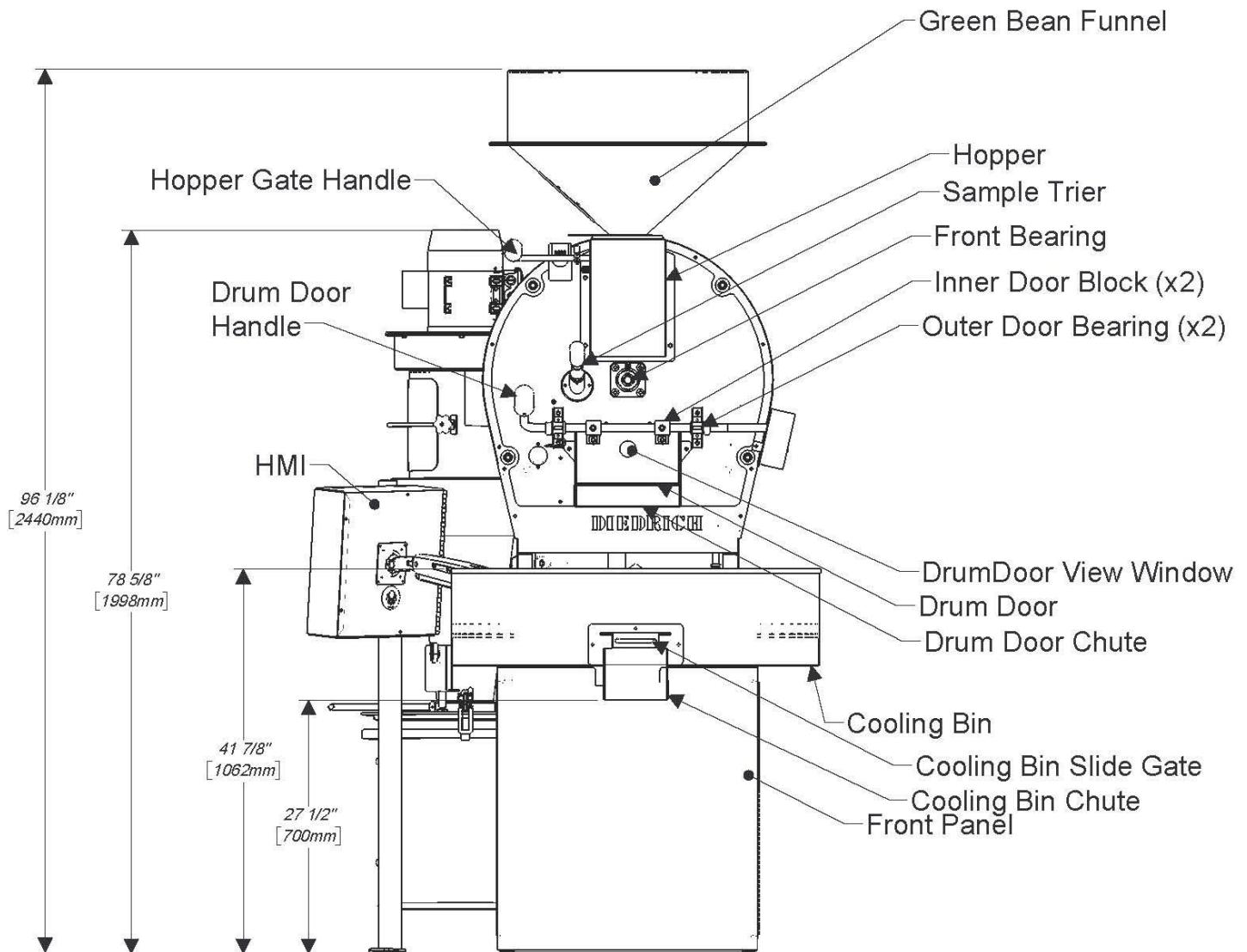
2. DR-25 ROASTER DRAWINGS

This section contains drawing views with dimensions and component descriptions. These drawing are valuable for familiarization with the Diedrich DR-25 roaster and for space and utility connection planning. There are also drawings of the DR-25 roaster with optional loader, destoner, cyclone, and afterburner.

Dimensions and some details are subject to change.

These drawings each take a full page so the remainder of this page is intentionally blank.

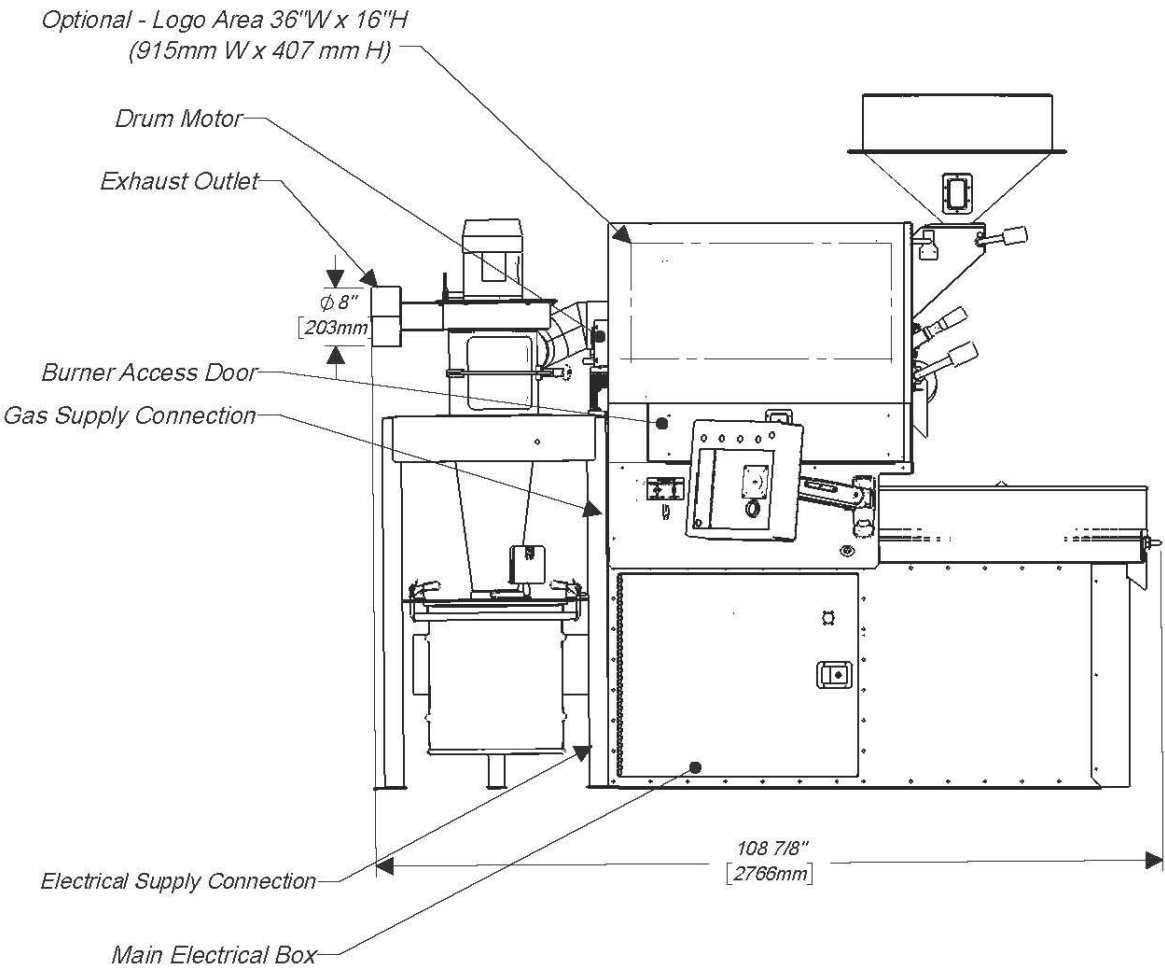
Figure 1: Front View



Front View

SCALE 1 : 16

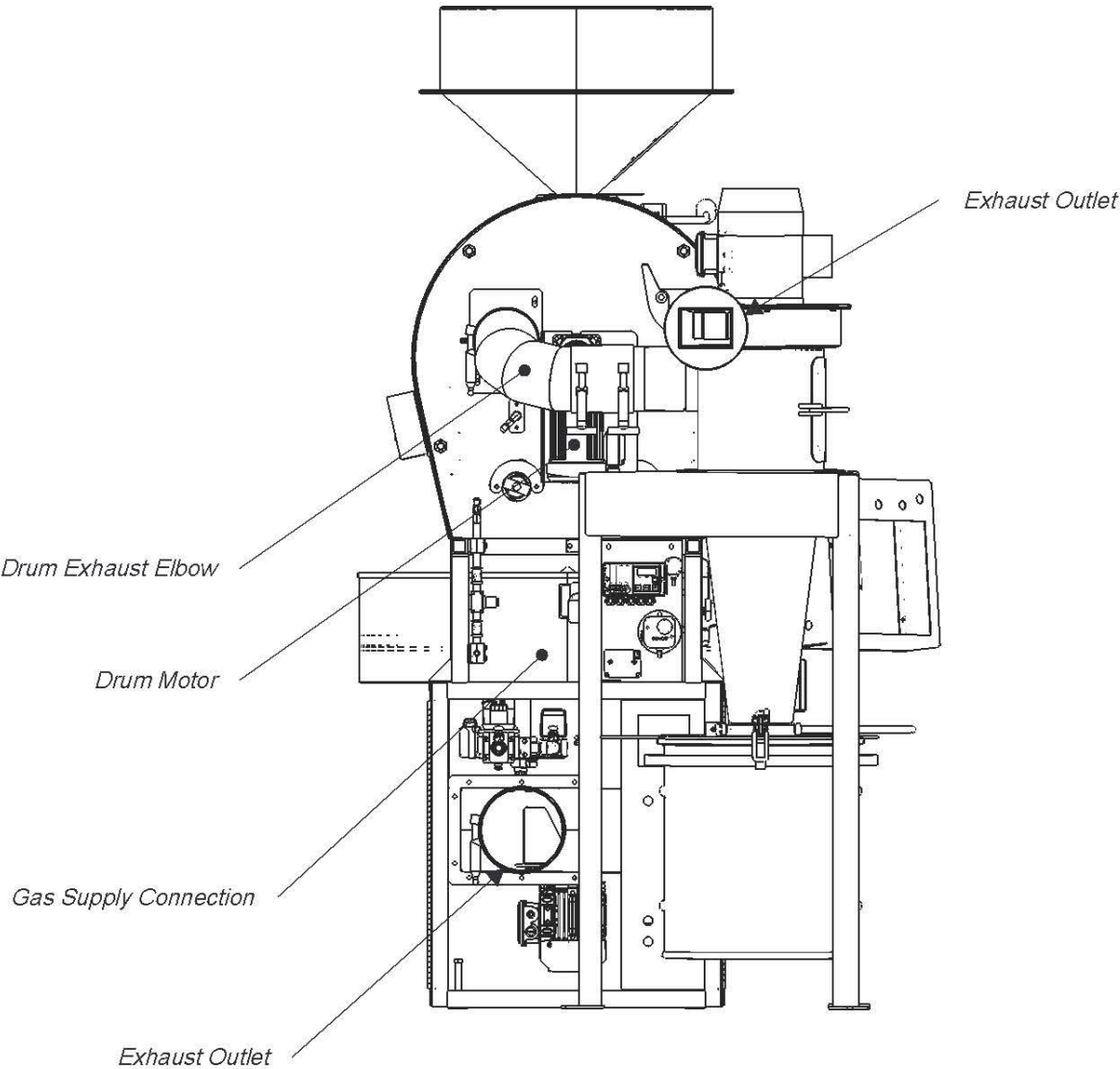
Figure 2: Left Side View



Left Side View

SCALE 1 : 24

Figure 3: Rear View



Rear View
SCALE 1 : 16

Figure 4: Right Side View

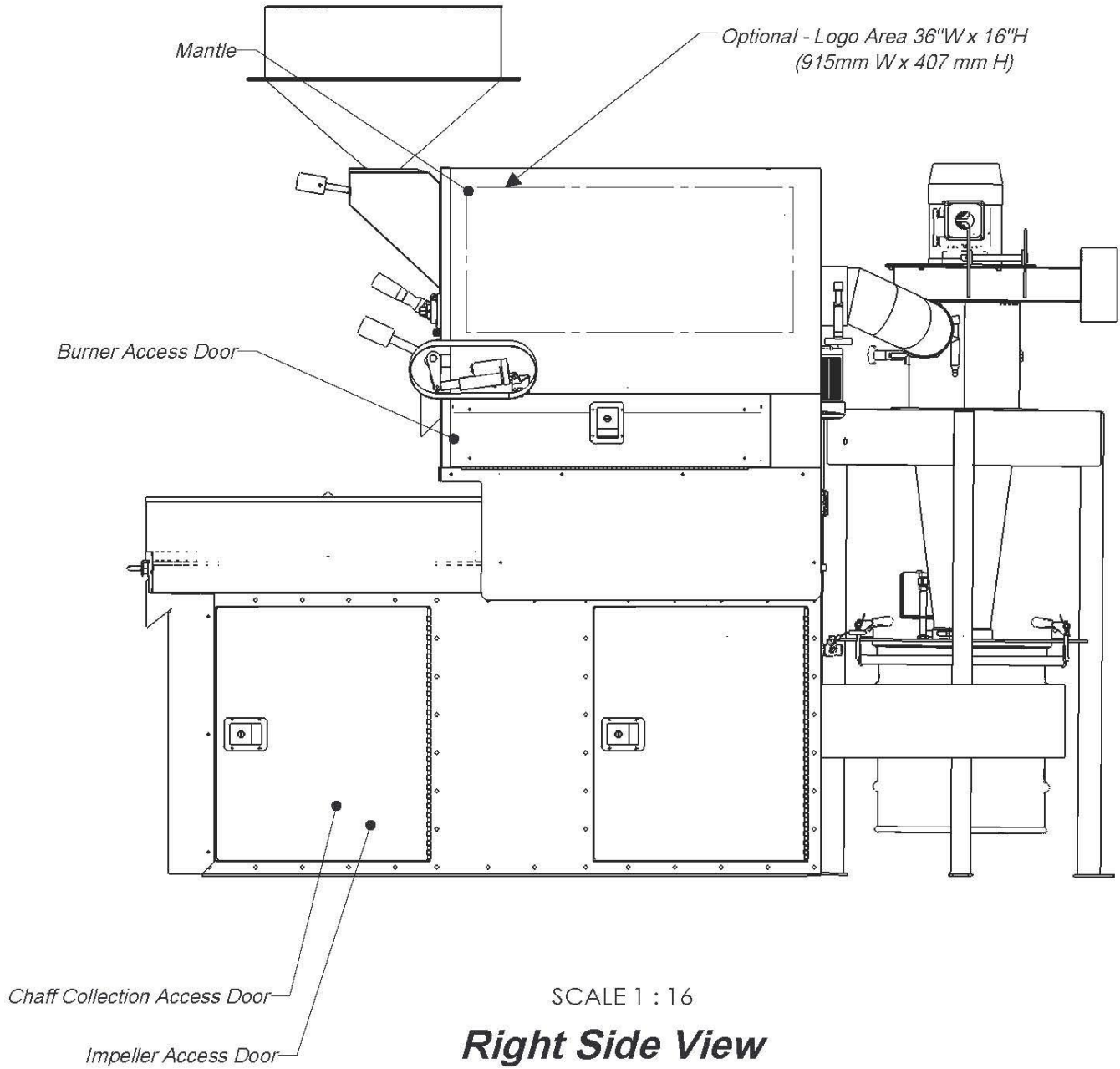
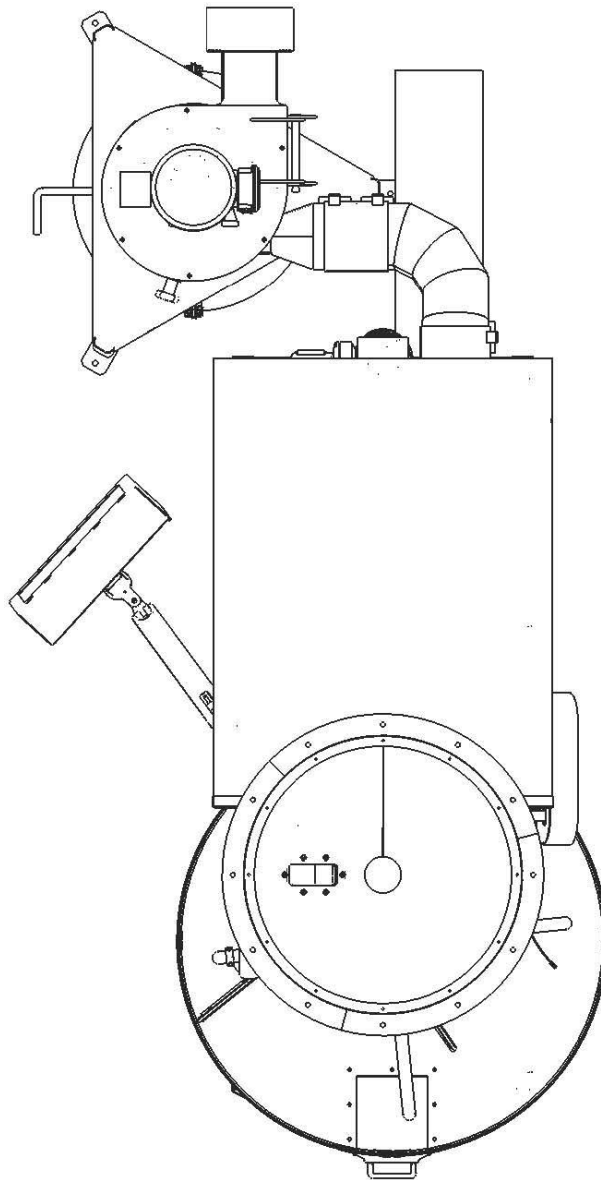


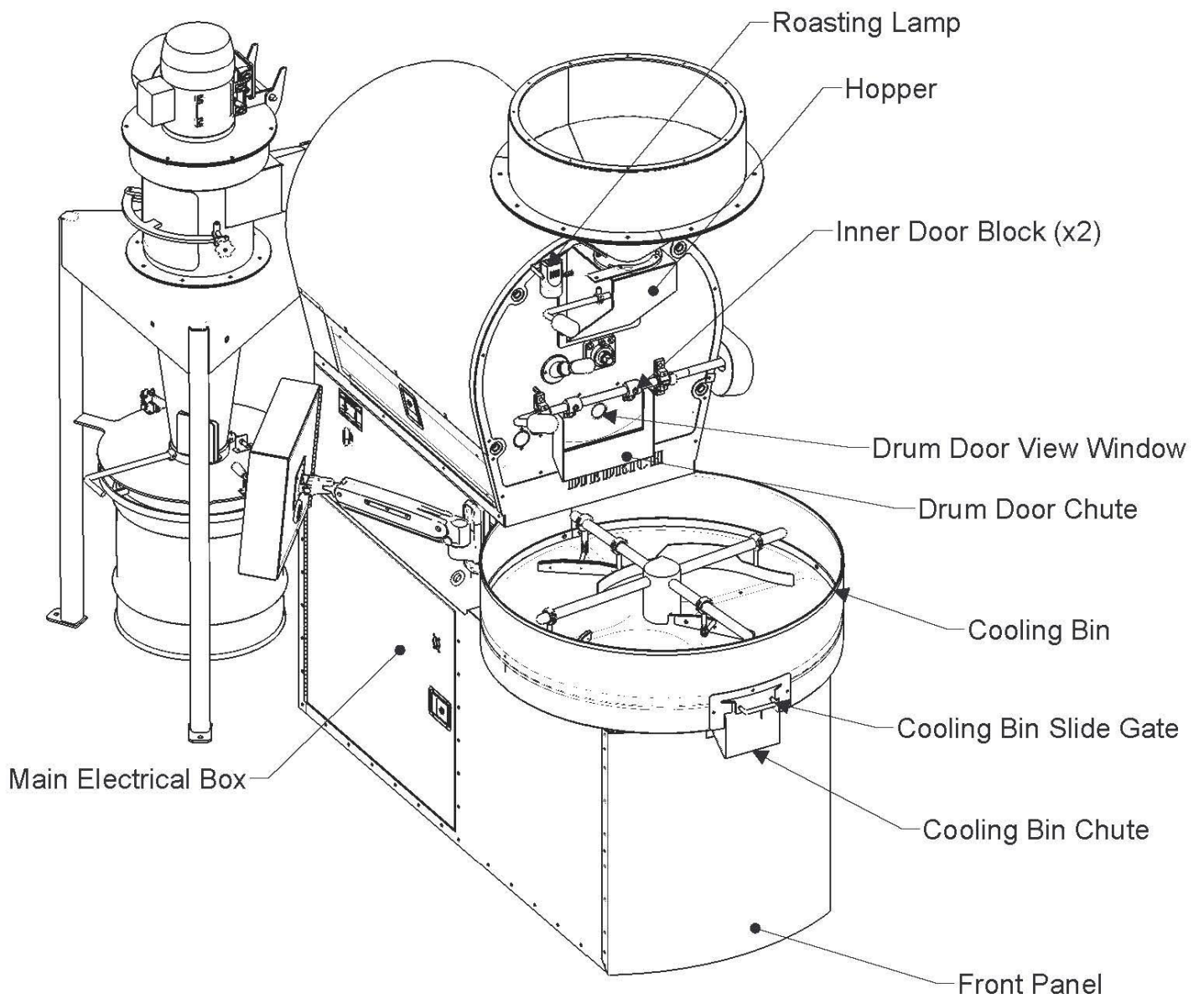
Figure 5: Top View



SCALE 1 : 16

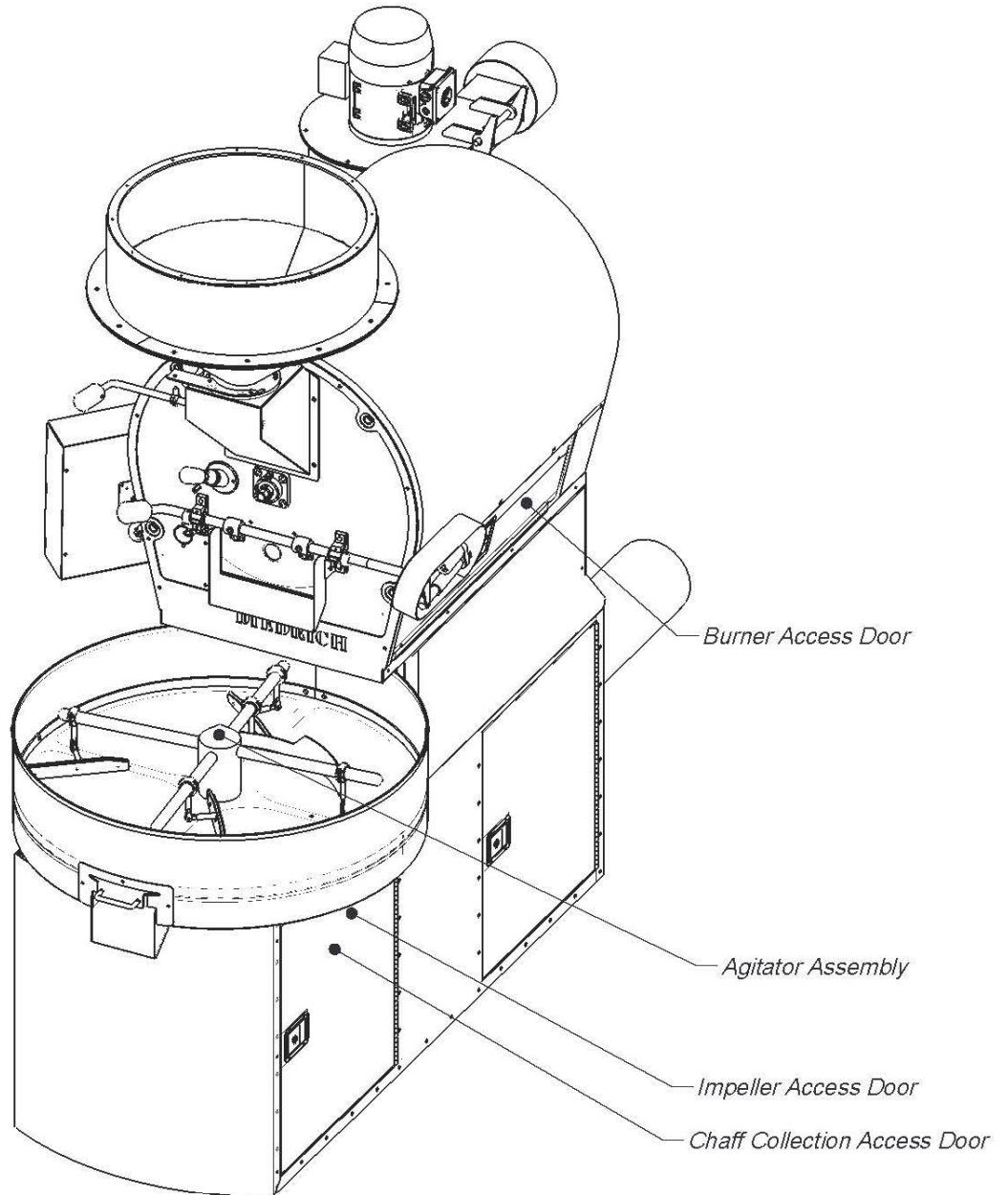
TOP VIEW

Figure 6: Front Left Isometric View



Front Left - Isometric View

Figure 7: Front Right Isometric View



Front Right - Isometric View

Scale 1:12

Figure 8: Top Space & Utility View

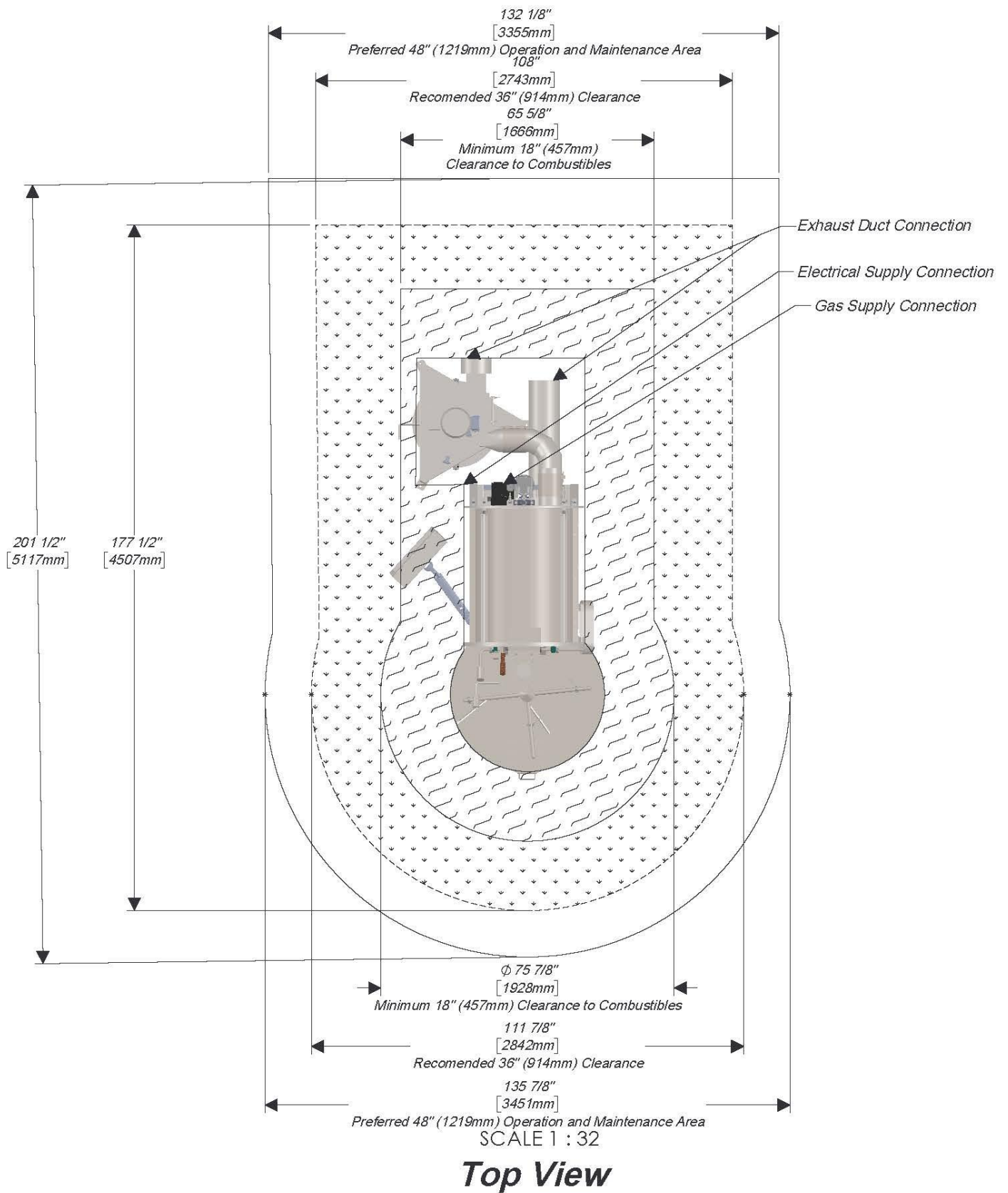
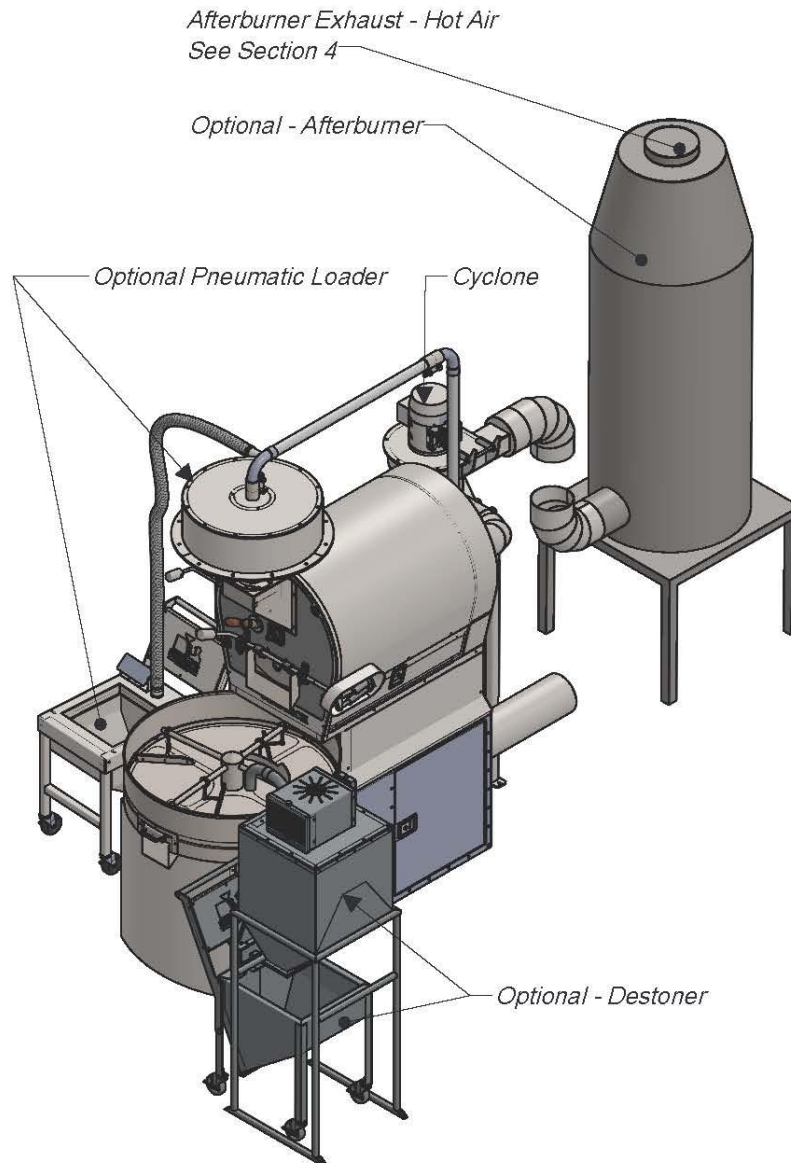


Figure 9: Isometric View - Full System



Scale 1:32

Isometric View - Full Roasting System
For More Information Request Layout For Purchased Options

3. FACILITY AND INSTALLATION PREPARATIONS

Review the Installation and Operation Manual upon purchase. Read it thoroughly prior to installation of the roaster and/or ancillary equipment.

Check local building/fire codes and regulations. Installation must conform with local codes and local codes, regulations, and requirements will govern in the event they exceed or contradict information provided by Diedrich Roasters LLC, in this document or elsewhere.

It is the purchaser's responsibility to ensure the appropriate codes and regulations, specific to their area, are followed and met.

Obtain any required permits such as building and air quality permits. Requests for information or assistance with permitting and/or certification forms must be submitted to Diedrich within 30 days of purchase. Anticipate approximately 15 business days from submittal of forms for Diedrich to complete our part.

Determine the layout/location of the roaster and any ancillary equipment.

Clearance to combustibles must be a minimum of 18 inches (457 mm) from the sides and the back of the roaster and from the roast air and cooling bin air ducting. However, 3-4 feet (1-1.2 meters) minimum clearance is recommended for operation, maintenance, and repairs. See the Top View Space and Utility Connection Information drawing (*Figure 6*).

Diedrich Roasters LLC may assist with a customized layout to fit within a specified space. This service is primarily available for Diedrich systems with roasters and other ancillary equipment.

Seek licensed and certified professionals for preparation, installation, and connection of electrical, gas, and exhaust ducting to the roaster and any ancillary equipment.

Make sure the appropriate electrical power is available. Ancillary equipment such as the destoner and afterburner will require their own power source, as they are not powered by the roaster.

Make sure the appropriate gas supply is available. See *Section 2.1* of this document for additional information. Additional considerations for the gas supply line include:

A safety shut-off valve must be installed in the gas supply line before, and close to, the connection to the roaster. An incoming regulator must be installed to adjust the incoming pressure to the roasters required pressure. A separate incoming pressure regulator is required for an afterburner, if an afterburner is used. Venting of the roaster and supply line regulators will likely require venting to the outdoors, per code.

A strainer or sediment trap, as well as a moisture separator or moisture trap/drip, must be installed upstream of the roaster. These must be capable of capturing and cleaning or draining sediment and moisture.

The roasting system will remove fresh air from the building. An additional fresh air inlet may be required to allow "make up air". See *Section 2.1* of this document for roaster airflow information. Consultation with a licensed Heating, Ventilation, and Air Conditioning (HVAC) contractor is recommended.

Ensure the appropriate size and type of exhaust ducting is installed. *Section 2.1* of this document, and the "Exhaust Ducting" section below, provide technical data and other pertinent information. The exhaust ducting can be expensive and have a long lead time.

4. EXHAUST DUCTING – GENERAL INFORMATION

Throughout the remainder of this document, the term exhaust ducting refers to the ducting that the customer, or their contractor/representative, select, acquire, and install. The exhaust ducting will connect to the applicable Diedrich provided equipment.

One of the most important aspects of the equipment installation is the use of an approved exhaust ducting system. Its design can greatly affect the equipment performance and the product quality. The cost and time to order and install the exhaust ducting are also important customer considerations.

Designing the exhaust ducting system requires a qualified professional to calculate the efficiency of the system and the proper size of ducting. The ducting must be of sufficient diameter to accommodate the air flow (SCFM - standard cubic feet per minute or SCMh - standard cubic meters per hour), meet the static pressure requirement (noted below), and meet applicable regulations. A licensed engineer or Heating, Ventilation, Air Conditioning (HVAC) professional can assist. Information the qualified professional will need, such as the diameter of the exhaust ducting and the maximum exhaust air flow, is found in the technical data table in *Section 2.1*. Customers should contact their sales or project manager representative with any questions.

A properly designed and installed chimney and rain cap is essential to the equipment performance and longevity. Water leaking in may cause an electrical short or damage the equipment. Your contractor will be able to coordinate with local jurisdictions for the correct cap. The cap should not have a screen since it will clog with residue of chaff over time. The Diedrich equipment (roaster, cyclone, Afterburner, loader, or destoner, as applicable) **MUST NOT** support the weight of the exhaust system.

The exhaust air from Diedrich products fits into one of the two general categories. Either hot exhaust air, such as from the roaster or an afterburner; or ambient/room temperature exhaust air, from products such as loaders and destoners. The sections that follow will discuss ducting considerations specific to these general categories

5. EXHAUSTING DUCTING, HOT AIR – ROASTERS AND AFTERBURNERS

The exhaust air from the roasting process is hot and contains oils and residues which are flammable. In the event of a ducting/flue fire, the internal duct temperatures can exceed 1000° F (538°C), which could cause nearby combustible materials to ignite. Thus, Diedrich recommends, at a minimum, stainless steel, double wall, positive pressure grease ducting that meets the applicable region/local standards, such as UL for USA, ULC for Canada, and CE for the European Union.

An important consideration when designing an exhaust ducting system is the static pressure. The static pressure is the backpressure or suction within the system. The exhaust ducting that connects to the roaster, cyclone, or afterburner, must be designed to operate with a static flue pressure between negative 0.15"WC (suction) and positive 0.25"WC (backpressure) at the exhaust of the roaster (cyclone or Afterburner, as applicable) while in operation. For Roasters (with or without cooling bin cyclone, and without an Afterburner).

Ducting must be suitable for 500°F (260°C) continuous, 2,000°F (1,093°C) for 30, minutes, and comply with UL-1978/ULC-SC662 Standard for Grease Ducts in the USA/Canada, and/or equivalent standards for other countries (such as CE standards for the European Union).

Installation must be done in accordance with appropriate NFPA standards in the USA or equivalent standards in other countries. The installation must also comply with the manufacturer's installation specifications and allowable distance to combustible/noncombustible materials.

For Roasters with an Afterburner:

Ducting from the Afterburner must be suitable for 1,000°F (538°C) continuous, 1,400°F (927°C) intermittent, and comply with UL-103/ULC_ORD-C959 in the USA/Canada, and/or equivalent standards for other countries (such as CE standards for the European Union).

Installation must be done in accordance with appropriate NFPA standards in the USA or equivalent standards in other countries. The installation must also comply with the manufacturer's installation specifications and allowable distance to combustible/noncombustible materials.

There are companies that offer ducting products that comply with both the UL 1978 and the UL 103 standards. Some of these companies are listed below along with their websites and contact information.

Van-Packer www.vpstack.com, 888-877-8225, and/or
VPTech@vpstack.com Selkirk www.selkirkcorp.com and/or customer
service at 800-848-2149 Jeremias www.jeremiasinc.com and/or e-mail
Cayce.raper@jeremiasinc.com DuraVent www.duravent.com and/or e-mail
customerservice@duravent.com