

# Ghibli R-90

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90 kg  
Commercial Coffee Roaster

The **Ghibli R-90** commercial coffee roaster was designed to provide the latest technology for those who **appreciate quality**

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The Ghibli R-90 is not another average commercial drum roaster. Our loyalty to the endless pursuit of excellence ensures that our roaster produces a boutique quality coffee with a full aromatic spectrum in commercial quantities, something hitherto unachieved by standard commercial configurations.

## Precision Design

With the help of advanced design software, every attribute of the Ghibli R-90's construction was meticulously designed to optimize each part of the roasting process. Thanks to extensive research and painstaking attention to detail, the Ghibli R-90 can offer:

/Advanced thermodynamic characterization.

/Precision drum housing, ensuring the drum always spins "in line", with a sturdy design that will bear the load for many years.

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/Exact proportion in drum design, achieving an optimal ratio of conductive and convective heat.

/In-drum fluidizing paddles designed to perfectly stir the beans, create greater heat conduction between metal and beans, separate chaff and immediately evacuate the beans from the drum into the cooling group.

## Perfect Heat Dispersion

We have conducted intensive research on closed ceramic combustion chambers. The ceramic surrounding the Ghibli R-90's drum ensures that the distribution of heat is equal at all times; with cold air unable to penetrate the drum. This presents a marked improvement over the common setup of self-aspirated burners, where heat is applied directly to the drum at a single point.



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## Clean, Safe and Efficient Heating System

Coffee-Tech's entire Ghibli line features a highly efficient turbo gas burner.

This special roaster is equipped with a dual-stage modulated burner; providing a wide range of settings able to maintain a constant heat. This clean heat source provides maximum gas burning efficiency with minimum levels of carbon monoxide emission. Safe, economical and stable, it features many parameters for control and calibration, all described in detail in our user manual.

## Comprehensive Set of Features

At Coffee-Tech Engineering, we pay special attention to the less obvious details, such as the compact, efficient structure of the roaster, batch cooling time, drum evacuation time, the size of the monitoring control lens and drum-gate, the addition of a lens in the green beans hopper and more. At the end of the cycle, the entire roasted batch is transferred to the cooling group in a matter of seconds. These features are often ignored but their impact is tangible in the finished brew. At Coffee-Tech Engineering, every setting and modification is tested in our laboratory to ensure we provide the best cup of coffee possible.

## [Optional] Roasting Software

Alongside the Ghibli R-90, we offer unique roasting software, PC operated, developed exclusively by Coffee-Tech Engineering, that completely automates the roasting process. The software enables the user to predefine and program personal roast profiles. By recording the desired heating curves, an endless number of roast profiles can be applied time and again with pinpoint accuracy.

The software analyzes the internal temperature at three distinct points, simultaneously managing the two-stage modulating burner. In addition, the software also controls the drum speed and airflow within the drum, allowing for complete control over the entire process.

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## Pneumatic Elevator for Green Beans:

This machine is equipped with a floor mounted green beans elevator for easy loading. It can be controlled by the roasting software or manually from the control panel.

## Pneumatic doors actuation:

All doors on the Ghibli R-90 feature pneumatic actuation, aided by air pistons and electro-valves and can be operated semi-automatically from the control panel or automatically by the software.

## Control Panel

The Ghibli R-90 is equipped with a self-standing control panel, ergonomically designed for operation and easy maintenance.

The control panel features an emergency stop switch, indicating lamps for the burner and afterburner, a USB port for computer connection, individual switches for all electric and pneumatic functions of the machine, including optional features such as De-stoner with its individual frequency inverter, along with all other optional features mentioned.

All electrical control components and motor protections are installed in this unit. This allows for very easy maintenance and service without the need to open the machine itself. In the event of a failure, the control board can be shipped separately for repair or exchange.

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## Cyclone Chaff Collector

Automatic Chaff evacuation, prevents accumulation in the cyclone, emptying continuously your chaff collector, no more chaff fire at the cyclone bucket.

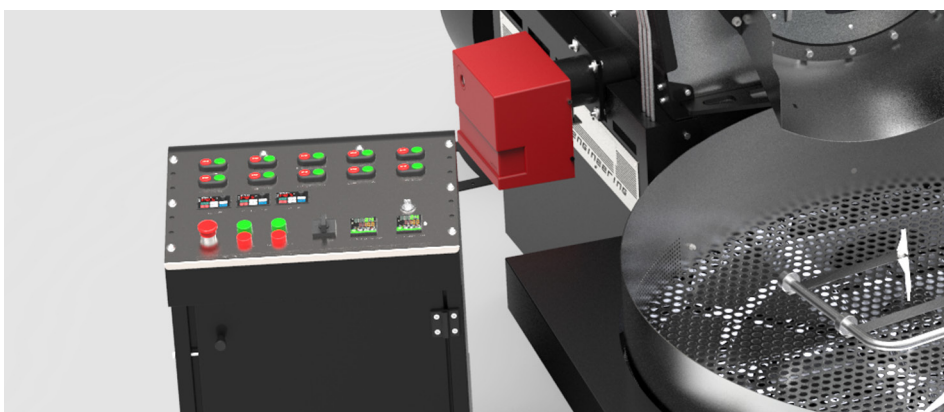
This machine comes with a heavy gauge, galvanized, painted steel chaff collector that can be taken apart with basic tools for cleaning. Cleaning is a tedious but necessary procedure on any commercial roaster, but we make it safe and easy to do.

## [Optional] Chaff Compacting Device

With the Ghibli commercial line you can order a compacting device for your Cyclone. This will pack your chaff into small capsules you can simply throw away or re-use for heating or agricultural purposes.

## Cooling Group

The Ghibli line is equipped with a stainless steel cooling group, equipped with a big screen mesh that requires no cleaning, Teflon agitation blades, and a dedicated high capacity cooling blower. The Cooling Group also features a big cleaning door and pneumatic evacuation opening - all covered for food safety and protection. Volumax cooling system obtains homogeneous immediate cooling. Volumax system is ducting high volume of pressurized air all around the cooling pan through the perforated cooling pan wall, this in addition to the Maine cooling blowers. Volumax helps to block roasting immediately.



Control panel

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# A New Generation of Roasting Drums

An extensive research and development process has resulted in four distinctive tailor-made drum models for the Ghibli line, each excelling at producing coffee suited to different tastes:

## Ghibli Standard Drum

This solid mild steel drum has been designed to produce an extensive aromatic range and high sugar levels during roasting. This results in a superb roast for most styles, including blends roasted for espresso.

## Ghibli Infrared Drum

Two separate layers of perforated mild steel ensure an improved grip between the surface and the beans, improved shaking and the creation of a larger contact surface between the beans and the heating source. Infrared radiation is applied to the beans via the perforations. This drum's increased infrared radiation treats the surface of the bean, creating a glaze on the bean's surface, encapsulating it with caramelized sugar. This has a significant impact on shelf life and aromatic profile, highlighting beans of single origin, especially when roasting for filter-brewed coffee.

This drum is designed to produce a stronger taste with higher levels of caramelized sugars and excels in rapid roasting times. The high levels of caramelized sugar also produce a deep brown, bluish colour in the coffee.

## Ghibli Thermodynamic Drum

This is the most advanced drum in today's industry. Built from two layers of mild steel with a middle layer of pure copper, the drum has extremely high thermal absorption and conduction

characteristics. In standard drums, roasting is performed by direct, limited contact between the beans and the drum. The Ghibli Thermodynamic Drum achieves a refined method of conduction over a wider contact surface between beans and drum.

Heat is generated in the first steel layer and then transferred to the copper layer, which reflects the heat from a 1.4mm gap onto the beans resting on the inner perforated layer of steel, removing any risk of burn marks. This produces a superb, evenly roasted batch of beans. In contrast to the Infrared drum, this drum is best suited to producing top quality espresso blends, with rich body and a very round, mild taste. This drum produces an amber reddish colour coffee, with the colour signifying the amount of sugar and oil the coffee contains.

## Ghibli Vortex Drum

The vortex configuration of the drum allows air to enter at a 45° angle at high velocity from four ducts. This creates a unique airflow, moving air in a spiral motion into the drum through the coffee. This configuration uses less air in a more controlled and efficient way. This presents an improvement over the commonly used perforated back plate, which creates an inefficient, uncontrolled flow of air over the beans. Less air means less gas consumption and more aromas, oil and sugar being retained in the roasted beans.

This drum produces noticeable improvements in the quality of the roasted beans, with clean uniform colour and stain gloss finish. The bean's colour and appearance is a clear indication of its oil, sugar, and caramel content.

## The Perfect Roasting System

Achieving a high level of conductive heat has proved the best method for producing a rich cup, and this is where we differ from other manufactures. Since conduction is complicated and presents several unresolved issues, many have abandoned it in favour of convective heat. At Coffee-Tech Engineering we have chosen to invest in extensive research in order to solve these issues.

In doing so, we are proud to offer a machine that truly reflects our beliefs and understanding of coffee roasting.

The Ghibli R-90 is equipped with individual frequency inverters for controlling motor speed in all important functions such as the drum rotation, the drum's airflow blower and the de-stoner.

These features help in achieving better results in any given condition, including various roasting styles and variations in different beans.

The Ghibli R-90 roasts continuously, while cooling takes place outside the drum, making it possible to roast up to 135 kg of beans per hour. The Ghibli R-90 is user-friendly, ergonomic, quiet and safe. Each function has an individual motor and heat protection.

We take pride in the Ghibli R-90 construction and high-end craftsmanship. This is a result of 3D CAD design, and the use of high quality materials, components and precise manufacturing tools assembled and completed by Coffee-Tech Engineering's passionate artisans.

Our software simulates a long list of tests prior to production; ranging from stress tests, heat dispersion and load distribution.

The Ghibli R-90 is available with various heating methods, from natural gas and LPG, to traditional wood and charcoal heating, according to the customer's preference. Being a high-end roaster, the Ghibli R-90 will ensure reliable operation together with consistently superb results for many years.

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# Technical Specifications

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## **Batch Capacity:**

30-90 kg

## **Roasting Cycle:**

17 minutes  $\pm$  3 batches per hour

## **Electrical Specifications:**

50/60 Hz. 7500W 380V 3 phases

## **Heating Method:**

Gas: L.P.G. /Natural Gas (15.5-50 Mcal/h) two individual burners

## **Chaff Evacuation:**

Cyclone type chaff collector, automatic chaff evacuation. Chaff compacting device is optional

## **Drum Operation:**

Direct drive individual heavy-duty gear motor 1.5 hp with frequency inverter for speed control

## **Cooling Agitation:**

Direct drive individual heavy-duty gear motor 1.5 hp.

## **Cooling Blower:**

High capacity 3 hp cooling blower, cooling time is about 3-4 minutes. Volumax compressed air injection into cooling pan

## **Drum Venting:**

High heat individual blower, 1 hp with frequency inverter for speed control

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## **Bearings:**

Two (F&R) hi precision slide bearings for cantering and two (F&R) high temperature self-aligned bearings with greasing. Front wet bearing uses for drum aligning with fine thread and special wrench. Machine is provided with suitable greasing pump and one kg of high temperature grease. Micrometric drum alignment mechanism

## **Doors Opening:**

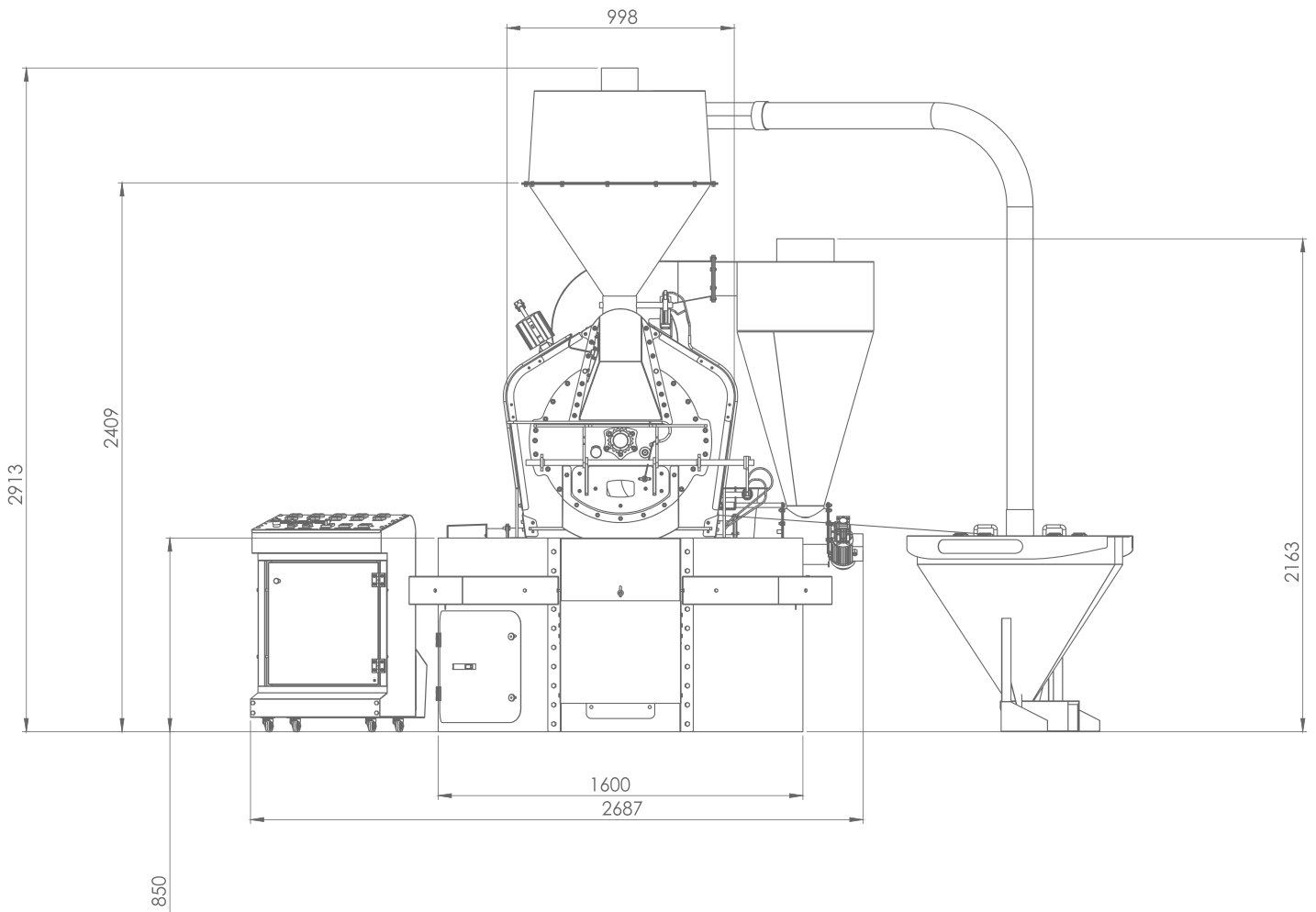
All machine's door openings are actuated by pneumatic pistons and controlled by software or manually from the control board

## **Body:**

Full precision metal work, top quality materials and hardware, galvanized steel, carbon steel and stainless steel. Drum housing front plate SS shielded lifetime good visibility

## **Also Available:**

Traditional wood/charcoal heating conversion / Automatic software



## Heating Technology



Conduction



Convection



Indirect Flame

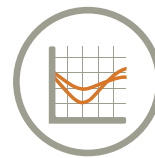
## Control Features



Drum Speed Control



Blower Speed Control



RDL

## Optional



Smoke Free



Infrared Drum



Green Product



Full Modulation



Volumax Cooling



Thermodynamic Drum



Vortex Drum

## General Features



Ceramic Chamber



Multi Point Temp.



In Drum Extinguish



Low Energy Consumption



Low NOx

## Roasting Method



Drum Roasting