

AUTOMATIC NATURAL ROASTER TN-180

Professional equipment designed for natural roasting of products such as coffee beans, cereals, nuts, cocoa and other granulated products. Maximum load capacity of 180kg depending on the sieve and grain density with adjustable cycles from 13 up to 20 minutes depending on the product and roasting point.

This roaster has been designed in close collaboration with Baristas and Master roasters that need the best equipment for the roasting of specialty and premium coffees. As a result, Discaf has manufactured a machine that respects the coffee's organoleptic characteristics and that allows the full development of the coffee, extracting the most from each bean. This roaster includes all the electronic and mechanical components necessary to achieve the perfect roast.

The roaster has an automated system that adjusts the air flow and speed based on the volume of coffee inside the drum, the condition of the chimney, external atmospheric pressure, etc. This means that we'll always have the same amount of air passing through the coffee, resulting in a much more precise and homogeneous roasting process.



The new software is supported by a state-of-the-art Siemens PLC and a large 12" touchscreen to properly display all the necessary parameters.

It can be used in two different ways:

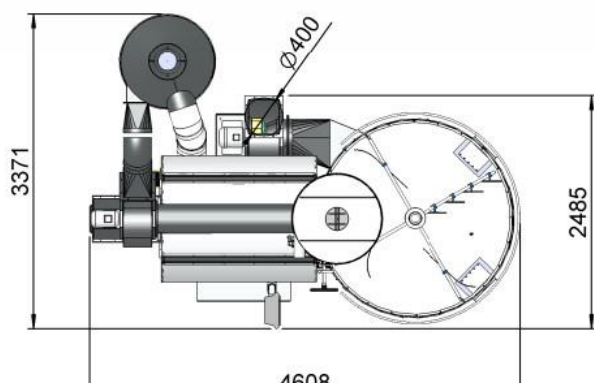
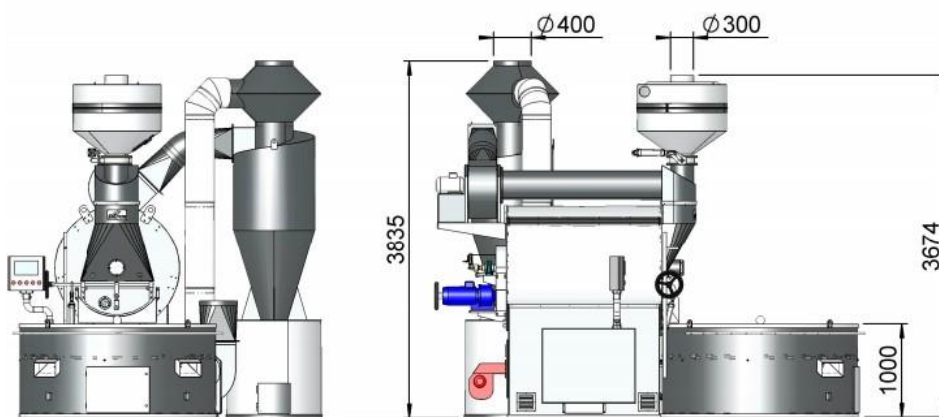
- In manual mode: one can manually create roasting profiles using a super-sensitive potentiometer that modulates the heat. The screen informs the user in real time of the status of all the machine's temperatures by graphically representing the 4 integrated rapid-response probes, consequently the Roaster master has all the necessary information to execute the roasting process.
- In automatic mode: There are two ways to use the recorded roasting profiles (recipes)
 - Automatic mode: This is a system that allows the faithfully automatic reproduction of any previously saved graph, regardless of the volume of coffee added inside the drum, its temperature, the room temperature, etc. This system ensures that the coffee has always undergone the same thermal process, and makes the machine easy to use, so anyone will be able to work with it with the confidence that the product will not change its properties.
 - Semi-automatic mode: This system allows to use a saved roasting profile and modify the five set points of temperature and time. The machine automatically creates a new roasting profile for these new parameters, by traversing through those points and automatically recalculates all the necessary gradients needed to ensure a smooth connection between the points. Once the roasting cycle is finished, this new roasting profile can be saved as a new recipe.



TECHNICAL DATA

Roasting drum with dual chamber	Fast response probe for chassis temperature
Hearth in stainless steel material	Automatic air pressure control system
Touchscreen: Proface de 12"	Optional remote connection
Software with smart roasting profile control	Cooler in stainless steel material
Drum speed control	Special real modulating burner
Airflow speed control	Low level of energy consumption (Low NOx)
Fast response probe for coffee temperature	Increased air flow
Fast response probe for air inlet temperature	Stainless steel finishes
Fast response probe for outlet temperature	

GENERAL MEASURES



MÁXIMUM ENERGY EFFICIENCY

In the traditional roasting systems, all the excess heat is expelled to the outside, using more energy than necessary because the machine's programming is predetermined and doesn't take thermal dynamics into account however this roaster, on the other hand, features a hot air recycling and recovery system. After decanting the smoke from the drum, we reintroduce it into the system, achieving a significant energy saving.

The decanter cyclone incorporates an insulated tank designed to incinerate the coffee bean chaff. This generates a heat energy that is returned to the roasting process, so this way the machine is literally roasting using the energy from the coffee grounds.

Thanks to our own software's new way of generating the roasting profiles and applying changes in certain elements, the roaster is able to modify the air circulation and fire control flows, achieving a greater energy savings. Now the machine uses just the right amount of energy at any given time and only applies heat when the hot air return from recirculation isn't sufficient to follow the roasting pattern. By recirculating the smoke generated while the roasting process and passing it through the flame again, we obtain a cleaner smoke.

The current burner of these new roasters is different from traditional burners; this new type is specifically designed for roasters. The burner modulates with a true proportional ratio 40:1, so the modulation of heat intensity is completely precise in percentage terms and does not require all-or-nothing combinations. This system allows the use of only the necessary energy at all times, thus achieving energy savings and money savings.

This burner and the machine are combined to feed the burner air inlet with hot air from the roaster's recirculation, thus achieving an energy savings and a reduction in nitrogen dioxide emissions (Low NOx) into the atmosphere.

In addition, the burner has an air overpressure system that forces a much large volume of hot air into the drum, this making better use of all the hear energy generated. This means that we achieve a better coffee roasting and reduce the consumption by making much better use of the hot air.

Taking into consideration all the previous explanations, this new technological system will mean a much more efficient work process, and consequently, the roaster will be more environmentally friendly.

