

Always the perfect solution – with us you are in safe hands.

Every application in the coffee industry has its own particular requirements. Speed, mass, variety, economic viability – regardless of whether you are producing a mass product, an instant coffee or a special roast; whether you deliver coffee

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products, torrefacto or coffee substitutes; whether your customers buy their coffee in specialised shop roasteries, supermarkets or delis; whether your market is in Europe. the USA, in Asia or Australia – we always have the best roasting solution for you. Because we have over 140 years of

experience and have supplied around 70% of the world market's coffee roasting capacity – making us both market and technology leaders in the roasting machine segment. We are also the only supplier to offer four different roasting processes: drum roasters, tangential roasters, centrifugal roasters and continuous roasters.

You have to love coffee to roast it properly, and you have to live and breathe coffee to really enjoy it. We are inspired by roasted coffee. Its wonder lies in its variety and the challenge of maintaining its consistency. And that's exactly how it should be. Roasting coffee is much more than just a profession. You can analyse and explain coffee; you can blend it or glaze it with sugar; you can change it, refine it and tease the very best from it its flavour. But before you can do any of that, you need to understand it. Coffee wants to be touched, tasted, smelled and enjoyed with all the senses. You know that. And so do we.



Our customers all have their own philosophies. Each swears by their own roasting methods to achieve the desired result. And they all rely on a consistent and homogeneous bean appearance. The experience that you as a coffee producer have acquired with your preferred roasting techniques is invaluable. Not only for your production, but also for our research and development. It cannot be replaced by analyses or tests.

A passion for good coffee – it shines through in all our roasting processes and in every machine we make.

Our passion for good coffee is reflected in all of the roasting principles available at PROBAT in every one of our machines. All of our roasters deliver totally reproducible results, regardless of which type, which blend or which roasting process is used. Our roasting solutions guarantee maximum value stability and top reliability. That's why our machines use only the highest-quality components from

renowned suppliers. Our objective is to ensure that your production process always runs at an optimum level. Because your business is taste. And our business is your satisfaction. That is why you always have a good feeling when you are roasting on a PROBAT machine — because our passion is neither a mere preference nor an end unto itself, but rather the basis for a qua-

lity philosophy that begins with an innovative concept and comes to fruition in first-class workmanship. After ten years of use, PROBAT customers are not looking to replace their roaster, but rather to add another machine to it. And that is one of the reasons why we are in a position today where we can proudly say that around seven out of every ten cups of coffee drunk around the world are roasted on PROBAT machines.





Without new ideas there is no innovation, and without a certain amount of experimentation there would never be any new products. We certainly do not want to tell you how to run your business. But when we can help you to expand or optimise your portfolio, we are happy to be the strong partner at your side. Test our expertise and our solutions. Make use of our pilot plant and engineering section, the only one of its kind in the world, and experiment to your heart's content with all the products and machines. And if you come to the conclusion that your performance requirements are in good hands with us, you will certainly find yourself in good company.

Heat transmission via convection – the solution lies in the strict separation of heat and movement.

Air plays a key role in coffee roasting. Therefore, for us, it has just one single but central task: convection – nothing more, nothing less. We rely purely on

mechanical means to move the roasting product. This principle is one of the cornerstones for consistency and reproducible results as well as being the underlying philosophy for all our roasting solutions. Because it is only the strict separation of movement and energy transmission that allows these to be precisely controlled. In PROBAT roasters, every single bean moves along a controlled trajectory and is guided through a controlled hot air flow. Every roasting has a clearly defined start and finish. We believe you should be able to control how fast or slow your roasting

product travels through more or less air at higher or lower temperatures. Because when you devise your optimum roasting result, every second counts – not only for the sake of your quality, but also for your productivity.



Energy, environment and reliability – three major issues that we believe cannot be considered separately.

Anyone who aspires to be a technology leader has to set standards. Our roasting machines not only achieve the best results when it comes to energy consumption and pollutant and noise emissions, but also set the standard when it comes to reliability. Nearly all industrial PROBAT roasting systems utilise a process that fully recirculates the roasting gases. During the entire roasting process, the roasting exhaust gas is directed back to the burner and reheated to roasting temperature. This helps to reduce both energy consumption and the level of emissions. By means of the CO monitoring device, elevated CO concentrations can be detected and appropriate measures can be taken. Our safety standards also far exceed the usual levels. Our engineers carry out safety and risk assessments on PROBAT roasting systems in accordance with the Machinery Directive 2006/42/EC. Any potential risks that are discovered are carefully assessed in terms of the probability of their occurrence as well as their likely

effect. Using this as a starting point, the implemented safeguards help to guarantee the functional safety of the process engineering – a safety factor that gives you peace of mind.

Protecting the environment is important to us. We offer a number of systems to clean exhaust gases - all precisely attuned to the needs of your roasting machine as well as complying with legal requirements. In addition to standard systems such as afterburners and catalytic converters, we also offer you particularly energy-efficient solutions. Low-temperature catalytic converters or the PROFORTE system can help you to significantly reduce your energy consumption. Environmental protection that pays off for everyone. All of our industrial batch roasters also offer the optional extra of green coffee preheating. This can reduce the roasting times and boost the processing performance by up to 25%. It also helps to reduce energy consumption and pollutant emissions by a comparable margin. At the end of the day, it's the taste that counts. And that is something that doesn't change.

THE CLASSIC SOLUTION

THE NEPTUNE DRUM ROASTER

A new dimension in coffee processing. The logical culmination of the evolution of the classic long roast is the NEPTUNE drum roasting system. Available with nominal outputs of 500, 1,500 and 3,000 kg/h, this roasting solution guarantees exquisite roasts. The newly developed adjustment options to the roasting profile make the NEPTUNE the ideal roaster for espresso and special coffees with particularly high aroma development. Thanks to its solid construction and low maintenance requirements, it is also a particularly reliable partner when it comes to instant coffee production. It is not only the NEPTUNE's impressive quality that is so convincing, however, but also its exceptional functionality. The variable drum rotation speed enables shorter cycle times, the special shovel mechanism ensures gentle and optimal mixing, and the effective cooling system provides you with even greater assurance of consistent product quality. The exceptionally efficient and infinitely adjustable burner, the low energy



consumption and maximum heat energy utilisation thanks to the NEPTUNE's optimum insulation add up to a unique drum roasting system that meets even the very highest requirements.



DRUM ROASTER WITH A NOMINAL OUTPUT OF UP TO 3,000 KG/H

Rotation on the horizontal axis

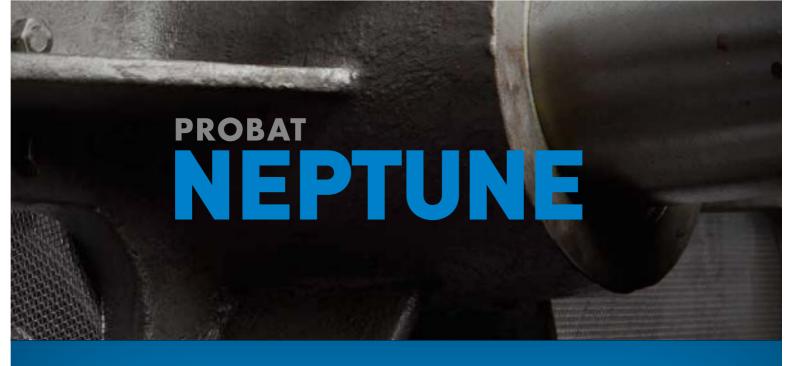
Long roasting time of up to 20 minutes with particularly high aroma development

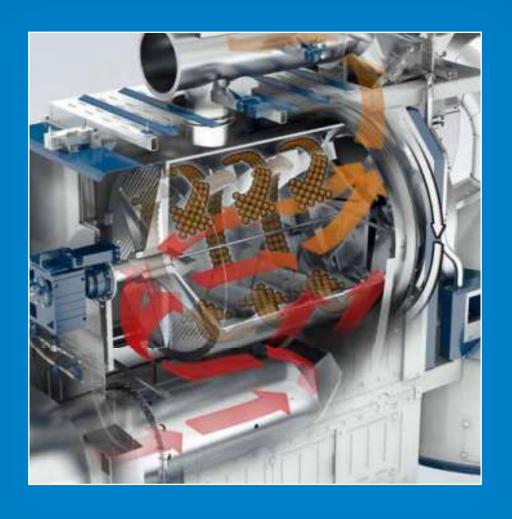
Ideal for espresso and gourmet coffees

Highest-quality materials for long operating life

High functional and process reliability due to top-quality workmanship







PROBAT NEPTUNE

PERFORMANCE DATA

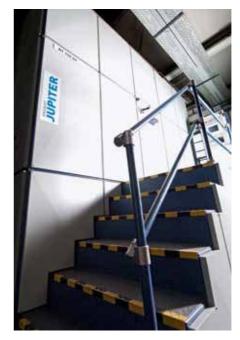
Туре	Capacity (kg/h)	Batch size (kg)	Roasting time (min)
PROBAT NEPTUNE 500	480	80–120	8–20
PROBAT NEPTUNE 1500	1,500	240-320	8–20
NEPTUNE 3000	3,000	480-640	8-20

THE FLEXIBLE SOLUTION

THE JUPITER TANGENTIAL ROASTER

Our tangential roasting solution JUPITER is a one of a kind worldwide as it is able to optimally roast the roasting product in the minimum time - regardless of the green coffee quality. The combination of controlled roast supply air and the mechanically moved coffee beans ensures an ideal temperature transfer between the bean surface and the bean interior. Not only that, it delivers maximum colour and moisture consistency. Its amazing range of possible roasting times, its extreme flexibility and not least its robust construction make the JUPITER an unmatched all-round roaster. Regardless of the coffee variety or blend, the JUPITER can roast to the desired profile. The fully enclosed roasting bin ensures that even the processing of difficult products can be achieved with maximum reproducibility. Its finely dosed water

addition ensures a precisely controllable termination of the roasting process and a pre-cooling of the coffee. JUPITER not only provides you with incomparable product diversity, but also stable and reliable roasting from the word go.





TANGENTIAL ROASTER WITH A NOMINAL OUTPUT OF UP TO 5,000 KG/H

Rotation on the horizontal axis

All roasting times from 2–18 minutes

Highly solid construction

Roasting of difficult products using fully enclosed roasting bin

Maximum flexibility, product variety and reproducibility

For all coffee roasts, varieties and blends







PROBAT JUPITER

PERFORMANCE DATA

	Туре	Capacity (kg/h)	Batch size (kg)	Roasting time (min)
	JUPITER 500	500	50-75	5.5–18
	JUPITER 1000	1,000	100-150 57-150 47-175	5.5-18 3-18 2-18
	JUPITER 2000	2,000	200-300 114-300 93-350	5.5-18 3-18 2-18
4	JUPITER 3000	3,000	172-450 140-525	3–18 2–18
	JUPITER 4000	4,000	400-600 228-600	5.5-18 3-18
	JUPITER 5000	5,000	550-750	5.5–18

THE UNIQUE SOLUTION

THE SATURN CENTRIFUGAL ROASTER

PROBAT is the world's only manufacturer of patented centrifugal roasting technology. The rotation on the vertical axis and the combination of roasting bowl and lamella ring ensure an especially homogeneous and gentle mixing of the roasting product. This enables the SATURN to deliver unmatched roasting performance in the medium roasting range. The numerous possibilities for making fine adjustments to the aroma, density and the extraction level of the roasted coffee, the rapid achievement of thermal equilibrium, and the gentle treatment of the product during the roasting process make the SATURN not only the perfect roaster for mass-produced coffee, but also for any product that simply has to be good. Regardless of which end product you use the SATURN for, the resulting excellent bean appearance will never fail to delight you. The SATURN boasts minimum heat loss, an especially energysaving and environmentally friendly operation and automatic regulation of cooling times. The volume of air can be reduced



to a minimum and the integrated roasting air recirculation ensures an optimum energy balance.



CENTRIFUGAL ROASTER WITH A NOMINAL OUTPUT OF UP TO 4,000 KG/H

Rotation on the vertical axis

Unique, patented roasting process for maximum product quality

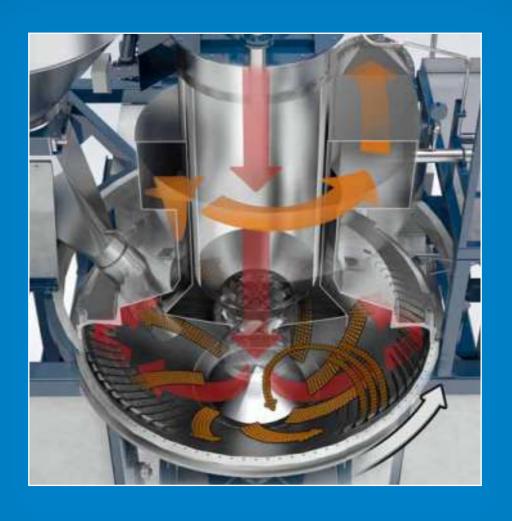
Best performance in the medium roasting range of 5–10 minutes

Especially homogeneous mixing of the roasting product

Optimal heat transfer with minimum thermal energy loss







PROBAT SATURN

PERFORMANCE DATA

Туре	Capacity (kg/h)	Batch size (kg)	Roasting time (min)
SATURN 250	250	32-42	5–15
SATURN 2500	2,500	300-400	5–15
SATURN 4000	4,000	480-640	5-15

THE CONSISTENT SOLUTION

THE PROBAT RC CONTINUOUS ROASTER

The PROBAT RC's continuous roasting process delivers excellent consistency of performance at high throughput rates and over a broad range of roasting times.

This machine continuously feeds large quantities of coffee (up to 4,000 kg/h) in small batches through a sophisticated system of chambers in the roasting drum. This allows an efficient product change without any need to stop the roasting process. Green coffees with a greater tendency for breakage can be processed easily. The process is ideal for roasteries that roast similar products over longer runs. The heat transfer is achieved almost exclusively via convection. The hot air is blown into the individual chambers via nozzles and, in combination with the rotation of the

drum, ensures that the roasting product is mixed thoroughly. Dust and chaff separation is achieved by using a cyclone. The robust construction, the optimum design of the components and the high quality of the machine significantly reduce life cycle costs. In addition, the cutting-edge burner technology, the special casing insulation and the ideal energy values achieved by recirculating roast gases make the RC an extremely economical solution. And yet another plus: thanks to its continuous operation, the level of exhaust gas remains emission peaks seen in batch roasting operation. This enables the exhaust gas treatment systems to be optimally adjusted and to be operated at lower power levels - excellent performance without skimping on environmental compatibility.





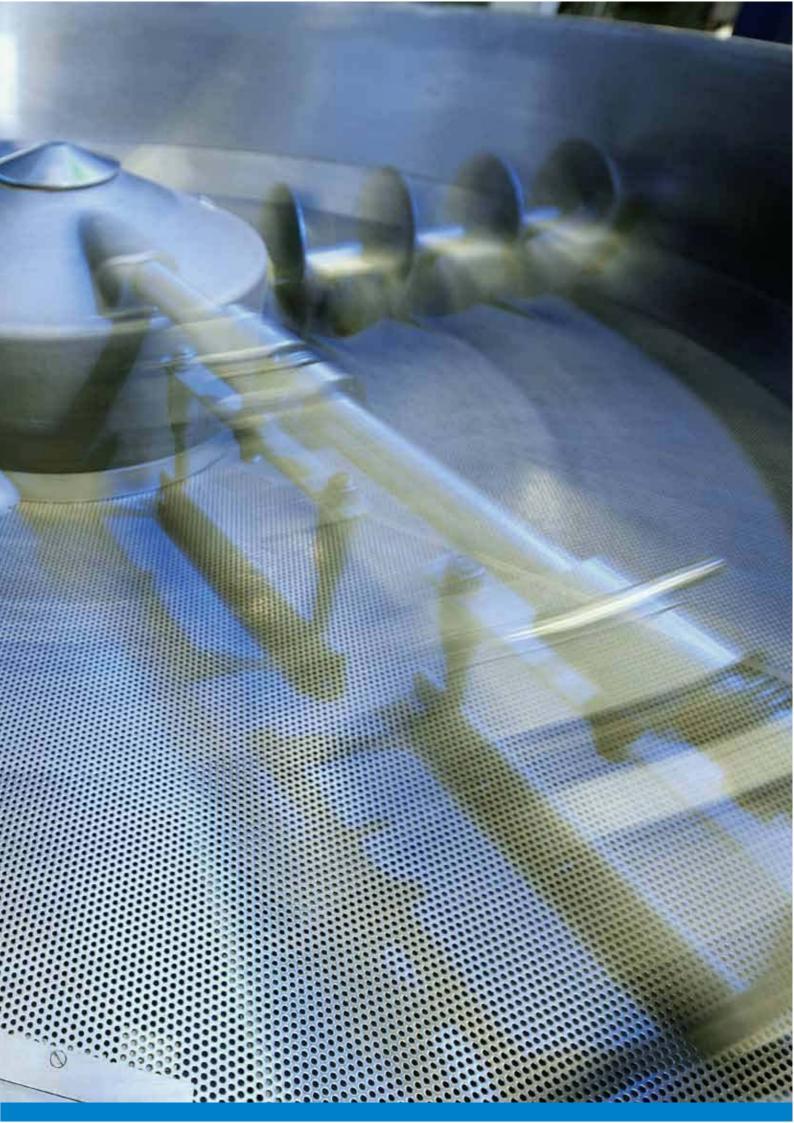
THE PROBAT CN TORREFACTO ROASTER

This special roasting process requires particular capabilities and performance. Standard coffee roasters simply cannot cope with the beans' tendency to clump, which results from the caramelisation process.

Torrefacto requires a special roasting solution that delivers a long operating life on the one hand, and particularly high product quality on the other. PROBAT CN roasters are not merely top-quality and extremely robust machines. The special design of the hot air system, the drum tilt mechanism and the cooling sieve configuration are particularly well suited to the requirements of torrefacto. This also includes extraction of the released gases during the emptying of the drum to avoid air contamination and sugar deposits in the building. Intensive air cooling after the roasting process helps to prevent the formation of clumps and an automatic cleaning system effectively removes any deposits. The roasting and cooling drums as well as the cooling sieve are easy to clean and the roaster offers ease of use that is unparalleled worldwide. PROBAT CN roasters



are designed to use sugar as well as molasses. And last but not least, the CN roaster's broad range of accessories provides you with maximum flexibility and product variety – because with this solution, you can adapt your roasting process to any product or recipe, and, of course, regular coffee too.



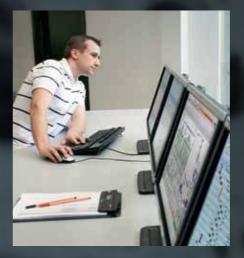
THE PRECISE SOLUTION

THE PILOT ROASTER CONTROL SYSTEM

The fully automatic PC-based operating station PILOT ROASTER manages and monitors your roasting machine.

It displays all actual and target temperatures as well as a broad range of other relevant parameters on its display screen. Automatic start-up and shutdown reduces operating complexity at the start and finish of production sequences.

To improve the operator's overview, the dialogue control, error messages and the process scheme are displayed on different sections of the screen. The roasting process is visualised by means of a product temperature curve. The data from the coffee batches produced is saved and can be retrieved and evaluated as required. A history database enables end-to-end documentation of the production process. To set up the machine for various roasting products, a comprehensive recipe administration function featuring freely definable recipes is available. This ensures that the machine can easily be adjusted to process various roast products and provides you with unprecedented flexibility.



An additional reflection control module allows automatic reproduction of product temperature curves, meaning that these only need to be defined once. Actual and target temperatures are permanently compared. Any deviations are dealt with by a control system that automatically adjusts the roasting air supply temperature and quantity. This minimises the possible effects of external factors on the roasting processes, such as batch size, green coffee moisture levels or temperature.



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