LARGE-BATCH COMMERCIAL ROASTING

Roast Assured™

PROBAT BURNS
The Bean Business
Helping You Manage All the Variables

Commercial coffee processing involves many uncertainties, beginning with the price and availability of quality green coffee. Once you acquire your coffee, the last thing you need is variability on the line. From green coffee receiving to grinding and packaging, each step affects the next. Changes in process parameters impact the characteristics of the brewed coffee. Your customers expect consistency, and that’s what Probat Burns delivers.

Probat Burns understands the fine details of coffee and how to manage them in large quantities. In fact, many commercial coffee processing plants depend on our equipment, control systems and services to produce most of the coffee consumed in North America.

Meeting Your Business Requirements
Consistency is only part of the challenge in coffee processing. Successful plants achieve this goal while also maximizing efficiency for profitability. Probat Burns has special expertise in helping clients develop the systems that meet this and other business requirements. Whether you produce light roasts or dark, regular coffee or high-yield, whole bean or ground, get the equipment and support you need to produce your optimal quality and volume of product. Depend on the industry’s leading provider to help you roast assured™.

roast assured™
A Flavorful History

Probat Burns helped shape the commercial coffee industry and has led its development ever since. We continue to advance our coffee roasting technologies and help our clients meet ever-changing consumer demands.

1860–1870
Coffee prices fall and soldiers return home craving it.

1860–1870
Burns sells hundreds of roasters due to increased coffee consumption.

1864
Jabez Burns invents the self-emptying coffee roaster in N.Y.; John Arbuckle buys one and is the first grocer in North America to sell pre-roasted coffee by the pound.

1868
The godfather of all Probat roasters is invented in Germany.

Early 1950s
Probat work expands from Germany to the North American market.

1950–1960
Coffee is the most popular drink in America.
Bay Area Air Quality Management District begins work to improve air quality.

1960s
Probat and Burns begin integrating thermal afterburners with roasters in response to local environmental codes.

Late 1960s
Probat advances its stage controls and develops first profile roasting control features for their roasters.

1997
Probat and Burns companies merge and now have the largest market share in North America.

Early 1990s
With advances in technology, the industry demands increased quality controls.

Late 1970s
Probat develops the first specialty coffee roasters for coffee shops.

Late 1970s
Specialty coffee roasters emerge; whole bean coffee appears in grocery stores.

You do not give to pepper, ginger, cinnamon or cloves strength or quality, pungency or aroma — but coffee you develop and by skill and judgement change from caterpillar to butterfly.”
— Jabez Burns, 1878

2010+
Probat Burns remains at the forefront of the industry, developing solutions that meet today’s coffee-processing challenges.
Expert Support Throughout Your Process

Probat Burns provides a full range of equipment and services to support you from green to ground, whether you’re opening a new business or upgrading your existing facilities. Select from our world-renowned roasting technologies, environmental control equipment, and other components sold individually or as complete process lines. We provide everything from equipment manufacturing and facility concepts to installation support, systems integration and maintenance.

Customers choose Probat Burns because of our experience and expertise. Our designers, engineers and technicians are proficient with coffee processing technologies. After years of serving the coffee industry, we understand exactly how to handle this product—providing our full support for all your needs.

Consulting

Discuss your business objectives with a Probat Burns consultant in order to leverage our expertise to your best advantage. We can help you select the right equipment and systems, whether you want one large roaster for maximum efficiency or several smaller roasters for greater flexibility. Through close collaboration, we can design your lines to minimize fuel consumption, manpower and maintenance requirements and accommodate space restrictions and resource availability. Depend on Probat Burns to help you make the best choices for your business at every step.

Green Coffee Receiving and Handling

Probat Burns will design and implement a custom system for handling your green coffee, from receiving to storage and further processing. We can help you determine the best equipment, layout and level of automation to meet your requirements. Our inventory management systems include multiple storage bin structures with the option to blend before roasting. Dust collection and green coffee cleaning systems keep your facility and beans clean.

Equipped manufacturing | Facility concepts | Process enhancements

Startup & commissioning | Maintenance & repair | Rebuilds and repair
“We depend on Probat Burns roasters and control systems to uphold our reputation for specialty coffees. They’ve become our long-term partner and our source for equipment and support.”
– Bruce Mullins
Coffee Bean International (CBI)
Roasters for Every Capacity & Need

**R Series**
SOLID DRUM
2,200–4,400 lbs/hr

Features & Benefits
- Mixing system and ideal drum diameter-to-length ratio for optimal mixing and consistent roasting
- Recirculating and nonrecirculating
- Double-walled roasting drum for energy efficiency
- Large cooling tray for effective cooling
- Analog dampers and burner controls, allowing for a wide range of temperatures and airflow rates
- Sight glass, bean thermocouple and product sampler for eyeballing roast development
- Optional online measure analysis and quench control to achieve desired residual moisture content
- Online color monitors to automatically terminate the roast

Controls
- Optional feed-forward controls for batch size flexibility
- Manual or profile roasting controls
- Automatic clean-out features

**Thermalo Series**
PERFORATED DRUM
1,500–2,500 lbs/hr

Features & Benefits
- Energy-efficient cylinder design with automatic clean-out (ACO) designed for product consistency and to minimize downtime and maintenance costs
- Recirculating
- Stirflex™ cooler for effective cooling
- Modular, base-mounted, pre-wired and pre-plumbed units for fast on-site installation
- Space-saving footprint

Controls
- Includes sequential control of the entire process, from roasting to cooling and destoning
- Allows for maximum production and assures product repeatability

**ThermaTwo Roaster**
AXIAL & TANGENTIAL
Up to 2,700 lbs/hr

Features & Benefits
- Holds either one or two bags
- Engineered for slow or fast roast
- Roasting chamber with gentle shovel mechanism for optimal mixing
- Recirculating roaster design with ACO to minimize maintenance
- Partial recirculation for thermal pre-cleaning of exhaust air
- Designed for even small or broken beans
- Optional water quenching for terminating the roast and for fluidized bed cooling after discharge
- Optional green coffee preheating to lower energy usage and to increase capacity by 20%

Controls
- Profile roasting and recipe management with forward control features
- Centralized roaster control design with PC or local HMI and touch screen

**Manufactured in North America**
Neptune Series
SOLID DRUM
440–6,600 lbs/hr

Features & Benefits
• Mixing system and ideal drum diameter-to-length ratio for optimal mixing and consistent roasting
• Double-walled roasting drum for energy efficiency
• Ideal temperature transmission through each bean
• Optional online moisture analysis and quench control to achieve desired residual moisture content
• New improved housing design with special drum insulation
• Modern outer housing cladding, allowing for easy incorporation of field devices such as water and gas trains

Controls
• Manual or profile roasting controls
• Optional feed-forward controls for batch size flexibility
• Recipe management and batch data storage

Saturn Series
CENTRIFUGAL
5,500–8,800 lbs/hr

Features & Benefits
• Special roaster bowl design with toroidal pattern for homogeneous bean distribution and optimal heat transfer from air to bean
• Modular roaster design for efficient installation and maintenance
• Optional water quenching and ring/flat bed coolers for faster cooling and full aroma development
• Optional green coffee pre-heating for lower energy use and greater capacity

Controls
• Expandable touch-screen control panel for easy operation
• Recipe management with learning mode
• Optional extension with additional operating stations

Jupiter Series
TANGENTIAL
1,100–11,000 lbs/hr

Features & Benefits
• Roasting chamber with gentle shovel mechanism for optimal mixing
• High-efficiency burners
• Recirculating roaster design with ACO to minimize downtime and maintenance
• Partial recirculation for thermal pre-cleaning of exhaust air
• Designed for even small or broken beans
• Optional water quenching for terminating the roast and for fluidized bed cooling after discharge
• Optional green coffee pre-heating to lower energy usage and to increase capacity by 20%

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MANUFACTURED IN GERMANY
Equipment for Complete Processing

**Grinders / Roller Mills**

UW Series and MRAL Series
- Three steps — pre-crushing, fine grinding and microfine grinding — to achieve a fine, consistent grind
- Ensure consistent particle size, for even large batches of any coffee grade
- Standard water cooling with manual gap administration or company PC control

**Stone Separators and Destoners**

Separators and extraction units ensure the cleanliness of your roasted coffee.
- Crankshaft drive to control vibration
- Fluidized bed to lift beans away from stones and foreign particles
- Sieve to remove larger particles
- Suction system to remove lighter-weight particles

**Briquetting Press**

Select from briquetting, palletizing and chaff aspiration units to dispose of chaff.
- Centrifugal separator, or chaff cyclone, to efficiently separate chaff from beans
- Briquetting and palletizing options for easy chaff disposal with minimal cleanup

**Bins and Hoppers**

Multi-cell silos, silo systems and bins store and/or weigh your green and roasted coffee.
- Bulk-and-dribble valves to control bean flow for accurate weighing
- Rotary pipe distributor for accurate rationing of beans to storage units
- Optional mixers and scales for blending green coffee by recipe prior to roasting

**Conveyors and Air Systems**

Select from a range of mechanical and pneumatic conveyor units.
- Drag chains, vertical buckets, tubular ropes and round chains for all your conveying needs
- Modular design to fit your facility without costly modifications
- High- and low-pressure options for complete control
- Self-cleaning closed pipes and tubes to eliminate risk of contamination

**Green Coffee Cleaners**

Air cleaners, sieves and various extraction units ensure the cleanliness of your green beans.
- Option to clean and then weigh, or vice versa
- Sieves to remove dust, bag fluff, sand and other particles
- Vibration and magnets to remove larger foreign particles

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Thermal Oxidizers
Select from a line of thermal afterburners to minimize emissions during roasting.
- Maintain VOC/CO destruction efficiencies of 95% or greater
- Designed to meet local codes and OSHA regulations
- Completely tested prior to shipping
- Maintenance-free outer shell
- Optional stacks

Catalytic Oxidizers
Select from a range of catalytic afterburners using standard and low-temperature catalytic inserts.
- Maintain VOC/CO destruction efficiencies of 95% or greater
- Low-temperature operation using low-temperature catalyst
- Significant energy savings compared to thermal oxidizers
- Remove all coffee-specific odors treated through catalytic bed
- Metal and ceramic catalytic inserts available

RTO
Regenerative Thermal Oxidizer (RTO)
- Maintains VOC/CO destruction efficiencies of 99%
- Engineered specifically for particulate, moisture-laden streams
- Eliminates pressure fluctuation
- 95–97% thermal efficiency to minimize fuel costs

The Proforte
Flameless Regenerative Thermal Oxidation (FRTO) system
*Information available upon request.*
Probat Burns provides a comprehensive range of equipment and support services for roasting and processing coffee and cocoa in small and large batches. The Probat Group is dedicated to exceeding international industry standards of excellence. With more than 250 years of combined industry experience, the engineers and specialists at Probat Burns continue to develop their world-leading expertise in safe, environmentally friendly and consistent roasting technologies so that all our customers roast assured.

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