SHOP LAYOUTS HANDCRAFTED FOR WOODWORKERS

3 Low-Temperature Oven Setups That Maximize Production & Reduce Contamination

For woodworkers and other industrial manufacturers aiming to make their operations more efficient, low-temperature ovens are a simple and cost-effective way to boost production and increase finish quality.

Available in numerous sizes and different configurations, low-temperature ovens – also known as drying enclosures – provide a dedicated space for the curing of liquid coatings. Low-temperature ovens allow manufacturers to keep their paint booths reserved for spraying, which helps prevent production bottlenecks. Additionally, by drying products in a controlled environment, instead of on the shop floor, you can reduce contamination in paint jobs.

MAXIMIZE PRODUCTIVITY TO BOOST YOUR BOTTOM LINE

Low-temperature ovens can be set between 110 and 180 degrees Fahrenheit. It takes about 30 minutes to cure products at 140 degrees inside a low-temperature oven. That means if the temperature is 70 degrees inside a shop, it would take about an hour – twice as long – for products to dry with only ambient air.

"There are some manufacturers that paint small parts that leave them in the paint booth and let them dry because they can afford to do that," said Royce Day, industrial territory manager for Global Finishing Solutions® (GFS). "That is not how most manufacturers operate. **The longer it takes to cure products, the more it costs your business**."

HOW LOW-TEMPERATURE OVENS WORK

- Temperature and cure time are set on the control panel
- Purge timer is set on the control panel
- Low-temperature oven starts generating heat
- When the temperature reaches a setpoint, such as 140 degrees Fahrenheit, the cure cycle timer turns on and the low-temperature oven maintains that temperature (paint manufacturers specify curing time and temperature on the technical data sheet that comes with the paint)
- When the timer ends, the heat turns off and the low-temperature oven goes into an idle position

REDUCE CONTAMINATION FOR HIGH-QUALITY PAINT FINISHES

For a woodworker, letting products dry on the shop floor is not an option because of the high amount of dust in the air. However, leaving products to dry in an open face paint booth could also result in contamination, since the front of the booth is open to shop air.

"In a low-temperature oven, the products are not exposed to any of the outside contaminants that may end up landing on them during the drying process," Day said.

EASY TO INTEGRATE INTO YOUR SHOP

The addition of a low-temperature oven is an easy upgrade for a manufacturer. Low-temperature ovens can be attached to a booth any time after the booth is installed, in sizes as small as a paint mix room and as large as a truck booth.

"Instead of tearing down a paint booth and putting in a new booth, it may be more cost-effective to add a low-temperature oven," Day said.

Depending on your current shop layout and equipment selection, the following are three options for integrating a low-temperature oven:

SETUP 1: OUTSIDE OF MULTIPLE OPEN FACE BOOTHS

Woodworking manufacturers often have two or more open face paint booths lined up side-by-side to accommodate numerous projects. A centrally located low-temperature oven can be incorporated so that products can be brought there to cure immediately after they are painted. In this setup, here is the workflow:

STEP 1
- Products are sprayed in Booth 1

STEP 2
- Products from Booth 1 are cured in the low- temperature oven
- Products are sprayed in Booth 2
- Booth 1 is reloaded with products

STEP 3
- Cured products are removed from the low-temperature oven
- Products from Booth 2 are cured in the low-temperature oven
- Products are again sprayed in Booth 1
- Booth 2 is reloaded with products

This setup is common for refinishing cabinets, furniture and doors. Open face booths are perhaps most attractive to woodworkers because of the flexibility in their dimensions. Open Face Paint Booths from GFS range from 6 to 20 feet wide, with depths of only 6 or 8 feet. This allows products like cabinets to be stacked inside and easily accessible to the painter.

SETUP 2: ATTACHED TO NON-HEATED ENCLOSED PAINT BOOTH

The next step up from an open face paint booth for wood finishing is an enclosed paint booth. With the addition of doors, enclosed paint booths, such as Enclosed Finishing Paint Booths from GFS, provide better contamination control for high-quality paint finishes and reduced rework.

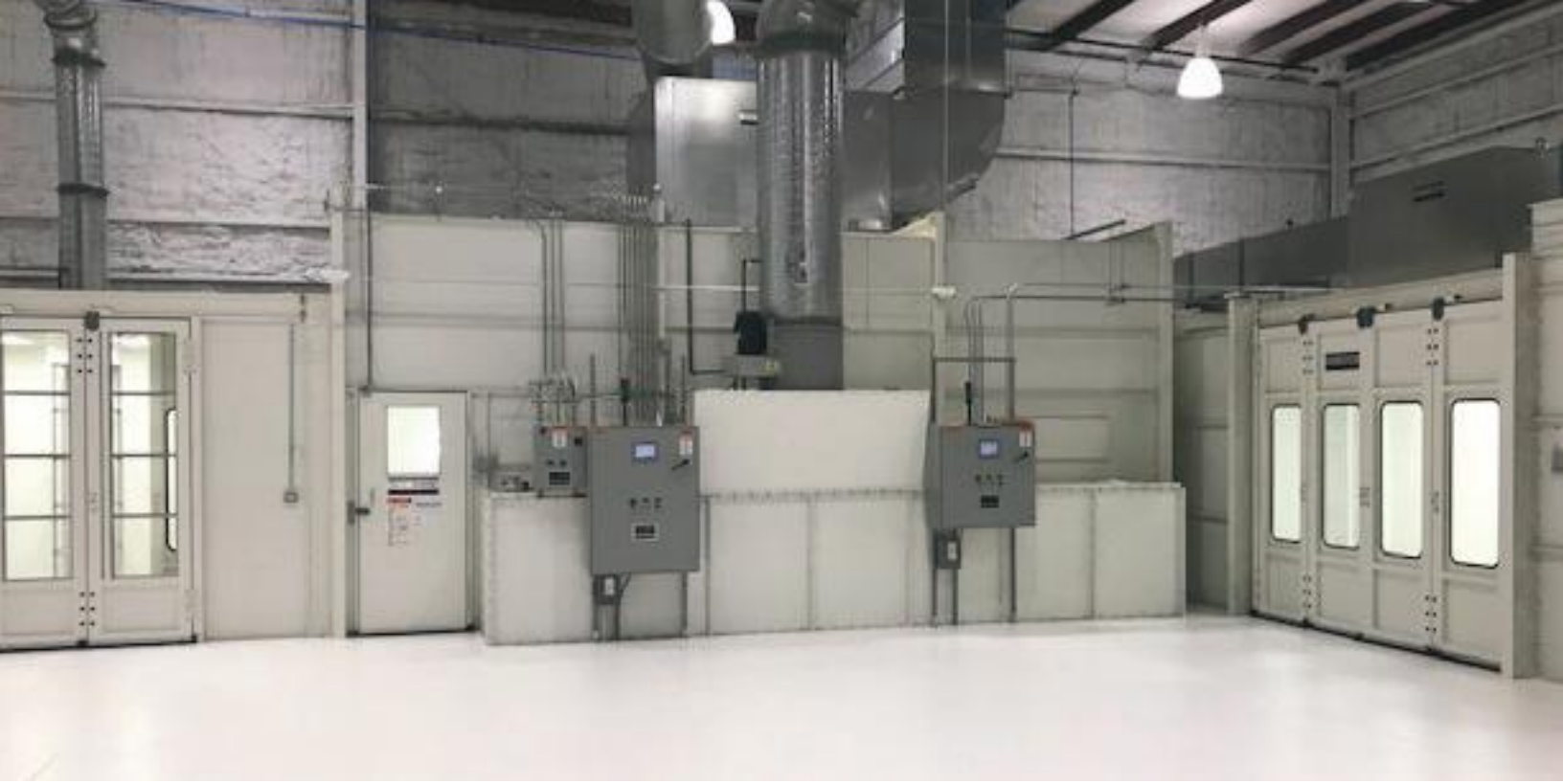
Similar to woodworkers with open face spray booths, manufacturers with non-heated enclosed paint booths rely on ambient air to dry their products, unless they have a low-temperature oven. Their gains in increased finish quality, thanks to the filtered product doors on enclosed finishing booths, are often offset by a significant amount of lost time in the drying process.

With a low-temperature oven attached to an enclosed finishing booth via a vestibule, painted products can quickly be stacked on carts and rolled into the low-temperature oven. There are substantial upfront and operational cost savings from not adding an air make-up unit (AMU) to an enclosed finishing booth. Having a low-temperature oven attached to a booth also allows products to remain in the same environment during painting and curing, which leads to a better quality finish.

SETUP 3: ATTACHED TO HEATED ENCLOSED FINISHING BOOTH

The most efficient setup, combined with the best possible finish, is having a heated enclosed finishing booth with an adjoining low-temperature oven. This allows you to maximize production, with the flexibility of drying products in the booth or in the attached low-temperature oven.

"You have a spray booth full of painted parts. You move them into the low-temperature oven, and while those parts are drying, you can spray another set of parts in the booth," Day said. "If the parts in the low-temperature oven are still drying when you are done spraying the second set of parts, since the booth is heated, you have the ability to dry those parts in the booth. This also provides better drying between coats of paint."



Low-temperature ovens are typically incorporated into an operation when a manufacturer without curing capabilities is hard-pressed to meet production demands or when a manufacturer is planning to increase production in the future, without wanting to sacrifice finish quality.

"Any time you have increased production requirements, you have to accelerate the curing cycles," Day said. "If you are drying only five large parts a day and you want to dry 10 large parts a day, a low-temperature oven would enable you to do that."

GFS has designed custom low-temperature ovens for woodworkers and other manufacturers, in a number of different configurations. To learn more about how a low-temperature oven can improve your operation or to get in contact with a distributor in your area, please visit globalfinishing.com.

DID YOU KNOW?

A low-temperature oven provides a dedicated space for the curing of liquid coatings. **Code requirements prohibit painting in a low-temperature oven**, which must adhere to NFPA 86: Standard for Ovens and Furnaces.