

COMPOSITE CURING

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INTRODUCTION

The value of composite curing is roundly recognized. The need for an extremely high level of control over the manufacturing process and the dependable, high-strength components produced are vital in a growing number of applications.

By curing composite resins in an autoclave or oven, businesses can reliably supply a variety of parts to their customers. However, the high costs of autoclaves make this option cost-prohibitive for many companies. There's good news for manufacturers on this front. Vacuum-assisted composite curing can also produce consistent results, as long as the ovens used are of high quality.

LEWCO's range of more than 200 batch ovens are customized to meet the individual needs of your business and, ultimately, your customers. When you partner with LEWCO, you can count on the best equipment, service and support for your composite curing needs.



EFFECTIVE, INNOVATIVE CONTROLS SET LEWCO OVENS APART

Ovens by themselves are vital tools that help businesses in the aerospace industry and many others fulfill orders that align with customer expectations. However, this equipment is only as good as the controls used to establish operational parameters and fine-tune results for the best products possible. At LEWCO, we know our approach to emphasizing relevant, useful and detailed controls will help address your organization's needs as well as those of your customers.

There are a number of specific controls that can benefit your business, from the calibration and operation of the oven itself to maintaining accurate records for internal use and review by your clients. Keep reading to see a list of some of our most effective, unique and useful controls.



EFFECTIVE, INNOVATIVE CONTROLS SET LEWCO OVENS APART (CONT.)



Some key features offered by LEWCO's range of ovens to keep in mind include:

Advanced operations

- Creation and storage of multiple ramp/soak recipes.
- Cascade loop control with lead-lag capability, allowing operators to control oven air temperature based on part temperatures.
- Vacuum configuration selection at each port.
- Controlled heating rates between 1°F and 10°F.
- High-temperature quick disconnect fittings for all vacuum and transducer ports.
- Fans can be programmed to turn off automatically once safe cooldown temperature is reached.
- User-friendly control customization options.

Security, connectivity and recordkeeping

- Non-editable file recording.
- Batch recording with user inputs, allowing customers to track specific batch data.
- Redundant data logging, with all data permanently stored on the hard drive of the computer associated with the oven and a limited amount on the process controller.
- Ability to calibrate all recording devices.
- Alarm history recording.
- Multi-level password protection.
- AMS 2750 compliance.
- NFPA 86 compliant.
- NFPA 70 & 79 compliant control panel.

CUTTING-EDGE OVEN DESIGN SUPPORTS YOUR BUSINESS NEEDS

Oven design is another critical factor that sets the leaders in the field apart from the followers. While controls ultimately mean the most to companies curing composites, a reliable oven is the foundation on which everything else rests.

Our ovens are built to last. We pride ourselves on offering consistent, high-performing equipment that supports your operations for years to come. Durability and length of useful life are prime considerations across our range of ovens, ensuring you get the best possible equipment for your composite curing needs – no matter which model you decide to use.

Keep reading to see a select list of some – but far from all – of the features that make our ovens so effective in composite curing applications.



CUTTING-EDGE OVEN DESIGN SUPPORTS YOUR BUSINESS NEEDS (CONT.)



Our oven design incorporates the features needed for consistent operation and high-quality results. Some specifics to keep in mind include:

- Guaranteed temperature uniformity of +/-10°F with a standard nine-point survey.
- Welded construction, which creates a more durable unit than panelized construction and reduces through wall metal with heat brakes and expansion joints.
- Explosion venting latches on doors. Also used in case of entrapment in the oven.
- Configurations can be customized to your needs for special space constraints.
- Manual or automated vacuum ports – you select the best fit for your operations.
- Optional variable vacuum pressure.
- A range of integrated vacuum pump sizes are available.
- Our unique wedge seal door design assures a positive seal throughout the heating cycle.
- LEWCO ovens come standard with a 12-gauge plate floor, and insulated floors are also an option.
- All fans on our ovens use premium efficiency motors.
- High-efficiency flows and integral plenums provide uniform airflow throughout the oven.
- Other options available upon request – we help you craft the oven your organization needs.

THE MANY INDUSTRIES LEWCO SERVES AND SUPPORTS

When discussing composite curing, aerospace is often the first industry that comes to mind. The exacting demands of this field require constant attention to detail and incredibly consistent results to align with the expectations of clients. LEWCO's enhanced-duty batch ovens are uniquely positioned to provide consistency and dependability. We develop a deep understanding of your company's needs and current operations to create a cost-effective, efficient and compliant process.

There are growing opportunities to use composite cured materials in a variety of industries beyond aerospace. Applications range from car parts and tools to sporting goods and some major home fixtures, like bathtubs. While the stakes of failure often are not quite as high as the aerospace industry, except some automotive applications, the quality of the final product is.

LEWCO ovens offer effective operator interfaces, data logging capabilities and a commitment to consistent results that means you can be confident in the products you sell to your clients.



THE LEWCO DIFFERENCE

At LEWCO, we understand how important it is for businesses that use composite curing to have the most reliable and consistent equipment possible. We also recognize the value that effective customization of equipment, controls and software can bring to the table. Our large range of curing ovens – more than 200 in all – can all be extensively modified to suit your individual needs.

We pride ourselves on providing the best tools for each and every job. By paying special attention to the unique applications of our ovens, we help you achieve the most positive and consistent results possible. To learn more about how LEWCO can equip your business with the perfect oven, controls and software, get in touch with us today.

