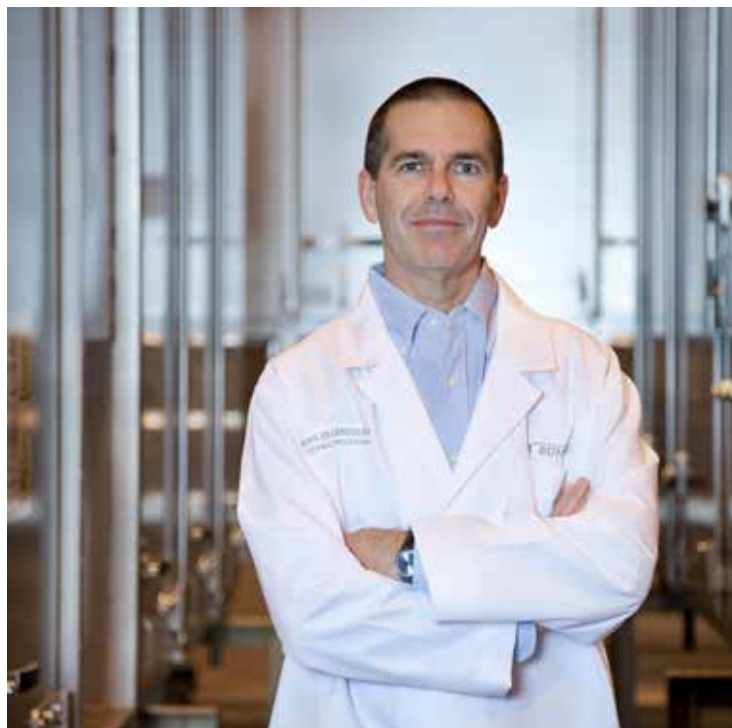


Bühler Aeroglide Dryer Services

Educate. Evaluate. Enhance.



Your Dryers. Your Business.

Reach your full potential with Bühler Aeroglide.

Dryer Evaluations

- Detailed evaluation of your existing dryer
- Complete process or mechanical analysis
- Process and mechanical inspections
- On-site adjustments
- Conclusive, written report detailing areas of opportunity and recommendations
- Hands-on learning and active participation for customer personnel

Training at Your Facility

- Half day: basic drying theory and application
- Full day: adds evaluation techniques and optimization
- Multi-day: adds a hands-on evaluation of your dryer

Drying Seminars

- “Drying Theory Put to Practice”
- “Dryer Maintenance: A Hands-On Approach”

Customers with existing drying equipment turn to Bühler Aeroglide for all their support needs...on all brands of dryers. In addition to worldwide sales and support offices, customers also experience our service through technical seminars, onsite training, equipment evaluations and product development. Bühler Aeroglide service is driven by three guiding principles – Educate, Evaluate, Enhance.

Education is provided through drying theory and dryer maintenance seminars, as well as on-site training programs. Participants in our educational programs return to their facility with a greater understanding of their process, and new solutions for operational improvement.

Evaluations provide the greatest potential for energy savings, improved product quality and increased throughput. A typical process or mechanical audit yields tremendous results.

Enhancing your unique product offering is what our development and testing service is all about. Bühler Aeroglide offers confidential design and testing services to customers looking to introduce a new product to the marketplace, or improve an existing recipe with a new thermal process.



Drying Performance Through Education.

Thermal processing seminars and training.

Seminars: Learn the Principles and Techniques for Optimal Drying

Bühler Aeroglide offers two drying seminars, each with a unique objective. “Drying Theory Put to Practice” teaches a participant to identify and implement process improvements. “Dryer Maintenance: A Hands-On Approach” helps participants keep their drying equipment in top condition for many years to come.

Each three-day course is hands-on, allowing students to utilize lab sessions to reinforce knowledge gained in the classroom. The seminars are open to companies in any industry. Bühler Aeroglide is an approved sponsor of Continuing Professional Competency (CPC) activities for Professional Engineers and Surveyors licensed by the State of North Carolina. Each drying seminar is worth 17 Professional Development Hours (PDHs).

For more information or to register for our next seminar, visit www.buhlergroup.com/training or e-mail aeroglide.training@buhlergroup.com.

Drying Theory Put to Practice

For plant and product development engineers, operators, maintenance and QC personnel. This course helps participants learn and apply drying theory to enhance the performance of their equipment.

Typical Itinerary:

- Day One: explore drying basics including operating parameters, balancing, evaluating, mechanical inspections, troubleshooting and a dryer simulation.
- Day Two: learn advanced drying concepts and measurement practices in a hands-on lab session.
- Day Three: advanced calculation methods used for dryer sizing.

Dryer Maintenance: A Hands-On Approach

For operators, maintenance personnel and managers. Focus is on preventive and routine maintenance theory and application.

Typical Itinerary:

- Day One: dryer operation and adjustments, evaluation, mechanical inspections and repair, and lab session with bench top product test.
- Day Two: heat and control systems including interactive labs for steam, gas burner and electrical systems.
- Day Three: advanced dryer mechanicals, preventive maintenance and a dryer simulation.



The burner troubleshooting lab is always a big hit with participants of the Dryer Maintenance seminar.

New Life for Existing Equipment.

Comprehensive evaluations for any brand dryer.

Experience 25-75% Operational Improvement

Bühler Aeroglide's process and mechanical evaluations are designed to enhance the performance of existing drying systems. Customers can expect any combination of improved product quality, increased throughput, reduced maintenance costs and downtime, and better moisture uniformity and energy efficiency. Consider these important facts:

- The average convection conveyor dryer operates 10% - 30% below its expected efficiency and capacity. An evaluation will uncover any inefficiencies, and put you on an immediate path to recovery.
- Our engineers often detect critical energy losses that typical operational measurements do not.
- Customers reported as much as **50% energy savings** after an evaluation.

Typical Process Evaluation:

- Meet to review current conditions, perceived drying issues, operational data, and goals of the evaluation
- Conduct dryer evaluation (shut down inspection and process data collection)
- Make short-term system adjustments based on dryer data (if possible)
- Conduct summary meeting to review initial data results and preliminary recommendations
- Field engineer representative returns to Bühler Aeroglide
 - Perform necessary calculations, re-analyze the data collected and discuss with other Aeroglide engineers to provide the best possible set of recommendations
 - Submit final report and recommendations

Typical Mechanical Evaluation:

- Thorough mechanical inspection by a parts and refurbishment engineer
- Troubleshooting and root cause analysis
- On-site mechanical adjustments
- Conclusive mechanical audit, detailing areas of opportunity and recommendations

Please see page six for more information on dryer refurbishments, expansions and replacement parts.

Who Should Attend? One employee is asked to assist in the evaluation process. However, we highly recommended involving anyone with the desire to learn more about basic dryer operation.

Satisfaction Guaranteed. If you are not completely satisfied with your dryer evaluation, Bühler Aeroglide will rectify all concerns (returning to your site if necessary) or void all charges. For more information, or to request an evaluation, call +1 919 851 2000 or send an e-mail to aeroglide.training@buhlergroup.com.



Since its inception, Bühler Aeroglide's Field Engineering group has conducted over 1300 detailed dryer evaluations.

Customer Success Story

Problem: System static pressure too high; reducing airflow through product.

Solution: Install properly sized recirculation fans.

Result: Improved moisture uniformity through product bed, production rates increase 25%.

Training at Your Convenience.

On-site dryer training programs.

Bühler Aeroglide offers on-site training for plant and product development engineers, operators, maintenance and QC personnel who wish to increase understanding of their drying process.

Beginner, refresher and advanced training programs are available to promote a better understanding of your thermal processing system, and to optimize its performance and up time. Choose from half-day, full-day or multiple-day formats. Customized training is also available.

Skills Learned:

- Drying theory, and how it relates to your products.
- Basic troubleshooting, and how to make improvements.
- Understanding airflow and the effects of internal baffling.
- Operating the dryer in best practice methods to achieve higher quality products and improved energy efficiency.
- Identifying (and avoiding) the most common dryer pitfalls.

To request dryer training at your facility, call +1 919 851 2000 or e-mail aeroglide.training@buhlergroup.com.



Typical Course Material

- Drying basics
- Drying control parameters (airflow, humidity, temperature)
- Dryer operation and adjustments (humidity, bed depths, retention time, temperature, balancing the dryer)
- Understanding airflow
- Process troubleshooting (airflow short-circuits, optimizing bed heights and speeds, optimizing operating humidity)
- Dryer parameters: cause and effect (open discussion on the cause and effect of different changes to process parameters)

Full Day Session Additions

- Evaluation techniques
- Equipment inspection
- Data compilation and review
- Field data: analysis of the effects on dryer performance

Multi Day Session Additions

- Dryer evaluation simulation
- Drying basics, continued
- Overall course review

Keep Up With Increased Demand.

Dryer refurbishments, expansions and spare parts.

Typical Improvements

- Extend bedplate life with heavy duty “wide knuckle” design hinges
- Improve product moisture uniformity
- Improve durability by adjusting bedplate and chain design
- Improve energy usage to enhance overall efficiency
- Improve product feed into the dryer

Auxiliary Equipment

- Lump breakers / granulators
- Doffers / pickers
- Oscillating belt feeders
- Oscillating spout feeders
- Oscillating vibratory feeders
- Rotary bed brushes
- High and low pressure CIP (clean-in-place) systems
- Fines removal systems
- Reciprocating paddle spreaders

Bühler Aeroglide parts and refurbishment engineers specialize in the mechanical aspects of drying equipment and assemblies. Upon completion of your mechanical evaluation, we will be pleased to offer:

- Replacement parts and accessories
- Retrofits and refurbishments
- Expansions for increased capacity

Upgrading a dryer through a new retrofit, refurbishment or expansion is a great way for customers to improve operations with their existing equipment. Your detailed mechanical audit will uncover areas of opportunity in energy savings, product consistency and reduced maintenance.

Bühler Aeroglide has the largest team of engineers devoted to dryer refurbishing and expansions in the world. With an average of over 20 years experience, this group excels at investigating the root of a problem and solving it with the customer. Highly successful upgrades and expansions have been performed on many OEM brands including National, FEC, Sargent, CPM Wolverine Proctor, Wenger, Babcock, Mitchell and locally made dryers.

Some of the most cost conscious companies around the world have trusted Bühler Aeroglide to troubleshoot their dryers, improve equipment performance and increase production. To maximize your dryer’s mechanical performance, please call +1 919 851 2000 or e-mail aeroglide.parts@buhlergroup.com.

A dryer expansion module arrives on a job site in Norway.



Enhance Your Product Offering.

Product development and testing services.

Aeroglide equipment specifications begin with product test data. Our process and design engineers know the latest thermal processing and equipment designs. But not until we know your product's unique characteristics can we configure the equipment and provide a recommendation. Bühler Aeroglide has invested in the necessary resources to provide confidential testing for our customers: a top-notch product test facility, interactive training and conference center, and a process engineering staff with experience in a wide variety of industries and products.

This equipment, combined with our product and process expertise, are put to use to conduct joint product development with our customers. Testing a variety of recipes and thermal process methods in the Bühler Aeroglide test facility can help processors focus on products they want to test and pursue in the marketplace. This joint development has led to many highly successful new products for our customers.

To enquire about product testing services for your next project, please call +1 919 851 2000 or email aeroglide.service@buhlergroup.com.



The continuous lab dryer is capable of pilot scale product testing in several configurations including dual impingement, through-air and fluidized bed. In addition to testing at the Bühler Aeroglide lab, customers may lease the lab dryer or other equipment for use at their facility.



Product development begins with lab trials to obtain test data.



Benchtop testing may be performed in our lab or at a customer's facility.



Snack pellet products before and after expansion at the Bühler Aeroglide Technical Center.

Bühler Aeroglide
100 Aeroglide Drive
Cary, NC 27511 USA
Tel +1 919 851 2000
Fax +1 919 851 6029
aeroglide.sales@buhlergroup.com
www.buhlergroup.com/drying

