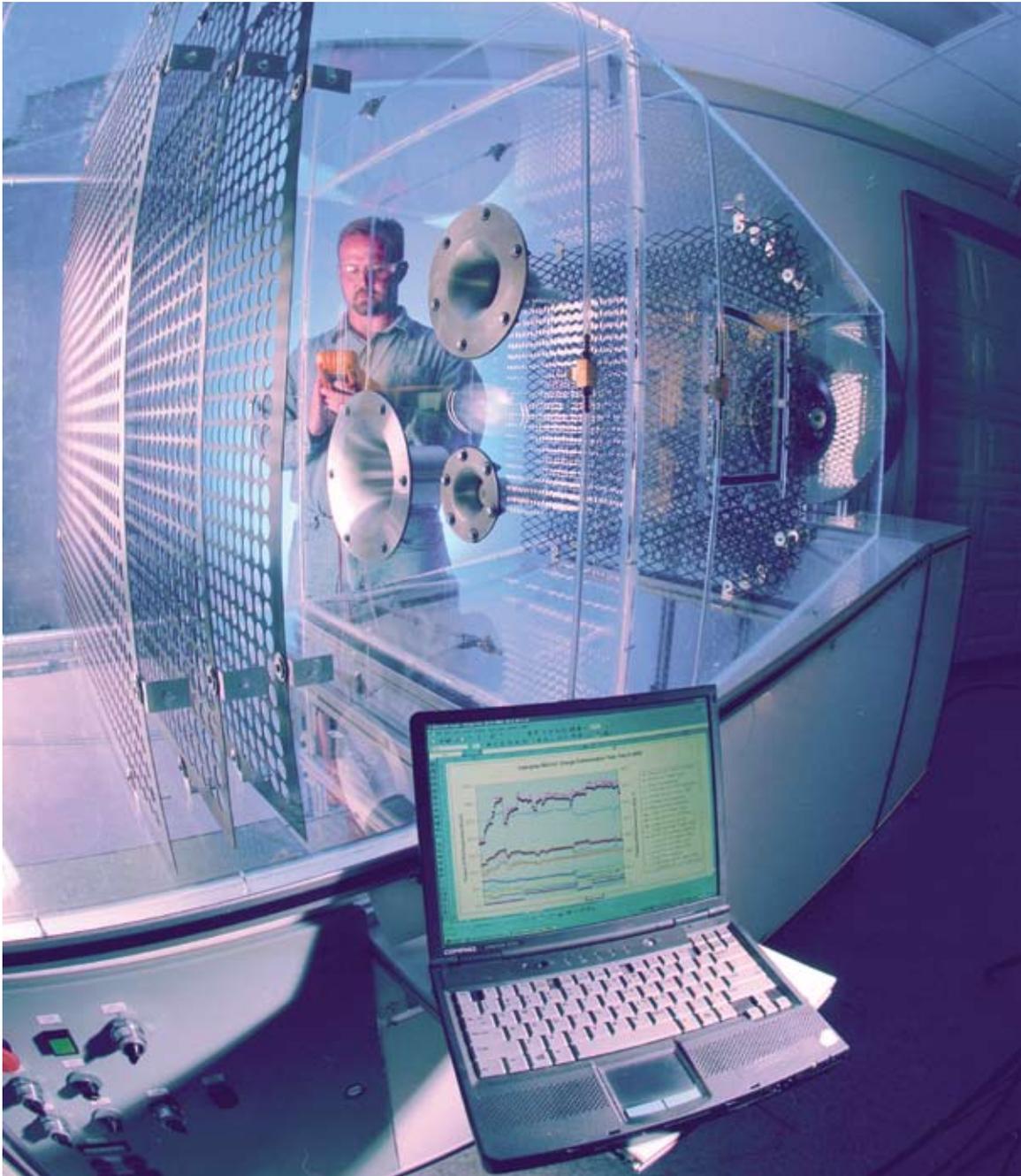


# OPERATOR ENVIRONMENT SOLUTIONS

*World Leader of Cab Climate Systems for:*

- *Commercial Trucks*
- *Off-Highway Machines*
- *Specialty Vehicles*



# HELPING OUR CUSTOMERS SUCCEED IN THE FACE OF MOUNTING COMPETITION.

***Operator environment solutions...focus of our business and a commitment to our industry.***



For 50 plus years, Bergstrom has designed and manufactured HVAC units for the commercial vehicle industry. Many of the world's largest and most admired commercial vehicle manufacturers have trusted Bergstrom to keep their customers comfortable, safe and productive.

Based on this proud heritage Bergstrom continues to invest in the people, technologies and global reach capabilities which will keep our customers at the front of their respective industries.

It has become clear that future success will be defined through excellence in key value added capabilities including:

- Product design and validation
- Optimization of supply base and logistics
- Continuing investments in research and development

## **Value leader - growing global footprint**

An important competitive advantage is our flexible, responsive resource base. Bergstrom has positioned engineering, sourcing, test and manufacturing capabilities around the globe offering tremendous economies and service to our customers.

Global capabilities are a powerful tool in the drive to improve our value proposition. Today's facilities include:

- Manufacturing
- Research and Development
- Engineering
- Testing and Validation
- Aftermarket Support



*World headquarters - Bergstrom Climate Systems  
Rockford, IL U.S.A.*



*Asian-Pacific Operations - Bergstrom China  
Changzhuo, Jiangsu, China*



*European Operations - Bergstrom Europe  
Wales, United Kingdom*

## Technological Leader - offering environment friendly solutions to meet the growing challenges of emissions and fuel issues.

Our new NITE system is the first product of its kind to effectively confront the dual challenge facing today's commercial vehicle industry:

- Mounting EPA legislation
- The increasing costs of running vehicles during non-service periods.

A series of surveys and focus groups have assisted us in constructing a "commercial viability" matrix providing the key metrics required by fleets, owner operators and OEMs. Thresholds for size, weight, capacity, duration and pricing were established in recognition of the many failed attempts to satisfy this market need by products which preceded NITE.

NITE is the first entry in the design and development of a family of next generation technology products offered by Bergstrom in response to this market need. We are committed to continued investment in this vital area and will launch new products over the near and mid-term.

## Simplified, robust designs and systems

From the beginning, our design philosophy has been to optimize materials and technology known to deliver years of reliable operation in the demanding environments of heavy-duty trucks and off-highway machines.

Bergstrom began as a heater manufacturer in 1949 and has grown into a designer and supplier of complete operator environment systems for many of our customers. As the scope of our capabilities have grown, so have our responsibilities. Our cab expertise includes:

- Sealing
- Insulation
- Glass solar shielding
- Pressurization
- Air circulation
- Air filtration
- Controls

## Product line summary

- Cab and sleeper climate systems
- Climate system components
- Air distribution systems
- Climate systems controls
- NITE bunk climate systems

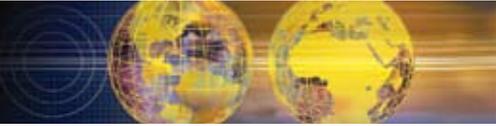


**NITE™**  
No-Idle Thermal Environment  
With Comfort Technology  
Bergstrom

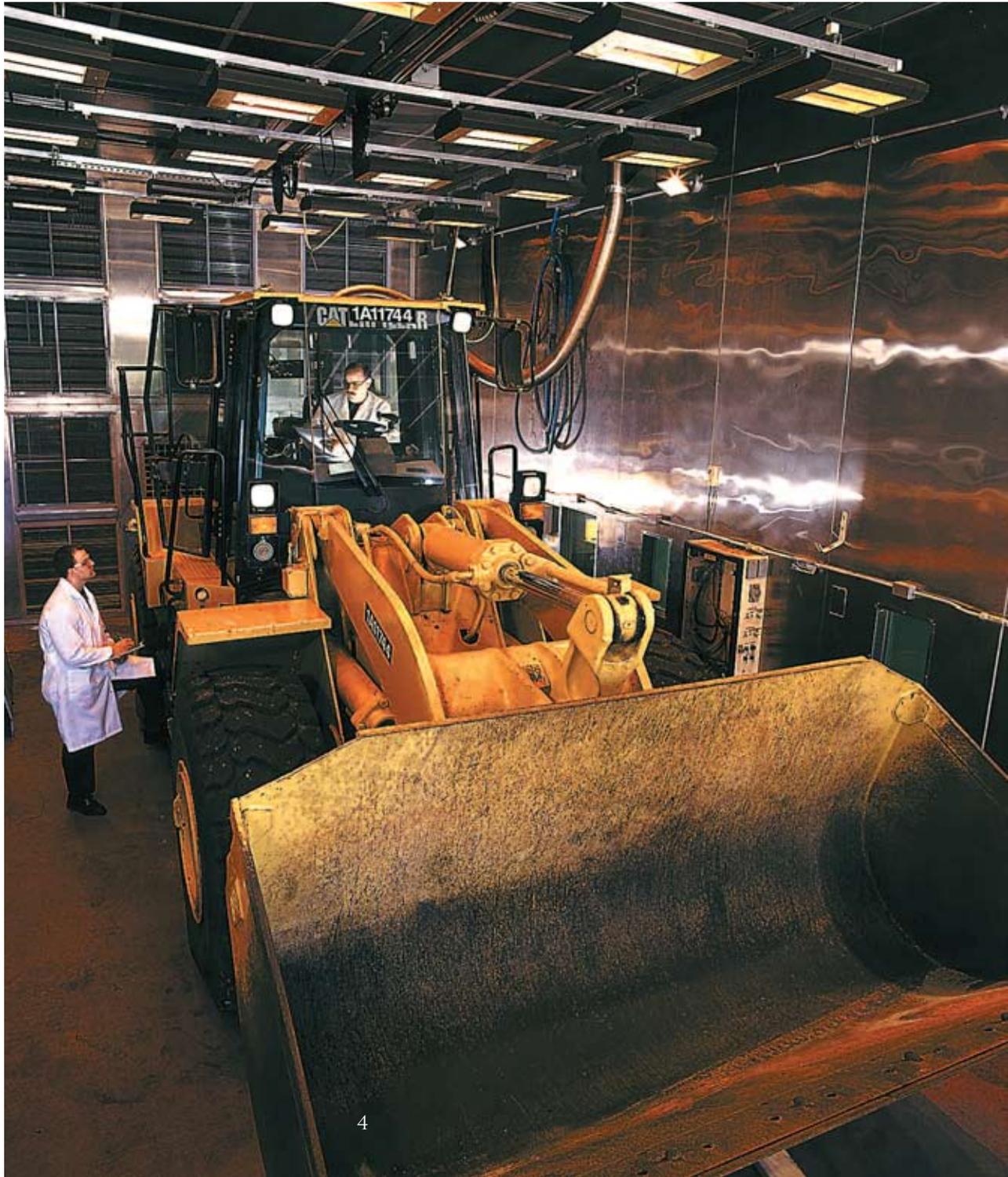


# ENGINEERING AND TECHNOLOGY

Central to our mission is the dedication to develop functional, durable and reliable engineered products that meet our customer's requirements. These products are integral components to the larger cab environment system expected to perform at "best-in-class" levels. To meet this challenge Bergstrom has recruited many of the industries top engineering professionals and equipped them with the finest facilities and advanced technologies.



*Full-scale environmental chamber.*



## People

Bergstrom's vision of providing around the clock and multilingual technical capability led to the creation of three separate and diverse yet closely coordinated engineering teams located in Asia, Europe and North America.

Linked through fully integrated 3-D solids modeling platforms, these engineers combine their talents and experience to optimize system performance and reliability while compressing program timing and cost.

With a foundation of commercial vehicle climate system experience and technical expertise, our engineering team balances systems inputs to optimize overall performance.

## Facilities

Climatic environmental chambers

- Byron, IL
- Rockford, IL
- Ystrand Mynach, S. Wales, UK

Calorimeter systems

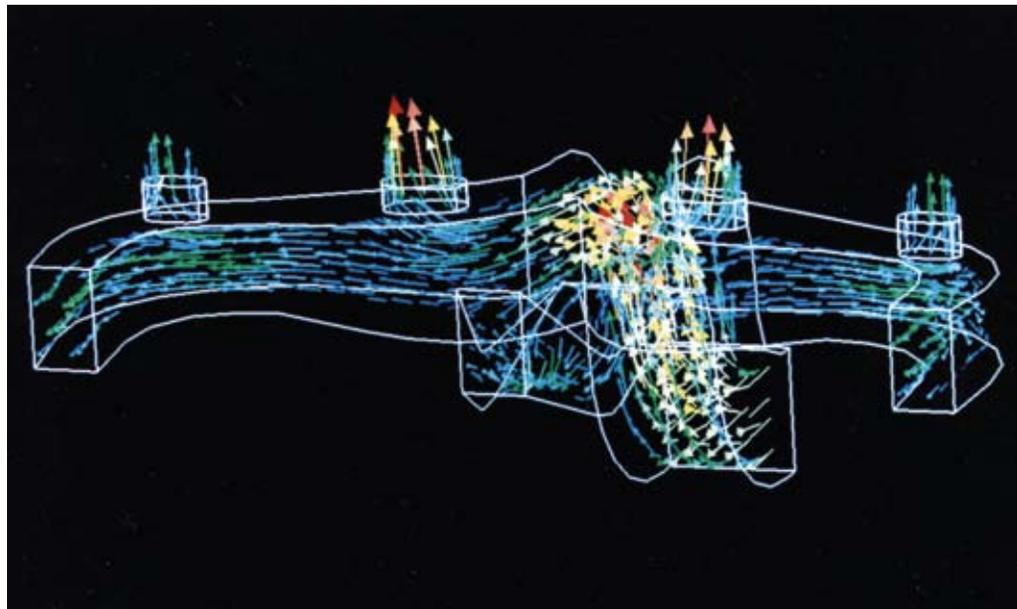
- Byron, IL
- Rockford, IL
- Changzhou, China

## Technologies

- Computational Fluid Dynamics (CFD)
- Finite Element Analysis (FEA)
- ProEngineering
- Unigraphics
- Catia
- Cadkey, Solid Works, AutoCad
- Motion Simulation
- Pro Mechanica (behavior modeling)
- Kinematics usage

## Development and validation technologies

- Component durability / reliability
- HVAC life cycle (dust environment)
- Thermal exposure ( -95F - 380F)
- Motor endurance
- Vibration
- Destructive torque
- Force testing (compression / tension)
- Chemical resistance
- Salt spray
- Sound testing



*Air velocity profile simulation by CFD*

# WORLDWIDE MANUFACTURING AND SUPPLIER NETWORK . . . A BERGSTROM ADVANTAGE.

**Global sourcing translates to volumetric purchasing leverage.**



Augmenting a very efficient product design process, Bergstrom is able to further reduce component acquisition costs by combining OEM and aftermarket requirements of commercial vehicle product to form the largest volume spend in the industry.

## **Purchasing**

The responsibility to identify and qualify the industries finest component and service suppliers rests upon our team of purchasing professionals. Searching throughout the world, Bergstrom partners with companies who prove themselves capable of being an integral part of the supply chain to our customers. Criteria used to evaluate each candidate include product quality, reliability, technology, logistics, economics and management excellence.

## **Materials/Logistics**

Our mission for materials/logistics is simply, "Get the product or service you need at the time, location and cost that you need it." Bergstrom's advanced information technology platform allows us to "respond to local needs with global force". Our global reach allows us to provide optimum value and customer satisfaction.



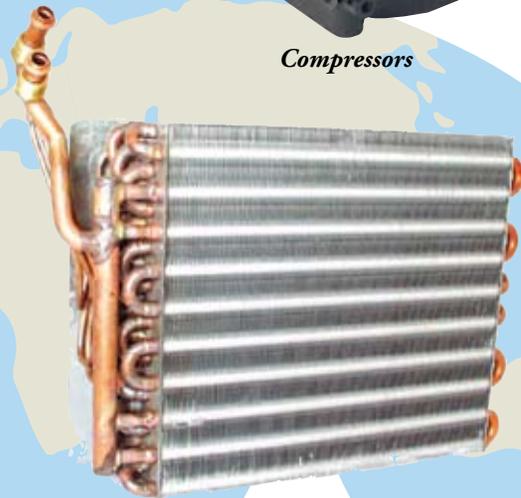
*Compressors*



*Motors*



*Condensers*



*Evaporators*

## Operations

The sites may change but the process remains the same. We take full advantage of the opportunities that present themselves to us operationally by following a couple of maxims. Firstly, we practice a strong belief in the merits of “single unit build”. Secondly, we have employed a “Mastery” program within our plants since the mid-1990s which has grown the capability of our workforce both personally and professionally and contributed in our ability to satisfy customers.

## Single unit build

The “single unit build” process enriches the contribution of our manufacturing team members by providing them with the opportunity to add value from the first fastener to the final test. Product quality and productivity are enhanced relative to conventional assembly line approaches.

## Mastery

Mastery is a self-nominating process available to our team members that desire to increase their personal “value”. Through a series of demonstrated proficiencies in quality, productivity, safety, teamwork, continuous improvement, and leadership, “Master’s” achievements improve their contribution and value. Our Masters, now greater than 50% of our workforce, play a key role in customer satisfaction.





**QUALITY** Bergstrom has an enviable record of quality as it has been traditionally measured. For instance, we were the first in our industry to achieve QS 9000 registration and enjoy a host of customer certifications. However, we prefer to broaden our view and interpretation of being a true “quality” business partner.

Our quality program is comprehensive in scope and measurements involving a variety of scales and dimensions. Internal quality data and field warranty information are important components. We close the loop on quality assessment by extensive benchmarking and end-user field surveys.

When viewed in total, the data generated by our quality assessment program provides the fullest possible picture of product performance and customer satisfaction.

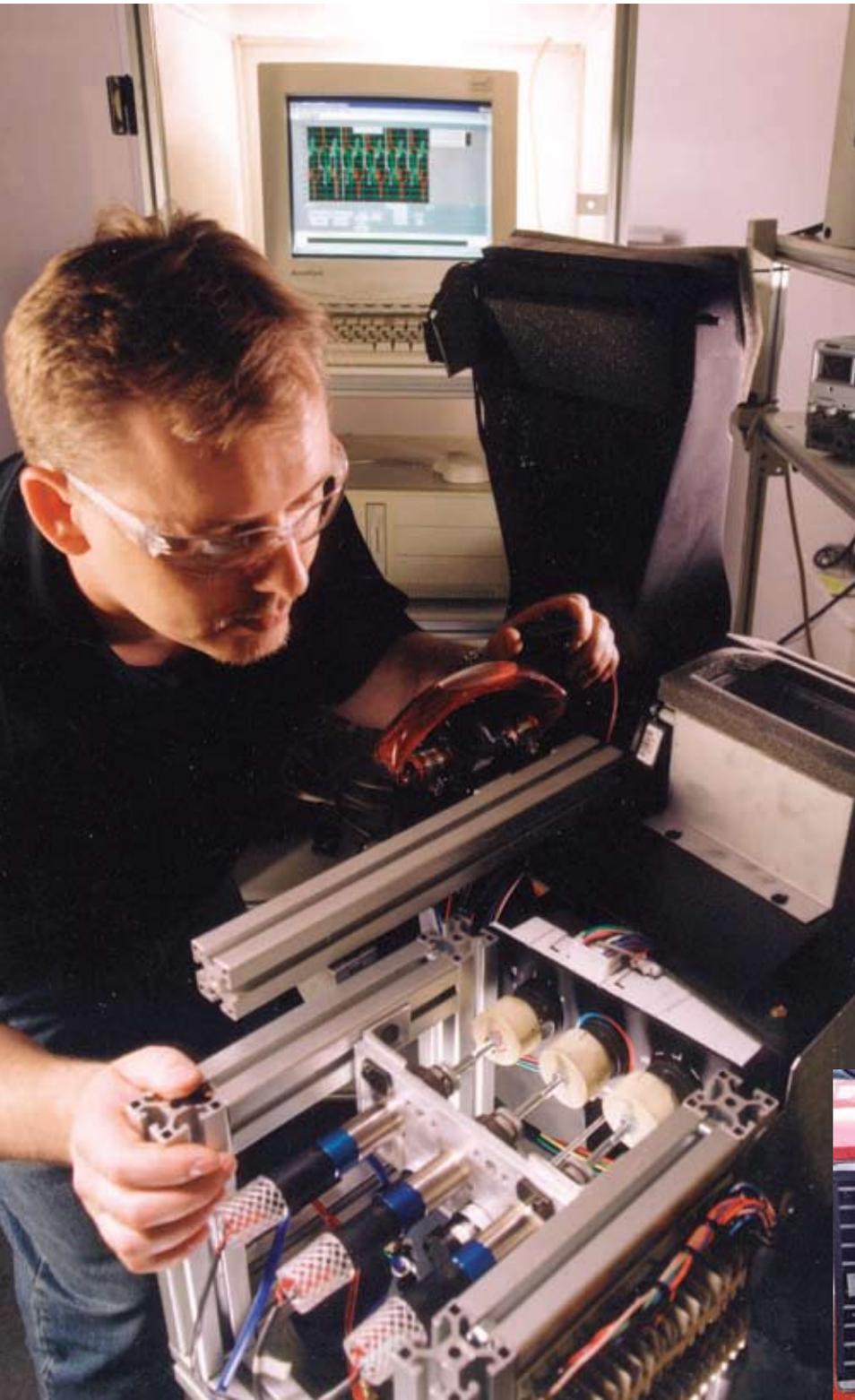
Important components of our quality program include:

**Error proofing** — A number of methodologies are employed within our design and manufacturing engineering domains to ensure a quality product is the end result of our efforts.

**Six Sigma teams** — Headed by one of our OEM certified Black Belts, these teams scrutinize potential projects through a complex filtering process before arriving at opportunities for improvement which will maximize value to our customer.

**Benchmarking** — We routinely perform full heating, air-conditioning and defrosting tests on a full range of Class 8 trucks, off-highway machines and school buses. The results of these efforts assist us in ensuring that our OEM customers are receiving best-in-class performance from the products they purchase.

**Field surveys** — We often hire independent, third-party agencies to survey fleets and owner operators to determine end-user satisfaction of our products. These types of programs assist our customers in terms of sales and marketing planning.



*Controls life-cycle testing.*



## AFTERMARKET

Service doesn't end with the OEM side of our business. The commercial vehicle aftermarket has long been an important segment of our OEM customers business portfolio.

Establishing a stand alone organization to assist our OEM customers grow their aftermarket business through their own dealers required a new approach. In 1995 as a natural outgrowth of our OEM business, we established Bergstrom Aftermarket. Today our fill rate is one of the industry's best ... providing the right product at the right time.

One example of our comprehensive programs is the seamless support to end-user customers in the field during an OEM's product launch.

A full range of services and programs are listed below.

### **Customer Support**

- OE parts and systems
- Direct communication with OEM engineering
- OE designs that support Aftermarket needs

### **Dealer Support**

- Training and educational programs
- Trade show support
- Promotional activities

### **Marketing Services**

- Customer service
- Marketing surveys
- Benchmarking activities

### **Merchandising**

- Parts catalogs and interchange data
- Brochures, flyers, ad slicks, etc.
- Point of purchase items

### **Private Label Services**

- Private label packaging
- Cataloging
- Design support
- Promotional support

### **Product Engineering**

- Specialized products
- Custom kits and support material
- Technical training and customer service



*Our fill rate is one of the industry's best.*

# ALIGNING OUR CAPABILITIES WITH OUR CUSTOMERS

**Value added continuum . . .  
Bergstrom's total solution approach**

The driving force has been clear and consistent since our inception in 1949, Bergstrom's sole focus is the commercial vehicle marketplace. We understand the challenges our customer's face and have configured our business so as to deliver superior value across the entire life cycle of our business relationship.

The VALUE PROPOSITION shown here is unique in our industry. We are committed to its continued growth and singular focus.



ADVANCED TECHNOLOGY

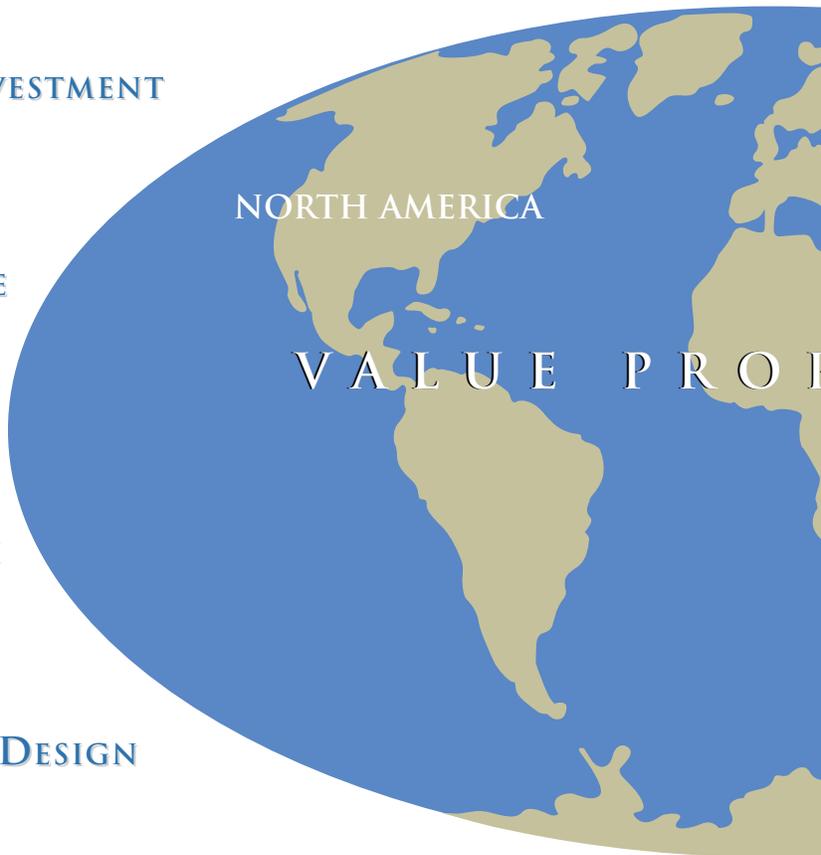
INVESTMENT

EXPERIENCE

RESEARCH

DESIGN

DEVELOPMENT





WARRANTY

AFTERMARKET SUPPORT



EUROPE

ASIAN-PACIFIC

POSITION

LOGISTICS



TESTING

MANUFACTURING

VALIDATION





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