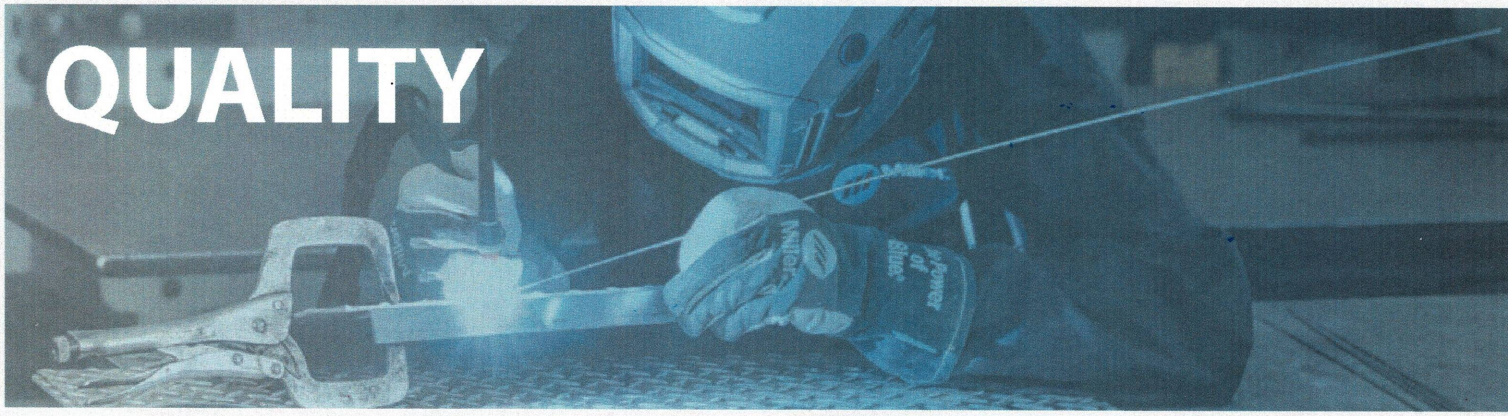

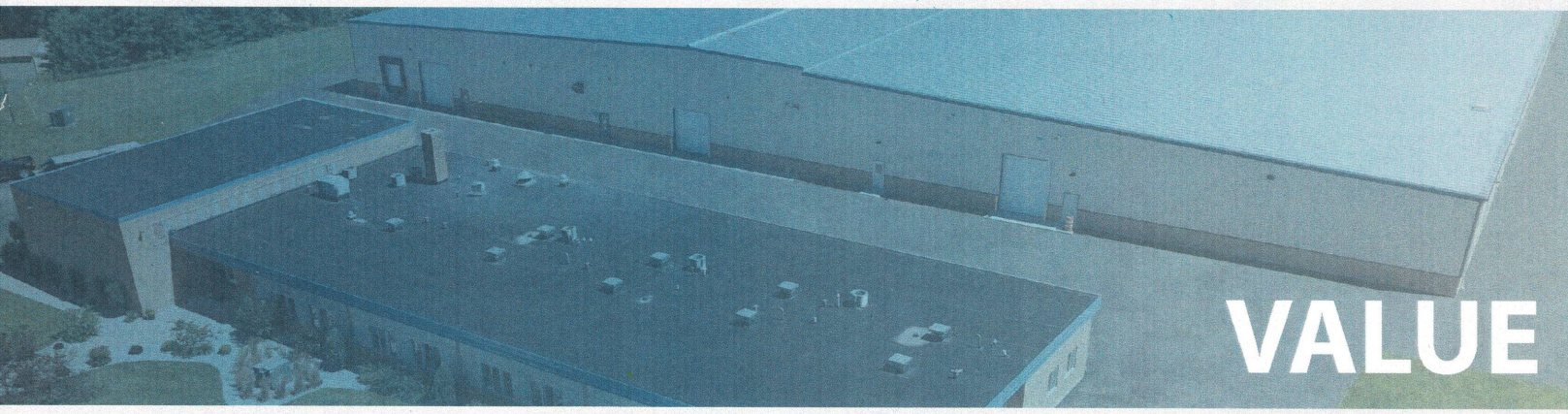

ABS ADVANCED BLENDING SOLUTIONS LLC

ADV-BLEND.COM

Blackhawk Machinery & Systems, Inc.

David W. Ennes
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1471 W. Blackhawk Drive, Mt. Prospect, Illinois 60056

THORESON McCOSH
A DIVISION OF ABS

THORESONMCCOSH.COM

ABOUT US

ABS | ADVANCED BLENDING SOLUTIONS LLC

Based in Wallace, MI, Advanced Blending Solutions is a world class designer and manufacturer of material handling, blending, and controls for the plastics industry. With representatives throughout the globe, ABS is a fast-growing company committed to providing the best products and services to meet their customers' unique needs.

All of ABS's product offerings can be customized to meet customer needs. ABS offers high-end gravimetric continuous blenders; extrusion throughput control weigh hoppers; vacuum and pressure pumps for material convey; dust collectors; vacuum receivers; SMART material distribution systems; a fully integrated controls system; resin wands; knifegates; static eliminators; flexible and y diverters; angel hair traps; and custom equipment.

THORESON McCOSH
A DIVISION OF ABS

Thoreson McCosh has been a leader in providing low-maintenance material handling systems since 1947. In the early days of plastics, there was no infrastructure. Thoreson McCosh saw the need to fill that gap. We were one of the first to develop a machine mounted dryer. Previously, materials were dried in an oven, then manually carried to the machine. Thoreson McCosh also saw the need to develop a better way to move materials. We replaced the hopper boy and bucket with the self-contained material vacuum loader.

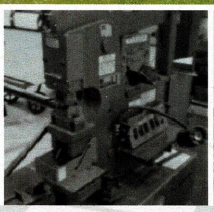
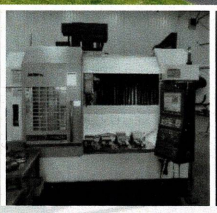
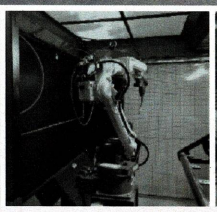
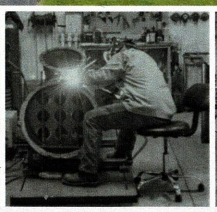
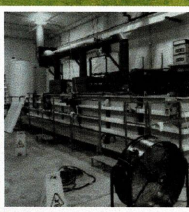
We continue to make great strides in the evolution of Thoreson McCosh, as we accelerate our growth strategy under the umbrella of Advanced Blending Solutions. Our mission remains unchanged. We will simply have access to state-of-the-art manufacturing and development facilities. Working with ABS' experienced team of engineers and technicians we continue to innovate new and better ways to dry and convey materials throughout your facility.

MADE IN USA

For full range of products, please visit our website.
ADV-BLEND.COM
THORESONMCCOSH.COM

PRODUCTION FACILITY



Manufacturing of our products is accomplished in our very own 65,000 ft^2 state-of-the-art facility; equipped with metal-forming, machining, welding, and surface finishing capabilities.

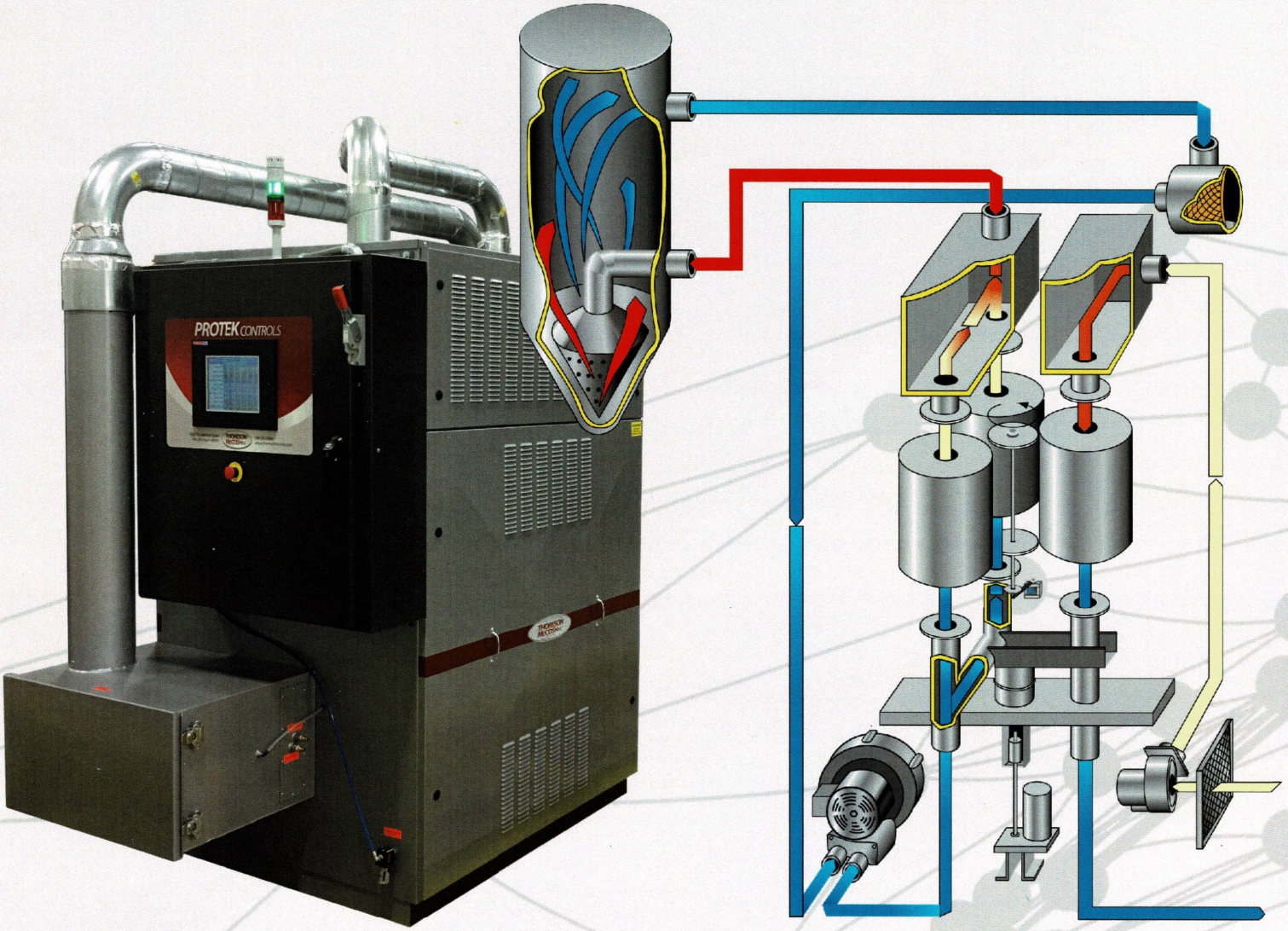
ABS has heavily invested in a 2,400 ft^2 research & development lab. It is important that we can continuously test and develop to the ongoing demands of the industries we serve.

DRYING

TD-SERIES

Desiccant Dryer

- Closed loop non valve drying system is engineered to prevent moisture, dirt, and other substances from contaminating processed materials
- The indexing triple desiccant bed design provides greater absorbing capacity and efficient drying, while using less power and desiccant
- The dryer uses residual regeneration heat that is recovered from cool-down to preheat the process-air flow
- Cool-down takes place in the process stream, which creates an economical, extremely dry desiccant with increased moisture absorbing capacity
- Heat that would normally be wasted is now reclaimed and used in the drying process



CONVEY

SMART SYSTEMS
Material Distribution

- Can significantly reduce required piping
- Ensures that the desired material is conveyed to proper destination by verifying that the material connection matches the recipe
- Allows a single common material line to be used in applications with multiple vacuum pumps
- Geared to complex multi-layer co-extrusion systems and centralized large-scale plant material handling systems

SMART SEQUENTIAL MATERIAL ALLOCATION & REDISTRIBUTION TOWER

TRANQUILITY
Vacuum Pumps

- High efficiency motors. (5-25Hp.)
- Premium sound-proof enclosure - silencer and low-noise design
- Standard Variable Frequency Drive, to reduce energy usage and angel hair creation
- External oil level and pressure monitoring
- Easy maintenance/oil change/oil fill
- High-quality canister filter
- Optional atmospheric vent valve
- High vacuum relief valve
- Fork pockets for effortless portability

TranQuility

MK-SERIES
Vacuum Pumps

- High efficiency motors. (2-20Hp.)
- Throughput capacities from 1,000-12,000 lbs./hr
- The modular design can be customized to suit your specific needs and requirements
- The centralized vacuum source eliminates the need for "press side" auxiliary units
- Great for Injection molding, blow molding, or extrusion applications

GUARDIAN
Material Loading

- Portable loader that is ideal for small to medium throughput requirements
- Throughput capacity from 200-1500 lbs./hr
- Single point fines collection system
- Compressed air blow down cleans the filter after loading sequences
- The Guardian can provide efficient 2-station loading

VM-1&VM-2
Material Loading

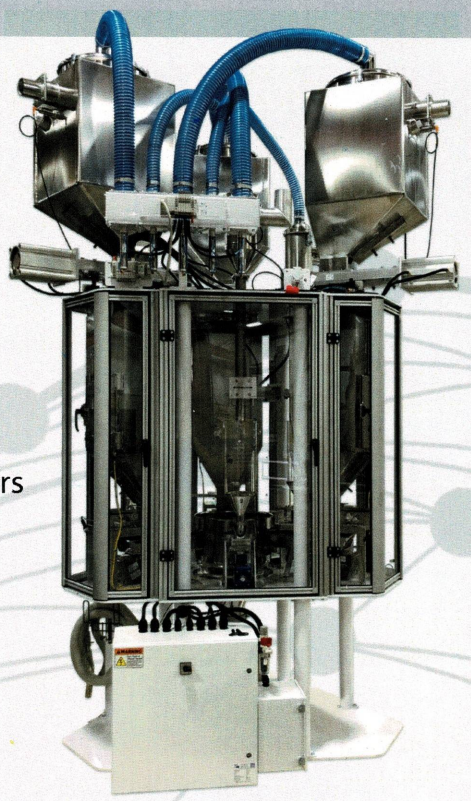
- Designed for applications where material is transfered from floor level into a dry hopper, surge bin or resin blender bin
- Throughput capacity up to 1000 lbs./hr
- 115V single phase
- Programmable time allows for adjustable load times
- Compressed air filter blow down cleaning
- Ratio material load settings

BLENDING

SIMPLICITY

Continuous Gravimetric Blender

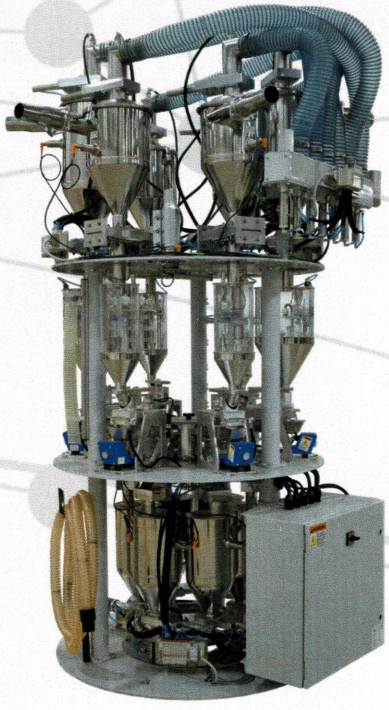
- Easy to install, configure, and maintain
- Maintenance-free vibratory feeders, with ranges from 0.1 to 6000+ lbs./hr
- Simultaneous metering of components
- Consistent blend, no mechanical mixing
- Color touch-screen
- Highly accurate PC/PLC based controls
- Standard models available for 2-10 components
- Options for high temp components, gravimetric extrusion control, and dust doors



SL

Continuous Gravimetric Blender

- Streamlined, lightweight design
- Integral weigh hopper for finished blend
- Mount directly to extruder throat, or on mezzanine directly above extruder throat
- Vacuum sequence manifolds can be integrated into the frame

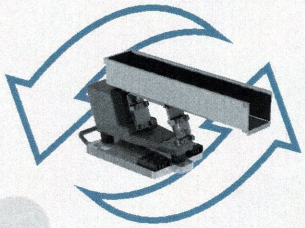


CHAMELEON

Auto-Cleanout Blender

- A fully automated material cleanout system that can complete a material change without operator assistance
- Line remains running during material change (purge)
- Unused material can be saved for later use
- Compressed air and vacuum cleans the system
- Material is removed through a chute and collected in a container below (Jug or surge vacuum style)
- Round blender frame – allows blenders to be mounted closer to each other
- Sliding doors allow easy access for operators

CONTROLS

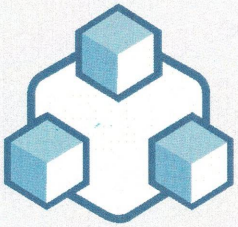


PLC Based Control System

Geared toward blending and bulk solids transfer applications. Can be customized to users specific needs.

Multiple processor sizes allow the system to be easily scaled to the application.

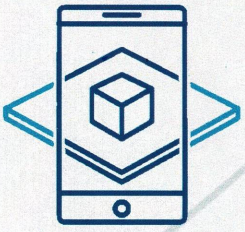
Support most standard industrial protocols for integration to OEM/ Line supervisory control systems



Software Modules

Software modules sold separately, allowing the user to scale the system to their needs.

- Blend control
- Extrusion throughput control
- SMART distribution system
- Temperature control
- Custom software modules for specific needs
- Pickup velocity/convey control



Augmented Reality Tech Support

PLCs/HMIs can be configured for remote connection to ABS tech support for aid in troubleshooting, remote program updates, HMI screen changes, etc.

User can communicate with ABS tech support via Augmented Reality sessions from any tablet or smart phone for easier and faster tech support.

TRENDING

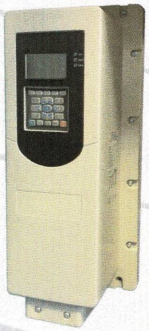
Canary Data Historian

canary Certified Partner

- Trending makes verifying blender performance easy
- Historical process data can be easily viewed as a time-based trend
- Trends are fully configurable. User can add any historical data point and easily change scaling, time range, stacking, etc.
- Trending software can be locally licensed or can be fully cloud based

VFD

Variable Frequency Drive



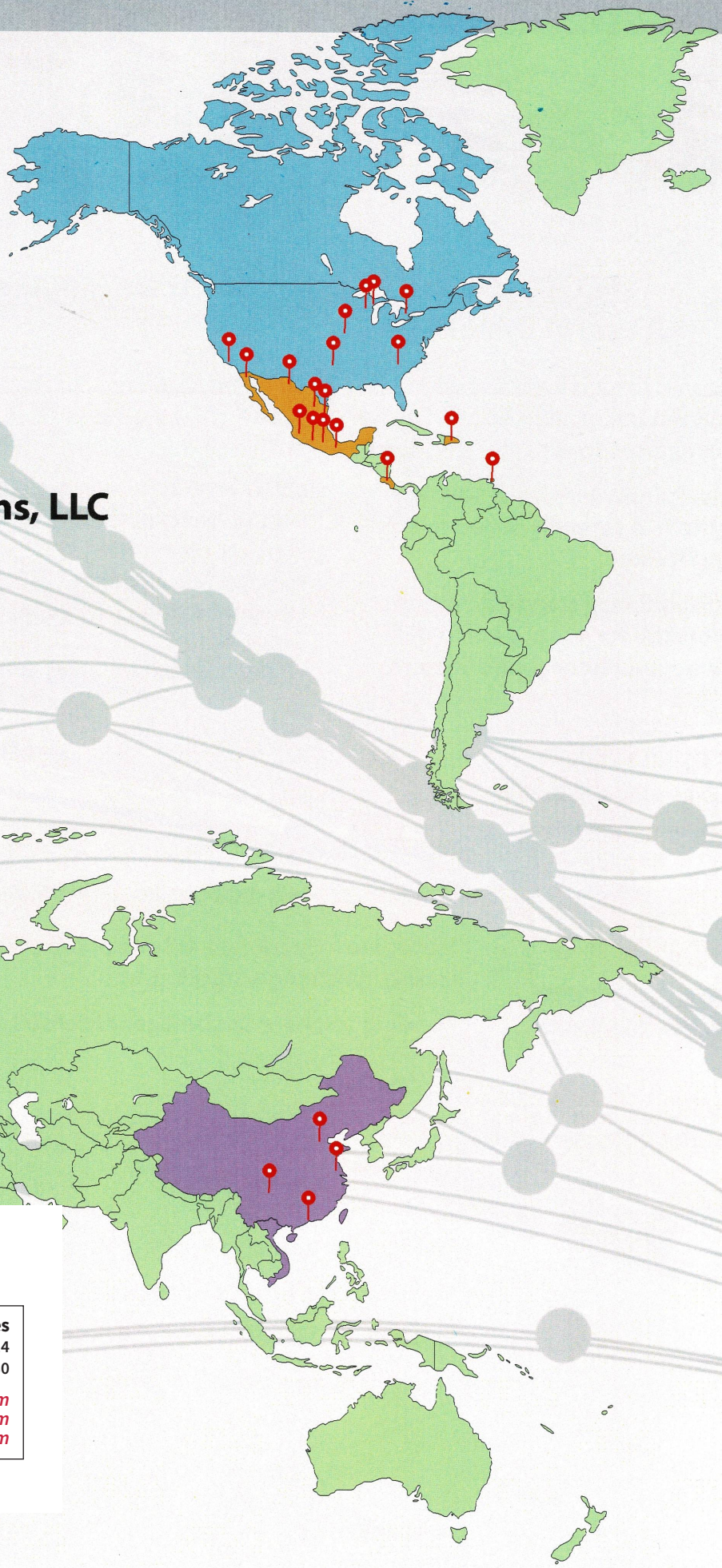
- Reduces the pick-up velocity of the material
- Reduces angel hair and material degradation
- Improves system efficiency and leads to significant energy savings
- Excellent for use on rail car unloads where angel hair is frequently generated

VARIABLE FREQUENCY DRIVE

US PATENT #9,731,914

CONTACT US

GLOBAL
SALES & SERVICE



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