

# BISON® CASE STUDY

 Food & Beverage Market

## 200 Series Parallel Shaft Gearmotor

CONTACT BISON



### Ice Agitation/Dispensing Application

Learn how Bison® developed a custom AC gearmotor tackling variable torque demands and condensation issues, with solutions including a compact design and reliability meeting AGMA standards.

#### Background

Bison® was engaged by a customer in the beverage dispensing industry seeking to improve the reliability of the ice dispensing function within their machines. These machines utilize gearmotor technology to rotate stainless steel bars that agitate ice within the bin and dispense it into cups. The high field failure rate of the existing designs motivated the customer to seek a change, along with a desire to reduce the machine's footprint.

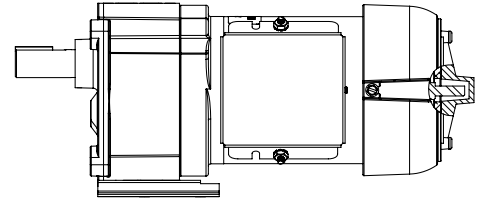
200 Series Parallel Shaft Gearmotor  
AC Model Shown



# BISON® CASE STUDY

## Ice Agitation/Dispensing Application

### 200 Series Parallel Shaft Gearmotor



#### CHALLENGES:

- **Variable Torque Requirements** – Calculating and understanding torque requirements is challenging due to different types of ice (full or half cube) and varying field conditions such as half bin, full bin, overfull bin, power outages, or slower period shutoffs.
- **Condensation Issues** – High humidity in certain geographic locations can lead to significant condensation buildup in the motor.
- **High Torque Loads** – Ice bridging/balling within the ice bin results in torque loads to the gearmotor that are up to 8 times the steady-state rated load requirement.

#### SOLUTION:

After extensive testing to understand the application requirements, Bison® developed a custom parallel shaft AC gearmotor.

- **Compact Design** – Downsized the overall footprint while enhancing the load capacity of the design in key areas to address spike loads in certain conditions.
- **Condensation Management** – Incorporated features within the gearmotor to mitigate and manage condensation in the motor.
- **Reliability Standards** – Met and exceeded reliability expectations with AGMA standards used to develop the bearing and gearing system.

#### RESULTS:

- **Successful Implementation** – The initial design was successfully tested and adopted in the application.
- **Expanded Solutions** – Three additional custom platforms have been developed and are currently serving the industry.

#### ABOUT BISON

For more than 100 years, Bison®, an AMETEK business, has helped customers differentiate their products by developing robust, flexible and durable motors, blowers and pumps under the brand names – Bison® Gear Motors, Lamb® Vacuum Motors, Nautilair® Combustion Blowers, Prestolite Motors DC Brushed Motors, ROTRON® Regenerative Blowers, ROTRON® Transportation and Windjammer® Brushless Blowers.

Bison® engineers thrive on technical challenges and provide customers with collaborative, customizable and optimized fluid-moving, fractional and integral horsepower solutions. Bison® has worldwide sales representative support, research facilities and manufacturing facilities in the United States, China, and Mexico. The company is headquartered in Kent, Ohio.

Bison® is a business of AMETEK – a leading global provider of industrial technology solutions serving a diverse set of attractive niche markets with annual sales over \$6.0 billion.