

# SUCCESS STORY

## VFD RECOVERS VALUABLE ENERGY ON A CENTRIFUGE

### INFORMATION

#### Industry

Food and Beverage

#### Application

Sugar Centrifuge

#### Product

Yaskawa U1000 MATRIX VFD



*A Yaskawa U1000 Matrix VFD at work maximizing centrifuge efficiency and energy savings.*

### THE VFD APPLICATION

The principle of centrifugal force serves a critical role in separating components of a solution based on density and particulate matter. The high-speed rotation of the centrifuge basket generates centrifugal force. This enables solutions with different densities to migrate towards the outer surfaces of a centrifuge basket, thus separating the solution into distinct components. A scraping procedure retrieves the separated product. In the context of sugar production, the process starts with crushing the cane to extract its juice. This juice then undergoes a heating and crystallization process, after which it is ready for separation.

### APPLICATION CHALLENGES

For this application, the customer required a solution that met the following criteria:

- Enhanced machine throughput and efficiency
- Continuous energy regeneration capability
- Straightforward wiring without the need for extra components to carry out the intended function
- Prolonged equipment lifespan

### THE YASKAWA SOLUTION

A Yaskawa **U1000 Matrix VFD** with its one of a kind design meets the needs of the customer by providing the following:

- The unique **Matrix** technology saves energy by capturing regenerative energy from the centrifuge and returning it to the main power line
- Continuous regeneration of up to 100%, enabling quick, controlled deceleration and stopping
- The simplified three-wire in and three-wire out power wiring eliminates dynamic braking resistors and typical external power components needed for a centrifuge
- The S-curve feature provides smooth acceleration and deceleration, reducing mechanical wear and tear and prolonging the life of the machine

The successful installation of the Yaskawa **U1000 Matrix VFD** is maximizing overall machine efficiency and energy savings for this customer today.

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### CONTACT YASKAWA

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#### More U1000 MATRIX VFD information:

<https://www.yaskawa.com/u1000>



#### Find a Yaskawa representative:

<https://www.yaskawa.com/support-training/support/sales-search>



### KEY U1000 FEATURES

The Yaskawa U1000 Matrix VFD brings a set of notable advantages:

- Adheres to the 5% input Total Harmonic Distortion (iTHD) standard as per IEEE 519 guidelines for harmonic mitigation at the input stage
- Adjustable torque limit and overtorque settings for optimized acceleration and machine protection
- Equipped with a Safe Torque Off (STO) safety feature, meeting the requirements of IEC62061 (SIL3) and EN/ISO 13849-1 (PLe)
- Does not rely on bus capacitors that degrade over time, contributing to a long product lifespan
- Built-in fusing
- Access to Yaskawa's award-winning 24-hour technical support is free of charge

Contact Yaskawa today to learn more about how you can use Yaskawa AC drives to perfect your food and beverage industry applications!