

# SUCCESS STORY

## VFD MAXIMIZES TENSION UNWINDER EFFICIENCY

### INFORMATION

#### Industry

Textiles

#### Application

Tension Unwinder

#### Product

Yaskawa GA800 Industrial VFD

Yaskawa U1000 MATRIX VFD



### COMPANY HIGHLIGHTS

The customer is a full-service automation and controls shop operating in the Southern U.S. They work with their customers to design and rebuild machine control panels while exclusively using Yaskawa variable frequency drives (VFDs).

### THE VFD APPLICATION

The customer encountered a challenging tension unwinder application for a carpet manufacturer. They turned to the local Yaskawa distributor for application and engineering advice. The application consisted of one "pull" drive and four tension unroll drives. The machine was composed of inverters set up to share the DC bus, with all five drives powered through their respective AC power sections. The only protection on the DC side was a set of diodes at each drive's positive and negative terminals.

### APPLICATION CHALLENGES

This original setup caused a lack of balanced voltage during power-up, which resulted in the failure of the non-Yaskawa drives. There was no room for an adequately fused common bus system with a line reactor and oversized drive, nor was there room for a regenerative converter.

The customer consulted with their Yaskawa sales representative to determine a viable solution. In the pull section of the machine, a very long carpet section was pulled through the line at a constant speed, getting cut and rolled at the end. So, the team opted for a **GA800 Industrial VFD** for the pull drive.

The four tension unroll drives presented a different challenge. The carpet went through several rollers at various heights, moving up high and down low through the line. The tension drives acted as pulleys high in the air, keeping tension on the carpet as it moved through the line, all while the force of gravity constantly pulled the carpet down. As a result, the tension drives were continually in regeneration, which made it a perfect application for the **U1000 MATRIX VFD**.



Yaskawa GA800 and U1000 MATRIX VFDs easily handle tensioning and power regeneration challenges in textile applications.

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### THE YASKAWA SOLUTION

Ultimately, one **GA800 Industrial VFD** for the pull drive and four **U1000 MATRIX VFDs** for the tension drives were selected. This eliminated the shared bus wires and diodes from the system and the need to share DC bus voltage. The system started without issues, and the customer was pleased to avoid the complexity of a shared bus system for the maintenance department, which was unfamiliar with the concept.

This was the first time anyone in the carpet industry used the **U1000 MATRIX VFD** in this type of application, meaning there is likely to be future sales potential.

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

### CONTACT YASKAWA

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#### More **GA800 Industrial VFD** information:

<https://www.yaskawa.com/ga800-drive>



#### More **U1000 MATRIX VFD** information:

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