



Control Concepts converted two high-horsepower extruder systems from aging DC drives and motors to modern AC technology.

DC  
TO AC

## WHAT WE DID

The retrofit replaced a 250 HP and a 400 HP DC drive and motor system with Yaskawa GA800 AC drives and Baldor/Reliance RPM AC vector motors, while retaining and interfacing with the facility's existing Allen-Bradley controls.

## ABOUT THE CLIENT

Pacific Corrugated operates HDPE (high density polyethylene) corrugated pipe production equipment at its Fontana, California facility. Two extruder systems relied on existing DC drives and motors that were experiencing regular issues, leading the company to pursue a conversion to modern AC drive and motor technology.

## THE CHALLENGE

Frequent issues with the existing DC drives and motors were affecting the reliability of two extruder systems. The replacement equipment needed to meet the torque and speed requirements of the applications, operate in ambient temperatures up to 50°C, and integrate with the facility's existing electrical infrastructure and Allen-Bradley control system.

## THE SOLUTION

Control Concepts engineered a turnkey DC-to-AC conversion for both extruder systems. The new heavy-duty Yaskawa GA800 drives were supplied in NEMA 3R enclosures designed with additional cooling for operation in ambient temperatures up to 50°C.

Each drive system included a 65 kAIC input circuit breaker and through-door locking mechanism. The drives were paired with 250 HP and 400 HP, 1,750 RPM Baldor/Reliance RPM AC vector motors.

**Control Concepts supplied the drive systems and completed the electrical upgrades, controls integration, startup, and commissioning. Pacific Corrugated was responsible for the mechanical installation of the new motors.**

## EQUIPMENT SUPPLIED

### 250 HP

Yaskawa GA800 drive

Baldor/Reliance RPM AC  
vector motor

### 400 HP

Yaskawa GA800 drive

Baldor/Reliance RPM AC  
vector motor

## THE RETROFIT INCLUDED:

- 1 Disconnect the existing drives and motors.
- 2 Upgrade circuit breakers, conduit, and wiring.
- 3 Install two new 480-volt circuit breakers.
- 4 Run new EMT conduit and THHN conductors.
- 5 Interface the new drives with Allen-Bradley controls.
- 6 Start up, test, and tune both drive systems.

## THE RESULTS



### MODERN AC PLATFORM

The conversion replaced aging DC equipment with current AC drive and motor technology that is easier to support and source.



### LESS ROUTINE DC MOTOR MAINTENANCE

The new AC vector motors eliminate brushes and commutators from routine motor maintenance.



### EXISTING CONTROLS RETAINED

The Yaskawa drives were interfaced with the existing Allen-Bradley control system, avoiding a complete controls replacement.



### BUILT FOR THE ENVIRONMENT

NEMA 3R enclosures with additional cooling were designed for operation in ambient temperatures up to 50°C.

## PROJECT AT A GLANCE



250 HP

400 HP

460 V

50°C

ALLEN-BRADLEY  
CONTROLS





Ready to replace aging DC drives  
and motors?

**SCHEDULE A CALL**

Control Concepts engineers DC-to-AC conversions for extruders and other high-horsepower industrial applications - from drive and motor selection through electrical upgrades, controls integration, startup, and commissioning.

**800-447-0691**



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