

The Electric Banjo

Background and Objective



When drying cotton, hot air volume is the most important thing to be considered. The Electric Banjo increases hot air volume by 30%.

This increase is obtained by taking advantage of the normal characteristics of centrifugal pull fans. Fans of this type work hardest when no cotton is in the system and air is cold. This is the normal condition when a fan is started, therefore a centrifugal pull fan is not used at its full potential in a cotton gin.

The Electric Banjo prevents a fan from overloading in cold, idle conditions by positioning a vane at the inlet of the fan. As the air system is heated and cotton enters the lines, this vane is automatically positioned to maintain full air flow during operation.

Technical Information

The vane is positioned with a linear actuator. Compressed air is required.

The actuator valves receive their signals from a PLC control unit, one handles up to 5 banjos.

Vane position is determined by motor load. Each banjo comes with a load sensor.

An LCD display shows the motor load and load setpoint for each banjo.

Fan motor horsepower is not changed.

Slide valves for the fan are not needed.

An external electrical signal can command the banjo to “unload” when the gin is idle.

