
MoCo's lumber stackers use Cone Drive's Model HP and RG series gearboxes.

ABOUT MOCO ENGINEERING

MoCo Engineering and Fabrication Inc. was established in 1995 because of the growing need for greater customer support in the lumber industry. Erik Humble and Chuck Moles, the company founders and principals, started the company with the goal to create a business based on customer service. With this goal in mind, MoCo has since grown to be the industry leader in the lumber handling industry, specializing in lumber stackers and related equipment.


MoCo's servo lumber stacker

BUSINESS CHALLENGE

After 12 years of building electro-hydraulic lumber stacking machines, MoCo Engineering understood the challenges and limitations of operating and maintaining hydraulically driven lumber stacking equipment. Having squeezed all the performance possible from their existing electro-hydraulic design MoCo engineers were convinced there must be a better, safer and more efficient way to power and control their machines. They had seen electric servodrives revolutionize performance of machinery in other industries and felt it was time to deploy this technology on their lumber stackers…and be first to market. Their challenge would be to design an all electric machine that customers in their traditionally hydraulic-powered industry would accept. The design goal was to create a machine vastly more efficient, significantly smoother, quieter running, easier to maintain, safer to operate, environmentally friendly and faster than their toughest competitor's hydraulic driven lumber stacker. Not a small challenge but after a year of development MoCo delivered their first-to-market servo-electric lumber stacker in January 2008. The "ServoStacker" exceeded every design goal, delivering exceptional performance and outstanding operational flexibility. Mr. Moles said, "The ServoStacker uses 75% less energy and runs so much smoother than previous hydraulic stackers. Our cycle rates and lumber throughput has increased by over 20%. Smoother running at higher speeds is directly attributable to synchronization of axes using electronic cam motion profiles." He went on to say: "The Bosch servomotors and Cone Drive gearing has made the ServoStacker so much smoother and quieter our technicians can now discover and troubleshoot even the smallest mechanical issues during startup. Issues that were masked by the drone of hydraulic pumps. The ServoStacker runs from zero speed to full speed in perfect synchronization and lets us dial in performance like no other machine on the market."

HOW WE HELPED

As with most hydraulically powered machines, MoCo's own electro-hydraulic lumber stacker had both linear and rotary hydraulic actuators that had to be converted to rotary electric servomotors. With decades of experience utilizing Cone Drive double-enveloping gears on their own electro-hydraulic stackers, MoCo engineers were eager to deploy proven Cone Drive gearing on their new servo-electric machine. Working closely with their local representative (Northwest Motion), Cone Drive HP and RG series gearboxes were selected to meet the demands of the formerly hydraulic driven axes. All critical engineering data required for servo gearbox selection was easily accessible online at www.conedrive.com and in Cone Drive's excellent engineering catalogues. Once application data was collected and gearboxes performance determined for each axis of motion, the online Cone Drive gearbox configurator at http://www.conetools.com/content/RedirectPage.aspx — made gearbox typecode designation and 3-D CAD downloads easily accessible.

TESTIMONIALS

"MoCo Engineering has utilized Cone Drive gearing on our Lumber Stackers since day one. Having had very successful results with Cone Drive for many years at a previous company before forming MoCo Engineering we were fully aware of Cone Drive's features and benefits. The most important feature being reliability. If a high production lumber stacker goes down an entire mill can shut down and HP Series gearboxes from Cone Drive are legendary with their ability to withstand abuse. When we transitioned our lumber stackers from electro-hydraulic to all servo electric, Cone Drive made the transition from hydraulic drives simple. Cone Drive HP Series offers motor adapters to mate with our Bosch Rexroth servomotors on the Main Carriage and Rake Off and Cone Drive RG Series servo gearboxes together with sprockets, chain and rack and pinions made replacement of hydraulic rotary and linear requirements easy. Cone Drive gears allow our MoCo Servo Stacker to run smoothly at higher speeds than ever before. Their double enveloping worm technology is both rugged and whisper quiet at all speeds. This feature allows us to hear the heartbeat of our lumber stacker from low speed to flat out high production speeds so we can optimize motion for the greatest long term machine reliability. MoCo Engineering has had great success with Cone Drive and will continue to use them in the future."

Sincerely,

- *Chuck Moles, Founder and Principal*
  MoCo Engineering
  Spokane, WA