



Mobile sawmill hits the road

DAVCO recently took its mobile twin-cut circular sawmill on the road, and the high-production unit is generating a lot of interest-- not only in Canada, but in Russia, too.

By Tony Kryzanowski

The first commercial model of DAVCO's improved twin-cut mobile automated sawmill was unveiled to Alberta woodlot owners during their recent annual tour, and a demonstration was also given to loggers and forestry people in Washington State. Both demos left many impressed with the circular saw's ability to saw in both directions.

In theory, the use of DAVCO's mobile sawmill should result in substantial daily production improvements.

The inventors, Grande-Prairie area residents Les Oilund and Dave Fenton, were on hand to introduce the sawmill and Oilund managed the controls during both demonstrations.

"The sawmill is built for commercial operation where you want higher production," says Oilund. "We're in the vicinity of about 20,000 board feet in an eight-hour shift depending on what you are cutting and the size of your wood."

Traditionally, circular saws cut in one direction and then either the carriage or the saw will move back to the beginning and resume cutting. DAVCO's twin-cut headrig has two circular saws positioned one over the other. When the saw is finished making a cut through the stationary log, it rotates so that the other saw is then set to make a cut as the headrig travels back to the beginning of the cycle. This eliminates wasted return travel time--and maximizes productivity.

Oilund says it was his experience working in sawmills and as a sawyer that inspired him to think about a twin-cut circular saw. Even though they were both "in retirement mode," Fenton felt they should design and fabricate a prototype. As the founder of a successful high quality machine shop, DAVCO Solutions Inc., in Grande Prairie, he had the resources to turn the concept into reality

Oilund and Fenton already had experience inventing and fabricating equipment for the forest industry, and are best known for their development and commercialization of the Ultimate line of harvesting heads, which today are marketed by equipment manufacturer Quadco. The team also holds a U.S. patent for a guiding guard for crawler tracks.

The DAVCO twin-cut mobile automated sawmill made its first appearance at the 2005 Northern Alberta Forestry Show, and in 2006, the company received a Canadian and U.S. patent on the flow pattern and headrig of the sawmill.

In addition to its ability to saw in both directions, another feature is its mobility. The sawmill is mounted on wheels so that a tractor trailer can tow it down the road from one location to another. It measures 10' 6" wide, 49' 2" long, and just over 12' high, and weighs in at 24,500 lbs. The mill is North American highway legal, but DAVCO says permits might be required in some jurisdictions. It was designed so that the log deck and outfeed deck can be retracted for transport.

DAVCO sawmill co-inventor Dave Fenton (above, left) explains to Alberta woodlot owners the technical capabilities of the twin-cut technology. Private woodlot owners represent an important potential market for DAVCO.



Rather than having to transport raw logs to a central sawmill location, the sawmill can be set up in the vicinity of the logs, meaning that a finished or partially finished product can be transported from the cutblock. Or in the case of High Level area sawmill owner Cliff Krahn, he was able to manufacture lumber in the area where the freshly manufactured lumber was being used.

Krahn has spent a couple of winter seasons manufacturing lumber for oil companies who use the lumber in their operations, such as building quad trails in the muskeg. It saves them having to purchase and transport lumber to their location--plus they use timber salvaged from building their own resource roads and well locations.

Oilund says it takes about 10 minutes to set up once the sawmill has reached its destination, with a little more time spent leveling it.

The main difference between this first production model and the prototype is the removal of the edger, which has contributed to a 6,000 lb. lighter package.

“It also has much improved track systems for the saws to run back and forth, the rotate system on the saws is much improved, and we have five bunk and head blocks now as opposed to three on the prototype,” says Fenton. “There’s also a lot more power to the saws, with a different motor driving the saws and a closed loop hydraulic system to the saws.”

The basic model includes: a John Deere model 4045, four-cylinder, 173 hp diesel engine; outfeed conveyor; waste conveyor; computerized operating system; enclosed cab; head saw with two saws; log deck and loader and log carrier. The entire mill uses Sauer Danfoss hydraulic power, which DAVCO says is low maintenance, quiet and economical.

It can handle logs up to 20’ 6” long and from 4” to 28” in diameter, and is capable of sawing both softwood and hardwood.

Operators sit in a climate controlled enclosed cab, where they punch in the settings for the fully automated system to ensure accurate measurements and control. The networks software was provided by Javelin Technical Solutions and is programmable to satisfy any dimension.

A front end loader is needed to load logs onto the 8’ live log deck. Logs are fed into the mill with a four-strand transfer chain that laterally moves the logs to the log loader. The chains are reversible for log control. The log loader itself consists of five arms coupled on a tube and positioned in line with each bunk. It singulates logs to the log bunk. Each head block has a top and bottom dog. The head blocks move laterally to accommodate the log diameter and are computer controlled for set accuracy in relation to the saw line. The four log turners have chains and lugs that rotate and position the log.

The 8’ long outfeed deck is comprised of three roof top chains and slides to accommodate the lumber piler.

The head saw itself has two, 26” circular saws with 16 teeth, creating a 5/16” kerf. The saws need to be sharpened every 2.5 to three hours, depending on how knotted or dirty the wood is.

“You can adapt any saw you want on there,” says Oilund. “You can put a carbide saw on there with a narrower kerf.”



In addition to the attention generated from the Alberta and Washington State demos, a lot of interest in the sawmill has also been shown from Russia. Information has been made available on the company's website in English, Russian, and Spanish.

"I feel good enough about this machine that I'm confident sending it anywhere," says Fenton.