

# Tech Update - WOOD PELLETTIZING EQUIPMENT SUPPLIERS

By Diane Mettler



## Andritz Sprout

Andritz Sprout has provided rugged, 100 per cent American-manufactured wood pellet mills for over 20 years. Ninety per cent of the wood pellets in North America are manufactured with Andritz Sprout machines, says the company.

With over 100 installations in North America, the company has the experience—and equipment—to maximize production and minimize costs. Andritz Sprout offers hammermills from 100 hp to 600 hp, pellet mills from 100 hp to 500 hp, and coolers and screeners for operations. Also available are Andritz Sprout manufactured dies and rolls. The company has fully staffed and capable service/parts departments to support the equipment.

[www.andritzsprout.com](http://www.andritzsprout.com)

## Bliss

Bliss Industries is a US manufacturer of robust wood pelleting equipment. The company has been manufacturing pellet mills since 1991 and works closely with customers to provide them with quality equipment and service.

Bliss offers a variety of models ranging from 21” to 4” diameter dies. Its three-roll design, along with the feed cone system, delivers even striations throughout the body of the pellet. The result is uniform wear within the pelleting chamber and a high quality finished product, says the company. Its two-stage twin drive offers greater flexibility and allows for lower electrical demand at start-up.

Bliss also manufactures a comprehensive line of hammermills for grinding everything from bark to wood floors. Its hammermill line consists of nine different diameters, twelve different widths and five individually distinct designs. Horsepower ranges from five hp to 600 hp, which makes it easy to find the correct mill for an application. [www.bliss-industries.com](http://www.bliss-industries.com)

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## Buhler

Buhler has accumulated decades of experience in pelleting technology and is a successful supplier of this technology to the feed industry. The company has been active in the biomass pelleting business since 1996 and built one of Europe’s largest facilities.

This year, Buhler was awarded the contract to supply the grinding and pelleting section of the world’s largest wood pelleting plant, being built in Florida. The scope of supply includes the mechanical and electrical equipment, the electrical control system and installation supervision.

Buhler specializes in engineering and supplying a complete solution for services and equipment after the dryer, including: size with its vertical DFZK hammermill, which operates without aspiration air; conditioning and pelleting with its RWPR-900.1\_8 wood pellet mill (up to 450 hp motor); cooling with a countercurrent cooler DFKG or DKFC belt cooler; screening with an oscillating sieve DFTA or a round sieve DFTD; bagging or bulk out loading; and electrical control system including MCC and PLC. [www.buhlergroup.com](http://www.buhlergroup.com)

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### **California Pellet Mill**

As the world's largest manufacturer of pellet mills, California Pellet Mill (CPM) has been a leader in developing specialized pellet mills and dies to efficiently and economically produce wood pellets. Innovative engineering and design have been combined with the latest manufacturing technology. Its pellet mills are built to operate 24 hours a day under tough running conditions to match the output requirements.

Extensive field research has proven the one-piece cast gear box produces continuously in the most adverse conditions worldwide. Most of CPM's gearboxes feature pressurized oil lubrication onto helical gears. And the smart, no-nonsense design and CPM's high standards ensure long, trouble-free use.

CPM's advantage is the use of a gearbox with shear pin protection. This is the most efficient method available for wood pelleting, says the company. CPM also provides local representation and support, which means customers receive expert guidance with their process, and hands-on training. [www.cpmroskamp.com](http://www.cpmroskamp.com)

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### **Dorssers Inc**

Dorssers manufactures pellet mill dies, roller shells and roll replacement parts for all makes and models of pellet mills for the feed, waste and pulp industries including: CPM, Sprout, Buhler, Robinson, Bliss, Matador, Landers, and more.

Its pellet dies are gun-drilled to a super finish, specially vacuumed-hardened in-house to ensure they provide consistent quality, provide trouble free start-up, and produce superior pellet quality. Dies are manufactured to a wide range of specifications depending on production requirements, quality needs and the type of ingredient to be pelleted. The roller shells the company manufactures are made of thru-hardened bearing steel to ensure a superior product.

Dorssers also offers efficient, professional reconditioning services for both pellet mill dies and roller assemblies. [www.dorssers.com](http://www.dorssers.com)

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### **Energy Unlimited Inc**

Energy Unlimited has been designing and installing wood pelleting plants since 1992. The company offers engineering and design services for any size plant. It manufactures furnaces for drying systems used in wood pellet production and has done work for some of the longest running wood pellet plants in North America.

Energy Unlimited offers installation, equipment procurement and turnkey systems.

[www.energyunlimitedinc.com](http://www.energyunlimitedinc.com)

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### **KAHL**

For decades, KAHL pelleting plants have been used successfully for compacting organic products of different particle sizes, moisture contents and bulk densities. The company continually develops new machines to improve capacities and efficiency. It offers consultation, assistance in obtaining approvals, engineering, commissioning, installation and after-sales services. Possible applications for the company's pelleting press include: wood shavings, chips, sawdust and sanding dust, among other things.

Due to the variety of input products and the different plant sizes available, KAHL will plan plants according to the requirements of the customer—from the large industrial plant to the

small 200 kg/hr pelleting plant.

Prerequisites for optimum operation are continuous product feeding into the press and a homogeneous, sufficiently pre-crushed product. Due to the large volume reduction when compacting wood and wood shavings, particularly sawdust from about 100 to 650 kg/m<sup>3</sup>, the press interior must be as large as possible.

All the main machines of the pelleting plant—hammermills, belt driers, pelleting press and coolers—are produced in KAHL's factory in Germany. The company also has a pilot plant there for carrying out pelleting tests. [www.akahl.de](http://www.akahl.de)

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#### **Briquetting Systems**

Briquetting Systems offers the CF Nielsen briquetting plants. A model BP4000 was installed at West Fraser's MDF plant in Quesnel, BC, to briquette MDF sander dust into solid fuel pucks. A BP\_200 will be installed at the Federated Co-operatives plywood mill in Canoe, BC, and also in Oregon and Washington, to produce fuel pucks from wood shavings for greenhouse heating.

Briquette press capacities range from 200 to 2,000 kg/h. They are modular and more presses can be added. The feed hopper for this automated system can accommodate two to three presses, meeting the requirements of both small and large operations.

One of Nielson's large configurations used at planer/sawmills has briquette presses installed inside two-storey round steel silos where the feed is blown into the top, sweep augured down into the presses, with the briquettes then pushed out the cooling line to trucks or warehouses. Containers for export can also be filled using this automated system. The company says the advantages of fuel pucks over pellets include: half the production costs; less complex machinery required; less susceptibility to moisture; uses a variety of feed including bark chips; and bulk density and fuel values are similar to pellets. Any boiler feed system using 6" or larger augers can handle the fuel pucks. [www.briquettingsystems.com](http://www.briquettingsystems.com)

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#### **PSi**

Pellet Systems International Inc. (PSi) is a leading supplier of pellet manufacturing equipment and is based in Nackawic, New Brunswick. The PSi pellet mill uses innovative technology, providing a substantial change in the way wood mass is formed into pellets, resulting in a substantial reduction in production power demand compared to traditional methods.

Using a two-cylinder die design, the pellet mill extrudes the pellets toward the die core, providing a clean operating environment. Inertia force within the rotating dies and a special surface treatment are used for reaching the required pellet hardness, while decreasing production power demand. Flexibility in raw material moisture content reduces the drying process and, in some cases, eliminates it completely.

PSi provides complete turnkey pellet mill systems, designed for producing the highest density pellet on the market, says the company. Pellet plants are designed with expansion in mind to accommodate a company's business as it grows.

Some of the advantages of the PSi pellet mill over traditional technology are: flexibility in handling incoming raw material moisture content (18 to 25 per cent); no cooling tower

required; utilization of multiple raw materials; and complete turnkey systems.

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### **M-E-C**

M-E-C's goal is to be the preferred supplier of industrial drying systems through carrying out continuous innovation and providing consistent quality and reliable service.

The company employs an experienced staff of engineers with specialized dryer systems expertise. It designs and builds complete drying systems, providing continuity of effort, quality control and timely delivery.

Through its total systems approach, M-E-C completely controls the equipment manufacturing process in its own engineering and manufacturing facilities.

From initial design to installation, start-up and training, the total systems approach ensures optimal efficiency and reliability in every system M-E-C designs and builds. For more than 30 years, the company has used this approach to design, build and install more than 500 dryer systems worldwide—from major manufacturers of composite panel board to makers of instant tea and processors of municipal waste. [www.m-e-c.com](http://www.m-e-c.com)

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### **Dupps**

Dupps makes a heated air, rotary drum dryer commonly used to dry green wood in pellet plants. The QuadPass dryer, with its special feed zone, is specifically designed for wood drying applications. The QuadPass is a hybrid of a single and triple pass dryer and developed to address the deficiencies of a triple pass dryer.

The QuadPass' "feed zone" introduces wet wood to the hot gas in a controlled way. This unique feeding feature provides the following benefits: a reduction in the amount of VOCs released by the dryer; a discharge stream that is

more uniformly dried (no wet spots or product charring); and a decrease in the occurrence of in-drum fires.

In 2006, Dupps manufactured and installed six QuadPass Dryers into wood pellet plants. A direct-fired dryer is the most efficient and least expensive way to dry wood from 45 to 55 per cent moisture to 10 per cent. There are many types of dryers on the market well suited to drying wood of lower moisture (eg 10 to 15 per cent moisture wet feed). However, for green wood in the 45 to 55 per cent moisture range, a direct-fired rotary drum dryer, like the QuadPass, is the most cost effective, says the company

In addition, Dupps heats the dryer using a wood-fired combustor which yields much lower operating costs than a combustor fueled by natural gas or some other fossil fuel.

[www.dupps.com](http://www.dupps.com)

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### **MiniPell**

MiniPell is a small-scale pellet press that was launched at the Elmia Wood trade fair in 2002 and has since been undergoing significant testing and several adjustments. This new generation of machinery allows the easy and cost-effective production of eco fuels and the easy conversion of renewable energy to heating.

Minipell's mobile pellet press is designed for small-scale production in sawmilling, carpentry or

forestry businesses. It requires raw material moisture of less than approximately 15 per cent.

The machine is fully automated—just load it with sawdust and, of course, monitor it occasionally. A GSM-based monitoring system is optional.

Output is 50 kg of 8 mm pellets, and it features a 7.5 KW engine. The 50 kg machine is 800 mm in width, 1,050 mm high and 1,200 mm in length. [www.minipell.com](http://www.minipell.com)

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#### **MÜNCH-Edelstahl GmbH**

MÜNCH-Edelstahl GmbH in Hilden, Germany is one of the leading manufacturers of complete pellet mills, grinder lines and high-quality spare parts for pellet mills. The company has more than 30 years experience in the business—it exports to more than 60 countries on five continents.

MÜNCH manufactures wood pelletizing pellet presses and complete lines including necessary pre-grinding. Pellet presses have, if required, an oil lubrication system, which increases operating times.

MÜNCH pellet presses can also be used for hardwood and MDF, are easy to maintain and need only short maintenance periods. Automatic control, temperature control and sprinkler equipment are options which MÜNCH can provide. Tests can be done in MÜNCH's own testing centre.

The company's ring die RMP pellet mills are said to be well-designed and compact. They deliver optimum economy for the customer. RMP pellet mills offer seven hp to 450 hp, single- or twin-drive, expandability for double-pelleting, long-term-conditioning, fat-coating at the die and automatic control.

MÜNCH also offers rollers according to demand, dies for all kinds of pellet mills worldwide, hammermills and coolers. [www.muench-gmbh.net](http://www.muench-gmbh.net)

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#### **WEIMA**

The WEIMA Group has developed the new TH 70 K briquetting press to produce square briquettes. In contrast to round briquettes, the square briquettes can be stacked for easier handling, better packaging and increased marketing opportunities.

The new press produces briquettes with a consistent external dimension of 70 mm x 70 mm and up to 100 mm in length. The briquettes are produced by hydraulic pressure only and without the use of a binding agent. The hydraulic drive of both the pre-compressor/filling cylinder and the main press cylinder is applied via a self-contained pump with a power rating of 7.6 kW or 15 kW. The large 100-litre hydraulic tank was designed to maintain a low oil temperature during continuous operation. Throughput will vary based on materials, but the average rate of the TH 70 K is approximately 200 kg/hr. The press also offers an optional Duo version that can double the throughput, leading to lower operating costs and higher efficiency. [www.weimaamerica.com](http://www.weimaamerica.com)

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