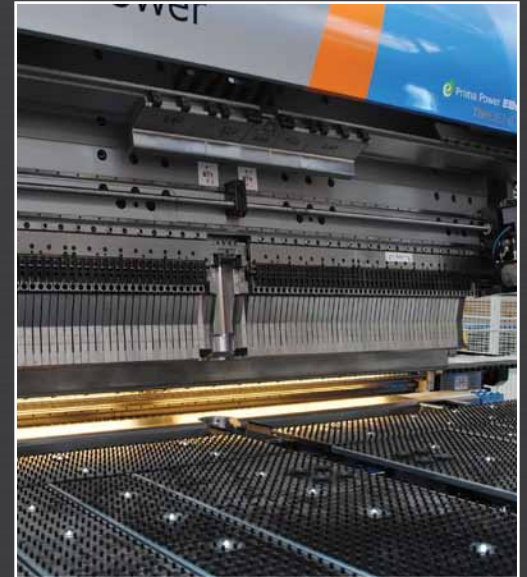


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How Sheet Metal Quality Affects Your Bottom Line

By Andrew McCarlie, Applications Engineer



Sheet metal material quality significantly affects the productivity of all fabricating, forming, and laser cutting equipment. In fact, for the fab shop, this is the single most area of importance after machine maintenance. Today, the quality of the material is more important than ever due to the high-speed axis capabilities of the latest generation of servo-electric machines.

In many cases, that “great deal” the purchasing department makes that saves several cents or more per pound/Kg can cost your company more than the original material savings you were making in the first place. Machine downtime, damage, and poor quality parts caused by material crashes in the machine or system can quickly escalate and have a negative effect on your company’s bottom line.

Material quality is dependent upon several factors, all of which will affect the final quality of the sheet metal running through your Prima Power machines. These include:

- The chemical composition of the steel when it is smelted. This covers the % of various elements in the steel mix, such as iron, carbon, etc., and is responsible for the physical properties of the sheet metal such as hardness, tensile strength, etc.
- The condition of the steel mill rolls that roll the steel flat during the manufacturing process.
- The surface condition of the sheet metal.
- The metal slitting, coiling, and uncoiling process. This sizes the coil to width, etc.
- The flat sheet piece production process using a cut-to-length line that usually includes both a leveller and straightener. This produces levelled and straight flat-cut blanks.



Example of poor-quality, rolled, levelled, and straightened material.

- There can be an additional mechanical stress relieving or mechanical stretching process.



Bowed material that is not stress relieved.

- A coating process to minimize corrosion.
- Palletizing, handling, and storage of the sheet metal blanks ready for dispatch.
- Unloading, palletizing, and storage in your facility prior to being used in your Prima Power machine or system.



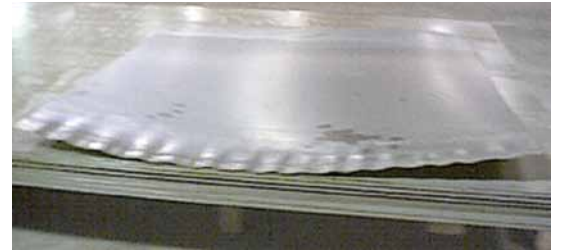
Each of the factors noted above will directly affect how this material will run through your machine or system. Some of these factors may seem self-evident, particularly to those who are faced with having to run material that has or is:

- Not straight, i.e., parallel or not level, i.e. bowed.



Bowed material on a Night Train cassette.

- Very hard to punch. Punches stick in the material even with the correct die clearance.
- An edge wave, making it difficult to both load into the clamps and reposition.



Difficult to laser cut due to uneven height.

- Oversize, so that it does not fit into either the machine or automated loading and storage systems. Program size is not the actual sheet size, causing a machine crash.

These material issues and the causes that produce them need to be addressed long before the material reaches the production floor. At this point, it is already very expensive to address the problem and often the production will be held up, while good-quality replacement material is found and loaded.

In most cases, the operator running the equipment has very little input into the material planning, purchasing, and delivery process. As a result, it is essential that the factors listed above are taken into account in the purchasing process along with consulting those who operate the equipment.

A material handling process needs to be in place, both from your metals supplier and within the company, to ensure the material is flat and dimensionally correct to within certain specifications and tolerances. A practical way to determine this in a Prima Power machine is to ensure the material is flat enough so that it never triggers the sheet sensors during loading or processing material through the machine or system. Ideally, this should be no more than 0.3"/7.5 mm, so that the material

Continued on back cover.

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Prima Industrie Strengthens Presence In China

By Ezio Basso, Prima Industrie Managing Director, Prima Power Division



PRIMA INDUSTRIE has announced the construction start-up of a new manufacturing plant in China. The company will build a new 8,000 sq. m. building in Suzhou, an industrialized area some 100 km from Shanghai. The factory will be completed in a year's time with production expected before the end of 2014, and within three years will employ over 130 people.



Prima Industrie is already directly present in China through its wholly-controlled company, Prima Power China (with offices in Beijing and Shanghai), that trades and provides after-sales assistance on 3D laser machines. In addition, Prima has an agreement with Leepport, a company listed on the Hong Kong stock market with offices throughout Mainland China and neighboring countries, for the distribution and after-sales assistance of its 2D laser machines and other sheet metal processing systems. The Prima Electro division also has a direct presence in China with its company, Prima Electro China, (located in Guangzhou), which deals with the sale and service of electronic components and laser sources.



The new plant in China will manufacture mid-end products (2D lasers, punching, and press brakes) for the Asian market. And since this production will be an addition to our actual volume, this will not decrease production in our European plants. This expansion will allow Prima Power to better support our customers throughout Asia.

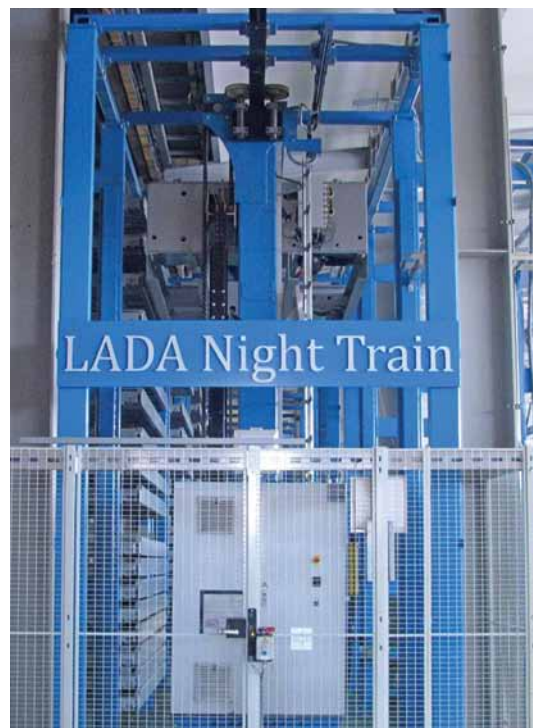
In the Words of Our Customers

This issue of the Power Line features several customer profile articles that highlight how Prima Power flexibility and technological advantage have helped our customers increase their quality, productivity, and profits:

Altec Industries, Inc, Birmingham, AL (see page 4) *"I have been in the metal fabrication business for 15 years. I have used many different types of machines throughout my career, including the major competitors' machines, and I have never had a machine perform as well as the Prima Power Shear Genius. And when you take the reliability of the SG into consideration, there is no comparison."*



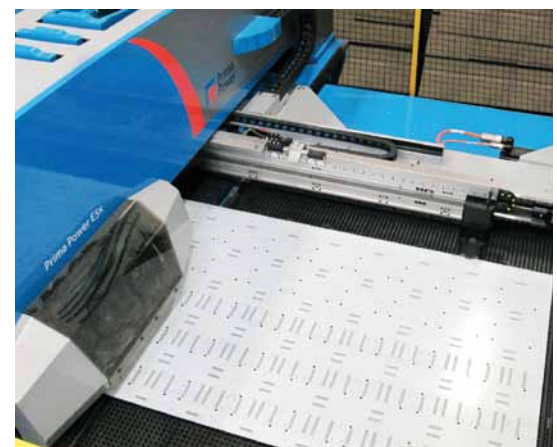
LADA-FLAKT, Togliatti, Russia (see page 8) *"This system was the first Night Train FMS installed in Russia. While its full capacity has yet to be realized, the Night Train has already doubled production. It has allowed LADA-FLAKT to earn a leading position for production, speed, and quality in Russia."*



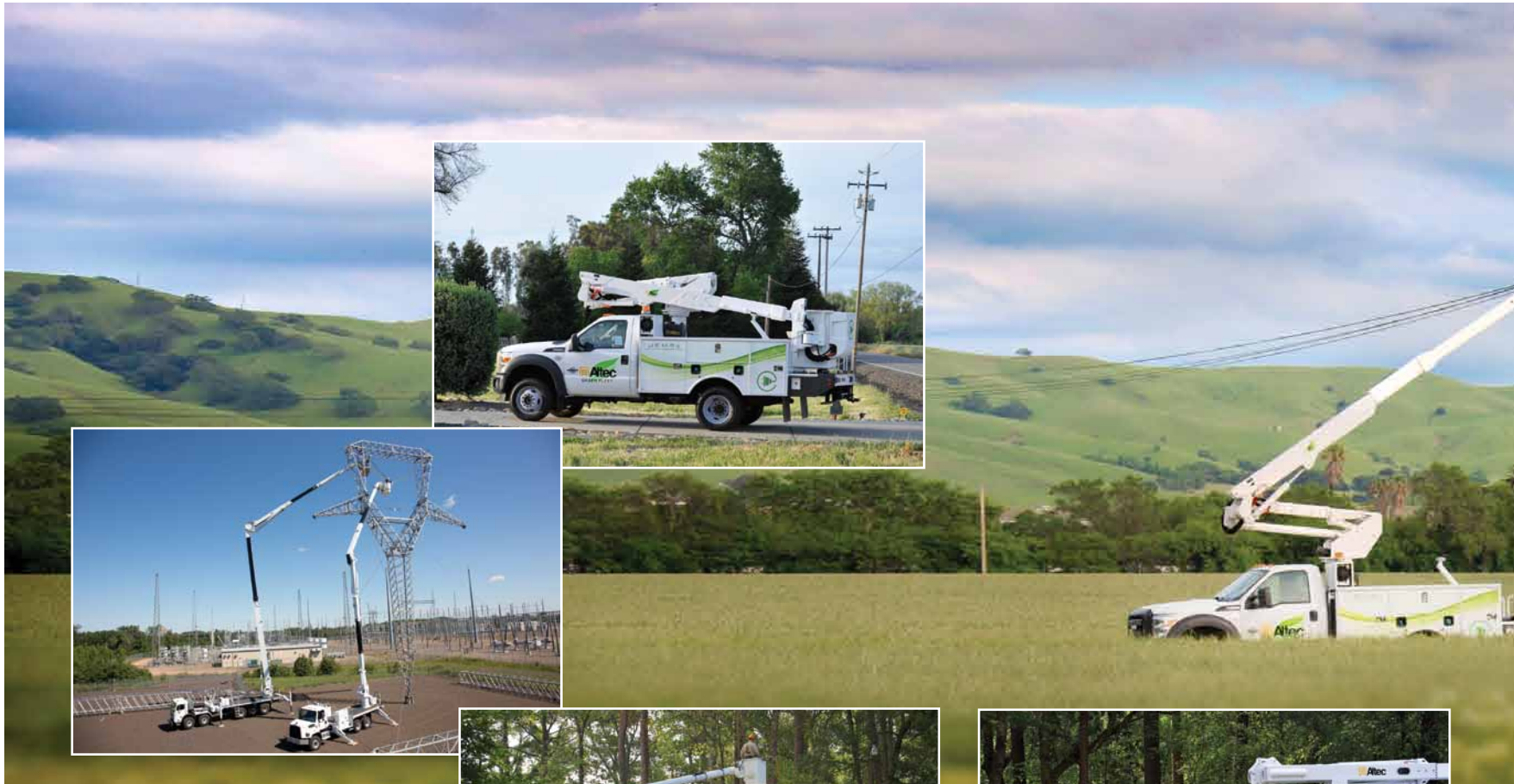
P. Lemmens Company, Gembloux, Belgium, (see page 14) *"The Night Train was therefore not just an option, but rather an integral part of the operations of the PSBB line and of our vision for the organization and the planning of our production."*



Yorkville Sound, Pickering, Ontario, (see page 12) *"Many products increased 40% - 100% in productivity. We can now run full-sized sheets without repositioning and the end result is that the products are coming off the machine more efficiently by reducing our actual punch time. The quality of the products has also increased dramatically."*



Altec Automates for Increased Productivity



Altec Industries, Inc., based in Birmingham, AL, is a leading provider of products and services to the electric utility, telecommunications, tree care, lights and signs, and contractor markets. The company manufactures such products as aerial devices, digger derricks, telescopic cranes, cable handlers, truck bodies, chippers, specialty products, and most recently, an expanding green fleet product line to help reach sustainable customer solutions.

Altec Industries, Inc. is a leading provider of products and services to the electric utility, telecommunications, tree care, lights and signs, and contractor markets.

Altec was founded in 1929 as the Alabama Truck Equipment Company, building mainly truck bodies in the early days. The company began distributing aerial lifts in the 1950s, and building its own aerial and digger derrick equipment in the 1970s. Today, the company has evolved into a major player in the international market, delivering products and services in more than 100 countries throughout the world. Altec products are the industry leaders and consistently raise the bar through innovative product design, integrated safety features, and continued dedication to total customer satisfaction.

Growing Pains

Altec's growth did not come without some challenges. By the late 90s, the company's growth had become so strong that it was unable to keep up with the demand of building utility bodies for the surplus of equipment orders. "We had some acquisitions and startup plants, but we had only the one original body plant in Birmingham, AL," says Jeff Mooney, General Manager of Altec Body Manufacturing in Burnsville,



In 2012, Altec purchased the servo-electric Shear Genius (SGe), two Prima Power Platino lasers with material towers, and a used Prima Power servo-electric press brake.

NC. "As a result, we were forced to outsource about half of the bodies we needed."

By 2004, Altec decided to ramp up its body manufacturing capability by adding a new manufacturing plant to the existing Birmingham, AL, facility. The new facility opened in Burnsville, NC, in Feb. 2006.



By the end of 2010, Altec's volume dramatically increased. "We were making a good quality product, and things were really starting to move," says Mooney. "By 2011, we experienced another jump in demand and were beginning to max out our fabrication capability on the SG. There was discussion of adding more production equipment, but instead we went to full around-the-clock production. We had three regular shifts and put on two weekend shifts. In essence, from about May 2011 through August 2012, that SG was running 24/7 with the exception of a four-hour PM every Monday. Our maintenance, programming, and operating departments worked closely with Prima Power to avoid any significant downtime during that period. We knew that this max production was not sustainable. But, we knew we could increase production while planning to fit more fab equipment into the plant. We ran for over a year non-stop. To this day, we maintain that weekly maintenance. If you take care of your equipment...it will take care of you."



From left to right: David Loftis, production manager; Jeff Mooney, general manager, body business; and David Tilly, plant manager.

"While we were planning the new plant, we looked at ways to be more efficient...especially in fabrication," says Mooney. "We wanted to turn our raw material into assembled parts as quickly as possible with as little work in process inventory as we could. We were exploring lean manufacturing and were interested in an integrated machine that could do the material handling, punch, shear, and bend. There were really only two options. We toured other manufacturing companies that used this type of equipment. The Finn-Power (now Prima Power) had a simpler, more straightforward design. We liked the Shear Genius punch/shear combination (SG) and the flexibility that the Prima Power system would give us. And, the fact that we could take raw material and turn it into a part ready for assembly in a very short amount of time was a big selling point."

In early 2006, Altec purchased an automated system from Prima Power, which was installed in March of that year. The equipment included:

- Shear Genius integrated punch/shear
- EB Express Bender
- Night Train Material Management System that integrates the system

"When it came time to purchase new equipment, there was no doubt in my mind...we needed another Prima Power SG," Mooney continues. "We could tie the new SG into our existing Night Train...and that's the route we decided to go. We also needed additional laser capacity. In 2012, we purchased the servo-electric Shear Genius (SGe), two Prima Power Platino lasers with material towers, and a used Prima Power servo-electric press brake."

"I have been in the metal fabrication business for 15 years. I have used many different types of machines throughout my career, including the major competitors' machines, and I have never had a machine perform as well as the Prima Power Shear Genius. And when you take the reliability of the SG into consideration, there is no comparison."

Continued on page 6

Altec Automates for Increased Productivity

Continued from page 5

Shear Genius

With the Shear Genius concept, the objective is to provide a machine capable of transforming a full-size sheet into finished parts. These parts can be moved to the final production stages for immediate integration directly into the final product assembly. To date, over 2,000 Shear Genius® machines have been installed throughout the world.

The heart of the new Shear Genius® SGe is an updated servo-electric 30-ton punching machine with 1,000 hpm stroke speed, 250 rpm index speed and 150 m/min sheet positioning speed. The right angle shear has a servo-electric actuation system, which makes shear movement both fast and fully controlled for maximum productivity. Material thickness in shearing can be up to 5 mm (Al), 4 mm (mild steel) and 3 mm (stainless steel). Automatic loading has been integrated, and also part removal and sorting are automatic.



On average, compared with a stand-alone turret punch press, the SGe reduces total manufacturing time by 60% and saves one blank sheet out of every 10.

“We ran for over a year non-stop. To this day, we maintain that weekly maintenance. If you take care of your equipment...it will take care of you.”

On average, compared with a stand-alone turret punch press, the SGe reduces total manufacturing time by 60% and saves one blank sheet out of every 10. The SGe eliminates wasteful skeletons and costly secondary operations, such as deburring. Nibble edges on the part exteriors were eliminated through the use of the integrated right angle shear.

“When it came time to purchase new equipment, there was no doubt in my mind...we needed another Prima Power SG.”

“We run the SG 24/7 and the SGe three shifts, five days a week. We process 2,100 sheets per week through the two Shear Genius cells. There is less scrap and no skeletons with the SG. Once we put a sheet in the SG, we don't have to touch it again until we have a complete part.”

“I have been in the metal fabrication business for 15 years,” says David Loftis, Altec Production Supervisor. “I have used many different types of machines throughout my career, including the major competitors' machines, and I have never had a machine perform as well as the Prima Power Shear Genius. And when you take the reliability of the SG into consideration, there is no comparison. We run the SG 24/7 and the SGe three shifts, five days a week. We process 2,100 sheets per week through the two Shear Genius cells. There is less scrap and no skeletons with the SG. Once we put a sheet in the SG, we don't have to touch it again until we have a complete part.”

Platino Lasers

The Platino is equipped with lasers (powers ranging from 3,000 to 5,000W), developed and produced at Prima Electro. The laser cuts a broad range of materials and thicknesses with speed and precision—without the need for manual adjustments. Platino's laser cutting head gives users a choice of a 10-inch focal length, in addition to the standard 5-inch and 7.5-inch lenses. The 10-inch lens enhances the application flexibility by increasing the depth of focus and enlarging the spot diameter for high and uniform cut quality of thick stainless (5/8 in.), thick aluminum (1/2 in.), and thick mild steel (1 in.).

Offering a compact footprint along with a Cartesian Cantilever structure that provides three-sided access, Platino is a cost-effective machine that is easy to operate and quick to program. Its unique stonecast frame reduces vibration and increases stiffness by about four



The Platino is a cost-effective machine that is easy to operate and quick to program. Its unique stonecast frame reduces vibration and increases stiffness by about four times compared to cast iron and about six times compared to welded frames.

times, compared to cast iron, and about six times compared to welded frames. Its low heat conductivity results in much higher thermal stability compared to traditional cast or steel frames.

“We had heard good reports on the Platino’s speed and low maintenance costs, but one of the biggest considerations was the smaller footprint. Compared to other lasers in the market, Prima Power laser and material tower was a much better fit in our facility.”

Flexible Automation

Prima’s 10-shelf TowerServer allows easy loading/unloading for blanks and processed sheets. It has an elevator for loading and unloading the pallets on and off the tower, and features single sheet separating, control systems, and sheet reference.

“We had heard good reports on the Platino’s speed and low maintenance costs,” explains Mooney. “But one of the biggest considerations was the smaller footprint. Compared to other lasers in the market, Prima Power laser and material tower was a much better fit in our facility. With the two new Prima Power lasers, we were able to dedicate the high definition plasma to just making truck body floors.”



The Express Bender (EB) is a bending solution designed specifically for each fabricator’s production requirements to achieve maximum productivity, quality, and repeatability.

“The EB is so much faster than press brakes. It has very low setup times and is extremely accurate. Today, 80% of the body is bent on the EB and 20% on press brakes.”

Express Bender

The Express Bender (EB) is a bending solution designed specifically for each fabricator’s production requirements to achieve maximum productivity, quality, and repeatability. The bending operation is fully automated—from the loading of flat punched parts to unloading of the finished product.

“The EB is so much faster than press brakes,” says Loftis. “It has very low setup times and is extremely accurate. Today, 80% of the body is bent on the EB and 20% on press brakes.”

Night Train

The centerpiece of the Prima Power automated sheet processing system is the Night Train Material Management System, which is the raw material inventory and work-in-process staging center. The Night Train FMS provides a total solution for unmanned operation for sheet metal fabricators by automating system control, as well as material flow within the system. This includes supplying raw material and removing and storing work in process.



The centerpiece of the Prima Power automated sheet processing system is the Night Train Material Management System, which is the raw material inventory and work-in-process staging center.

“We’ve had great support from Prima Power. I just call, and receive great customer support. If we do have a problem, within a 24-hour period Prima Power will have a technician in our shop. That’s huge to have support like that. We also appreciate the importance of training the new operators and keeping them involved in the maintenance process.”

Growing Number of Parts

“Prior to using the Prima Power equipment, we were outsourcing many of our parts,” says Mooney. “We have brought most of these parts in-house. If there is a quality problem, it is much easier to handle in-house, than with a vendor that is four hours away. We are creating 50 to 100 new part numbers every single day and currently have 27,000 SG programs and 4,000 EB programs. This number grows each day. That is the nature of our business. Without purchasing the Prima Power equipment, we would not have been able to meet the growing demands of our customers.”

Customer Service

“We’ve had great support from Prima Power,” concludes Loftis. “I just call, and receive great customer support. If we do have a problem, within a 24-hour period Prima Power will have a technician in our shop. That’s huge to have support like that. We also appreciate the importance of training the new operators and keeping them involved in the maintenance process.”

Russian Ventilation Company Achieves a Breakthrough in Production Development



LADA-FLAKT's Night Train FMS line includes two laser machines, two punch/laser combination machines, five auxiliary robots, an automatic bending center EBe5, and three loading/unloading modules.

A new manufacturing facility recently opened in Togliatti, Russia, which reflects the principles of innovation and technologies of the future. Togliatti is the center of the Russian automobile industry. This new plant is owned by LADA-FLAKT, a company established in 1993 and founded on an agreement between AvtoVAZ, the Russian automotive giant (120,000 employees) and the Finnish subsidiary of ABB.

LADA-FLAKT specializes in fans, ventilation and drying chamber equipment. Some 10,000 ventilation units are manufactured annually, with solutions for various sectors of the economy with such products as axial fans, centrifugal fans, air conditioners, air ducts, and others, including various types of air and fire valves, and automation and control modules for ventilation systems. The products range from standard equipment to large systems, with sophisticated electronics developed and manufactured by LADA-FLAKT, for handling ventilation in such industries as underground railways and high-rise buildings, under normal conditions as well as in emergency situations, such as fires.

Prima Power is LADA-FLAKT's main partner for sheet metal fabrication equipment. This cooperation began in 2003 with the purchase of the TP-3000 turret punch press. That step has contributed to the development of design and technological ideas, and has allowed LADA-FLAKT to create new forms and types of fans.

The company's growth and expansion into new, more technologically-sophisticated markets, combined with the need to improve productivity, led to the purchases of a Prima Power laser punch in 2007 and a servo-electric press brake in 2010. According to LADA-FLAKT management, these machines have radically changed the manufacturing process and set a new course of development for the company.

By purchasing the LP6, LADA-FLAKT has not only increased its productivity by 40%, but also changed the approach to the design and creation of ventilation products. The machine's modern software also reduced scrap by 20%. In addition, the auto-index stations have allowed the company to produce more complex-shaped parts. This has allowed the company to reach new frontiers in the market of industrial air in cooperation with acknowledged companies such as Eisenmann, Geico Russia, and GM-AvtoVAZ. In addition, the Russian Railways Enterprise has signed a contract with the company for production of air ducts for renewing the fleet of passenger rail cars.

The Prima Power Platino laser was purchased in 2009. The incredible power, precision, and speed of this machine allowed making unique tunnel fans with a diameter of 1,600 mm to 3,000 mm. These products were used in Russian metro lines in Kazan, St. Petersburg, Moscow, and Sochi.

The installation of the automated laser cutting line (LADA Night Train) was the next stage in the cooperation history between LADA-FLAKT and Prima Power. The general design of the system was agreed upon in April, 2012 at a meeting in Kauhava, Finland, and in August 2013 the line was launched into operation. "It is our policy never to accept just the adequate when it comes to manufacturing technology," explains Igor Starobinsky, general manager of LADA-FLAKT. "We want the optimum solution and no less. As technology is developing fast, I was very interested to witness on-site the performance of the latest Prima Power solutions. It was an interesting experience."



According to LADA-FLAKT management, Prima Power machines have radically changed the manufacturing process and set a new course of development for the company.

“This system was the first Night Train FMS installed in Russia. While its full capacity has yet to be realized, the Night Train has already doubled production. It has allowed LADA-FLAKT to earn a leading position for production, speed, and quality in Russia.”

Night Train FMS

This line includes two laser machines, two punch/laser combination machines, five auxiliary robots, an automatic bending center EBe5, and three loading/unloading modules. This system was the first Night Train FMS installed in Russia. While its full capacity has yet to be realized, the Night Train has already doubled production.

It has allowed LADA-FLAKT to earn a leading position for production, speed, and quality in Russia.



With the large crowds expected to attend the Sochi Winter Olympic games, the provision of intake and exhaust systems for road and railway tunnels and subways are a matter of great importance. LADA-FLAKT fans with impeller diameters of 63 to 224 cm were supplied for the Sochi metro tunnel duct systems.



“You cannot sit and wait. You must develop and move forward. We did not just merely launch a new line. We have made a breakthrough to a new level of production development. This world-class, elite equipment allows us to significantly improve the quality of our products and increase our productivity by 60%. We are confident that we are now capable of competing with the leading world manufacturers of industrial exhaust fans.”

LADA-FLAKT and Prima Power have several years of successful experience in the production of machinery and systems for sheet metal fabrication. According to Ilya Federov, the general director of Prima Power Russia, “Prima Power has developed a near turn-key solution where our customers are inputting a flat sheet of metal...and outputting parts ready for assembly.”

The LADA Night Train requires only three people for full operation. In this case, we are talking about a high-tech work place and highly-qualified personnel. “If you want to achieve something, you have to make a dedicated effort,” says Starobinsky. “You cannot sit and wait. You must develop and move forward. We did not just merely launch a new line. We have made a breakthrough to a new level of production development. This world-class, elite equipment allows us to significantly improve the quality of our products and increase our productivity by 60%. We are confident that we are now capable of competing with

the leading world manufacturers of industrial exhaust fans.” Today, LADA-FLAKT is one of the largest manufacturers of ventilation systems in Russia. In 2013, LADA-FLAKT and Prima Power celebrate 10 years of collaboration that was expressed in delivery and installation of a total of 14 machines, five software programs, and extensive staff training.

Winter Olympics Supplier

LADA-FLAKT will be a supplier to the upcoming Winter Olympics in Sochi, Russia, taking place during February 2014.

For the ceremony of the lighting of the Olympic flame, LADA-FLAKT has made a special air screen that protects the torch from the wind during the ceremony. The screen is located at the foot of the cup and its air flow cuts off the air streams blowing from the sea. The calculation and design of the system were carried out in conjunction with the Samara State Aerospace University.

The large crowds of visitors to Sochi during the Olympic games from Russia and throughout the world will result in greatly increased traffic. As a result, the provision of intake and exhaust systems for road and railway tunnels and subways are a matter of great importance. LADA-FLAKT fans with impeller diameters of 63 to 224 cm were supplied for the Sochi metro tunnel duct systems. The function of these fans is to remove exhaust gases and air, while ensuring the flow of fresh air into the tunnels.

Blechexpo 2013



Blechexpo and Schweisstec took place in Stuttgart, Germany on November 5 – 8. This trade fair is held every two years and claims to be the only event in the world that deals with the complementary technologies of sheet metal processing and joining technology. Today, Blechexpo has gained a leading position in Europe and now ranks second in the world on the list of trade fairs for sheet metal processing processes.

This year, Prima Power exhibited the Punch/Bend and Platino Laser + LST, and attracted a very interested group of visitors each day of the exhibition.

Based in the heart of industrial Europe, the large consumer and user market is a real “benchmark” for the manufacturers of products, machines, systems and accessories in hard and software for sheet metal component production from small scale to highly industrial. This year, well over 1,000 exhibitors from more than 30 countries and a gross exhibition space of 70,000 m², participated in the Blechexpo and Schweisstec trade fairs. The

trade fair duo now attracts around 26,000 visitors to the Stuttgart trade fair center.



FABTECH 2013 & Open House

Prima Power made a strong impact at FABTECH 2013 held November 18-21 at McCormick Place, Chicago, IL. Record crowds throughout FABTECH filled the booth each day of the show. Visitors were enthusiastic when they were introduced to the Platino + LST 2D laser, the eP servo-electric press brake, and the Fast Bend.

For two nights during FABTECH, Prima Power hosted an Open House after show hours at its showroom in Arlington Heights, IL. Visitors were able to get a close-up look at the SYNCRONO Fiber Laser, the Servo-Electric SGe6 + STS, and Platino 2D Laser System. Guests also were presented various ERP demonstrations.



The Sounds of Quality & Productivity

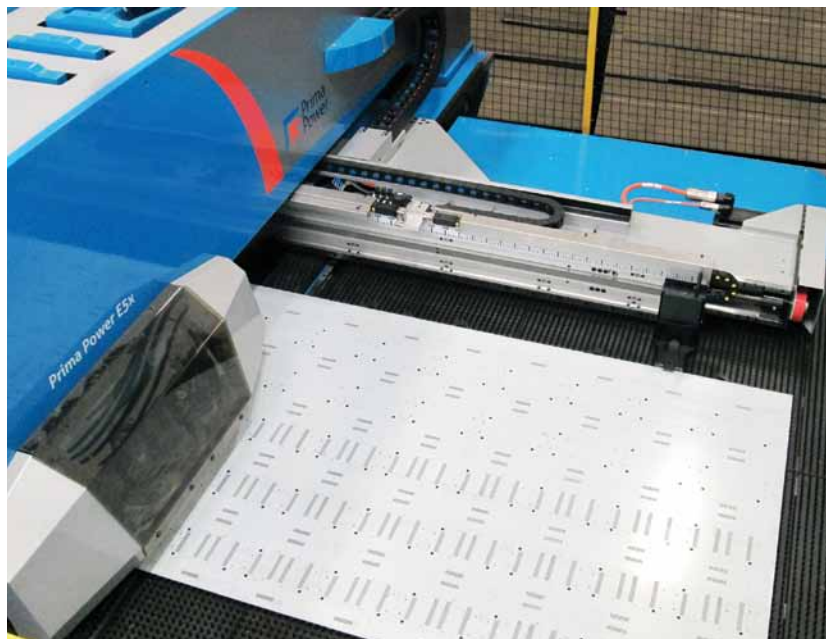
Yorkville Sound, Pickering, Ontario, manufactures a full line of professional PA products including mixers, amplifiers, active and passive loudspeaker cabinets, and lighting. The company also designs and manufactures a complete line of Canadian-made tube and solid state instrument amplifiers under the Traynor brand for Canada, the U.S. and export markets. In addition, Yorkville Sound distributes quality lines of guitar and bass amplifiers, guitars – including Gibson and Epiphone models – as well as other products.



“Many products increased 40% - 100% in productivity. The end result is that the products are coming off the machine more efficiently by reducing our actual punch time. The quality of the products has also increased dramatically.”

This vertical integration allows us to control the quality and the cost so that our hands are not tied in purchasing.”

For its sheet metal fabrication, Yorkville Sound processes cold-rolled steel, aluminum, and stainless steel. In 2000, the company purchased a P5 turret punch press from Finn-Power (now Prima Power). “We also had a competitor’s turret punch press model,” says McKeown, “but the P5 was our primary machine because of its flexibility and reliability. It ran for two shifts for many years, and probably still could. But we decided to replace the older unproductive competitor’s machine with a new turret punch press. Because we had such a great history with the P5, we didn’t look anywhere else. We wanted to bring in new technology and purchased a new generation of turret punch press from Prima Power.”



The E5x has the ability to process full 1,250 mm x 2,500 mm sheets without repositioning and makes nesting of the part more efficient and economical.

In 1963, Yorkville Sound was founded in the back room of the original downtown Toronto store of sister company Long & McQuade – the largest chain of musical instrument retailers in Canada, with 60 locations from British Columbia to Newfoundland. This year, Yorkville Sound is celebrating its 50th Anniversary and has evolved into a company that designs and manufactures all of its North American-built products at the 150,000-square-foot Pickering facility with 200 employees and also maintains offices in Niagara Falls, NY and Rochester, NY. The professional PA products of Yorkville Sound are sold throughout the world.

Vertical Integration

Yorkville is a vertically-integrated manufacturer, whose main focus is the quality of its component parts. “We truly wouldn’t sacrifice quality for speed,” explains Larry McKeown, supervisor, metal fabrication. “We try to make everything in-house from the ground up. That includes circuit boards, sheet metal fabrication, cabinet building, powder coating, etc.

E5x Servo-Electric Turret Punch Press

The Prima Power E5x was installed at Yorkville Sound in March 2013. With the new E5x by Prima Power, modern servo-electric punching productivity is available in a flexible and affordable package. The E5x has the ability to process full 1,250 mm x 2,500 mm sheets without repositioning and makes nesting of the part more efficient and economical.

Other features of the E5x include:

- Extremely high servo-electric accuracy for less scrap, more production, and excellent forming and marking capability
- Fully-programmable punching speed, upper and lower limit of stroke
- Programmable clamp setting
- Robust O-frame design for perfect tool alignment and less wear on the punching tools
- Touch screen and Tulus Lite user interface
- Average power consumption of 4 kW for less energy use



Larry McKeown, supervisor, metal fabrication, explains that without the E5x, his company would not have been able to keep up with the increased demand for production created by bringing back products that were being produced in China.

“The year prior to purchasing the E5x, we had purchased a \$100,000 sander to deburr and remove scratches and mars. That machine is idle most days since we no longer have secondary operations with the E5x.”

“We copied the turret we used in the P5, so all our tooling would be the same in both turrets,” explains McKeown. “This dramatically increases our flexibility by having common tooling in both the P5 and E5x because now we can run all our parts on both the machines... something we couldn’t do with the turret punch press that we replaced.”



In 2000, Yorkville Sound purchased a P5 turret punch press from Finn-Power (now Prima Power). The P5 ran two shifts for many years while becoming the company’s primary machine because of its flexibility and reliability.

Yorkville Sounds has over 80 different SKUs that it manufactures. This does not include the store fixture production or any of the distributed products, which would increase the number of SKUs into the hundreds.

“Without the E5x, we realized we would not be able to keep up with this increased demand for production. We were also bringing back four speaker cabinets that we were producing in China.”

The efficiencies that Yorkville Sound has gained with the E5x, compared to the old turret punch have been impressive. “Many products increased 40% - 100% in productivity,” says McKeown. “We can now run full-sized sheets without repositioning and the end result is that the products are coming off the machine more efficiently by reducing our actual punch time. The quality of the products has also increased dramatically.”



The E5x has extremely high servo-electric accuracy for less scrap, more production, and excellent forming and marking capability.

“Our parts are coming off the press faster...and they look better. Better quality...and it’s done quicker. What company isn’t looking for that?”

The E5x has also reduced secondary operations. “The year prior to purchasing the E5x, we had purchased a \$100,000 sander to deburr and remove scratches and mars,” McKeown points out. “That machine is idle most days since we no longer have secondary operations with the E5x.”

Increased demand at Yorkville Sound was another reason for purchasing the E5x. “At the time of purchase, we were forecasting that six new products would soon come online,” recalls McKeown. “Without the E5x, we realized we would not be able to keep up with this increased demand for production. We were also bringing back four speaker cabinets that we were producing in China. There will be a total of 11 lines that we will once again produce in Canada instead of China because we can now produce them more cost effectively in-house. It was always our goal to bring these products back from China.”

“Our experience with the P5 and E5x has been very positive,” concludes McKeown. “Our quality and productivity have increased dramatically, while we have realized cost savings in eliminating secondary operations. Our parts are coming off the press faster...and they look better. Better quality...and it’s done quicker. What company isn’t looking for that?”

Belgian Company Rides The Night Train Into The Future

"Our Primary Concern is to Improve Our Manufacturing Flow."

By Serge Vandenplas

P Lemmens Company, a Belgian manufacturer of air movement ventilation, heating, and air conditioning products, was created in 1977. From the outset, P. Lemmens, Gembloux, Belgium, has focused on the design and manufacture of direct-drive centrifugal fans. The company grew quickly and today competes throughout Europe.

In 1988, the concept of manufacturing small air conditioning units began. This type of equipment can be installed on a suspended ceiling where it is needed and with the minimum amount of air ducts. Since then, this approach has become as important as the production of the fans themselves. Another application is the heat curtain we've all encountered at the entrance to a large area. Add to this the introduction of electronically commutated motors (ECM), which is the basis of Total Airflow Control (TAC) technology. TAC is the technology that allows fans to operate intelligently. The DC motor, with permanent magnets, is connected to an AC circuit. The motor's operation is controlled by an electronic module which is in turn controlled by the electronic system of the unit on which it is mounted.

"The improved manufacturing flow was given priority. The best option available to us was fully-automated punching, shearing, and bending. Additionally, this will help us to improve the quality of our parts to a level that's more consistent and which facilitates assembly. Also, automation allows us to better control the flow of raw material and inventory."



Air conditioning module for installation on a suspended ceiling.



Assembly of small ventilation boxes.

P. Lemmens manufactures the fans and the housings in which they are assembled. These modules are installed on a suspended ceiling, wall systems, water heaters, heat recovery, central ventilation units, etc. The design and assembly of all these systems are performed in-house. The motors are purchased, as well as the impellers and heat exchangers. Other manufacturing phases, such as the installation of electrical wiring, painting, or welding of stainless steel parts, are also sub-contracted. According to M. Christophe Liégeois, the head of production at P. Lemmens: "There are companies that specialize in this kind of technology, and we take care of our core business which is the design, assembly, marketing, and distribution of our systems, and we plan to stay within these parameters." This approach pays off, as evidenced by the fact that P. Lemmens has become a European leader of systems utilizing TAC technology.

Automating Sheet Metal Fabrication & Bending

In order to compete in this advanced technological marketplace, the management of P. Lemmens realized their company had to increase its capacity and automate its fabrication & bending capabilities. As a result, the company purchased a Prima Power PSBB line, which includes a servo-electric Shear Genius punch/shear, a servo-electric EBe Express Bender, and a Night Train Material Management System.

"The improved manufacturing flow was given priority," explains Liégeois. "The best option available to us was fully-automated punching, shearing, and bending. Additionally, this will help us to improve the quality of our parts to a level that's more consistent and which facilitates assembly. Also, automation allows us to better control the flow of raw material and inventory."



According to P. Lemmens management, the Night Train Material Management System was not just an option, but rather an integral part of the operations of the PSBB line and of the company's vision for the organization and the planning of its production.

“The Night Train was therefore not just an option, but rather an integral part of the operations of the PSBB line and of our vision for the organization and the planning of our production.”

Night Train

The centerpiece of the Prima Power automated sheet processing system is the Night Train Material Management System, which is the inventory and material transporting center. The Night Train provides a total solution for unmanned operation for sheet metal fabricators by automating system control and material flow within the system. This includes supplying raw material, as well as removing and storing work in process. “The Night Train was therefore not just an option,” explains Liégeois, “but rather an integral part of the operations of the PSBB line and of our vision for the organization and the planning of our production.”

The raw material can be manually introduced to the lines or they are taken from the Night Train stock with the assistance of a robotic lift which will search for the sheets stored on cassettes. With the P.

Lemmens configuration, the stock has 40 cassettes which are capable of holding four Euro-pallets of raw materials and 60 cassettes where semi-finished parts are stored until needed for further operations. In the future, the company expects to double this capacity.

Combined Punching and Shearing

With the Shear Genius concept, the objective is to provide a machine capable of transforming a full-size sheet into finished parts. These parts can be moved to the final production stages for immediate integration directly into the final product assembly.

Servo Electric

Starting the systematic development of servo-electric machine tools in mid-1990s, Prima Power has widened the range continuously and now extends this technology to the integrated right angle shear. The heart of the new servo-electric Shear Genius® SGe is an updated servo-electric 30-ton punching machine with 1,000 hpm stroke speed, 250 rpm index speed, and 150 m/min sheet positioning speed. The right angle shear has a servo-electric actuation system, which makes shear movement both fast and fully controlled for maximum productivity. Material thickness in shearing can be up to 5 mm (Al), 4 mm (mild steel) and 3 mm (stainless steel). Automatic loading has been integrated, and also part removal and sorting are automatic.



The EBe servo-electric Express Bender is a bending solution that is designed specifically for each fabricator's production requirements to achieve maximum productivity, quality, and repeatability.

After the punching and shearing is complete, the pieces are stacked by a gantry robot to serve as buffer stock before bending or for Night Train storage.

Automated Bending

Finally, the parts are sent to the panel bender – the Prima Power Express Bender. The EBe servo-electric Express Bender is a bending

Continued on page 16

Continued from page 15

solution that is designed specifically for each fabricator's production requirements to achieve maximum productivity, quality, and repeatability. The bending operation is fully automated, from the loading of flat punched parts to unloading of the finished product. "This unit enables us to perform bends that were impossible until now," explains Liégeois. "Back edges, anchors, clips, small parts...anything goes."

Advantages

For Liégeois, this production line is a great leap forward. "It offers us a myriad of possibilities. On the one hand, there is a high degree of automation, which boosts quality. On the other hand, the on-site storage possibilities for semi-finished parts can be completed according to the module to be assembled. As a result, the manufacturing flow is improved since each piece that comes out of the machine can be immediately directed to the module being assembled. In the end, automated bending gives us more possibilities. We can now make bends that we weren't able to do before. This opens the door to other assembly solutions, such as the implementation of clipping systems that will eventually replace the rivets being used now. This will surely impact both the assembly time as well as aesthetics."

"This unit enables us to perform bends that were impossible until now. Back edges, anchors, clips, small parts...anything goes."

Assessment

Three wishes fulfilled: "Ideally, the production line would improve quality, feasibility, and capacity. And that is indeed the case," affirms Liégeois. "The automation of the punching, shearing, and bending procedures allows for the replication of the same operations, hour-by-hour, day-by-day, year-by-year, without fluctuations in quality. The EBe panel bender also allows for much more complex bends which have a direct influence on the way parts are mounted on the assembly line. In addition to the time saved, during assembly, the aesthetic aspect is also enhanced. Finally, a growing demand for P. Lemmens products required

a significant increase in capacity. The PSBB line has ensured this as well, but that's not all. The very nature of the line actually makes it possible not only to increase the hours of production, but at the same time, it frees up personnel who were previously occupied with manually handling parts which will soon be manufactured entirely on the PSSB line. The staff will then be free to handle the assembly of P. Lemmens products."

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With the P. Lemmens configuration, the Night Train stock has 40 cassettes which are capable of holding four Euro-pallets of raw materials and 60 cassettes where semi-finished parts are stored until needed for further operations. In the future, the company expects to double this capacity.

When investing in the PSBB line, P. Lemmens had its sights set on the future, an attitude which may be characteristic of every rapidly growing company. "Innovation happens by changing the technical specifications of the components which are immediately incorporated into the standard processes," concludes Liégeois. "Over time, certain components naturally disappear. And then we must also remain proactive. In the near future, certain types of motors will disappear in light of our preparations for regulation ERP 2013/2015. We're not going to wait until 2015 to complete the transition to the new regulation. To stay ahead of the competition, it's essential to continuously innovate."

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Mate's VariBend™ Helps Expand the Use of the Turret

By John Galich, Marketing Manager, Mate Precision Tooling

One of the most common sheet metal fabricating operations is bending, which usually tops the list when fabricators look to eliminate secondary press brake operations. Yet the opportunities to rationalize bending operations are limited. Mate offers one popular solution—EasyBend™—for smaller parts where using a press brake seems like overkill. With the new VariBend™ tool, Mate expands the possibilities of making fabrication more efficient through more effective use of the punch press.

Mate's VariBend is a flexible, multi-purpose tool that allows forming of sheet metal tabs in a punch press environment, eliminating **some** secondary operations normally reserved for a press brake. Flexible, because it can be used for a range of material thicknesses, VariBend is also multi-purpose, because it can be used to form tabs at any angle up to (and in some cases exceeding) 90°.

The upper forming tool is lowered onto the sheet until bending begins. Then, the flange is over-bent to account for the material springback. As the upper tool returns, the desired bend is formed.

Although not required, the VariBend is well-suited for machines with upforming capabilities, and especially machines with stroke control. Upforming allows the highest form possible for the tool design. Since the die sits lower than a forming die in a normal forming operation, the sheet lies flatter. This increases the accuracy of the formed tab while keeping sheet marking on the bottom side of the sheet. Using VariBend in machines with stroke control assures easy setup and accuracy when forming tabs in a punch press.

VariBend can also be used in machines without upforming capabilities or stroke control features. Formed tab height may be restricted, depending on the height of the turret gap of the user's machine. Mate Ultraform® holders may be used for length adjustment in machines without stroke control. Formed angles can be modified by adjusting the length of the Ultraform holder with the VariBend tools installed.

When ordering a Mate VariBend tool, you should consider the range of material you want to form. The maximum height is determined by the design and height of the upper tool. VariBend will produce form heights of approximately 0.300" – 0.700" (7.6 mm – 17.75 mm). With caution and reduced speeds, slightly shorter forms can be achieved. Also, VariBend should be ordered and designed for the maximum material



thickness desired because material thickness has range limitations due to the upper and lower tool geometry. If you use a wide range of material thicknesses to be formed with the VariBend, multiple tool sets may be required. Mate's application specialists can help you design the tool appropriate for your needs.



If you have a secondary operation you want to eliminate that is not covered by one of Mate's standard solutions, our team of custom design engineers and applications specialists has helped hundreds of customers solve their issues. They can create a custom solution for you quickly and affordably. Standard or custom, all Mate products are backed by world-class field support and 100% satisfaction guarantee.

For more information about Mate tooling systems for Prima Power punch presses, please visit mate.com. If you want to learn more on how Mate's Custom Engineering group can help you, please visit mate.com/en/fabrication-solutions.

Enhancing Your Shop Floor From The Office

By Kyle Plass, Applications Engineer



Prima Power is proud to inform you of the different Office options that are available from the Tulus software family. Tulus Office design allows offline users to take control of shop floor tasks. The tasks within Tulus Office are beneficial to operating efficiency of the machinery, as well as monitoring of production status.

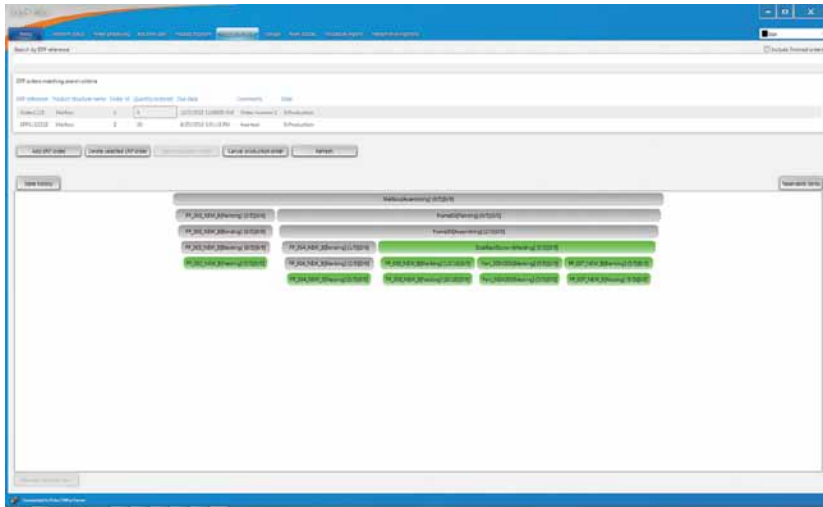
TULUS OFFICE

Tulus Office is a scalable software package that offers a variety of options connecting to machinery at the shop floor. Office software is available to be installed on an offline Windows PC. Users can access multiple machines within one software package, retrieving the following data:

Product Routing (MES)

Track your product assembly throughout the manufacturing process using the Product Structure option. Assembly structure can be set up inside Tulus Office to define each manufacturing phase a component requires. Assembly information is defined manually or can be imported directly from ERP system to allow for ease of scheduling. A Terminal connection at each phase (i.e. press brake, laser, etc...) allows for an operator to update real-time individual component completion. In addition to completion tracking, components that are missing or damaged can quickly be flagged and re-ordered for blanking.

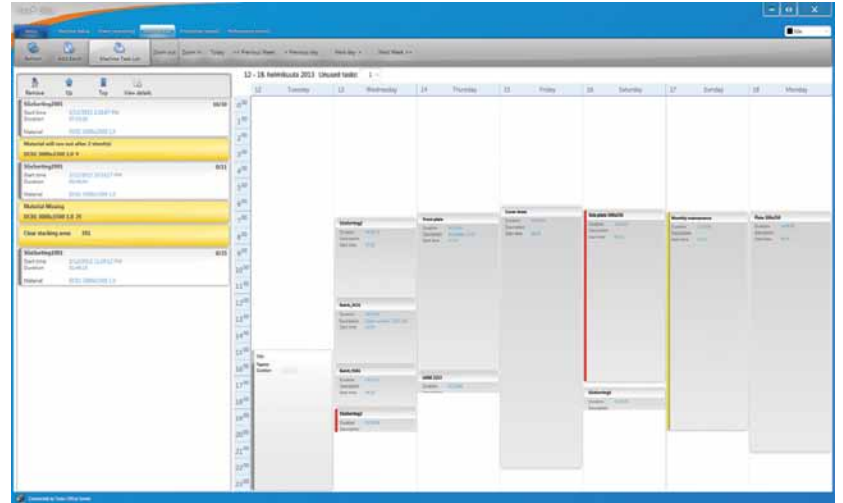
Driven by due dates and priorities, Product Routing allows for a quick visualization of what and when products need to be processed at each phase.



Machine Load

Scheduling of machines has never been easier with the machine's active task list right at your finger tips. Jobs can be added on the fly, or if preferred, the entire day, week, or month could be planned with the use of the Factory Load calendar. Current task list displays active production.

Color representation used within the calendar helps recognize "hot jobs" or orders that are overdue. Tool changes or the need to change material are also identified within the task list to help plan setup accordingly.



Production Reporting

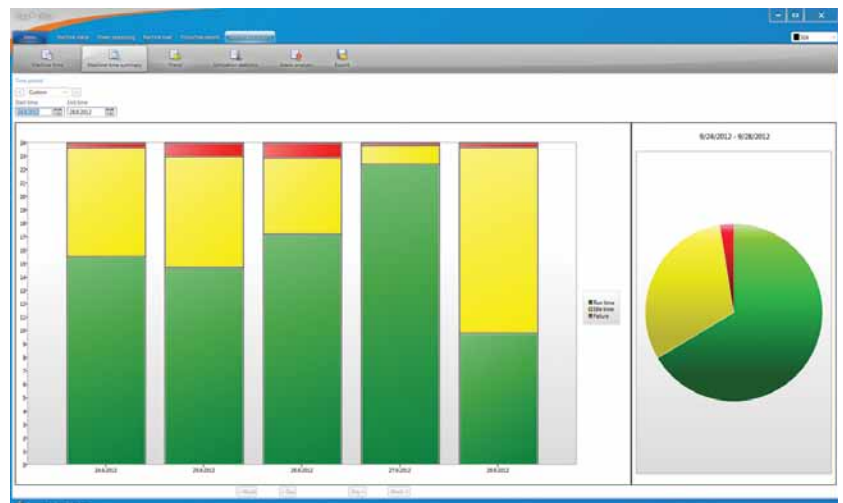
Track real-time production data available. Available data includes:

- Program: Actual program run times and sheet utilization
- Component: Quantity per component produced
- Material: Quantity per material sheet size processed

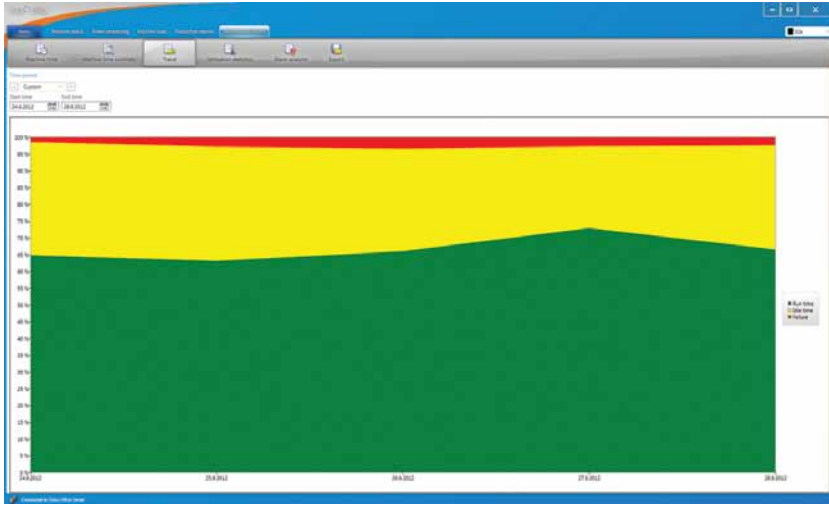
Production Reporting allows the user to filter specific date range. The reports generated can be printed, shared, or used to report back to ERP.

Performance Reporting

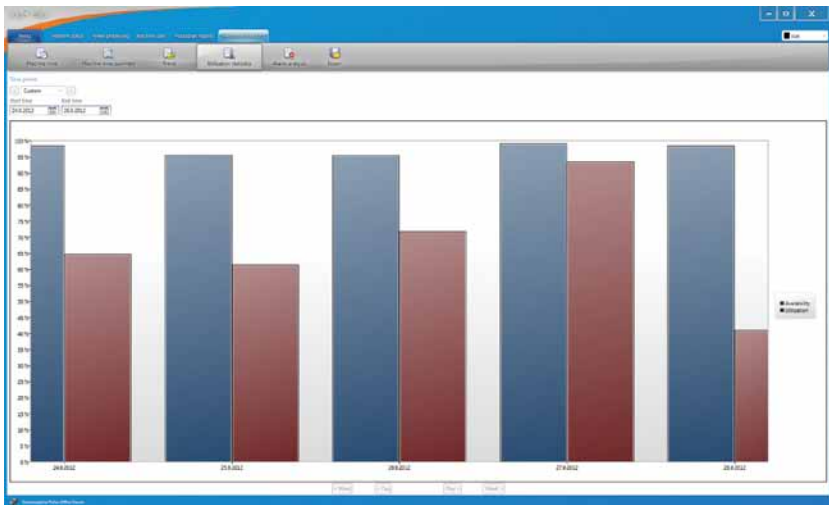
Performance Reporting takes the production reporting a step further by reporting all machine time including processing, idle, and fault time. Processing time is recorded when machine is actively running. Idle time is defined by machine in idle state. Faults are automatically recorded and timed by machine status.



Idle times can be defined by user to describe the reason why machine was sitting idle (ex. lunch break, tooling change, etc...). Fault error messages are recorded to identify what alarms occurred during this time.



Graphical reporting for all processing time and alarm history data is available. Alarm history can be reviewed to help maintenance department be proactive in fixing spikes in specific alarms. Alarm analysis reports help quickly identify where the problem area is occurring and can be tracked per date and time stamp.



TULUS WEB MONITORING

A lighter version of remote monitoring, – Web monitoring – is a scaled down version of Tulus Office that offers a portal to connected machines. There are three functions that can be used:

- Review Active Task List
- Machine Current Status
- Machine Alarm Info

The purpose of web monitoring is to have an active web service that anyone can access internally in the company network and review current status.

TULUS MOBILE MONITORING

The future of unmanned production lies within your hands. Configuration & setup of Tulus Mobile can identify availability of mobile phone number based on respective shift time. Data sent to and from a mobile phone includes: active alarm info, status inquiry, and the machine's upcoming tasks (e.g. tool change).

Mobile user can send inquiry to machine and retrieve current status. Machines connected can send information to active mobile phone informing of a coming task to help decrease idle times. Active alarms are sent to active mobile phone informing machine is down. Active alarm info can be useful for unmanned production or real-time maintenance crew awareness.



Franke Foodservice Systems Discovers Flexible Bending with Prima Power

Franke Foodservice Systems is the world's leading provider of comprehensive solutions for the global foodservice industry. The company provides an array of products and services to the global food service equipment markets. With a focus on the quick-service restaurant (QSR) and casual theme-dining segment, Franke specifies, designs, and manufactures stainless steel food service equipment, meeting specific operational needs of the customer.

To date, Franke has built and installed more than 27,000 kitchen facilities worldwide and completed millions of deliveries that make restaurant operation easier and more profitable. The Franke Group employs around 8,500 people worldwide and is established in 40 countries with 68 subsidiaries. Through its global manufacturing facilities in the US, Asia, and Europe, Franke's lean manufacturing processes maintain the highest quality standards.



Doug Frederick, production supervisor, explains that a major reason for purchasing the BCe was that the press brake operators were spending an incredible amount of time on different setups. "We needed to find another solution."

Bending Blues

In 2007, the Franke manufacturing plant in Fayetteville, TN, had a major challenge in its bending area. "Our product mix is very diverse," explains Doug Frederick, production supervisor. "We don't run a high volume of many items. We are a low-volume, high-mix manufacturer. We have over 10,000 different cabinet, table and shelf products, usually in quantities of one or two. Our press brake operators were spending an incredible amount of time on different setups. We needed to find another solution."

Frederick and his production team saw the Prima Power Express Bender at FABTECH and visited numerous shops that had automated bending equipment. "Our company is very thorough prior to purchasing equipment," says Frederick. "We don't buy anything on a

The BCe series bending centers offer the well-known Express Bender benefits of precision, flexibility, and high-surface quality in a semi-automatic process. Only loading is performed manually, an easy task due to user-friendly design.

whim. We researched all the other major brands and Prima Power was the best solution for us. We really liked the servo electric features of the machine."

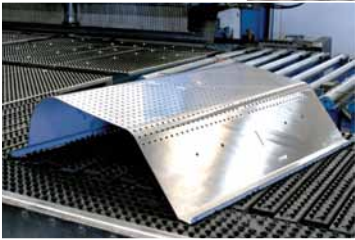
"The BCe handles our most intricate setups and parts. These would take quite a bit of time on the press brakes, but only about 16 seconds on the BCe."



The BCe series provides productive capacity for single piece and small batches, as well as serial manufacturing. It enlarges bending capability to the applications that were not possible before, allowing production of components which are fully perforated, have large or high forms, or need large openings. Total manufacturing time is shortened since the loading operation is simultaneous with the unloading of the ready-bent component.

Prima Power BCe

In 2008, Franke purchased the Process Bending Center (BCe) from Prima Power. The BCe series bending centers offer the well-known Express Bender benefits of precision, flexibility, and high-surface quality in a semi-automatic process. Only loading is performed manually, an



easy task due to user-friendly design. The BCe series provides productive capacity for single piece and small

batches, as well as serial manufacturing. It enlarges bending capability to the applications that were not possible before, allowing production of components which are fully perforated, have large or high forms, or need large openings. Total manufacturing time is shortened since the loading operation is simultaneous with the unloading of the ready-bent component.

“We’ve had the BCe for five years. Today, 50% of our bending production goes through the machine. It has provided very reliable operation.”

“The BCe handles our most intricate setups and parts,” says Frederick. “These would take quite a bit of time on the press brakes, but only about 16 seconds on the BCe.”

Other benefits include:

- Favorable energy savings, (-64 % consumption and CO emission compared with hydraulic solution)
- Excellent bending accuracy and surface quality with high repeatability
- Higher productivity – loading operation is simultaneous with unloading – shorter cycle time
- Eliminates the need for highly-skilled operators while providing maximum productivity and quality
- Full safety for the operator – the parts to be processed are transferred automatically from an external table
- Reliable, accurate operation – automatic clamp feeder moves the part to be bent from the table to the manipulator
- Higher operator efficiency – automatic pusher conveyor unloads bent parts to the unloading table with automatic buffer function

- Fully-automatic setup between different components (with ATC)
- With automatic tool change ATC and bar code reader, the machine makes automatic setup and activates new part program
- Very low maintenance cost
- Compact layout
- Higher productivity and faster programming compared with manual folding machines and robotized press brake

“I am glad that we purchased the BCe. It is a very versatile and flexible machine...and has been a great fit for us. Our engineering department is getting very good about working with the operators and designing parts for the BCe.”



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“We’ve had the BCe for five years,” explains Frederick. “Today, 50% of our bending production goes through the machine. It has provided very reliable operation. The Prima Power service techs are always available if we need them.”

The features Frederick likes best on the BCe include:

- Quick setups
- BCe can be easily programmed on the shop floor
- Easy to make adjustments
- BCe is very accurate
- Bends a tighter tolerance than on a press brake (which the welders love)
- Every day sustainability



“I am glad that we purchased the BCe,” concludes Frederick. “It is a very versatile and flexible machine...and has been a great fit for us. Our engineering department is getting very good about working with the operators and designing parts for the BCe.”

Wila's "American Vintage" Tooling System

High Performance, Attractive Price, Exceptional Value!

By David Bishop, Business Development Manager, Wila USA



For decades, press brake machine, control, and tooling advancements have largely been based on reduced set-up times, greater accuracy, and the ability to run small batch sizes efficiently. While that trend has yielded tremendous improvements in productivity, not everybody is changing tooling eight or more times per shift, and not everybody can justify the investment in a hydraulic clamping system. Some fabricators simply want more accurate, more durable tooling that can be loaded right into the manual clamps that were provided with their press brakes, and they want to be able to purchase it at an affordable price.

In response, Wila® recently introduced our "American Vintage™" line of press brake tooling. This product line was designed for press brakes that utilize American style tooling. It features a broad range of punches and dies that are packed with many of the productivity-enhancing features that you have come to expect from Wila.

All punches and dies are produced from a tough 4140 alloy steel. We harden the working surfaces to HRC-52 to provide long life and an equally long period of retained accuracy. All critical dimensions are precision ground to a tolerance of ± 0.0008 " (.02 mm), making it possible to purchase various lengths of the same punch or die at different intervals and know that they will all match perfectly.

We also added our patented Safety-Clicks® to punches weighing 28 pounds (12.5 kg) or less, making it possible to load and unload them

vertically in a Wila American Style Clamping System, or in the manual ram clamps that your press brake came equipped with. This makes it much faster to change punches and to reconfigure set-ups involving sectionalized punches.

Press brake owners that want to upgrade their tooling from basic low tolerance planer made tooling will enjoy the fact that all punches in this product line are 4.750" (120.6 mm) tall, making them more versatile than the standard 4" (100 mm) tall punches that are common to American style tooling. All dies are 2.125" (54 mm) tall, which gives them slightly longer down flange capability than standard 2" (50 mm) tall American style dies.

All key dimensions are laser marked in imperial dimensions right on the front face of the tooling. No more guesswork required when identifying punches and dies. Possibly the best feature of all is that our new American Vintage line of tooling is attractively priced to make it affordable to all press brake owners!

If you rarely change tooling, are on a tight budget, or simply want the benefits of Wila's improved accuracy, durability, and the ability to order matching replacement tooling sections, we have just the solution for you. It's called "American Vintage™" and it's available only from Wila, the company that the world turns to for maximum press brake productivity.

Distortion-Free Embossing with the Wilson Wheel® Rolling Forge

By Jeff Paulson, Marketing Manager, Wilson Tool International

Distortion is a significant problem faced by many fabricators trying to create large embosses on the punch press. Traditional punching methods used for embossing work against the sheet metal's natural tendency to move and warp, which results in distortion.

Until now, there has been no reliable way to create sizeable embosses in a punching machine that result in flat, smooth, buckle-free forms.

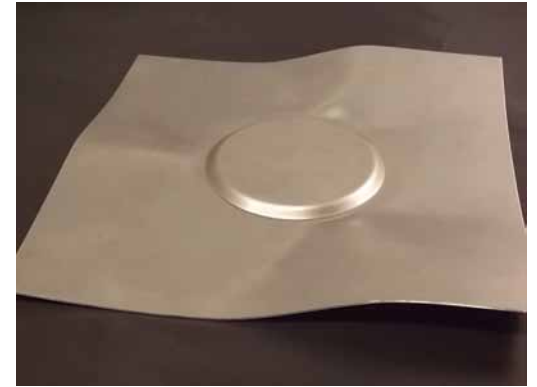
To solve this problem, Wilson Tool recently introduced the Wilson Wheel® Rolling Forge – the first tooling to create distortion-free embosses, offsets and other forms every time.



Wilson Wheel® Rolling Forge Punch

These revolutionary tools are unlike any other style of punch press tooling, allowing fabricators to create unique forms and shapes at unbelievable speeds.

Each forming tool is specially designed for high-speed production of slits, ribs, offsets, knurls, flares and logos on a wide range of materials with virtually no burrs or nibble marks. Faster cycle times and high quality production help fabricators achieve higher output with less waste.



Emboss using traditional punching tools.



Wilson Wheel® Rolling Forge Die

Unlike traditional punching methods, the Rolling Forge works with the metal's natural inclination to stretch and move by traveling around the form several times, evenly stretching small amounts of metal with each pass.

The result is a sturdy, perfectly smooth product with a very high emboss. No other tooling can produce results that are as even, clean and reliable.

To see the Wilson Wheel® Rolling Forge in action, visit the Wilson Tool channel on YouTube at www.youtube.com/wilsontooltube.

While distortion is a normal reaction to sheet metal being subjected to traditional punching treatments in order to create large embosses, it is unnecessary. Using a specialty tooling like the Rolling Forge will save fabricators significant time and frustration.

Choosing the right tooling for the job can minimize many fabrication headaches and eliminate unnecessary secondary operations.

The Rolling Forge is the most recent addition to the Wilson Wheel family of products, which have been helping fabricators solve their toughest fabrication challenges for years.

More of the Wilson Wheel® Family of Products

Designed for high-speed production of unique forms and shapes, the entire Wilson Wheel family of specialty tools enables fabricators to speed cycle times, cut costs and improve product quality.

Fabricators wanting the flexibility to quickly create offsets in any contour, starting or ending anywhere on the sheet, should try the Hydraulic Rolling Offset. Creating ribs in contours can be done just as easily with the Hydraulic Rolling Rib. The Hydraulic Rolling Shear makes it possible to create straight-line cuts or contours from anywhere on the sheet. Each of these can be produced using Auto Index.

For easy, clean separation of parts, the Hydraulic Rolling Pincher is ideal.



Emboss using the Rolling Forge.

The Rolling Logo tool makes it easy to produce more visible logos. Logos can be produced larger than station size (e.g. 100 mm long logo in a C station) on a wide range of material. Logos can be started or ended anywhere on the sheet. Tonnage is reduced compared with single-hit stamping.

The Rolling Knurl tool creates a grip-like effect on the sheet metal for rapid production of knurls. High-speed production is equal to programmed table travel speed.

The innovative Rolling Flare tool enables production of large diameter flares, even larger than station size normally allows, as well as other shapes. Each Rolling Flare is designed to suit specific customer requirements.

Wilson Wheel technology from Wilson Tool cuts cycle times, reduces waste, and produces higher quality products to support lean manufacturing goals.

To learn more about the Wilson Wheel family of specialty tooling, visit www.wilsontool.com.

loads correctly and does not collide with the turret, carriage guide rails, shear, laser head, or catch in any of the part sorting options, such as the buffer, stacking robots, stackers, etc., while running at the specified speed for that thickness and type of material.



Sheet Sensor

Ideally, the requirements for material purchase should include a stringent quality document laying out the maximum permitted tensile strength, dimensional size and thickness limits, chemical composition range, flatness and straightness limits.

Tensile strength plays a large role in the bowing of material when it is being punched or cut and material that bows after being punched or cut often produces parts that halt the machine or system due to them colliding inside the machine or sorting systems.

Bowed parts are very difficult to bend or form consistently in the press brakes and folding machines, whether they are servo electric or hydraulic. Material that is often cheaper, due to a very wide tensile strength tolerance, and being a much higher tensile strength than is actually required for a part, bends very inconsistently and over-stresses the bending or folding equipment, leading to significant machine wear and damage, resulting in poor part quality and excessive machine setup and QC time.



Bowed parts after punching and shearing and laser cutting.



It should also be noted that material which varies significantly from specification in thickness and hardness can cause problems in the folding or bending process, as well as extra wear on the punch tooling.

The material specification document setup should also specify a standard for pallets to be used, along with permissible handling and stacking requirements. The amount and grade of oil used, if any as a corrosion inhibitor, should also be specified.



Under-bent parts due to material quality issues (excessive tensile strength and hardness)

The handling specifications should also be adhered to in-house because you do not want to damage or induce bowing of material you have in-house due to improper internal storage procedures. An example would be that of poorly palletized unsupported sheets of material having several pallets of other material stacked on top of them. This extra weight will induce a "set" in the material, causing it to bow.

Attention to consistent sheet metal quality can pay huge dividends to your company's bottom line.



Happy Holidays
from Prima Power

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