

# POWER *Line*

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# Long-Term Care Tips for Your Machine & System Investment

By Andrew McCarlie, Applications Engineer



When sheet metal fabrication machines are first purchased, regular maintenance schedules and operator training are integral elements of the process. At time of purchase, the customer is eager to protect the investment, and careful attention is given to training machine operators and preventative maintenance schedules (weekly, monthly, 3-month, 12-month, etc.). In many ways, this reflects the same proactive maintenance attention a consumer gives a new car or truck purchase.

However, if you fast forward three to five years, the enthusiasm for regular preventative maintenance has often diminished. Often, your not-so-new machine or system is only maintained when it breaks down rather than at scheduled intervals. You start to notice that you are having more machine downtime along with costly repairs. At the same time, the operator who was originally trained by the machine builder may have been reassigned to other duties or is no longer with the company. In many cases, the subsequent operators learn "on the job" rather than in a certified training program, thus compromising machine operation efficiency.

Often, tight production deadlines interfere with maintenance schedules. While this delay can be acceptable for the short term, the rule of thumb is that once major service intervals are sacrificed major machine problems start to surface soon after. Both production schedules and maintenance schedules are interdependent upon one another.

## Smooth Operations

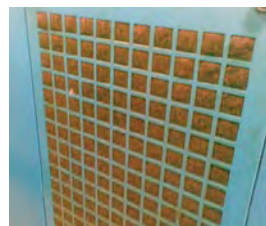
A good example of this is the oil service interval required on hydraulic powered machines. Clean hydraulic oil of the correct composition is vital to the smooth operation of these machines. Failure to replace this oil at the manufacturer's specified intervals, particularly when the working environment of the machines exceeds 100F/38C, will cause failure in the servo-hydraulic valves as well as other ancillary parts of the system, including the pump and associated hardware. This often

results in lost production time and expensive part replacements. This is no difference from neglecting to change the oil in your car which can result in costly engine damage.

Another area of regular maintenance that is often neglected is cleaning the air intake filters and radiator for the hydraulic cooler and the air conditioning units on the main control cabinets. This can result in catastrophic overheating causing "over temperature" alarms and degrading the hydraulic oil due to failure of the hydraulic oil cooling unit and the air conditioning unit. Again, costly machine downtime is the end result.



The new generation of Prima Power E-Series servo-electric machines does not require this service.



## Tool Holders

Another area of the machine maintenance that is often neglected over the long term is the regular maintenance of tool holders in the machine. These should be included in the weekly, monthly, and yearly maintenance schedules. One of the obvious signs of holder wear is the excessive amount of tool sharpening required compared to when the machine was new.

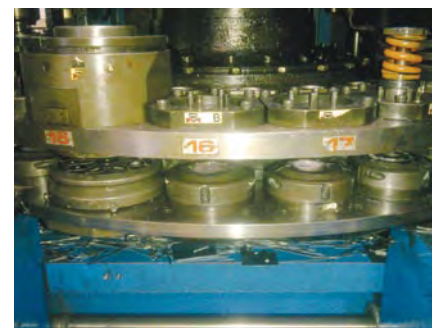
For example, over time, the lift springs in the holders wear, and if not replaced when noted during the prescribed maintenance schedule, they can cause the machine to shut down with "punch stuck in sheet" alarm. Regular inspections of the holders will pick up wear in the guide keys along with wear in the holder.

These items will contribute to excessive tool wear and the need to sharpen tooling on an almost daily basis when holder wear is excessive. This is particularly important when using very small die clearances for punching material 1mm/0.040" and thinner.



In a Prima Power turret the holders are easily replaced in as little as 30 minutes. Lift pins and springs can be swapped out just as quickly due to the easy quick-change design of the holder.

Weekly maintenance should also include clearing slugs, dirt, and grease from the turret area. Over time slugs can build up under the turret and get into places that can cause machine damage.



The clamps that hold the sheet while punching are another area that tends to be neglected in long-term machine maintenance. These clamps have sensors to detect if the sheet has moved or come out of the clamps, notifying the operator of potential accuracy issues or stopping the machine from crashing a sheet which can damage the machine and result in costly downtime. A small amount of time spent checking the functionality of the clamp sensors, clamp teeth, and clamp plates

*Continued on back cover*

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# New Opportunities... New Solutions

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



As we exit 2012, Prima Power is pleased with the results of the past year, and we look forward to a continued positive trend for 2013 and beyond.

Prima Industrie heads a leading Group in developing, manufacturing, and marketing of laser systems for industrial applications, sheet metal processing machinery, as well as industrial electronics and laser technologies.

The parent company Prima Industrie S.p.A. is listed on the Italian Stock Exchange since 1999. With 35 years of experience, the Group has over 10,000 machines installed in more than 70 countries worldwide and is among the main worldwide manufacturers in its market.

The Group has 1,500 direct employees and manufacturing sites in Italy, Finland, USA and China, as well as a direct commercial and after-sales presence in France, Switzerland, Spain, Germany, the UK, Belgium, Poland, Russia, Turkey, the USA, Canada, China, the UAE, Brazil, Korea and India.

Since 2011, the Prima Industrie Group has been structured into two Business Units:

**Prima Power** – laser and sheet metal processing machines: including design, manufacturing and marketing of:



- Laser machines for cutting, welding and drilling of 3D and 2D components.
- Machines for sheet metal treatment by means of mechanical tools (punching machines, combined punching/shearing systems, combined punching/laser cutting systems, panel benders and automation systems).

**Prima Electro** – industrial electronics and laser technologies:



including development, manufacturing and marketing of power and control electronics, and of high-power laser sources for industrial applications, destined both to the Group machines and to third parties.

## 2012 Results

Consolidated revenues as at September 30, 2012 were 21% higher than the same period one year ago. Sales by geographic area show increasing revenues in every market. We

have been especially encouraged by the large number of visitors and prospective buyers to both the EuroBLECH and FABTECH shows.



## Increased Markets

During the past year, new Prima Power subsidiaries in Brazil, Turkey, and India have accomplished their start-up phase and are expecting good results for the next year. The new Tech Centers in China are already active (see page 15). We are also establishing new subsidiaries in such important geographical areas as Australia, Mexico, and Malaysia.



## New Products

To further increase our customers' productivity, quality and profits, Prima Power has recently introduced such new products as the Platino Fiber laser (see page 17), the new Platino CO<sub>2</sub>, the new high-end turret punch range, the new LP6x punch-laser combination, the new eP press brake, the new series of panel benders, and software products.

## New and Improved Service

To further enhance our customer service, Prima Power has created new hubs for faster and more efficient spare parts logistics, new remote service concept, to offer fast and analytical Just-In-Time service for customers around the world.

## In the Words of Our Customers

This issue of the POWER LINE features several customer profile articles that highlight how the flexibility and technological advantage of Prima Power equipment has helped customers increase their quality, productivity, and profits:

**Alto-Shaam, Inc, Menominee Falls, WI, USA** (see page 4). "With the addition of the Fast Bend, we increased our productivity by 250%. For the same amount of time, we were able to produce 2-1/2 times more parts than with the press brakes. That is where eliminating setup was definitely bringing in the value we sought out. Prima Power has changed the perspective on how press brake operations had been traditionally functioning for years."



**Vaccari & Bosi, Pievepelago, MO, Italy** (see page 10). "With the last Prima Power machine installed, the Rapido Evoluzione 2 with 3000 W fiber laser, we achieved the growth we sought. Reduced cycle time translated into increased productivity of the machines."



**AVT Beckett Elevator Ltd., Pickering, ON, Canada** (see page 12). "The speed of the cut on the Platino is unbelievable. The Platino increased production 30-40%. And the quality finish is better than we could have hoped. We were at our capacity prior to purchasing the Platino. We would not have been able to meet our current production without it."





# The Heat Is On – Fast Bend Boosts Productivity for Cooking Equipment Manufacturer



*Alto-Shaam has an 80+% market share in its core markets, which include restaurants, hotels and casinos, supermarkets, healthcare, education, and business and industry.*

How do food service professionals in kitchens throughout the world meet the challenge of preparing and serving thousands of meals at the proper temperature while maintaining food safety? Chances are they are cooking with equipment from Alto-Shaam.

Alto-Shaam, Inc., Menominee Falls, WI, is the originator of the low-temperature cook-and-hold oven.

The company set a new standard within the industry and changed the way many products are cooked. Alto-Shaam manufactures and supplies first-choice equipment for commercial kitchens, including ovens (cook and hold, combitherm, and convection), holding cabinets, quick chillers, heated buffet servers, rotisseries, smokers, and fryers. Its heated display cases allow vendors to show hot foods on multiple shelves while keeping the dishes warm. Alto-Shaam has



an 80+% market share in its core markets, which include restaurants, hotels and casinos, supermarkets, healthcare, education, and business and industry.

From its humble beginnings during the 1950s in the back of a Milwaukee residential two-car garage, Alto-Shaam has evolved into two manufacturing plants with a combined 350,000 square feet of manufacturing space and 400 employees in Menomonee Falls, WI. In



addition, the company has facilities in Canada, France, Germany, and Singapore. Currently, Alto-Shaam has additional distributor locations in more than 50 countries outside the US providing equipment sales, service, and parts.

All of the sheet metal fabrication processes begin with the laser to

create blanks, then bending, welding into sub-assemblies, and final assembly of the products.

“We go through several tons of sheet metal per month,” explains JK Raghavan, Ph.D., vice president, operations. “Stainless steel is the primary metal we use. What is unique in our operation is the fact that we are a low-volume, high-mix manufacturer. We manufacture small quantities from several thousand SKU of finished products. Our commitment to our customers is to supply any finished product within 21 calendar days, or about 15 business days.”

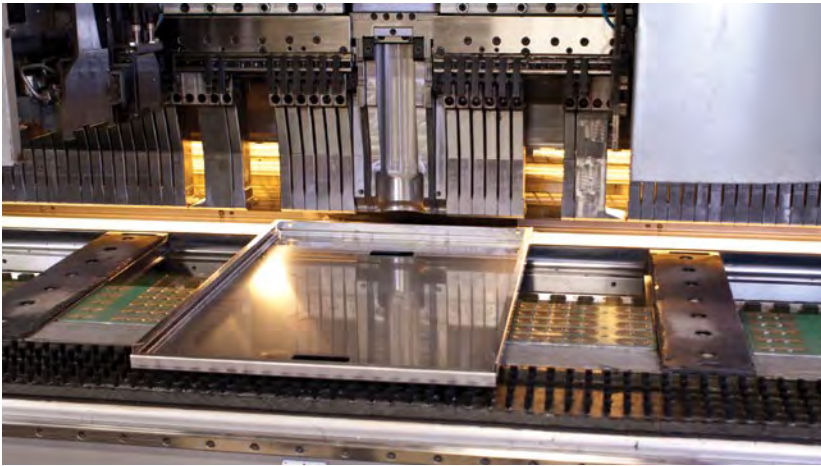
## Bending Bottlenecks

One of the biggest bottlenecks in this low-volume, high-mix process is bending. “With bending, press brake setup is the first step, and in our low-volume, high-mix market, more than half the time was spent doing the setups,” continues Raghavan. “The many non-value added setups were causing us to lose our capacity very quickly and bending became a



major bottleneck. We began looking for a solution that would give us zero set-up time.”

Several years ago, Raghavan and his team attended the FABTECH show in Chicago to search for automation that would help reduce the amount of time his company was spending on press brake setups. “We first looked at the Prima Power Express Bender with full automation,” says Raghavan. “Upon analyzing the amount of part manipulation programming that we had to do and maintain, we realized that neither our parts nor our manufacturing process were ready for that kind of operation. It required a human interface. Pure automation was not going to take us to where we were going. But the idea of taking out the setup was a very valuable proposition. We talked to Mike Stock, Prima Power’s vice president of sales, at FABTECH and asked for other opportunities. He suggested the Fast Bend solution, which had only recently been introduced to the market.”



The Fast Bend provides a solution to the labor-intensive tool setup, programming, and part handling involved in forming metal in a traditional press brake. It reduces or eliminates non-value added costs associated with the traditional press brake operation.

**“With our low-volume, high-mix manufacturing philosophy, having a machine like the Fast Bend is a game changer. With the addition of the Fast Bend, we increased our productivity by 250%. That is where eliminating setup was definitely bringing in the value we sought out.”**

### The Fast Bend Solution

The Fast Bend is the newest member of the Prima Power servo-electric bender family. While technically part of the bender product line, the Fast Bend fulfills many of the needs of today’s fabricators regarding the press brake operation.

The Fast Bend provides a solution to the labor-intensive tool setup, programming, and part handling involved in forming metal in a traditional press brake. It reduces or eliminates non-value added costs associated with the traditional press brake operation. The Fast Bend also provides additional flexibility with the capability to form different angles, hems, multiple corner radii, “z” offsets, and closed tubular profiles



The Fast Bend operator can initiate a part program by simply scanning the bar code on the part. The instruction screen will notify the operator when the tool setup is complete, and graphically display how the part blank is to be loaded. The result is quality, speed, and elimination of mistakes.

with the standard set of tooling. The Automatic Tool Change (ATC) option, automatic feed table, and automatic inversion of positive and negative bending blades allow for more bends per side in an automatic sequence without manual intervention. The Fast Bend operator is simply required to load, rotate, and unload the part.

**“When we first started working with Prima Power, we first took our existing parts and looked for ways to take the non-value added setup out and improve it. As our company moves into new products and new designs, we are using the machine’s capabilities to increase the flexibility of our design.”**

Part setups as low as 10 seconds can be achieved when using ATC in conjunction with the optional bar code reader and operator instruction display screen. The Fast Bend operator can initiate a part program by simply scanning the bar code on the part. The instruction screen will notify the operator when the tool setup is complete, and graphically display how the part blank is to be loaded. The result is quality, speed, and elimination of mistakes.

The Fast Bend excels in high-mix, low-volume production flow where the emphasis is on zero setup and elimination of WIP. Additionally, with its servo-electric drive, the average energy consumption is reduced and environmental disposal of oil and filters associated with alternative hydraulic drives is eliminated. The Fast Bend is Green Technology.

“With our low-volume, high-mix manufacturing philosophy, having a machine like the Fast Bend is a game changer,” says Raghavan. “With the addition of the Fast Bend, we increased our productivity by 250%. For the same amount of time, we were able to produce 2-1/2 times more parts than with the press brakes. That is where eliminating setup was definitely bringing in the value we sought out. Prima Power has changed the perspective on how press brake operations had been traditionally functioning for years. Prima Power had the ability to keep automation

Continued on page 6

Continued from page 5

at the right level. If you don't need full automation you can still achieve your results by focusing on the non-value added waste of setup. With that solution, Prima Power redefined the idea of the press brake and automation at the right level."

Fast Bend benefits include:

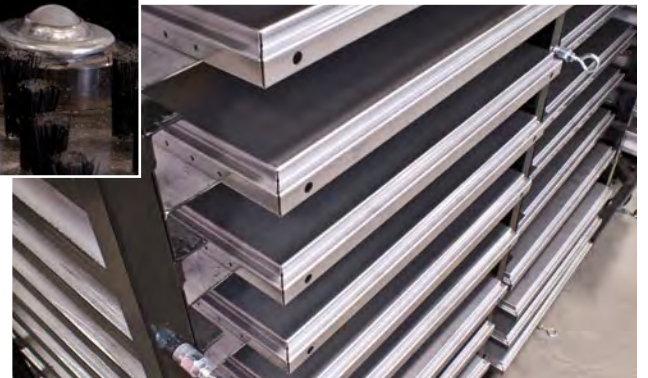
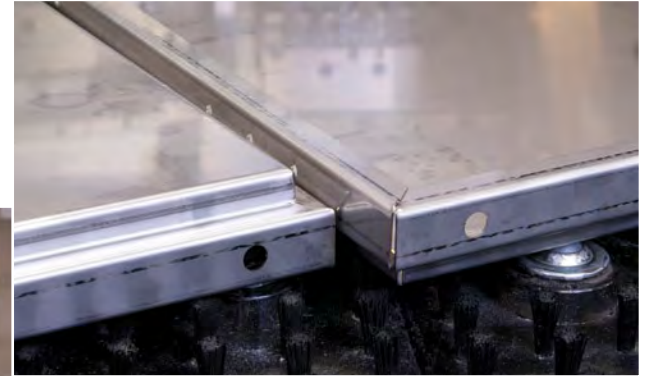
- Excellent component quality and improved product fit up
- Increased flexibility
- Eliminates setup time
- 3X faster than the fastest press brake
- Higher production with automatic tool setup, reduced part handling and automatic positioning of bends on each side
- Reduced WIP
- Easy operation and intuitive programming
- High reliability
- No influence by thermal conditions
- Low energy consumption
- Improved operator safety
- Reduced impact on the manufacturing environment (minimum noise and vibrations)
- Possible upgrade with industrial robot automation
- Green Technology

***"The Fast Bend is equal to 2-1/2 press brakes...so in essence, two people are producing the same amount as four to five people on the press brakes."***

### Lean Manufacturing

"We have been on a lean journey for about five years and it is all about taking waste out of our production, while providing value to our customers," explains Raghavan. "Everything that we do has to have a value element to our customer. When we first started working with Prima Power, we first took our existing parts and looked for ways to take the non-value added setup out and improve it. As our company moves into new products and new designs, we are using the machine's capabilities to increase the flexibility of our design. We no longer are concerned about the complexity of a part. As long as the Fast Bend can bend it, we go after that part. At one time our DPM (defect per million opportunities) was 1,700.

*The Fast Bend also provides additional flexibility with the capability to form different angles, hems, multiple corner radii, "z" offsets, and closed tubular profiles with the standard set of tooling.*



Today, we are at less than 700. The Fast Bend was one of the tools that we were able to use to improve our product part quality. The Fast Bend is a machine solution for lean operation."

### Labor Savings

Another important point is the skill necessary to operate the Fast Bend. In a press brake, you constantly need skilled operators who can think through operations in order to do the bending in the machine. In the Fast Bend, that is not the case. You can take anybody with basic skills and quickly have the person operate the machine effectively because the

***"If a low-volume, high-mix company is looking for eliminating non-value added waste and wants to improve its bending capacity, the Fast Bend is a slam-dunk solution."***

parts are preprogrammed. The Fast Bend literally works the operator through the bend sequences. You no longer need a highly-skilled operator to run the machine, and we can now make the part much faster with a higher degree of accuracy and quality."

The Alto-Shaam factory works two 10-hour shifts per day, four days a week. "We still have a little more capacity with the Fast Bend and are not yet maxed out on its full production ability," says Raghavan. "The Fast Bend is

equal to 2-1/2 press brakes...so in essence two people are producing the same amount as four to five people on the press brakes. However, Alto-Shaam has always been a progressive manufacturing company. Our lean philosophy is not about people reduction, but rather an emphasis to eliminate waste, provide a lean culture so that employees are constantly looking for areas where they can bring value, and continue to challenge them into opportunities to improve the whole process. When I say we have two operators instead of five, it does not mean that we have eliminated three positions. Instead, some of these employees are doing Continuous Improvement (CI) initiatives...they are applying some of the lean knowledge that they have gained and solving everyday demands of eliminating non-value added wastes.

"None of our automation intimidates our employees," Raghavan continues. "On the contrary, they understand that automation is the solution and has only helped them work better, faster, and with higher quality. They understand and embrace automation as a means to be more productive...and that is helping our business. If a low-volume, high-mix company is looking for eliminating non-value added waste and wants to improve its bending capacity, the Fast Bend is a slam-dunk solution."



# New Standard Pro Clamping Systems Wila Technology, Exceptional Value

By David Bishop, Business Development Manager, Wila USA

For decades, press brake owners worldwide have turned to Wila® Clamping Systems to speed up tool changes, increase productivity, and maximize profitability. Increasingly they have come to realize that it simply doesn't make sense to pay skilled press brake operators to spend time manually clamping, seating, centering, and aligning tooling. While the emphasis has primarily been on the savings that could be realized by eliminating these non-value added activities, savvy press brake owners are now placing as much or more emphasis on the increased output that can be gained by getting the press brake up and running faster. In short, less set-up time equals more production time.

As Wila clamping systems continue to grow in popularity, our New Standard Premium® Clamping Systems have become the clamping systems of choice. Current models feature working surfaces that are CNC-Dee hardened®, making them the most durable clamping systems available. They also feature aluminum cover strips with vernier scales that facilitate rapid tool location, and reduced profiles to provide minimum interference zones making it possible to bend a wider range of parts. And finally, they are available with nylon guards on the ends to prevent damage during tool loading. We also offer a full range of hydraulic clamping systems for American style press brake tooling.

Unfortunately, in these lean economic times with budgets being what they are, despite all their benefits, some press brake owners still find it difficult to commit the money to purchasing a hydraulic clamping system for a new or existing press brake. It is for them that we recently introduced our new line of Wila New Standard Pro® Clamping Systems. Like our New Standard Premium Clamping Systems, Wila New Standard Pro Clamping Systems are available in a wide range of models that are designed to be mounted to virtually every make and model of press brake. They include models that are designed to be bolted directly to the ram of new press brakes right at the factory, and versions that are designed to be retrofitted to press brakes with American style rams and European style rams.

Whereas our New Standard Premium Clamping Systems have CNC-Dee hardened working surfaces and are capable of handling maximum loads of 84 tons per foot (250 tons per meter) on head loaded punches, our New Standard Pro Clamping Systems come with pre-hardened working surfaces that are capable of handling maximum loads of 61 tons per foot (180 tons per meter). Both have substantially higher load ratings for shoulder loaded punches for those high tonnage



bending applications. Like their New Standard Premium counterparts, our New Standard Pro Clamping Systems come with aluminum cover strips with vernier scales and are available with nylon guards to protect the ends. Possibly the most attractive feature of our New Standard Pro Clamping Systems is their lower price.

Are you among those that need to improve the productivity of your press brakes, but have been restrained by your budget? Possibly you've been reluctant to make the investment because of uncertainty about the future direction of the economy. Either way, Wila has a solution! Wila New Standard Pro Clamping Systems will enable you to change punches with incredible speed and turn costly set-up time into valuable production time. And they are available at a very attractive price. Wila New Standard Pro Clamping Systems...Wila technology with exceptional value!



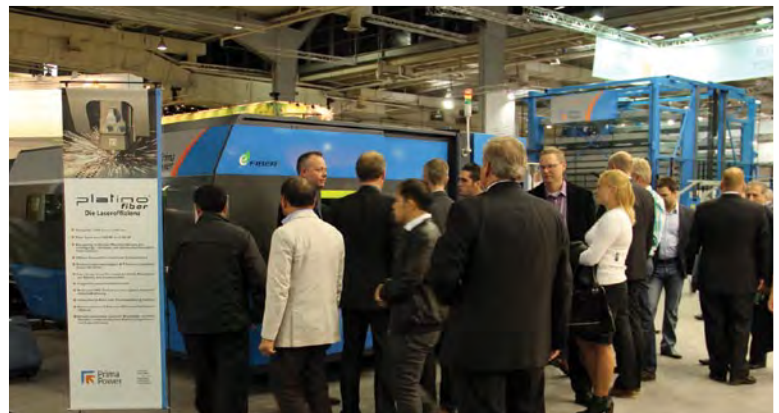
## EuroBLECH 2012

After five successful exhibition days at the Hanover, Germany exhibition grounds, EuroBLECH 2012 closed its doors on Saturday, October 27, 2012.

On a net exhibition space of 84,000 square meters, a total of 1,520 exhibitors from 39 countries presented innovative sheet metal fabrication to 60,500 visitors from countries throughout the world.

Prima Power once again participated at EuroBLECH in a big way with a compact FMS solution. The Prima Power PSBB (punching, tight angle shearing, buffering, and bending) is a fully-automatic manufacturing line for processing sheets into ready-bend, high-quality components.

In addition, Prima Power had on display a Platino Fiber 2D laser cutting machine and a new generation ePe servo-electric press brake.





## FABTECH 2012

FABTECH 2012 attracted a large number of visitors each day of the show, which was held November 12 – 14 at the Las Vegas Convention Center.

FABTECH is North America's largest metal forming, fabricating, finishing and welding event. This show combines four previously independent shows that have for decades brought millions of buyers and sellers together from around the world. FABTECH is ranked 35 among the top 250 trade shows in America.

This year Prima Power exhibited the following machines at FABTECH 2012: SYNCRONO Fiber Laser, E5x Compact Express, Servo-Electric eP-1030 Press Brake.





## Subcontractor to the Automotive Stars

What are the qualities that drive manufacturers like Ferrari, Maserati, Lamborghini, Alfa Romeo, and many others to rely on a subcontractor to produce major components vital to the proper functioning of a vehicle?



The turntable allows workpiece loading and unloading in total safety, while the machine is operating.

First there are functional and aesthetic qualities to be considered. But that is not enough – quality must be accompanied by consistent results over time. Each rejected part is an economic loss that must be avoided at all costs.

In addition, the image is equally important...but this necessitates the absolute reliability of the product. Vaccari & Bosi is a complete subcontractor. Walking through the workshops located in the different production sites and technical offices, it is possible to find lasers and machines for chip removal, forming, cutting, measuring, as well as Cad design and Cam programming stations, etc. These machines are operated by the company's 120 employees. In 2011, the company experienced a sales turnover more than 20 million Euro. But the really impressive data is the 100% increase in turnover compared to 2010. "With such demanding customers, it is essential to have cutting-edge and constantly updated equipment," explains Paolo Bosi, the

company's president. "This is the reason each year we invest nearly 25% of our revenue in new installations, and, equally important, in the training of our personnel. This allows us to increase our turnover, while guaranteeing a substantial portfolio of orders, close to four years."

*"Our relationship over the past 10 years has allowed us to add additional Prima Power lasers to our manufacturing facility."*

Vaccari & Bosi manufactures many different components, ranging from individual pieces (such as seats for some Ferrari models, characterised by a deep drawing process followed by a laser cutting phase) to complete assemblies (such as frames, including fixture and support equipment).

### High Technology for Cutting

For laser cutting, Vaccari & Bosi has relied on Prima Power for many years. The first machine, a Rapido CO<sub>2</sub>, 3000 W laser, was installed about 10 years ago. "I believe that honesty, in life as in the workplace, is crucial to obtain the best results," says Bosi. "Honesty has allowed us to grow in recent years, allowing us to deal with all of our customers on an equal footing. As a result of our capabilities and potential, they consider us a key resource for optimal results. The same is true with our relationship with suppliers, such as Prima Power. Our relationship over the past 10 years has allowed us to add additional Prima Power lasers to our manufacturing facility.

*"Reduced cycle time translated into increased productivity of the machines."*

The next laser purchase that Vaccari & Bosi made was the Prima Power Optimo machine, equipped with a CO<sub>2</sub> 4000 W laser. This laser has a considerable working volume (about 11 m<sup>2</sup>) that can be used for pendular machining due to its movable partition and utilizing the entire space available to accommodate the larger pieces.



Fiber laser offers undisputed benefits for thin sheet metal cutting.

### Choosing a Supplier

"Reduced cycle time translated into increased productivity of the machines," adds Bosi. "To achieve this result it is necessary to act on multiple factors. First, we must be able to rely on agile and fast machines, with high-dynamic characteristics. In addition, the shorter time required for setups and load/unload operations maximizes the



potential of our plants. The Optimo has allowed us to make the most of the pendular machining, virtually eliminating downtime. Of course, reliability is also a very important factor in choosing an equipment supplier. Currently, we operate two shifts, so any delay would have a detrimental impact on us and our customers. Modern machine tools have made great strides, but it is important to use them correctly and carry out timely periodic maintenance as recommended by the manufacturers.”

Optimo features quick-change tooling and a wide variety of laser powers allowing the user to configure the machine based on the specific needs of each customer and each application. Flexibility is very important for Vaccari & Bosi, which must often produce small batches, sometime as low as 20 pieces at a time.

**“With the last Prima Power machine installed, the Rapido Evoluzione 2 with 3000 W fiber laser, we achieved the growth we sought.”**

### The Advent of Fiber Laser

As mentioned, at Vaccari & Bosi the workshop is not “static”, but takes advantage of the new technologies as they become available. “I do not chase the latest model,” continues Bosi. “We only purchase new machines if we are required to machine a new work piece or if the technology allows us to make a significant leap forward in terms of productivity, quality, and accuracy.”

In recent years, such a leap in technology has been created by the new fiber laser: “Usually we only process thin gauge sheet metal, a few millimeters at most... a characteristic that well fits the fiber laser. With the last Prima Power machine installed, the Rapido Evoluzione 2 with 3000 W fibre laser, we achieved the growth we sought.”

The Rapido Evoluzione 2 installed at Vaccari & Bosi has a working volume of 4,050 mm in X, 1,530 mm in Y and 765 mm in Z, more than enough to accommodate both the equipment and work pieces to be cut. In terms of speed, the linear axes allow 100 m/min which, combined with the ability of A and C axes to rotate to 1.5 revolution per second, allow the remarkable speed of 175 m/min along the cutting path.

The high brightness fiber laser used on this machine guarantees maximum energy efficiency and absence of maintenance. In addition, it allows cutting highly-reflective materials such as copper, brass, and some special aluminium alloys, which are increasingly used on modern supercars.

The Rapido takes advantage of the Perfect Tool package, which embodies different systems for optimizing the cutting process. The machine is able to fit the diameter of the laser beam on the lens to the material and to the thickness of the part to be cut, with positive results in terms of flexibility, productivity, and quality. Additionally, it can automatically find and set with speed and precision the correct focal position, thus aligning the laser beam to the gas flow. Prima Power

installed a rotary table with a protective wall which rotates along with it, to allow loading and unloading of the work pieces safely while the machine is running.

### Technology and Solidarity

During the disastrous earthquake in Emilia Romagna, Ferrari has responded by auctioning a 599XX

limited edition for the relief effort, a truly successful initiative, which made it possible to collect approximately 1.4 million Euro. Vaccari & Bosi has been at the forefront as Ferrari’s official suppliers since



Vaccari and Bosi own one Optimo and two Rapido laser machines by Prima Power.



The parts require high cutting accuracy and high aesthetic quality.



1953, with such parts as the silencer of the F355, the chassis of the F456, the exhaust manifold of the 550 Maranello, and the chassis of the Ferrari 250. The relationship with the Scuderia of Maranello is strong and consolidated. “Beyond technology, productivity, or purely commercial issues, it is our honor and pleasure, to contribute to the creation of these custom-built cars,” explains Bosi.

The car has been customized with a special commemorative plaque signed by the President Luca di Montezemolo and drivers Fernando Alonso and Felipe Massa and was handed over to the new owner directly by the first driver of the Scuderia Ferrari, during the last Italy Grand Prix held at Monza last September.

“Technology, flexibility, and human resources development are therefore the strengths of not only Vaccari & Bosi, but also of Prima Power – a combination which contributes to improving the ability of both companies to respond to the new challenges imposed by the markets,” concludes Bosi.

***This is a translated and edited version of an article that appeared in the October 2012 issue of TECNOLOGIE MECCANICHE.***



# Canadian Elevator Manufacturer Rises to New Heights with Prima Power Platino Laser

**A**VT Beckett Elevator Ltd., Pickering, ON, has a short, yet very interesting history.

The original Beckett Elevator was founded in 1953 and grew into Canada's largest elevator manufacturer. The company fell on hard times and in 2008 went into receivership. At this time, Darren Sullivan and Barb Buchanan, owners of a newly-formed small manufacturing company, became interested in purchasing Beckett Elevator. The couple researched the company's history, made a business plan, and thought they had sold their ideas and dreams to the bank for financing. That's when things got a little interesting. "About a week before closing, and after we made the financial commitment, the banks pulled out of the deal," reflects Sullivan with a painful smile. "We were forced to seek financing from personal savings and family and friends to honor our commitment."

What began as an inauspicious beginning has turned out to be a very wise investment. "We raised the money and had 30 days to move our old company's equipment into the new facility...and we did it," says Sullivan. And the newly-formed AVT Beckett Elevator never looked back. "We started the process of manufacturing elevators on a larger scale. There were seven employees at that time. Because of the past history, we were able to book orders with the previous company's old customers. We also sold components to other elevator companies throughout North America. Since our first year, we more than doubled our sales each year."

Today, AVT Beckett is a manufacturer of standard and custom elevator packages and parts for elevator companies across North America. The company is currently housed in two buildings totaling 38,000 square feet with 39 employees, including seven engineers, and operating 18 hours/day.

## Increasing Productivity

Although Sullivan had 20 years of experience in the elevator industry, his experience in manufacturing was minimal. "We studied the process of how the previous company manufactured parts...doing piece manufacturing instead of utilizing a full sheet," explains Sullivan. "We kept



Darren Sullivan and Barb Buchanan inspect a part produced on the Prima Power Platino Platino 2D laser.



*"The Platino laser has changed AVT Beckett's engineering approach. The way we design...the way we build product now has given us much more capability than what we had prior with just the turret punch press. We are able to achieve any hole, any slot, and any angle now with the Platino."*



looking at it and didn't agree with the process...so we began to make changes. We started running everything in sheet, minimizing costs, and upgrading efficiencies by huge numbers. We soon discovered that when we ran the turret punch press, we had to deburr the parts. We had a lot of waste...a lot of scrap. The finished product was not as potentially good as we wanted it. Although the turret punch press worked, it wasn't efficient for our production."

***"The speed of the cut on the Platino is unbelievable. And the quality finish is better than we could have hoped. We no longer deburr any product that is produced on the Platino."***

Sullivan and his engineering team began to search for more efficient production equipment. "We looked at a number of machines online and then went to the CMTS 2011 in Toronto," says Sullivan. "We took six of our employees to the trade show with no plans of buying a machine that day. We never saw the lasers run before. We spent four hours in the Prima Power booth asking questions about the Platino 2D laser. By the end of that day we told them we were buying the machine."

***"The Platino increased production 30-40%. With the dual tables, we almost gained two employees worth of time, 80 hours. We were at our capacity prior to purchasing the Platino. We would not have been able to meet our current production without it."***

### Platino 2D Laser

The Prima Power Platino is equipped with lasers developed and produced at Prima Industrie in laser powers ranging from 3000 to 5000W. 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).



*The Platino cuts a broad range of materials and thicknesses with speed and precision without the need for manual adjustments.*

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 4 times compared to cast iron and about 6 times compared to welded frames. Its low heat conductivity results in much higher thermal stability compared to traditional cast or steel frames.

***"With the Platino, there is also the "Wow" factor – it looks great! When we bring customers through the door...their chins drop. We use the Platino as a sales tool for our company. The Platino allows us to be unlimited in design and manufacturing."***



*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.*

"Since this was our first laser, our operators and engineers had a huge learning curve," says Sullivan. "Prima Power supplied training on machine safety, maintenance, machine operation, and programming. Within two months we were self sufficient on the machine. We very rarely have any issues with the Platino that we can't handle."

*Continued on page 14*



Continued from page 13

## Engineering Change

The Platino laser has changed AVT Beckett's engineering approach. "The way we design...the way we build product now has given us much more capability than what we had prior with just the turret punch press," states Sullivan. "We are able to achieve any hole, any slot, and any angle now with the Platino. Before, we were stuck at a 90 degree punching system where we could only do the shapes that we had the proper tooling for. Now we can do any shape or design. The Platino has given much more design flexibility. There is nothing we can't do now."

## Imagination

"One of the most important criteria with owning a laser is to have someone on your staff with imagination. If they can imagine it, chances are we can make it on the sheet. With the turret you are just imagining a box. But on the Platino laser, if you can think about it and you can draw it... you can produce it on a sheet. This has allowed us to design many more products. It has allowed our R&D side not to be limited. Even taking some material out, like slots in plate to eliminate weight is important. In our industry, weight reduction is huge."

## Platino Speed & Quality

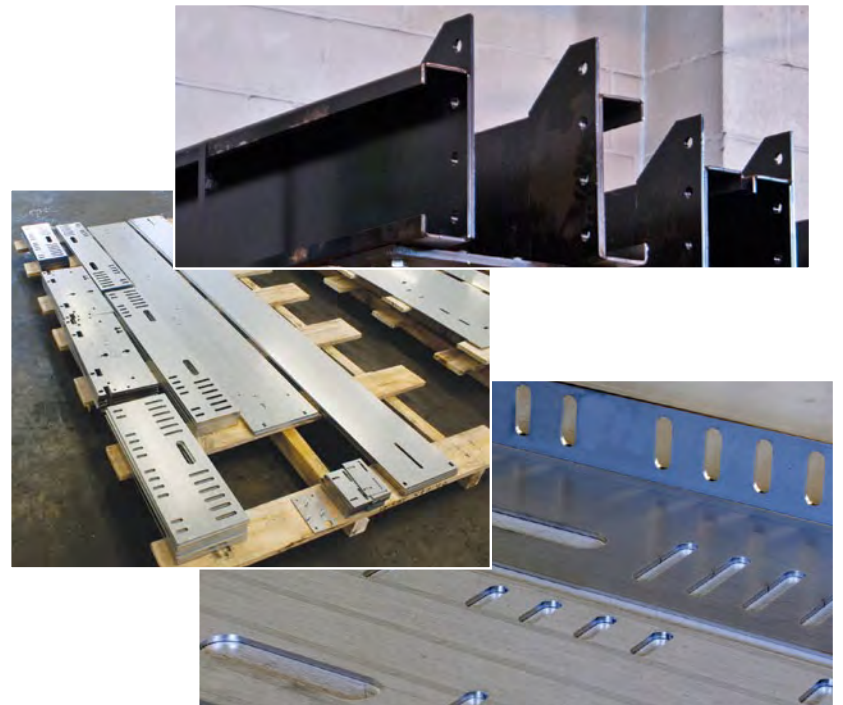
"The speed of the cut on the Platino is unbelievable," Sullivan continues. "And the quality finish is better than we could have hoped. We no longer deburr any product that is produced on the Platino. The parts come off clean. Before the Platino, we had a full time employee deburring eight hours a day. This job position has been reassigned to a more productive function. Also, with the laser being self sufficient, we have an operator multi-tasking on two jobs – the laser cutting and either assembly or bending parts on the small press brake."

According to Sullivan, other benefits that the Platino has provided AVT Beckett include:

- The Platino has reduced scrap by almost 70%
- The Platino increased production 30-40%. "With the dual tables, we almost gained two employees worth of time, 80 hours per week."
- "We were at our capacity prior to purchasing the Platino. We would not have been able to meet our current production without it."

- "With the Platino, there is also the "Wow" factor – it looks great! When we bring customers through the door...their chins drop. We use the Platino as a sales tool for our company. The Platino has put us to the next level with prospective customers who visit our facility. It gives us the look...the knowledge...it is an impressive machine."
- "The Platino allows us to be unlimited in design and manufacturing."

During the next six months, AVT Beckett Elevator will move to a new facility in the Toronto area with 60,000 sq. ft. of production space and 10,000 sq. ft. of office area.



The Platino has increased production at AVT Beckett by 30-40%. With the dual tables, the company estimates they have gained 80 hours per week in productivity.

This article appeared in the August 2012 issue of SHOP METALWORKING TECHNOLOGY.





# Prima Power Opens New Technology & Training Center in China

Prima Power's latest Technology & Training Center (TTC) was officially opened last July at Leeport Machinery Co., Ltd., in Shanghai. The Opening Ceremony was officiated by Joseph Lee, chairman & managing director, Leeport (Holdings) Ltd.; Ezio Basso, Prima Power managing director; Dr. S W Lui, executive director, Leeport (Holdings) Ltd.; and Jan Tapanainen, vice president, sales, Prima Power. The opening ceremony was well attended by VIP customers from China and Prima Power distributors from Asia, Australia, India, and the Middle East.

The TTC exhibited three of the latest Prima Power metal forming machines for demonstration: Platino 1530 Fiber Laser Cutting Machine (2000W), SGe6 Servo-Electric Punch/Shear Combination Machine, and the eP-1030 Servo-Electric Press Brake (100 tonnes, 3 m).

Leeport, not only from the sales point of view, but also for the training of our customers and our technicians. Well-trained engineers are crucial to provide our customers a high level of service. These services (i.e. training, production startup and preventive maintenance) allow our products to reach the highest performance in terms of cycle time and reliability, and are considered by Prima Power to be an integral part of our products."



Ezio Basso, managing director of Prima Power, pointed out that the investment in the Technology Center was important for the training of customers and also Prima Power technicians. His speech was translated into Putonghua by PEI Jin, general manager of Prima Power China.

Prima Power has the highest range of products available in the market, with a common approach in terms of:

- ECO sustainability
- Efficiency
- Low energy, low maintenance, low operating costs
- Performance
- Flexibility
- Automation

Immediately following the opening ceremony of the TTC at Leeport, the Prima Power China 3D Technology Center, managed by Prima Power China, was also opened on the same day at a nearby location in Shanghai. The latest Rapido 3D laser cutting and welding machine, well suited for making automotive parts, was on display for demonstration.

Currently, Prima Power has seven technology & training centers throughout the world: two in Italy, one in Finland, two in the USA, and now two in China.



The Prima Power & Leeport teams together with Prima Power distributors from Asia, Australia, India and the Middle East.



VIP customers and guests showed great interest in the machine demonstration of SGe6 Punch/Shear Combined Machine. In the background is Platino 1530 Fiber Laser Cutting Machine (2000W)



Joseph Lee, chairman & managing director of Leeport (Holdings) Ltd., explained that during 22 years of cooperation with Prima Power, Leeport has sold over 700 machines and more than 30 Flexible Manufacturing Systems in China.

In his opening statements, Joseph Lee explained that since selling its first Finn-Power turret punch press 22 years ago, Leeport has sold over 700 machines and more than 30 Flexible Manufacturing Systems (FMS) throughout China. "This technology center will serve not only our local Chinese customers, but also all customers throughout this region. Distributors in other countries are welcome to bring their customers here. Prima Power's Rob Stiels will be based in Shanghai and manage the technology center.

Ezio Basso also spoke at the ceremony. "The TTC investment provides an additional boost to the 20+ years of cooperation with



Gianfranco Carbonato, chairman & ceo of Prima Industrie, visited the Prima Power Technology & Training Center at Leeport Machinery (Shanghai) Co., Ltd.



# HPX™ Guide Assemblies Make Changeovers Faster and Easier

By Jeff Paulson, Marketing Manager, Wilson Tool International

As punch press fabricators seek new means to reduce downtime and increase part production, many are focusing on the amount of time spent setting up tooling. Whether for routine maintenance, like sharpening a punch, adjusting punch length or switching tooling between jobs, tooling changeovers consume valuable production time.

Last year, Wilson Tool redefined punch press tooling with the introduction of EXP® punch technology, the first tooling in the industry to offer a standard holder with universal punches.

With a revolutionary design that makes it possible to use the same holder with multiple punches, EXP punch technology offers the fastest setups in the industry. Switching from one punch to the next can be done in seconds – up to four times faster than changing traditional punch press tooling.

EXP punch technology is also the most durable punch press tooling in the industry, delivering twice the tool life as most standard punches, because every EXP punch is manufactured with Wilson Tool's exclusive Ultima™ premium tool steel.

Punches and dies made from Ultima tool steel have significantly greater wear resistance, minimizing common downtime problems like breaking, chipping, cracking and tool fatigue. This greatly reduces the amount of time spent sharpening or replacing tooling.

New HPX™ guide assemblies from Wilson Tool are designed to optimize the industry-leading features found in EXP punch technology to further minimize downtime. The result is the fastest, easiest to use thick turret tooling available.

HPX guide assemblies combine EXP replaceable punch technology with the tool-free punch adjustments first introduced in Wilson Tool's HP2 spring packs in one, easy-to-use package.

Wilson Tool's patented HP2 punch adjustment capabilities allow operators to simply turn the punch head to adjust the length of the punch – no tools required. Each click adjusts the punch by .005" (.13 mm) – without taking off the guide.



This means that punch length adjustments can be done while the punch is loaded in the machine, which means there's virtually no downtime for simple adjustments.

HPX guide assemblies support ABS or non-ABS lubrication, work in all thick turret machines and can be used for round or shaped punches, eliminating the need for multiple assemblies. One assembly does it all, so tooling costs are minimized.

Faster tool changes, easier punch adjustments and more durable tool steel all work together to make EXP punch technology and HPX guide assemblies the fastest, easiest-to-use and most cost-effective thick turret tooling available today.



To learn more about HPX guide assemblies or EXP punch technology, visit [www.wilsontool.com](http://www.wilsontool.com). To keep up with all of Wilson Tool's latest product innovations and helpful tooling tips, register to receive our monthly e-newsletter, Tooling Around the World.



# Platino® Fiber Laser – Efficient & Flexible

**P**LATINO® Fiber 2D laser cutting machine is the perfect balance of innovation and experience. This product combines state-of-the-art efficient and ecological fiber laser technology, with the proven reliability and flexibility of the PLATINO® platform.

PLATINO® Fiber is the right choice for sheet metal manufacturers looking for a production tool which is efficient, granting energy and maintenance savings, and productive, particularly on thin and medium-gauge sheets.

PLATINO® Fiber is also highly flexible: it is suitable for a wide range of materials, including highly-reflective metals, and with zero setup time the machine can change from cutting flat sheet metal to processing round, square and rectangular tubes. It also features a wide range of optional automation modules, to suit any production need.

PLATINO® Fiber is available for sheets up to 1,500 × 3,000 mm and with 2 kW and 3 kW fiber laser. The combined speed of the linear axes is 140 m/min and the acceleration is 1.2 g for each axis.



PLATINO® Fiber compact design provides minimum footprint and easy transportation and installation. The synthetic granite frame offers the best thermal stability and vibration damping, and the cantilever design allows maximum accessibility to the machine and the integration with the automation systems.

The protection cabin grants safety and visibility at the same time. It features a roof which totally opens when loading, unloading, and when maintenance operations have to be performed. Windows are made of fiber-safe material.



*PLATINO® Fiber is the right choice for sheet metal manufacturers looking for a production tool which is efficient, granting energy and maintenance savings, and productive, particularly on thin and medium-gauge sheets.*

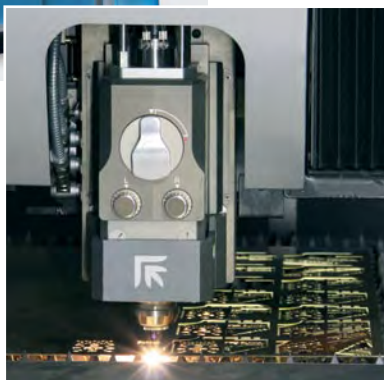
PLATINO® Fiber head is equipped with a single focusing lens suitable for any production and with a high-dynamics focal axis. Maintenance is easy and quick due to the cartridge system for lens changing and to the optional automatic nozzle changer. The Safe Impact Protection System (SIPS) protects the machine head in case of collisions with workpieces or fixtures. With the Optical Precision Control (OPC) the nozzle alignment is simple, quick, perfect.



The P30L numerical control by Prima Electro features a user-friendly slim console with 17" LCD touch screen and trackball, high computational power and more powerful HMI, Windows® embedded. Thanks to the advanced algorithms for optimal trajectory management and the TOB (Tables-On-Board), the machine is extremely easy to use.

For off-line programming PLATINO® Fiber takes advantage of the user-friendly and fast MAESTRO-Libellula® system. Main features of the MAESTRO-Libellula® are: highly effective and accurate Nesting Module, Tables-on-Board (TOB), Integrated Virtual Machine with accurate production cost and time calculation, FBS (Fast Beam Switching) for grid cutting, to boost speed in case of parallel profiles. The cell software package integrated in the P30L control system ensures continuous and effective machine operation.

A wide and modular range of solutions for the automation of the material flow is available for all production types and sizes, from the simplest to the most sophisticated. The machine can also be integrated into a Flexible Manufacturing System for intensive and demanding production flows.





# "Faster...Better...with Less Labor"

## Texas High Precision Job Shop Automates to Boost Productivity

Data-Matique, Garland, TX, is a full-service, high-precision sheet metal and machining manufacturer whose parts are used for products for leading innovative companies in the following industries:

- aircraft
- ATM and banking automation
- computer, electronics, and technology
- postal sorting
- medical, oil & gas
- motor vehicle parts
- military & government
- telecommunications
- entertainment lighting

Founded in 1973, Data-Matique services some of the most complex and advanced industries in the world making quality control tremendously important. The company markets itself as a one-stop shop supplier of high-precision fabrication, precision welding, assembly, and inventory management. Data-Matique provides complete services for everything from small, simple jobs to complex or high-volume production runs.



*Optimum use of the Prima Power LP6 means that a fabricator can use the turret punch press where it is easier or faster, and the laser where it is the most effective.*



*C.A. Theis chose the Prima Power LP6 laser/punch combination with the LST6 load and stacking robot.*

Data-Matique takes pride in being a full-service provider of precision sheet metal parts to a wide range of customers. Today, the company's sprawling and highly technical 83,000 square-foot-plant employs more than 90 skilled professionals and houses some of the most specialized and systemized pieces of equipment the industry has to offer.

### C5 Compact Express

In 2007, Data-Matique purchased the Prima Power C5 Compact Express. The C5 Express adds unmanned operation to the C5 turret punch press through highly compact load/unload automation. The unit's loading / unloading solution utilizes the space above and below the machine, requiring only slightly more space than a turret punch press. It is fast, with simultaneous loading and unloading during processing, accurate, and it does not limit easy manual operation.

The 20-station, 33-ton C5 hydraulic turret punch press has a maximum sheet capacity of 50" x 100" and is available with either Siemens or Fanuc controls.

*"The C5 Compact Express was our first automated sheet metal machine. We can load 6,000 lbs of material on the machine and walk away from it. It loads, punches, forms, and unloads automatically."*

"The C5 Compact Express was our first automated sheet metal machine," explains C.A. Theis, general manager. "We can load 6,000 lbs of material on the machine and walk away from it. It loads, punches, forms, and unloads automatically. We are certainly interested in automation that helps reduce labor costs. With automation like this you can have one man operating 2 or 3 machines. We currently run the C5 unattended on some jobs, and are striving for lights out automation."

*"The LP has allowed us to increase our sales considerably. It has dramatically increased our capacity."*



Other features of the C5 Compact Express include:

- **Super fast servo hydraulic punching** – Nibbling speeds up to 1100 hpm. The servo-controlled ram, stroke speed, and position are fully and individually adjustable in both directions. Another benefit is different punching modes (punch, Quiet Punch™, downforming, and marking).
- **Easy loading** – Four optimally-positioned gauge pins allow easy loading of blanks or full-sized sheets. Sheet loading is performed with a simple push and always close to the table edge. Sheet supports rise from the table to allow easy positioning of heavy material.
- **Efficient unloading** – The C5 delivers the processed components to a freely programmable position on the table, increasing the operator's efficiency. The entire material flow on the C5 can be conducted from just one side. This allows for simple and efficient logistics and enables the machine to be positioned anywhere on the shop floor – even in a corner.
- **Automatic Clamp Setting & Movement** – Prima Power's patented automatic clamp setting PCS is a standard C5 feature. It automatically positions sheet clamps according to the numerical program, virtually eliminating dead zones. When changing production from full size to small sheets, clamp settings can be made automatically without wasting operator time.
- **Work Chute** – Prima Power's work chute is not just a drop door or a work chute in the ordinary sense. Its mechanism allows the reception of several components to 19.7" x 19.7" in size onto a level from which they subsequently exit from the machine as a stack.

*“However, the LP allows us to punch and laser the part on one machine, giving us a higher quality, more precision piece...and a lot faster. We run a substantial amount of parts “lights out” on the LP.”*

### Laser Punch

In 2007, Data-Matique began its search for new equipment. After an intensive search of the latest automated technology on the market, Data-Matique chose the Prima Power LP6 laser/punch combination with the LST6 load and stacking robot.

The Prima Power LP laser/punch combination represents proven technology and intelligent integration of punching, forming, tapping, and laser cutting in a single unit for the most varied sheet metal operations.



*The C5 Express adds unmanned operation to the C5 turret punch press through highly compact load/unload automation. The unit's loading/unloading solution utilizes the space above and below the machine, requiring only slightly more space than a turret punch press.*

Optimum use of the Prima Power LP6 means that a fabricator can use the turret punch press where it is easier or faster and the laser where it is the most effective. The LP allows the user to look at the parts to determine the optimum process for every production.



*The LP6 has the ability to utilize full sheets while eliminating the need to shear to size blanks being processed.*

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“The aircraft parts that we build are very hole intensive in order to keep the weight down,” explains Theis. “There is also a great deal of punching and forming on these parts. With the laser punch, we can punch the holes, form the countersinks, laser cut the perimeter, and go straight to the press brake. This eliminates secondary operations since we don’t have to deburr because it is such a clean cut.”

Other benefits of the LP6 include:

- Reduction of piece part costs – faster punching time, reduction in direct labor assigned to set up and punching, and reduction of number of manual operations.
- Ability to utilize full sheets while eliminating the need to shear to size blanks being processed.
- Increased machine utilization – if load/unload system is purchased with the LP, unmanned operation can be achieved from load, punch, upform, laser cut, unload, and sorting of parts in one machine.



The Prima Power LP combines the unique C-Series 20-station turret punch press with the latest generation of CO2 lasers.

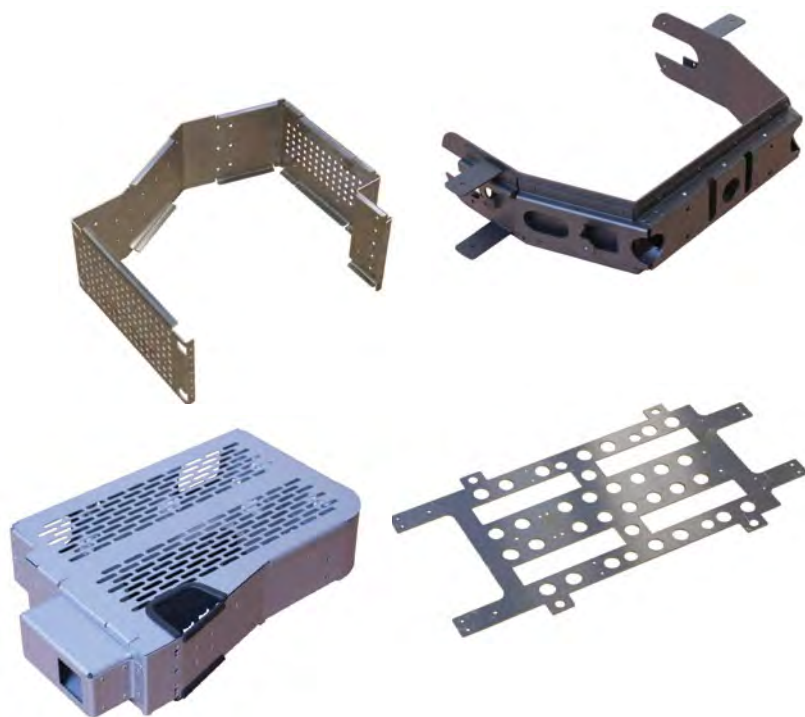
“The LP has allowed us to increase our sales considerably,” says Theis. “It has dramatically increased our capacity. In the past, the choice was either punching or laser cutting on one machine. We have made parts that went on both the laser and the punch, but then you are moving it from one machine to the other and you lose tolerance. In addition, punching the entire part created a lot of deburring. Conversely, if you just laser cut the part you can’t perform such secondary operations like countersinks or forming operations. However, the LP allows us to punch and laser the part on one machine, giving us a higher quality, more precision piece... and a lot faster. We run a substantial amount of parts “lights out” on the LP.’

***“We are running parts faster, with more precision, and we are using less labor to produce the parts. The LP has allowed us to reduce our costs and be more competitive in the marketplace.”***

The Prima Power LP combines the unique C-Series 20-station turret punch press with the latest generation of CO2 lasers. The punching part of the LP consists of a 30 ton (33 US ton) turret punch press that has excellent forming capabilities – .630” high (16 mm) with no die interference; auto-index, Multi-Tool®, programmable clamp settings, and brush tables.

### New Realities of the Market

“Faster, better, with less labor is the new mantra of the precision sheet metal industry these days,” concludes Theis. “And that’s what we are doing with the Prima Power LP. We are running parts faster, with more precision, and we are using less labor to produce the parts. The LP has allowed us to reduce our costs and be more competitive in the marketplace. Cost reduction is extremely important... You must find a way to build parts for less money... if you can’t you are in trouble. That’s what automation is all about.”





# Improve Machine Uptime And Product Quality With Aligned Turrets

By John Galich, Marketing Manager, Mate Precision Tooling

Over the past several years, Mate has consulted with many customers on ways to maximize uptime in their fabricating operations. Along the way, Mate discovered that incorrect turret alignment is a leading cause of reduced uptime and poor tool life. Alignment ensures the punch enters the center of the die, resulting in even die clearance around the cutting edge, the best possible tool life and higher quality parts.

New turrets are aligned by factory technicians and verified during installation. After use, turrets often require some realignment. Press uptime will increase if accurate station alignment is maintained.

## Signs of Misalignment

You can detect the need for alignment through tool wear, part burrs, and scrap inspection. The following table shows some of the more common indicators of misaligned turrets.

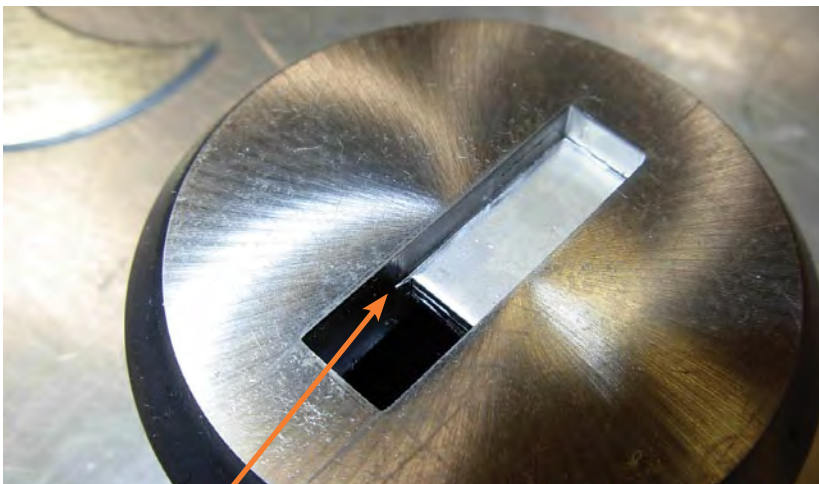
### Slivers on a long rectangle

- Classic misalignment indicator



### Damaged corner

- Marks and abrasion indicate evidence of being hit



Alignment problem indicator

**Uneven punch surface wear** on any one side of the tool (marking and/or galling) is more evident on long, narrow shapes but can happen on any shape or size tool.



## Mate Pilot™ Calibration System

Alignment tools should be used as soon as there is evidence of misalignment. These tools refresh the precision orientation, allowing the punch to enter the center of the die. If possible, align the station as a periodic preventive maintenance measure to prevent poor quality parts and damage to tools.

For Prima Power users, one such alignment tool is Mate's Pilot™ Calibration System, which ensures precision concentric and angular alignment of thick turret punch presses. This system provides a simple and accurate way to verify the precise alignment of a punch press station and perform station alignment when required.

The Pilot Calibration System operates in two modes:

- **Verification Mode** – enables users to confirm the precise concentric and angular alignment of each station within their turret. If verification confirms the station is aligned, then the machine is ready for use. If verification shows that alignment is required, then calibration system should be used in the alignment mode.
- **Alignment Mode** – enables users to restore the concentric and angular alignment of each station with the same or better precision as the initial machine installation.

A tri-color indicator light makes it simple for users to know when the turret is aligned.

- **Red light** indicates that the station is not aligned.
- **Yellow light** indicates that the station is aligned to within 0.0012(0.030).
- **Green light** indicates that the station is aligned to within 0.0003(0.008), recommended when punching material with a thickness 0.048(1.20) or less.

**Important note:** When reviewing sheet metal edge quality, hole quality and tool wear, a worn turret bore may look like a problem with station misalignment. Unfortunately, worn turret bores do not consistently result in the punch entering the center of the die opening, and aligning the station will not solve this problem. A worn turret bore will allow the upper alignment tool to move to match the lower, resulting in a green light and the appearance of alignment.

To learn more about Mate's Pilot Calibration System and other Mate fabricating solutions, visit [mate.com](http://mate.com).



# Laserdyne Systems Provide Faster Turnaround Advantage to Wisconsin Contract Manufacturer

Multi-axis laser processing is one of the complete spectrum of precision manufacturing services provided by Ace Precision Machining Corporation, Oconomowoc, Wisconsin. What sets this one-stop contract manufacturer apart is the depth of its laser processing operations along with large scale capabilities in metal joining, CNC machining, metal forming, thermal processing, and much more.



Shown with a recently purchased Laserdyne 795 BeamDirector systems are (left to right) Kurt Magedanz, Process Engineer and Ed Magedanz, Senior Manufacturing Engineer of Ace Precision Machining Corporation. The systems are used for processing complex aerospace components similar to the one pictured on the worktable.



One of five Co2 laser systems ranging from 1700 to 4000 Watts used for cutting, trimming, welding, and hole drilling.

Ace Precision is a strategic manufacturing partner with leading aerospace, power generation and defense manufacturers. By doing all operations in-house, Ace Precision reduces turnaround time on projects and eliminates issues that might occur when using a third party supplier.

"Almost nothing is outsourced," explains Ed Magedanz, senior manufacturing engineer for Ace Precision.

"Because our facilities and trained people encompass all areas of metal forming, fabrication, and testing, the company maintains process control from start to finish. We work on large projects that involve prototype development. When the project ramp-up occurs, we are ready with the right equipment and the trained personnel to deliver as required. Our track record with multi-axis laser processing is a great example of how we provide all of our contract services to the benefit of our many customers."

## Growth Opportunities & Manufacturing Challenges

Ace Precision laser processes a wide range of materials and has capitalized on the growth opportunities within industries that have seen a rapidly expanding need for the latest in laser system processing. Among these are long-time OEM customers Honeywell, Rolls Royce, Siemens, as well as other global manufacturers who require

components and assemblies processed with multi-axis laser systems.

"The aerospace and turbine industry has made a large move to cooling combustion components with effusion holes," says Magedanz. "These are small holes drilled through the part at steep angles. In many cases, where parts are thermal barrier coated, our Nd:YAG lasers are the only way of providing these steep-angled holes efficiently and with accuracy. We continue to grow our laser department by acquiring the latest technology to take advantage of these new industry trends and to provide the versatility with different laser system models to handle these and a growing range of projects."



Ace Precision manufactures engine components for the commercial and defense industries. A laser-processed engine component is pictured being visually inspected. Ace Precision has experience with many engine designs including military platforms for Apache and Chinook helicopters, Abrams M1 Battle Tanks and B2, F18, F22 and F35 aircraft.



With nine Laserdyne multi-axis laser systems in-house, Ace Precision is equipped and experienced at the most complex projects requiring laser processing. As pictured, these include drilling effusion cooling holes in very dense patterns at shallow angles holding hole diameter tolerances of less than 0.002 inch.

Ace Precision's dedication to Laserdyne systems goes back to its beginnings and now includes four CO2 systems with up to 8 axes of motion, five multi-axis BeamDirector drilling systems with Nd:YAG lasers, and a shuttle-equipped 2D cutting system. Together, these systems give Ace Precision the capacity, flexibility, and precision required to produce highly complex combustion chambers, liners, turbine plenums,

compressor housing, tailpipe, and heat shield assemblies along with other precision engine components.

## The Right Equipment

With seven Laserdyne multi-axis laser systems already in house, Ace Precision recently added the two new 795XL systems to process complex parts needed for a military vehicle project. In developmental and through prototype stages over a two-year period, when the



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project went into quantity production, Ace Precision was ready with the newest Laserdyne systems. "This is how we handle major projects and use our broad range of precision processes," reports Magedanz. "It gives us the advantage of faster turnaround, because we are using the very latest, high-speed laser systems with the highest repeatable quality level established during the prototype stages of the project."

***"It's a real time-saver and our system operators like it because there is minimal learning required to operate the newer systems."***

"One of the best things about working with Laserdyne equipment is that even though the technology has evolved over the years, their program structure is still the same," explains Kurt Magedanz, process engineer. "We can take a program from one of our older laser systems and put it into one of the newest laser systems and it will operate with no changes, even with a completely different laser source and a controller that is two generations newer. We accomplished that by taking the part programs from the older lasers for the prototype work and then moving them to the newer and faster systems when we move into volume production. It's a real time-saver and our system operators like it because there is minimal learning required to operate the newer systems."

The latest two Laserdyne 795XL systems at Ace Precision are capable of seven axes of motion with 2 m X 1 m x 1 m (80 inch x 40 inch x 40 inch) work envelope that includes two high accuracy rotary tables. The structure of these laser systems allows for the processing of small to large part configurations in all seven axes, giving Ace Precision the needed flexibility to handle a wide range of projects with repeatable precision.

### **Hole Accuracy**

Achieving a high level of accuracy from prototype to production stages and from one job to another is possible because of how Laserdyne designs and integrates its system features. Everything works perfectly together – the controller, software, motion system, laser, process sensors – because everything is Laserdyne's design and manufacture. A good example is Laserdyne's Automatic Focus Control (AFC™). It's a feature users swear by and one Ace Precision provided feedback to Laserdyne engineers and saw refined through the years. AFC guides the motion system, maintaining critical focus position, and following the contour of the part regardless of slight surface irregularities. With AFC, all machine axes react to sensing of the part surface, creating unlimited R-axis correction with high speed and unmatched sensitivity. AFC allows top machine speeds so productivity is maximized without downtime or scrapped parts.

"Repeatability ( $\pm 0.0001$  inch) of the laser system really comes into play on our jobs," says Magedanz. "Our Laserdyne BeamDirectors with their AFC features are designed so we maintain this accuracy with consistency through the entire work envelope. The best thing about working with Laserdyne as a company is their willingness to work with us to find a solution when we have a complex part that needs outside-the-box approach to laser processing. We come away with a solution

to our problem and Laserdyne gets to use the experience to develop new technology for integration into future systems."

"Our eight Laserdyne systems demonstrate our capabilities, their depth, and how we use Laserdyne supplied systems to the benefit of our



*The motion required for multi-axis laser is very complex. Laserdyne's AFC features makes trepanning, percussion drilling and drilling on-the-fly fast, precise and with high-quality results. The photo shows this complex motion simulation made possible by dual processors.*

customers," says Magedanz. "This also applies to our machining, metal forming, thermal processing and other precision services. In the chip cutting area for example, we have over 50 CNC machines – vertical mills, horizontal mills, turning centers and more. We've positioned our business to ensure redundant capabilities in two separate facilities in order to manage risk and provide timely and reliable service to customers around the world."

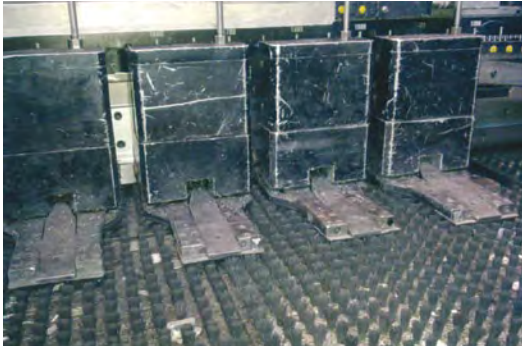
***"Our Laserdyne BeamDirectors with their AFC features are designed so we maintain this accuracy with consistency through the entire work envelope. The best thing about working with Laserdyne as a company is their willingness to work with us to find a solution when we have a complex part that needs outside-the-box approach to laser processing."***

Ace Precision Machining Corporation [www.aceprecision.com](http://www.aceprecision.com)  
Prima Power Laserdyne [www.primapower.com](http://www.primapower.com)



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prevents major problems from occurring during punching or cutting.



Another area of maintenance that is often neglected is the care and maintenance of the Multi-Tool punch cassettes.

There is a documented service interval for these very important tooling components. The spring replacement is based on the number of spring cycles. For example, a MT20/24 cassette ends up with the highest number of hits due to its large tool capacity. They are often crucial to production, as in many cases their tool load is required in most products. Failure of

performance can cause significant downtime if the Prima Power documented service intervals have been neglected.



Small maintenance items missed over time can cause significant amounts of lost production time.

The old saying "For want of a nail the battle was lost" very much applies to the long-term commitment to following the PM schedule laid out in the machine manuals, along with the machine warnings in the later series of machines, that is due for a service interval (similar to the maintenance message light in your car!)

**INSTRUCTIONS FOR ASSEMBLY OF PUNCH CASSETTE:**

- If any one spring is broken, or if the assembly is more than two years old, replace all springs.
- Lubricate the springs with EP type grease before installation. Note stacking pattern:



Prima Power has defined Preventative Maintenance programs to meet our customers' individual needs.

For more information on Prima Power Preventative Maintenance and Operator Training Programs, please contact Crystal Thorton, customer support supervisor at [crystal.thorton@primapower.com](mailto:crystal.thorton@primapower.com)



*Happy Holidays*

from

**Prima Power**

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