

LVD's Global Perspective

DISCOVERY

ISSUE NUMBER 11

Fertile Ground

FORMING SOLUTIONS FOR AMAZONE



Strippit VX: Punching at its most productive

PA Series makes automation affordable

LVD XXL: Supersized applications

Australian Subcontractor DVR: 30 - 40% more productive

In Touch: A group approach to Sany Group

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Editorial Notes:

In honor of its tenth anniversary, we've updated and revamped Discovery.

We've changed to a more reader-friendly format with more in-depth features and user profiles, and a cleaner, modern design that's more inviting. While the content remains focused on products and solutions for more efficient, more productive sheet metal fabrication, you'll find we're delivering this information in a fresh new way.

Share your comments and suggestions, marketing@lvd.be

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“Getting this balance wrong can mean increased part cost and ultimately decreased profit.”

From the EDITOR

Mind Your P's

As the global recession begins to lift, you may be in a better position to expand your fabrication capacity. If so, now's the time to take a hard look at your production requirements and at equipment that will help balance the three P's: price, performance, profit.

Finding the right price-to-performance ratio (that's the price of the machine compared to its functionality) is something we've emphasized before, but it bears repeating as it's more relevant than ever. Getting this balance wrong can mean increased part cost and ultimately decreased profit.

We think the three P's are so important, they are a key consideration with every product we build.

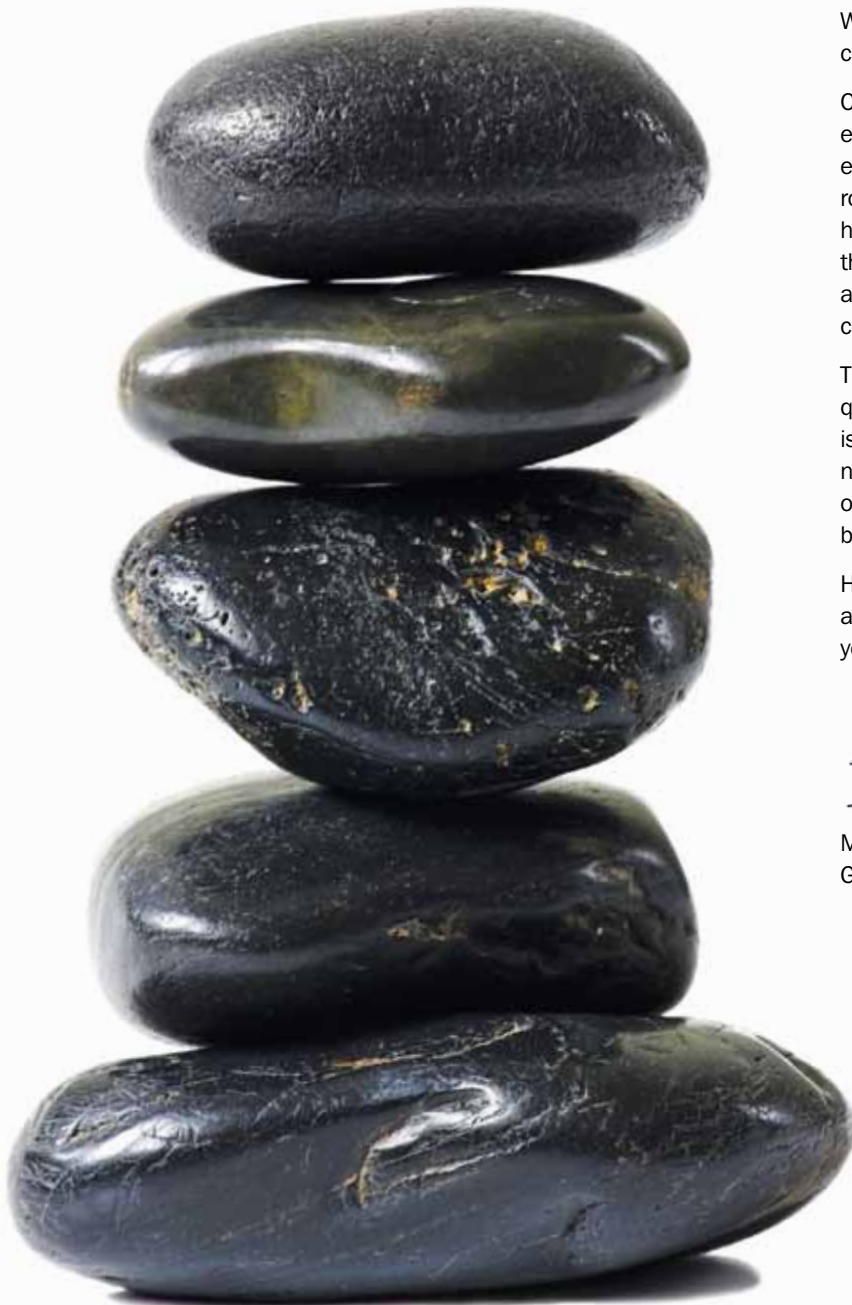
Our newest punch press, the Strippit VX, is a perfect example. It's the most productive punch press Strippit has ever engineered. A high production system, it's ripe with robust features including a high-speed ram, innovative, high-capacity table, and new energy reduction system (ERS) that makes it one of the most energy efficient punch presses available today. It's an ideal fit for shops that need high capacity for high throughput.

The 3 P's approach extends to automation where the question faced by shop owners when work levels increase is: Should they automate or should they hire? Enter our new PA-Series autoloader system, an affordable, flexible level of automation that can increase productivity without labor burden.

How you balance the 3 P's is unique to your requirements and objectives. Whatever your needs, we'll help you mind your P's and get the balance right.



Matthew Fowles
Group Marketing Manager



New Product FOCUS

STRIPPIT VX-SERIES

Maximum Punching Productivity

The new VX-Series delivers the highest level of punching productivity of any Strippit CNC turret punch press. A high-speed 20kN hydraulic ram combined with a large, versatile 48-station turret and innovative table design makes this turret punch press 30% more productive than previous generation Global machines.

Designed for High Performance

An energy-saving hydraulic press drive and motor system optimized for high-speed operation generate fast axis speeds of up to 530 hits per minute on 25 mm centers and up to 1750 strokes per minute. An innovative table design has the capacity to handle sheet weights of up to 150 kg.

The Strippit VX-Series is equipped with three programmable, relocatable work clamps, which can be programmed to a position on the X carriage and individually relocated to a new position within the part program. This reduces or eliminates “no punch” zones, increasing material utilization, providing significant savings when punching stainless steel and aluminum.

A full 25 mm feed clearance between the upper and lower turret allows high quality forming for a wider range of applications, including the production of forms such as lances, louvers, embossments or card-guides.



Flexible Turret Configuration

A double-track turret provides a flexible configuration of 48 stations featuring four standard 88,9 mm auto indexable stations that can utilize the latest wheel tool technology. Every station accepts shaped punches and dies and can be further enhanced with the addition of indexable multitools to expand the auto-indexable tools.



Fast Set-up and Programming

A state-of-the-art, PC-based Fanuc control makes machine set-up fast and simple. The control provides powerful features such as diagnostics, offers large program storage capacity and networking capability with user friendly MMI (man-machine interface).

Optional CADMAN® programming software provides automatic unfolding of 3D SAT and IGES files, auto-nesting full support for all standard and advanced punching functions, including Auto-Index stations, Multi-Tools, standard and special punches, forming, embossing, tapping, stamping and wheel-style tools.

Energy Efficient

An energy reduction system (ERS) reduces machine energy consumption by 15%, making the Strippit VX-Series one of the world's lowest energy consuming punch presses.



Automation Options

Strippit VX punch presses are automation compatible for integration with a load/unload system, Pick-Sort robotic material handling unit, or 4, 6 or 10-pallet Compact Tower for full material storage and retrieval.

AUTOMATIC LOAD/ UNLOAD SYSTEM

Reduces worksheet handling time by as much as 80% and provides fast, efficient processing of materials up to 3,5 mm.

PICK-SORT MATERIAL HANDLING SYSTEM

Converts the Strippit VX into a freestanding, lights-out production cell. This robotic system loads full size sheets and automatically retrieves and stacks individual punched parts with dimensions up to 1524 x 3048 mm. An offload system removes and stacks skeletal frames or nested sheets.

COMPACT TOWER (CT)

Provides full capabilities for loading, unloading, and storage of raw material and finished parts, thus enabling automated production from stored raw material to stacked finished parts, as well as providing increased storage capacity.



New Product FOCUS

STRIPPIT PA-SERIES

Compact, Cost-effective Automation

Add a Strippit PA-Series automatic load/unload system to an existing Strippit punch press and transform your machine into a streamlined production cell.

The Strippit PA-Series is compact, easy to use, easy to access and retrofitable for Strippit V, VX, and S-Series punch presses. It provides continuous, uninterrupted processing, delivering more value and productivity for your punching applications.

An affordable automation system, the Strippit PA-Series is a budget friendly means of reaping the benefits of automated production, including better use of existing labor, reduced material handling, greater efficiency and productivity.

Offered in two configurations: Strippit PA-1225 supports sheet sizes up to 2500 x 1250 mm; Strippit PA-1530 handles materials up to 3048 x 1524 mm. Both systems work with minimum sheet sizes of 500 x 1000 mm in maximum sheet thicknesses of 3,5 mm.





Key Features

- **Compact** – single side system has a small footprint
- **Affordable** – mid-level automation positioned for a limited budget
- **Robust** – withstands rugged application
- **Easy to use** – simple to program and operate
- **Reliable** – engineered and designed for long production life



Why Automate?

CONTINUOUS, UNINTERRUPTED PRODUCTION

A material handling system combined with a high-speed punching machine allows a continuous, even flow of work through the punch press, providing a high level of productivity. Worksheet handling time can be reduced as much as 80 percent.

USE OF LARGER BLANK SIZES/WORKPIECES

Automated load/unload devices can handle large workpieces that can't easily be managed in a manual operation, or where a two operator setup is needed. Automating the loading and unloading of the sheet takes advantage of the machine's capacity to handle larger blanks, thus increasing efficiency.

"LIGHTS OUT" MANUFACTURING

Automating punch press operations makes "lights out" production feasible. Production can be switched to different nestings by automatically changing the program after one batch is finished. Double sheet detection and sheet separation devices prevent loading of multiple sheets.

WHAT USERS ARE SAYING:

"We're more productive than ever. Part processing is fast and uninterrupted; the machine and tower provide full loading, unloading and storage."

Chad Perfetti, fabrication manager
G.A. Braun, USA

"We have the flexibility to process a high volume of parts. The system provides a safe, efficient way of loading and unloading material."

Siow Siok Hwa, co-owner
Golden Seal Pte. Ltd., Singapore

Application SPOTLIGHT

Amazone is fertile ground for LVD bending technology



“Right from the start we had the feeling that with LVD is wasn’t simply about buying a machine, it was about solving a problem.”

Dr. Stephan Evers

LVD forming technology is helping to reduce rejects, improve quality and speed time to market with new products at a world leading manufacturer of agricultural equipment. A total of five LVD Easy-Form CNC press brakes – along with CADMAN-B offline programming software and stone radius tooling – have been installed at three of Amazone’s sites in Germany.

At all three sites the key factor that convinced the works managers to invest in LVD was the recognition that it offered an integrated and logical approach to the whole bending process. It is not just about the machine itself, it also encompasses the Easy-Form angle measurement system to ensure accurate bend angles, LVD CADMAN-B 3D offline programming software to ensure accurate developments, the user-friendly CADMAN graphical control and Stone Radius tooling to ensure repeatability and a smooth forming process.

Herr Günter Aljets, who heads up production at Amazone’s Hude works, where the first LVD press brake was installed, first came across LVD at a Euroblech exhibition and he realised that it could provide the solution he was looking for.

“What was clear from our discussions that LVD’s approach was not just to sell a machine, it had really analysed the bending process and set about optimising it.”

Dr Stephan Evers, previously head of production at Gaste and now works director of the Hude plant agrees: “We looked at all the main suppliers and all the machines were pretty similar, but I had the feeling that they weren’t really addressing the main question. They were happy to try and sell their machines, but they hadn’t really got to grips with the main problems. And the typical problems in fabrication are the accuracy of the bend angle and the length of the formed flange.

“Right from the start we had the feeling that with LVD is wasn’t simply about buying a machine, it was about solving a problem. That was what impressed me. They had looked at all the problems that we had grappled with in house and come up with an integrated bending philosophy to address them. So we made the decision to go with LVD too.”

Solving Robot Welding Problems

The most recent machine was installed at Amazone’s BBG subsidiary in Leipzig. The 500T PPEB 500/40 press brake is used to produce a wide variety of formed parts in material from 3mm up to 30mm thick, including high strength steels, that are later robot welded into sub-assemblies for various types of cultivator.



Amazone manufactures fertiliser spreaders, seed drills, powered (rotary cultivators and rotary harrows) and non-powered soil cultivation (disc cultivators and harrows), precision air planters and crop protection sprayers for medium-sized farms, large estates and contractors.



Before the installation of the LVD press brake, lack of control over the bend angle, particularly on thick plate meant that there were real problems with the robot welding.

Parts didn't fit in the welding jigs and inconsistent joint gaps meant a lot of remedial work was required. This took time and had a knock on effect on productivity. Since the LVD technology has been introduced these problems have been solved and a further three robot welding cells installed.

As Herr Jorg Pollex, works manager at BBG, explains: "The important thing for us is repeatable accuracy."

In terms of productivity he has found that setups are faster with minimal tool change times and significantly quicker programming, but the decisive factor is that after a changeover the machine very quickly starts producing accurate parts – and they stay accurate too, even when there are variations in material thickness and tensile strength.

"The proof of that is that we hardly ever get any non-conformance reports on welded assemblies because of the bending process. With fewer rejects and faster setups our optimum batch size can be smaller. We have also been able to reduce stock because we can be more flexible in the way we load the machine. The process is altogether more secure and more stable."

Non-conformance Reports Slashed

At Amazone's plant in Gaste, two LVD Easy-Form press brakes, a 400T PPEB-H 400/50 and a 170T PPB-EFL 170/30, both of which were installed in 2007, have reduced non-conformance reports by 40%.

As production manager Herr Stefan Holthaus explains: "A very big factor in the purchase of the LVD machines was the accuracy. We weld a great many parts by robot and the number is constantly increasing. Before we bought the LVD machine we had problems with accuracy of the bend parts in robot welding – weld gaps were too big, we didn't achieve the right bend angle, parts didn't go together properly. LVD's angle measurement system it was a crucial factor in our decision to buy the machines."

Herr Holthaus says that the LVD system has also helped to speed up the introduction of new products. "In the past designs came down from the development office and it was up to production to make them. If they weren't suitable for mass production it meant a lot of problems, a lot of rejects and a lot of going backwards and forwards between the design and production departments to improve the part."

Now the parts are designed in the CADMAN-B software and the integrated database makes all the correct bend angle assumptions to produce an accurate development. This ensures that the formed flanges on the component are the right length and correctly aligned with the other features.

Parts are then trialled on the machine and the production department gives feedback on how modifications that would make them easier to produce – ensuring holes aren't too near the bend line for example, or changing a flange length to make it easier to bend. By cutting out time intensive trial and error the development department has saved the equivalent of half a full time employee's time.

The CADMAN-B database is supplied with thousands of generic bend allowances for particular combinations of tools and materials, but LVD always recommends that customers add actual data from their own production. The team at BBG has been meticulous in adding bend data to its CADMAN-B database – carrying out test bends for every combination of material, thickness and tool set. This has paid off says Herr Pollex. "I'm glad LVD insisted that it was important to maintain our database. It now contains comprehensive information on all our tools and materials so the developments always come out right"

Mr Holthaus adds that with the introduction of CADMAN-B software the design department has become much more aware of what is feasible. That has made them more ambitious and the parts they are creating have become more complex – and they could only be produced using offline programming rather than programming at the machine.

He says that the operator interface on the machine has also improved quality –



the graphical display of the bend sequence make it much easier for the operator to interpret what needs to be done and avoid errors.

“We can do things now where before we had problems in the workplace interpreting the drawings – particularly where there were nested or compound bends. Now we can see very clearly from the software how it all goes together. The offline programming is a massive advance for us. Importing programs has given us a big step forwards in terms of productivity.”

Visualizing the Bend Sequence

The first of Amazone Group’s LVD Easy-Form press brakes – a 220T PPEB-EFL 220/30 – was installed at its Hude plant in November 2006 and joined by a second machine a year later. Together they produce formed parts for seed drills and cultivators. Herr Lund, one of the production engineers at Hude, agrees that the graphic display on the machine control is a real benefit.

“Being able to visualise the bend sequence makes the machine very easy to use, even for untrained people. They can learn how to use it very quickly and make fewer mistakes.”

“The freedom that laser cutting gives in the production of blanks has made designers a lot bolder. For example, they are creating much more complex assemblies that reduce the amount of welding required. But it does make the bend sequence more complicated, so visualisation is very helpful. And of course the greater bend accuracy ensures that the components come together properly.”

Final Component

The final component in the LVD solution is its Stone Radius tooling. This has a special compound radius profile that allows the plate to flow smoothly into the die during forming.

“Stone radius tooling isn’t just a marketing gimmick,” says Herr Pollex. “Without it we used to get chatter marks on then plate. These had to be polished out or else they would give a poor painted finish. And when we did springback tests the chatter meant that we didn’t get an accurate reading.

The stone radius tooling gives much better repeatability agrees Herr Lund, and with a lot less tool wear. He says the tooling on the first machine at Hude has been running for over four years now with no sign of wear.

The Right Decision


All three works managers are convinced that the decision to invest in LVD technology was the right one. “I would unreservedly recommend the machines,” says Herr Pollex. “LVD use the phrase ‘first part, right part’ and they proved that was the case.”

Doctor Evers adds: “It was never stipulated from above that we had to go with LVD, all three of us independently came to the same conclusion that they were the right machines for us.”

And as Herr Aljets concludes: “We were convinced by the technology. We put our money on LVD against a lot of competition, and I’m pleased to say we put it on the right horse.”

“Being able to visualise the bend sequence makes the machine very easy to use, even for untrained people.”

Herr Lund



In addition to satisfying the needs of standard bending operations, LVD has also built a reputation for custom press brake manufacturing, designing and building press brakes as large as 3000 tons in stand-alone and tandem configurations. These extra large, extra performance machines address the unique needs of heavy plate forming.

To get the big picture perspective, Discovery's editorial crew travelled to Germany to visit with eight custom press brake users.

XXL

Supersized Forming

When the forming requirements are big, so is the solution.

Accurate Forming of Crane Booms

The KSK plant at Schwerte, part of the Vlassenroot group, has expanded its capacity for the production of mobile crane booms with the installation of a new LVD PPEB-H 2000T 14m press brake.

Vlassenroot is one of the world's major manufacturers of critical components for mobile cranes and operates across four sites in Belgium, Germany and Poland. One of the strengths of the group is that it has all of its production processes in-house and can offer crane manufacturers a complete fully welded boom and chassis from one supplier.

In fact, the acquisition of KSK in 1999, which had extensive welding facilities, was driven by the demand from crane manufacturers for complete welded booms.

"We have complete control of the whole process, from steel to welded boom section, and we are the only one in the world that can offer that," says Ludwig Deckers, plant manager at Schwerte. "That gives us a lot of advantages and it gives the crane manufacturers a lot of advantages too."

He adds that in recent years the strongest part of the market has been in cranes for the wind power sector, which puts Vlassenroot at an advantage because its LVD press brakes give it the large-scale production capability to meet this demand.

"The largest crane we build parts for has a 500T capacity and the longest section we produce at Schwerte is 14,55m long. We supply all leading crane companies throughout the world.

Herr Deckers explains that the partnership with LVD goes back a number of years.

"Our first link with LVD came when we asked them to rebuild one of these as a CNC machine with new hydraulics and controls. It all went exceptionally smoothly so we asked them to rebuild all our press brakes. So when we needed new capacity in Belgium it was a natural step for us to go to them for new machines too. We now have two 2000T LVD PPEB 14m press brakes at our Belgian plant.

"We went to LVD for this new machine too because of the good experience we'd had with them and the service they provide."

The new machines LVD built for Vlassenroot – and now KSK – were designed specifically to be the optimum configuration for crane boom forming in high strength steels.

The latest machine includes a couple of further refinements. The first is a series of CNC pushers at the front of the machine that ensure the plate is firmly located on the back gauges.

"It was a hell of a job for the operators to push these long and heavy components up against the back gauges, so we asked LVD to come up with an automatic system rather than using manpower. It has worked very well," says Herr Deckers.

The second special feature is a bottom die that can be adjusted in 10mm increments from 110mm up to 320mm. This is to allow KSK to cope with some of the very large bend radii required on the higher strength steels.

Bending these materials requires special expertise and the highest quality equipment says Mr. Deckers.

"In normal steel, to bend an angle of 90 degrees you may have to bend to 89 or 88 degrees to allow for springback. With the 1100 Newton tensile strength material we commonly bend you may have a springback of 30 degrees – so you have to bend to 60 degrees. So you need a lot of force to go into the die to bend the material."

The stronger the material, the lighter and taller the crane builders can make their telescopic booms. There is currently talk of 1300 Newton or even 1600 Newton tensile strength steel in the future – but that would require designs and welding materials that have yet to be developed.

"The bend accuracy is crucially important to us because of the requirements of the end product. Although we are making very large components – up to more than 14m long – the tolerances the customers are asking for are very tight. On a boom section 1,6m in diameter, the height and the width have to be within plus or minus 2mm on the welded fabrication. Otherwise, the telescopic boom sections won't slide in and out properly," says Herr Deckers.

"After only a few weeks of operating the new machine it has proved itself to be more accurate and more productive than the machine we had before. I didn't expect such positive results so quickly."

"The bend accuracy is crucially important to us because of the requirements of the end product."

Herr Deckers

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“We wanted to be able to offer components that other people couldn’t offer. We like challenges and start at the point where others have reached their limits.”

Herr Roterring

Biggest Is Best for Wiropa

When the directors of Wiropa set up the company in 2008, they had a clear picture of what they wanted to offer customers. This was a subcontract cutting, forming and processing service with a focus on heavy engineering sectors, but with the emphasis on being able to offer very large components (XXL – Extra – Extra – Large) to customers in sectors such as crane building, wind power and shipbuilding.

It is reflected in the equipment and facilities at Wiropa’s facility at Gescher, Northern Germany.

At the heart of Wiropa’s capacity is one of the largest tandem press brakes ever built by LVD. This comprises two identical 10,2m LVD PPEB – H press brakes, each with a press force of 1250 tonnes, which can either operate as individual machines or be combined to create a single 20,4m press brake with a press force of 2500 tonnes under a single control.

The result is that Wiropa has the flexibility to form a very wide range of components, from small parts in 1,5mm stainless up to very long parts 30mm thick.

Matthias Roterring, who set up Wiropa with Thorsten Paul and Ludger Witte, explains the company’s philosophy: “We wanted to be able to offer components that other people couldn’t offer. We like challenges and start at the point where others have reached their limits. By offering customers the lengths and widths of material that we can process

they can have bigger and longer sections with fewer welded seams and joints. Our aim is to solve our customers’ problems.”

DRAWING ON EXPERIENCE

When the three directors set up the company they drew on a combined experience of over 50 years in the sector to determine the equipment they needed.

Herr Roterring says: “When we came to buy the press brakes we looked for machines and manufacturers that could meet the technical specifications we knew we needed. We also looked at what experience the supplier had in this field and its position in the market.

From a technical point of view, LVD answered all Wiropa’s questions.

Torsten Paul takes up the story: “Normally, people come to LVD with a product and ask how can they make it. In our case, we haven’t got a product of our own so we went to LVD with a very precise enquiry specifying press force, bed length, throat size, frame opening, tool holding – everything.

So why did Wiropa choose a tandem machine, and why that size?

“First of all we decided that we wanted two press brakes because of the security and flexibility that would give us,” says Herr Paul. “We had established that a significant proportion of the parts we were likely to be forming would be in the region of 8m to 10m long, and because of the way we were set up with the profiling, cranes and hall layout we could see that there might



be a call for parts in the 14 to 16m long range too. So we thought, let's not get one big machine, or one big machine and two small machines. Let's get two identical 10m machines that we can combine to give a 20m machine."

It was not enough to get the size of press they wanted; Wiropa also wanted to be at the forefront of bending technology and be ready for any future demands.

Herr Roterring explains: "We wanted the latest machine with the latest technology built in, and we think that in this respect LVD is ahead of the field.

The press brakes are fitted with LVD's advanced Easy-Form® angle measurement system, which ensures the correct bend angle is achieved even when there are variations in material thickness and strength.

The tandem press also features LVD's latest programmable crowning system for long piece parts – Bi-Comp which offers a unique and intelligent synchronisation of the two independent V-axis crowning systems. This ensures perfect bending over the full 20m even on the most challenging materials especially in specialised steels such as Hardox and Wieldox typical for Wiropa.

And as they say 'The proof was in the eating' when Wiropa formed some 2,4m long components in Hardox 500. The press force required was near the maximum possible on the press and yet a consistent bend accuracy of 0,2 degrees was achieved

across the three required components. No reworking, no extra parts for set up, just three correct parts, right the first time.

POSITIVE RELATIONSHIP

Wiropa's positive relationship with LVD comes from a feeling that they are a good partner to do business, with says Herr Roterring.

"When we first visited LVD's factory, everything we saw there made a very good impression. The attention to detail, the fact that they made all the components themselves, such as the hydraulic cylinders; everything we saw made it clear that LVD knew what it was doing when it came to building machines. That gave me the confidence that LVD could give us what we were looking for.

"This carries through to the service and installation engineers too. Everything has gone very well. We would recommend LVD machines to other people, and we already have."

Summing up, Herr Witte says that the specification and technology of the LVD equipment is paying dividends.

"We haven't been in business long but we have already seen that the diversity of what we can do is extremely important. We can make products that other people can't, and we can make the parts they can make too.

So the customer can get everything they need from one supplier – from 1mm to 40mm thick.

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“The spectrum of parts we can produce on the LVD laser allows us to be very flexible – and produce parts in larger sizes to a higher quality than plasma or flame cutting.”

Herr Schumacher



Large LVD Laser Brings Customer Closer

Based in Ehingen, Southern Germany, the firm of Schumacher GmbH is close to its biggest customer Liebherr in every sense.

Schumacher produces all kinds of sheet, plate and tube parts for Liebherr’s telescopic mobile cranes – amounting to around 30000 part numbers in structural steel, aluminium and stainless. These range from parts in 1,5mm sheet metal for enclosures, cladding and electrical cabinets up to much heavier components for applications such as stabilising outriggers, working platforms and chassis frames.

As the head of the company Herr Gerhard Schumacher explains: “They count our machines as part of their production capacity.”

TREND TOWARD BIGGER COMPONENTS

In fact, with the purchase of a 6kW LVD 12530 Impuls laser with a 12,5 by 3,2m cutting capacity – reckoned to be the largest flying optic laser system on the market – it can produce large parts to laser quality that Liebherr could not do in-house.

According to Herr Schumacher, the trend is towards bigger and bigger components: “The downturn in the construction industry has led to a reduction in demand for smaller mobile cranes, but the growth of the wind energy sector has boosted demand for the larger cranes required to erect and maintain wind turbines.”



Subsequently when Herr Schumacher searched the market for manufacturers of large laser bed laser cutting machines he found LVD was one of the few if not the only company able to offer him the experience and capabilities that he needed in such a machine.

MINIMIZING NON-PRODUCTIVE TIME

With the LVD Impuls, Schumacher can profile parts up to 12,5m by 3100 mm in material up to 25mm thick fine-grained, high-strength steel, 16mm aluminium and 20mm stainless steel. This means it can process the complete spectrum of parts for Liebherr – as well as other customers in the truck and machinery sectors – using the same machine.

The machine has twin shuttle tables so that parts can be loaded and unloaded on one table while profiling continues on the other table – minimising non-productive time.

This feature also allows Schumacher to run the Impuls unmanned for long periods, including overnight.

“We can lay up 8 large format plates, in different thicknesses and materials if we want, on each of the two shuttle tables. We can then run the machine without having to load or unload until it has processed all 16 plates – which means it can run automatically through the night shift,” says Herr Schumacher.

Schumacher GmbH’s business was originally built on sheet metal craft skills, particularly for the construction sector, and parallel to its fabrication business it still installs and repairs roofs, building facades and steel-framed buildings, as well as making one-off craftsman pieces. Indeed, this is how it first came to work with Liebherr when in the mid 1970s it won a contract to maintain its roofs and buildings.

Somewhere along the way, in around 1982, Liebherr asked if Schumacher could supply components too. This was initially for sheet metal components such as tool boxes, covers, electrical cabinets and so on.

“We slowly increased our machine capacity, and from producing what were essentially spares and maintenance parts we started making more and more production components,” says Herr Schumacher.

NEVER SAY NO

“We became Liebherr’s ‘fire brigade’. When they couldn’t do something in-house or needed something urgently we did it. Our policy was to never say no. If Liebherr couldn’t do it we would.

“Our machines are practically bound together with theirs. They think of our capacity here as part of their production capacity. We ship direct-to-line in Liebherr, we are linked into their ERP system and they send DXF files straight from their IT system to ours. Now, any of the sheet metal parts that you can imagine might go into a mobile crane could be produced here.”

With the LVD Impuls 12530, Schumacher can laser cut parts that Liebherr can only make using oxy-gas or plasma cutting – which can’t achieve the cut quality and accuracy possible on a laser. On axle support components, for example, there is a requirement to create clean and accurate holes for large supporting bolts. Liebherr’s machines just don’t have the definition to do this, so, after plasma profiling, the holes had to be bored out on a milling machine.

Using the LVD laser, the cut quality is so good that the bolts fit without the need for an additional machining stage – giving a more efficient and cost-effective process.

“The spectrum of parts we can produce on the LVD laser allows us to be very flexible – and produce parts in larger sizes to a higher quality than plasma or flame cutting. This has brought us even closer to Liebherr and opened up opportunities in new products and markets,” concludes Herr Schumacher.

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Herr Schumacher



RECENT Installations

LVD equipment is installed in manufacturing facilities across the globe, including some of the best-known manufacturing companies in the world.



Galva Coat's galvanized stadium lighting poles measure from 4m up to 20m.



Ford Component Manufacturing Limited produces parts for the rail industry using LVD laser & punching equipment.



Vanderlande Industries' baggage handling system at Terminal 5 in London's Heathrow Airport is one of the most complex, innovative projects of its kind.

Malaysia

LeBLANC Malaysia, Port Klang, a wholly owned subsidiary of LeBLANC International PTE., has added a PPEB-H 640/61 press brake for the manufacture of broadcast towers, monopoles and other telecommunication equipment. The 640 ton custom press brake is used to produce LeBLANC's unique three-legged telecommunication tower. The press brake was jointly manufactured by LVD-HD, the newly established joint venture company of LVD and Hubei Tri-Ring Metalforming Equipment Co., Ltd.

Seik Lam Components Industries Sdn Bhd, Selangor, has installed a Sirius Plus 4 kW laser cutting system featuring a 10-unit Compact Tower system, as well as an Easy-Form Series 170/30 press brake with extra stroke and distance. A precision sheet metal fabrication facility, Seik Lam will use the equipment to produce a wide range of precision products, including switchgear components, assemblies and sub-assemblies, indicator instrument parts and stationery items.

Poland

Feerum S.A., Chojnów, a leading manufacturer of silos, dryers, conveyors and other devices for grain processing has invested in two PPEB Series press brakes and an Axel 4020 4 kW laser cutting machine. The additional equipment increases capacity and complements Feerum's existing LVD punch presses and press brakes.

Sweden

Seabased Industry AB, Uppsala, part of the Seabased Group, has purchased an LVD Axel S 3015 5 kW laser cutting system. Seabased AB develops industrial solutions for sustainable conversion of ocean wave energy to electricity. It is the world's largest wave power plant producer. The company's facility consists of 400 - 500 units with an installed power of approximately 10 MW.

The Netherlands

Vanderlande Industries, Veghel, has installed an Easy-Form® Series press brake to achieve high accuracy and quality bending of its automated material handling systems used in distribution centers, parcel and postal sortation facilities, as well as baggage handling at airports.

United Arab Emirates

Galva Coat Industries, Abu Dhabi, has installed an LVD Impuls 4020 R laser cutting system, Strippit V30-1525 punch press, PPEB-5 135/30 press brake and MVS 6/31 guillotine shear. The high performance equipment complements Galva Coat's existing LVD 3000-ton custom tandem press brake and 14 m x 8 mm shear. Galva Coat is a leading manufacturer of galvanized lighting poles, transmission poles, guard rails, and structural steel fabrications.

UK

Ford Component Manufacturing Limited, Monkton, part of Ford Aerospace, recently installed an LVD Orion 2,5 kW laser cutting system for the processing of components for the automotive, power generation, rail, construction and other high-tech industries. The laser cutting system is the first laser for the facility which previously relied on punching equipment for its sheet metal fabrication operations.

U.S.A.

Ruskin Company, Kansas City, Missouri, has installed two Strippit V30-1525 turret punch presses at its Kentucky and West Virginia production facilities. Ruskin is a leading manufacturer of air and sound control products for the heating, ventilating and air conditioning (HVAC) market. The company is one of the largest air control solutions providers with 21 production and office locations worldwide.

Feerum S.A. builds products for all stages of grain processing: transporting the grain from the field, preliminary cleaning and drying, and precise cleaning, finishing at storage and safe keeping of grain.





Small Precision Fab Shop Embraces Automation with Big Results

DVR is leaner, quicker to respond and 40% more efficient

“By buying equipment with automation we have been able to reduce labor costs while still increasing production and reducing lead times.”

Bob Viner, owner of DVR Metal Industries

Bob Viner, owner of DVR Metal Industries, (www.dvrmetal.com.au), Queensland, Australia, has fuelled the growth of his 12-person family run business with a simple philosophy: “If you don’t do anything different, nothing different will happen.”

The philosophy has served Viner and his company well, as DVR has grown from its establishment in 1993 as a press shop with mostly hard tooling to a highly automated precision sheet metal supplier of garage doors, industrial buildings, appliances, and mining industry goods with annual sales exceeding \$3.6 million.

Along the way, Viner has recognized opportunities to do things differently, remaining flexible to quickly adapt to market needs and open to adopting new technology and processes.

Case in point: While most companies DVR’s size might shy away from automation, Viner and his son, Production Director, Steve Viner, have embraced it. DVR purchased an LVD Strippit Global 20 1225 turret punch press with automated load/unload system in 2005. In 2007, the company added an LVD Axel 3015 L2 laser cutting system with integrated material handling.

30 – 40% More Efficient

Automation has made DVR 30 to 40 percent more efficient, making it leaner and more responsive to customers’ changing and often challenging requirements.

“By buying equipment with automation we have been able to reduce labor costs while still increasing production and reducing lead times,” said Viner. “The capability to run ‘lights out’ with automation has also seen production levels increase without the need for more shifts.”

Viner’s goal is to function as an extension of his customers’ production shops. For a small, dedicated list of customers, DVR serves as a preferred supplier, providing complete design, manufacturing and assembly services.

DVR handles a range of materials, including mild steel, galvanized steel, aluminum and stainless steel ranging in thicknesses from 0,55 to 12 mm.

Automating Instinctively

The Viners stay abreast of new technology and trends by attending industry trade shows around the world. They began considering their first piece of automated equipment after visits to the Euroblech exhibition and the U.S.-based Fabtech show.

“We saw automation at various trade shows and felt that it was the way we wanted to go,” explained Viner. “What we found with LVD was that it wasn’t a multi-million dollar investment for large companies only, it was quite affordable for a company of our size.”

There was no long justification process for DVR’s first automated machine, the Strippit punch press with load/unload. The decision for the purchase was more of an instinct.

“Being such a small and agile family business, we can decide quite quickly if a machine or piece of equipment can benefit, complement or replace existing equipment,” said Viner.

DVR’s LVD Strippit 20-ton punch press is equipped with an automatic load/unload system able to handle sheets up to 2500 mm x 1250 mm for processing of large workpieces or multiparts in material thicknesses up to 3,5 mm. A compact, space-saving design loads and unloads material from the same side of the turret punch press.

The automated punch press reduced DVR’s manual worksheet handling and proved an efficient method of processing workpieces. As the punch press processes parts, the machine operator is free to perform other functions. With only four machine operators, maximizing the use of workers’ time is key to DVR’s profitability.

Having benefitted from automating its punching operations, DVR looked to replace its stand-alone hybrid-style laser with an automated laser cutting system and turned again to LVD.

DVR’s Axel 3015 is a high-speed flying optics laser featuring a fully integrated load/unload system that permits smooth, continuous part processing.

The machine is configured with two loading stations. These extra stations improve the flexibility of the system without the need to invest in a storage tower.

From Concept to Finished Part Faster

To support the automated punching and cutting applications, DVR has two LVD PPEB precision press brakes in 135 and 80 metric ton capacities.

DVR employs LVD’s CADMAN® programming software – the complete punching, bending and laser cutting suite – to integrate its fabrication operations, another way the company “automates” its operations. A Windows-based software, CADMAN provides easy, sheet metal

oriented CAD functions for the design of formed and fabricated parts.

“CADMAN software enables us to program jobs offline and seamlessly integrate jobs between all machines,” said Viner.

“Now we can draw one part and that geometry can be used for the turret or the laser,” said Steve Viner. “We don’t have multiple programs. It’s all one package. One of the biggest gains that we have is that the customer sends us 3D files that they have drawn and we can unfold them and get an accurate part from the first go.”

The CADMAN-B 3D module automatically determines the bend sequence, automatic gauging and tool selection, all optimized for minimum tool stations and part turns. The software module provides accurate and detailed profile drawings and automatically communicates directly with the press brake control.

“In the past, if a customer wanted 100 parts, we would produce 105 because we knew that we would destroy five pieces during the setup,” explained Viner. “Now, we just cut 100 parts because with the bending software, we get 100 good parts. From my perspective, that’s probably one of the best things with LVD, the automation of the process.”

The DVR – LVD relationship is based on a long-standing partnership that began 15 years ago.

“Our relationship is at the highest level,” said Viner. “But it’s the way the equipment has performed and the consultative approach LVD has provided that demonstrates their commitment to us.”

LVD’s advanced equipment combined with the CADMAN software solution makes it easier for DVR to produce parts quickly and accurately.

“Since adding automation, we haven’t looked back,” added Viner. “Customers know that their products are manufactured at the most efficient level.”



Since this article was written, DVR has invested in more market leading technology from LVD, purchasing an Easy-Form 220 ton – 3m CNC press brake equipped with CADMAN® Touch control, Easy-Form® Laser in process adaptive bending system, modular backgauge unit and extended open high and stroke.

LVD In TOUCH

Custom Collaboration:
Group effort makes Sany Group's 3000 ton custom press brake a reality

"We secured this contract because we approached this project as a team, with a sharing of ideas and goals and a shared responsibility."

Patrick Deferme,
LVD Marketing and Sales Director

When Sany Group Co. Ltd., Changsha, China, one of China's largest manufacturing firms, awarded LVD-HD the contract to build a custom 3000 ton press brake to produce mobile crane equipment, it culminated a year-long team effort on the part of Sany Group, LVD Company and LVD-HD, the joint venture company of LVD and Hubei Tri-Ring Metalforming Equipment Co., Ltd.

While it's not surprising that a project for a custom designed, high tonnage press brake would take some time to evolve, what's noteworthy is the level of interaction, the close collaboration and the number of individuals involved to formulate the ideal machine.

The PPEB-H 3000 ton, 14 meter press brake is the most technologically advanced machine of its kind, incorporating unique productivity-enhancing features developed by LVD. A group of 13 engineers, sales and application technicians from LVD and HD, in offices located in Belgium and China, crafted the specifications for the machine.

Servo controlled with state-of-the-art hydraulics and electronics, the press brake represents the most sophisticated forming technology available, provided as a turnkey system including press brake, CNC feeding - evacuation automation, and CNC forming tools.

It is equipped with a CNC adjustable Vari-VEE die with Smart Crown feature and LVD's patented Easy-Form® Laser adaptive bending system. LVD's Vari-VEE die provides automatic adjustment of the V-width to reduce setup time and provide flexibility to form long parts, different material thicknesses and high strength materials. The Easy-Form Laser system provides exact measurement of the angle

during the bending process. Combined, these features provide Sany Group with highly efficient, high accuracy forming and process quality management.

Engineers also equipped the design with automatic forming feeding, automatic back feeding, a custom-designed backgauge, and CNC plate supports for handling large plate material along the length of the press brake. A special tool storage unit is part of the package.

All functions of the machine including part programming are controlled through LVD's exclusive CADMAN® Touch control, a PC-based touch screen CNC control system.

Developing the bending solution for Sany Group meant numerous technical meetings to review every facet and feature. Designs and drawings were created and re-created. Topics discussed included sheet followers, light guarding, components, tooling, and machine tolerance, to name a few.

To control costs, the press brake is being jointly manufactured by LVD and HD. LVD will perform engineering and design work and provide critical components for the custom machine. HD will manufacture the frame and handle assembly. The HD production facility is uniquely suited to manufacture highly specialized large press brakes up to 10000 ton – 12,5 m in capacity, geared toward offshore, energy, oil and gas applications.

Installation of the machine is planned for November 2010.



Latest NEWS

From LVD Worldwide



Winning Technology

LVD technology is recognized as distinctive and innovative.

LVD's CADMAN® software was awarded an MTP Gold Medal as among the best technology showcased at ITM Poland 2010.

CADMAN combines fabricating design and programming functions into a single package, providing a unique integrated sheet metalworking solution that moves users from “art” to “part” faster and more efficiently.

The latest version of CADMAN-B 3D offline programming software for bending is LVD's most versatile package yet with more automatic functions to speed programming time and ensure accurately formed parts.

CADMAN-B 3D ver. 7.2 is compatible with LVD's CADMAN® CNC control and CADMAN® Touch touch screen controller. The new release also supports robotic bending applications.

CADMAN-L 3D and CADMAN-P 3D version 28 for LVD laser cutting systems and turret punch presses provide enhanced punching and laser cutting modules within an easy-to-use interface featuring advanced auto-nesting capabilities, import/export nesting; multiple machining functions on a single part, 'job explorer' and full compatibility with Microsoft Vista / Windows 7.

For more information on CADMAN software, visit www.lvdgroup.com.

Sales & Support in Spain

LVD has partnered with A.S.E.I.M., s.c., Aragonesa de Servicios y Equipos para la industria Metalúrgica, to provide sales and service support for customers in Spain.

Founded by Jorge Mañé and Montserrat García 20 years ago, the family owned and operated business is strategically located 14 km from the city of Zaragoza in Northern Spain.

A.S.E.I.M. is currently managed by Oscar Mañé García and Sergio Mañé García. The Mañé García family has a long history in the sheet metalworking industry with well over 25 years' experience.

The A.S.E.I.M. facility includes commercial offices and a demonstration center, which showcases advanced metal fabrication equipment, including an Easy-Form® Series press brake.

A network of local agents provides extensive coverage supported by LVD technician Bart Vermeire, now based in Spain.

ASEIM has begun actively marketing its association with LVD with participation in industry trade shows (BIEMH) and with regionalized technology seminars.

For more information, visit lvdgroup.com, call +34 976 10 89 11, or e-mail: aseim_LVD@aseim.net.

Easy-Form[®] Series Press Brakes

- Is your bending under-performing?
- Got an angle measurement system in the cupboard that doesn't work?
- Fed up with broken promises from your current machinery supplier?
- Not a believer in angle measurement systems?



LVD has THE solution for you!
Easy-Form[®] Laser – adaptive
bending system.

- Reduce set-ups
- No more re-working
- Eliminate scrap
- Right first time – every time!



Tried the rest, now get the best.
LVD Easy-Form Laser!

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