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Newsletter for customers, employees and partners
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Trends and markets

Changing the course

Our new horizontal forging machine HWS is operated fully hydraulically. The solution from LASCO is more flexible compared to the traditional mechanical design and offers a number of further advantages.

Know-how

Goal-oriented

In the second part of our series on the automation of forming processes we focus on demands of sub-processes made on automation and show solutions with the aid of forging robots, special tools and intelligent process control.

Internal

Setting the course

LASCO is presenting itself future-oriented: Gernot Losert and Lothar Bauersachs have been appointed additional Managing Directors. Friedrich Herdan is now Chairman of the Board of Directors.

Hydraulic horizontal forging machine presented
By changes in the capital and management structure in the current year LASCO has taken decisions that should set the course for developing our international market position and securing our enterprise and jobs in the long run.

This should be mainly for the profit of our customers: LASCO’s operative business has become more intensive and broader in the last few years and the number of our business partners all over the world has clearly gone up. Nevertheless we wish to maintain personal contact between them and our senior decision makers. Both this concern and our wish to bring about a smooth generation change in the top management has caused us to appoint two long-time senior LASCO executives additional General Managers. I would like to ask you to place the same confidence in my colleagues Gernot Losert and Lothar Bauersachs as you have placed in me for so many years of good cooperation. Moreover a number of capable executives in our company have received procuration.

Having been part of the company management for more than 30 years the shareholders of LASCO provided me the opportunity of a capital participation in the company. I was very pleased to accept this offer as - taking over this personal risk - I can demonstrate to our staff and business partners that I see our company on a sound basis and with a successful future ahead, that I trust my designated successors in day-to-day business, and that I want to continue to contribute my experience to LASCO.

With these optimistic signals from our company I am sending my best wishes for the end of the year to you, your family and your enterprise. We from LASCO look forward to seeing you again in the coming year!

EMO in Milan exceeding all expectations

According to a comment of MM Editor in Chief Ken Fouhy they were borne out in their decision to take part in the most important fair for metal processing internationally despite the world-wide slackness in sales by an exceptionally good course of the fair and will profit from it by incoming orders in the months to come. Other than expected before, the exhibition halls in Milan were well attended, so Fouhy, and the share of foreign visitors was very high with 41%. Particularly the number of visitors from non-European countries rose significantly. 40% of all foreign visitors came from non-EU-countries, i.e. mainly from India, Russia and Japan.

With just less than 125,000 trade visitors Emo Milan was faced with a decrease in attendance compared with the precedent event in 2003 with approx. 155,000 visitors, but still its organiser, the Italian Machine Tool Association Ucimu, drew a clearly positive balance at the end of the 5-day trade fair.

LASCO made the same experience. Distinctly more international trade visitors than expected on the background of the global economic condition showed interest in novelties for metal forming from Coburg and focussed on the fully-automated forging unit in form of a hydraulic double-acting hammer HO-U 200, which was sold even during the trade fair to the Italian enterprise Valsecchi Roberto S.r.l. (Casletto-Rogeno).

The next EMO in Milan will take place in October 2015. As Milan will host the world exhibition EXPO the same year, synergies and more than 200,000 visitors are expected.
LASCO has developed a hydraulically driven horizontal forging machine under the type designation HWS. At the EMO in Milan the novelty, which is standing out by a number of innovative solutions, was received with great interest.

Compared with the well-known mechanical horizontal forging machines of different brands, which were initially equipped with vertically and more recently with horizontally split clamping jaws, the novelty from LASCO offers essential technical advantages:

- Independent hydraulic cylinders in the upsetting and clamping operation allow freely configurable sequences of motion and reduce wear that is inevitably caused in the clamping tools by overlapping sequences of motion.
- Tong motion when closing the clamping operation is avoided thus preventing the resulting conicity in the formed area.
- The disadvantages of mechanical drives with numerous bearings and support points, clutch and brake are avoided. Thus there is almost no wear or consumption of compressed air.
- The clamping force is 50% higher than the upsetting force which avoids an opening (gaping) of the clamping tools. In special cases the clamping force can be increased even more.
- The machine is especially suited for the stepwise upsetting of volume gathering and finish-forging (e.g. of flanged shafts, rear axle shafts, steering rods, brake cam shafts, turbine blade roots, -midspans and -shrouds) as well as for the extrusion of hollow parts (e.g. axle tubes).
- The forming speed for forming different alloys can be selected freely and even varied during the forming process itself.
- As volume gathering and forming always happen in several steps, the advantages of our novelty can be fully benefitted from by automation and simultaneous use of various forming stations.

LASCO – the pioneer of fully-automatic hammer forging – has set another milestone in the development of its technology: In the USA an older air-operated die-forging hammer of a third-party manufacturer as well as the downstream trimming press were interlinked in a fully automated process for the first time on the customer’s request.

The synergy of Channellock’s experience and knowledge of programmable die forging hammers and LASCO’s automation expertise resulted in the first joint automation project of such hammers. Now the commissioning stage has been completed the two companies will go on cooperating closely in the optimisation stage. Although - according to LASCO project engineers - this solution does not reach the efficiency obtainable with LASCO double-acting hammers due to limitations by its special design, initial experience shows that the line can be operated at a much higher productivity level compared to manual operation of the line.

The famous US American producer of hand tools Channellock Inc. (Meadville/PA) placed the order for this modernisation project which was completed successfully in October 2009. With the automation project of the Chambersburg die forging hammer and the downstream trimming operation in the trimming press Channellock was pursuing the following goals:

- Significant facilitation of work for the operator
- Consistency of the whole process
- Increase in quality

LASCO solved the task by equipping the hammer with two forging robots with special patented LASCO gripper, a ram position recognition system, a master control and a robot for feeding the trimming press as well as a flash remover and other technical equipment.

Founded in 1886, Channellock, Inc. is a worldwide leader in the manufacture of high-quality pliers and assorted hand tools with a workforce of about 400 dedicated associates. The enterprise - run by the DeArment family in the fifth generation already – is supplier for more than 4000 wholesalers in the USA and exports its quality products to more than 45 countries in the world.
Process optimisation (Part 2)

Automation – doing it right

In part 1 of our series on automation we already focussed on special conditions and tasks in forging. Part 2 deals with the variety of everyday situations in the forge that can be managed better by automation.

Manipulation in the forging unit

Automatic forging on a hammer poses one of the biggest challenges for an automation system. Due to the hammer characteristics such as high ram speed and short blow sequences high demands are made on its dynamics. Moreover the work-pieces tend to jump off the impression – especially with hard blows. The hammer movement caused by the spring damping on the foundation is another problem and the tong holds that change after each blow are not easy to compensate via the electronic control.

How can such a process be automated?

The crucial point was to furnish the forging part with two tong holds and to hold it from two sides.

An important key to the success of automatic hammer forging are the patented forging tongs from LASCO. They are especially conceived for the characteristics of hammer
forging such as withstanding high accelerat-
ing forces, keeping forces and vibrations off
the robot and compensating the changes in
billet length, especially for the pre-forming
blow and bending operations, just to name a
few of them.

Automation in a press with several forming
stations appears to be a little easier. The
work-pieces stay in the tools and are lifted
purposefully by an ejector system. Different
solutions are necessary for cycling only one
work-piece or more work-pieces simultane-
ously through the die cavities.

If only one work-piece is transferred from
station to station, the gripper must be able
to take up the changing work-piece safely – from
the straight via the bent to the finish-forged
part with flash. If needed, various gripper
jaws can be integrated in a gripper.

The challenge posed by more work-pieces
cycled through the die cavities simultaneously,
where maximally all stations are occupied, is
the very tight tool area, especially if it needs
to be lubricated – as it is mostly the case. 3D
CAD, motion simulation and slim grippers
help to find the optimum solution.

Transfer from the forging unit
to the trimming press

The part can be transferred by taking it out
from the finishing impression of the forging
press and placing it directly into the trimming
operation or via a swivel arm with centring
plate from the tool area. When transfer-
ring the part from the forging press to the
trimming press the position of the part must
be constantly maintained. This means that
any uncontrolled movement of the part must
be avoided by all means. For safe gripping
tong holds on the flash of the work-piece are
necessary. Another positive effect of gripping
the flash is that the sensitive surface of the
work-piece remains untouched.

Via sensors the correct position of the part in
the trimming tool can be detected. Incorrect
positions of the work-piece normally lead to
scrap and – in the worst case – to a destruc-
tion of the tool.

Manipulation through the trim-
ing press with two stations

Often there are two stations in the trimming
press with functions like piercing, trimming
or calibrating. After the first station the part
must be fed to the first processing operation
correctly positioned. Here it is indispensable
to grip the work-piece itself and the tong
holds are decided upon in close co-ordination
with the customer.

Discharge of the work-piece
from the trimming press

As for gripping the same applies as men-
tioned above. Tong holds are used for transfer. Thus the finished parts can be positioned
on a cooling line or on a conveyor belt in a
targeted way.

Discharge of the flash into the
flash container

Every manufacturer’s aim is, of course, to
minimise the share of flash, i.e. scrap. Hence
the flash is thin, irregularly shaped and rather
instable. The more complex the flash shape
the higher the risk of getting caught at the
trimming tool. It is important to have a single-
piece flash to ensure that it can be detached
from its “interlocking” by tilting it up. The
spot where the flash is dropped can be varied
to get a more homogenous distribution in the
flash container.

Normally the slugs are removed from the
press quite easily as they are dropped from
the press via a chute onto a conveyor belt.
(To be continued)
New integrated degree programme

The number of new apprentices at LASCO is again above average. In autumn 14 new apprentices started their professional training. For the first time LASCO is training an electrical engineering technician in an integrated degree programme.

This comparatively new kind of education is a combination of a Bachelor degree in electrical engineering and a practical in-house vocational training as electronic technician for technical equipment and installation. Compared with the usual length of the in-house training of 3.5 years it is reduced to 22 months and done before the Bachelor degree of 7 semesters of normal course duration respectively during the vacation period. LASCO cooperates here with the University of Applied Sciences in Coburg.

Two commercial (industrial clerks) and 12 technical apprentices (three industrial mechanics for machine and systems technology, three mechatronics, two machine and plant operators, two electronic technicians for technical equipment and installation, one cutting machine operator for turning, one electrical engineering technician in an integrated degree programme) keep the total number of apprentices constant at 50 - with 40 of them in technical and 10 in commercial jobs. The percentage of apprentices doing their vocational training at LASCO of currently 16% is distinctly higher-than-average in this industrial sector.

LASCO has repeatedly emphasized the importance of intensive training efforts and investment for a long-term safe-guarding of the demand for skilled labour both in the company and the region. The vocational training of the company has been above average in number and in quality, which is also demonstrated by the high performance regularly achieved in the final exams.

Spotlights

Expanded range: LASCO is meeting the requests of a number of manufacturers for forged, stamped and sheet metal parts and is expanding its range of job-order manufacturing by the production of tool holders or tool supports. Such special equipment is useful when production processes require quick changes due to frequent product changes. LASCO offers the necessary know-how and production from one source: from the design via materials procurement and machining up to the assembly of complete tool holders or tool supports. Even very large part dimensions are no problem. LASCO has been supporting the industry with its modern production equipment in job-order manufacturing by the machining of metal parts (e.g. turning, milling, drilling). The spectrum ranges from the machining of component parts to the complete assembly and production of small batches.

45 years with LASCO
Werner Völk 15.08.2009

10 years with LASCO
Frank Enders 01.09.2009
Alexander Stahn 01.09.2009

Recently retired
Roswitha Rosenbusch 30.11.2009

Sadly mourned
Eduard Scheler † 26.08.2009

TRADITION REVIVED: With a get-together of its pensioners on the company premises LASCO has revived a good old tradition. In the future members of the management and the works council will inform them on latest developments and perspectives of the company in annual get-togethers in summer.
Friedrich Herdan shares tasks as Chairman of the Board of Directors in the operational management of LASCO with (left) Lothar Bauersachs (Engineering and Sales) and (right) Gernot Losert (Administration and Production).

Future-oriented presence

Management expanded

LASCO is setting the course for an expansion of its international market position by changes in its ownership structure and management.

Lothar Bauersachs (Engineering and Sales) and Gernot Losert (Administration and Production) were appointed additional members of the company management of LASCO Umformtechnik GmbH. Both have been working for the enterprise in different responsible positions – recently as director and divisional director. The new company management of three is now running the operative business under the chairmanship of Friedrich Herdan, the sole Managing Director for many years, who is also responsible for the foreign subsidiaries and has joined the holding company Langenstein & Schemann now.

Friedrich Herdan continues his commitment

Friedrich Herdan took over shares of one of the three family branches in the holding company. For the first time in the company history of almost 150 years the enterprise has a partner – besides the family branches of Hellmut Langenstein and Rolf Langenstein - who does not belong to the founder family. Friedrich Herdan explained his decision with his sense of responsibility for his employees and customers after having headed LASCO for more than 30 years. With his private financial commitment he wanted to demonstrate that he believed in the positive perspectives of the company.

Getting well through the economic trough

By appointing Lothar Bauersachs and Gernot Losert members of the board of management LASCO is taking into account the growing responsibility in a globally expanding business and securing continuity by rejuvenation at the same time, so Friedrich Herdan. True, LASCO, too, had to put up with a sales decrease due to the general economic trough in the current year of about 10% compared with its historic record year 2008. However, it got over this slump by using short-time work temporarily without any bloodletting and will report again a positive result according to Friedrich Herdan. The order inflow has been on the increase in the second half of the year 2009. The prospects for 2010 are currently considered to be satisfactory.
Interview with Regis Barré,
Managing Partner
Raymond Barré S. A.
Les Hauts-Rivières, France

We have a mission

up grade: Mr. Barré, what importance has the production technology in your company?

Regis Barré: It enables us to fulfil our mission that we have had for many decades, i.e. to deliver first-class precision forging parts to the different lines of the metal forming industry. It enables us to maintain and expand the edge we have over the competition by the expertise, know-how and passion of the work-force of our company by guaranteeing our high production level that constitutes our reputation. Or to put it differently: forward-looking technology enables us to manufacture products more efficiently than others.

up grade: What role do solutions from LASCO play here?

Barré: We have had business relations with LASCO for many years. We get solutions from the machine tool manufacturer which are tailored to our specific requirements. At the beginning these were die forging hammers that were successful due to the efficiency of their hydraulic drives. They were followed later by screw presses from which we expected specific advantages regarding production-oriented possibilities and economy.

up grade: Have your expectations been met?

Barré: Absolutely and from the very day of commissioning of the individual line. The progress of precision forging in the die with the help of screw presses with frequency-controlled drive is to be seen in the fact that this technology offers a good deal more possibilities for the production of precision parts with high energy efficiency than with conventional presses. Of course, screw presses do not reach the high cycle time of hammers. LASCO succeeded in compensating this process-related disadvantage by intelligent automation to a large extent, though. Moreover, there is the flexibility screw presses offer and their unmatched reliability. That pays off!

Founded in 1912 already, the drop forge is still family-owned. What started as a forge with less than a dozen people engaged in hand forging and iron works operations has now become an industrial enterprise in the French Ardennes with 160 employees. The forge is supplier to various lines of industry such as pipe manufacturers and the automotive industry. Raymond Barré’s speciality are small precision forging parts with a weight of up to two kilograms and a monthly output and despatch of approx. four million pieces and a completed weight of about 750 tonnes. The backbone of its specialisation are grown know-how, an efficient team and modern production technology like fully automated production lines or lines for heat treatment as well as its own tool production support. For many years machines and lines from LASCO have been among its production lines as well. Raymond Barré uses several hydraulically driven die forging hammers of the HO-U series.

It was already in 2003 that the enterprise recognised the advantages of screw presses with frequency-controlled drive technology in its own processes and invested in a first fully-automated LASCO screw press SPR. With the modern press technology work-piece tolerances of ± 1% can be maintained in the process. By cycling more work-pieces through the dies simultaneously an optimum cycle time is reached as well. Convinced by the reliability and availability as well as the precision and efficiency of the press for the most difficult production tasks Barré put another fully-automatic screw press line from LASCO into operation.

Production of high-pressure pipe joints on a fully automatic SPR on the premises of Raymond Barré. The French drop forge recognized and used the advantages of a directly driven screw press with frequency converter for the production of precision parts early.