

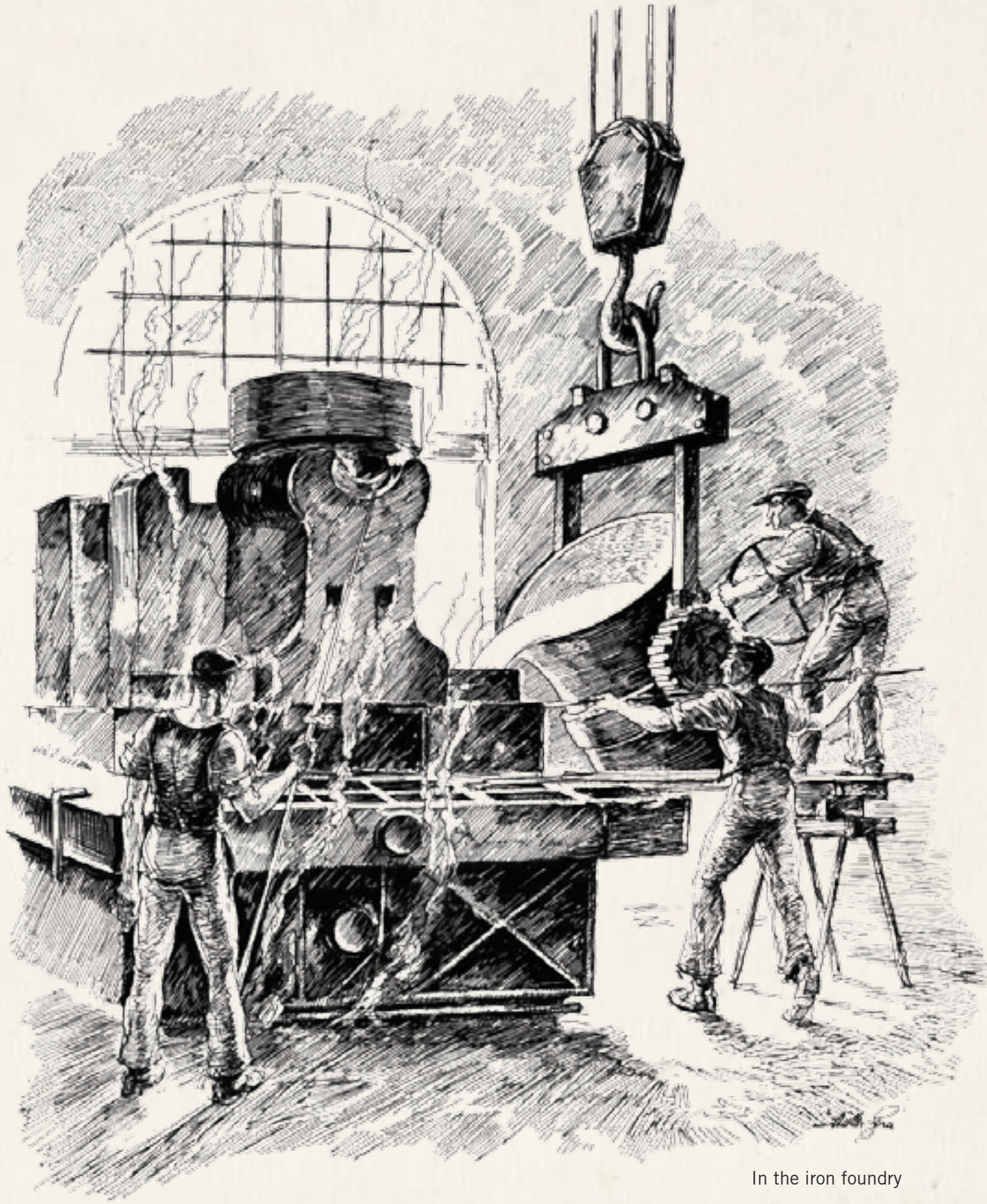
Tradition - Passion - Vision
150 years



1863 - 2013

Tradition - Passion - Vision
150 years





In the iron foundry

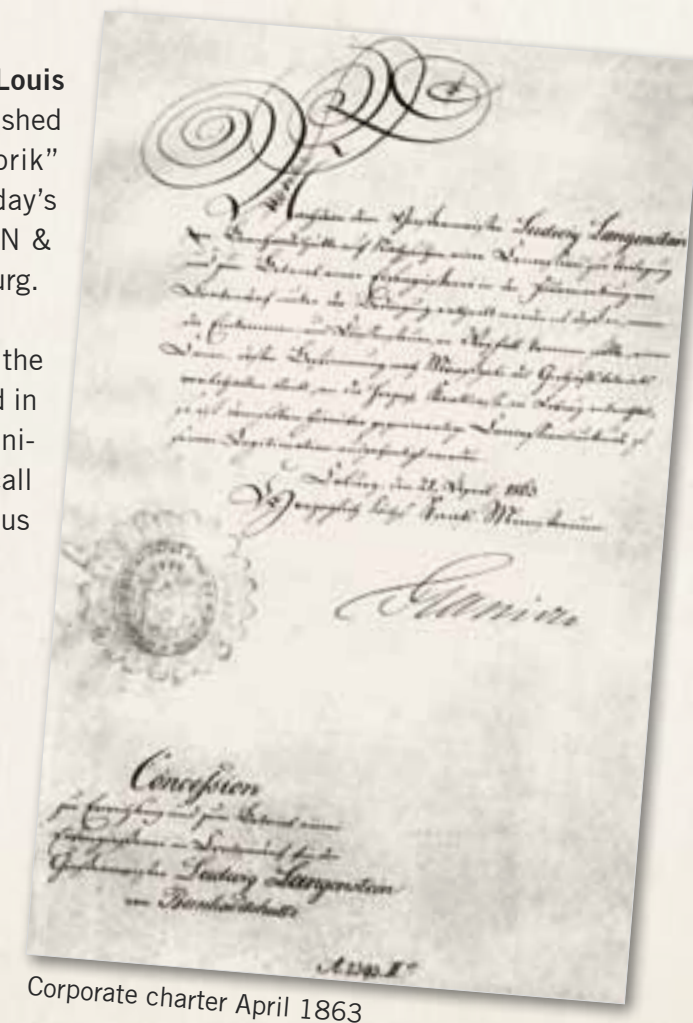
Tradition

It was the middle of the 19th century, the first German Constitution (St. Paul's Church, Frankfurt 1848) was still young, the German Empire would not rise before 1871 and the Duchy of Saxe-Coburg-Gotha – which was of quite some importance at that time – was a member of the German Confederation, a loose amalgamation of states consisting of 35 principalities and four free cities.

Length was measured in “Rute”, “Fuß” and “Zoll”, and people paid with “Gulden”, “Thaler” and “Silbergroschen”. The majority of the population worked in agriculture and skilled crafts and trades. Economy was not very innovative, but industrialisation slowly made its breakthrough – and not only the middle classes in the Duchy of Saxe-Coburg-Gotha pushed for better conditions for economic development, i.e. for liberalism.

In this epoch metallurgy expert and master founder **Louis Langenstein** and merchant **Ludwig Schemann** established the “Cortendorfer Eisengießerei und Maschinenfabrik” (Iron Foundry and Engineering Works Cortendorf), today's machine tool factory “LASCO” – originally: **LANGENSTEIN & SCHEMANN, CORTENDORF** – near the ducal seat of Coburg.

The licence for setting up an iron foundry was granted by the Ducal Saxe State Ministry in Coburg on 21 April 1863, and in the same year – on 30 September – the Ducal Saxe Administrative District Office granted the owners' request to call their factory “Ernst-Hütte” (Ernst Foundry) due to a “gracious decision” by Duke “Ernst II”.



Corporate charter April 1863

Company management

Only a short time after the foundation, the young owners and their company had to pass their first acid test, when in the war year 1866 the majority of the staff were called up for military service. Hard times had begun - arriving quite unexpectedly after a long peaceful phase - and much courage was required to bear up under the times of this war (and the following ones).

One day, however, the soldiers returned once again to their peaceful work and took up their former routine, to which new tasks were added.

Until 1884 the two founders managed the company together.

After Louis Langenstein's death in 1884 and Ludwig Schemann's death in 1886, Louis' son **Carl Langenstein** became the Managing Director and also acquired the company shares of the Schemann family after the Schemann widow's death.

His two sons, **Franz** and **Alwin Langenstein**, joined the company in 1902 and in 1908 respectively and took over the company management in 1928. From 1951 on Franz Langenstein had sole responsibility for the factory. He entrusted his son **Hellmut Langenstein** with the technical management, however, as early as 1957.

From 1961 on Hellmut Langenstein, his brother **Rolf** and his cousin **Horst Langenstein** shared the company management.

In this constellation the 4th generation after Louis Langenstein was in charge of the company until 1986.

Friedrich Herdan, who had already joined the management in 1982, was appointed Chairman of the Board after Hellmut Langenstein's retirement in 1986, and the fortunes of the family business were solely in his hands from 1990 – 2011.

Since then **Lothar Bauersachs** (Engineering/Sales) and **Gernot Losert** (Administration/Production) have been the Managing Directors of the operative "LASCO Umformtechnik GmbH".

The LASCO Holding "Langenstein & Schemann GmbH" is managed by **Friedrich Herdan** as Chairman of the Board and **Gudrun Langenstein**, Vice Chairwoman, as well as **Frauke Gramelsberger**.



Louis
Langenstein
1863 – 1884



Ludwig
Schemann
1863 – 1886



Carl
Langenstein
1884 – 1928



Franz
Langenstein
1928 – 1961



Alwin
Langenstein
1928 – 1951



Hellmut
Langenstein
1961 – 1986



Rolf
Langenstein
1961 – 1986



Horst
Langenstein
1961 – 1990



Friedrich
Herdan
1986 – 2011



Lothar
Bauersachs
2011 –



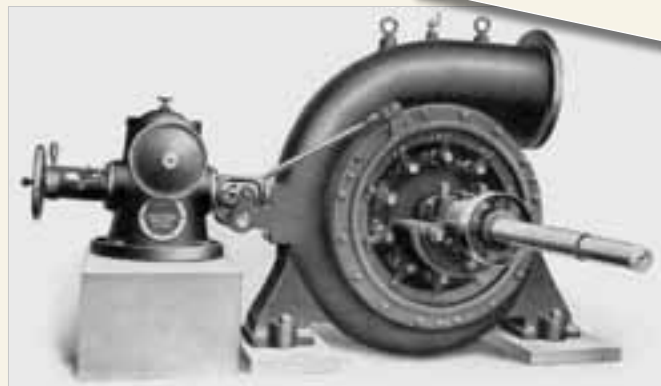
Gernot
Losert
2011 –



The beginning of the hydraulic prime mover production



Pelton rotor



Francis spiral turbine with horizontal shaft



Original LASCO steam engine



Original "LASCO locomobile"

Historical product range

Shortly after the foundation of the company, the product range also included **waterwheels** and **milling equipment** besides **foundry products**. But as early as 1869 they started to design and build the first **water turbines**. Some hundred lines were to follow. The high demand in Thuringia played a decisive role at the beginning, but also later the solidly-built, advanced "LASCO design" of **Francis, Kaplan** and **Pelton turbines** was highly appreciated abroad. Thus numerous interesting lines – with a performance of up to 3,000 kW – were delivered to many countries worldwide.

During its further development the company took up the construction of **combustion** and **steam engines** and succeeded in advancing this manufacturing sector to a high technical degree, too.

For about 50 years - **saw gates** were also produced. Both the Thuringian and the Franconian Forest offered good sales opportunities. The design of the "Hexenmeister Saw Gate", which was patented several times, was technically far ahead of its time.

However, the production of saw gates was stopped in 1952 within the scope of a general standardisation of products and rationalisation.

Already towards the end of the 19th century rising industries within LASCO's field of activities inspired changes in the production programme. The tool factories at Suhl, Zella-Mehlis, Schmalkalden, Erfurt etc. – situated in the "Green Heart" of Germany – needed efficient die forging hammers for production purposes. For this reason LASCO started with the production of **forging hammers** as early as the 1880s.

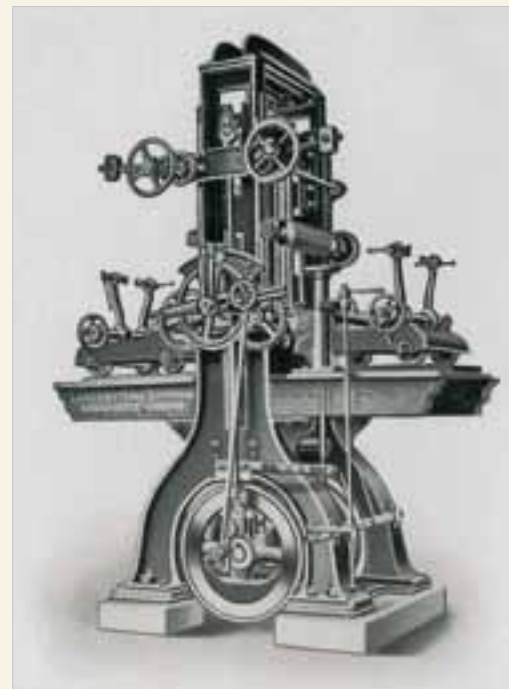
Only a short time afterwards the first "**LASCO patent drop-board hammer FW**" was developed from the first "**friction forging hammer**". Its maximum working capacity was at 5 mt (approx. 50 kJ). More than one thousand of these machine tools - which were advanced and efficient for that time - were delivered. At the same time a powerful **spring hammer** especially suited for stretching was developed for the surrounding small-scale industry as well as for crafts and trades. This robust forging hammer excelled in high efficiency, great flexibility of application and long operational lifespan.

Four sizes of the series FH with ram weights of up to 100 kg were built and delivered worldwide.

Lasco Patent



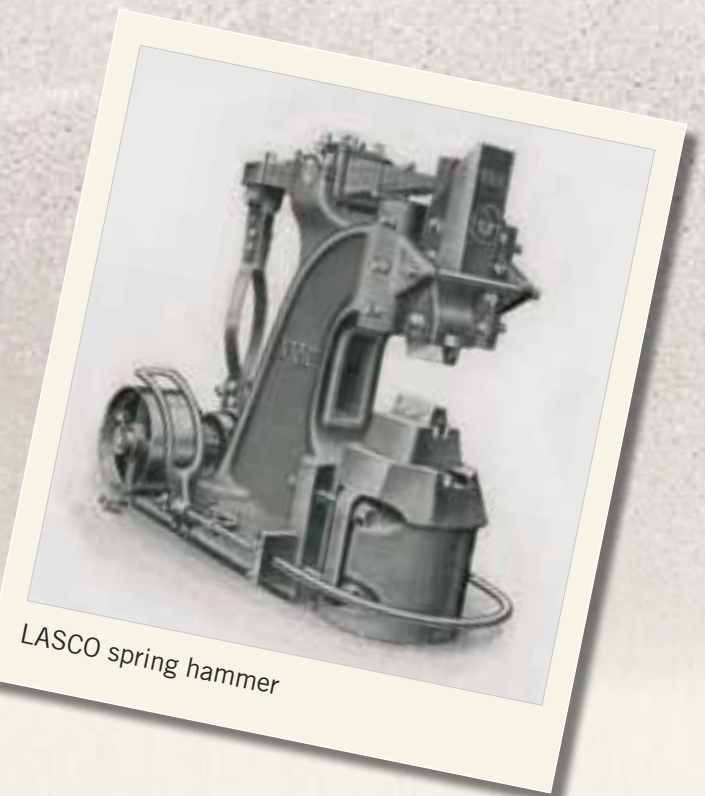
Original LASCO gas engine



“Hexenmeister Saw Gate“



LASCO patent drop-board hammer FW



LASCO spring hammer

“Langenstein & Schemann AG” (corporate form from 1918) gained access to the relevant industries in Baden-Württemberg, the Ruhr area, Westphalia and also beyond the German borders. This was based on its success in Thuringia due to its robust machine and line design and continuous development.

The economic development in the pre-war period and bold entrepreneurial spirit led to the continuous rise of the company and its development from a small firm to a respectable machine tool factory with iron foundry. More than 1,000 drop-board hammers as well as spring hammers proved to be reliable production lines in the steel-processing industry as well as in crafts and trades.

In the 1930s the production of special hammers for forming light metal parts for the developing aircraft industry was introduced. The first hammer of this type, an **electro oil-hydraulic “LASCO forming hammer”**, left the company in 1938.

A resulting development from this machine was the first **“hydraulically driven die forging hammer” – LASCO patent no. 974854 dated 1951** – which

proved to be a first-rate success story. Meanwhile this machine tool has been delivered to 62 countries in the world in the HES, KH, KGK and currently the HO series.

Due to the valuable experience LASCO had made with the construction of hydraulic machine drives, the company promptly developed the first “electro oil-hydraulic press for deep-drawing, blowing, forging and stretching” for the rising automotive and accessories industry in the early 1950s.

This machine for universal application was presented to trade professionals at the European machine tool exhibition in Hanover in 1952 for the first time. Important car manufacturers recognized the universal applicability of this machine very quickly, which consequently led to high production figures through to the 1980s.

Since then LASCO machines have been presented at nearly all German and European machine tool exhibitions. There are permanent representations as well as our own after-sales services and spare part stores both in Germany and in many European and overseas countries.



First electro oil-hydraulic die forging hammer worldwide – LASCO patent no. 974854 dd. 1951



Electro oil-hydraulic LASCO forming hammer VSH



Electro oil-hydraulic LASCO die forging hammer KH/KGK



Electro oil-hydraulic LASCO deep-drawing TSP range

Ever since then the steady and consistent development of the machine tool range has been adapted exclusively to our customers' requirements.

The significant success of LASCO is based on entrepreneurial courage and open-mindedness.

„Quality based on tradition and progress“

has been a fundamental principle throughout the company history and applies to the complete production programme.

The years from 1970 onwards are characterised by a step-by-step and consequent extension of the machine tool range for hot and cold solid forming, sheet metal forming and later on also for the production of building materials. Automation of all LASCO machine tools and lines for the forming as well as the building material industry plays an important role in customer-oriented research and development.

After splitting the company in 1982 a change under corporate law from “Langenstein & Schemann AG” to “Langenstein & Schemann GmbH” was made. The company has served as a holding company since then.

Operational business – design, production and sales – has been the responsibility of the newly founded “**LASCO Umformtechnik GmbH**” since 1983.

In 1996 “**LASCO Engineering Services L.L.C.**” was founded in Detroit (USA) and “**LASCO (Beijing) Forming Technology Co. Ltd.**” in Beijing (China) in 2006.



Passion

With 150 years of engineering experience LASCO is today, worldwide, a highly reputable manufacturer of state-of-the-art machine tools and lines for both the solid and sheet metal forming as well as the building material industry.

Our company philosophy is characterized by progress – understood as a permanent task. Technical experience and the constant implementation of the latest findings in science together with our own development work help us design products for highly economical operation.

The main asset for high efficiency is our well-trained committed staff on all levels.

Our customers' requirements are our top priority and serve as our yardstick for all our activities.

Thus LASCO offers state-of-the-art engineering.

Several hundred patents granted and 131 patents currently in use, product and process know-how which has grown through the years, together with the cooperation of universities and institutes all secure the success of our work and are its basis.

LASCO product range

Solid and sheet metal forming

Current products and fields of application

Our nearly comprehensive range of traditional machine tools for forming technology comprises hydraulic presses, die forging hammers, counterblow hammers as well as screw presses, pre-forming units, forging and cross wedge rolls, and automation of machines and lines, are the focus of the product programme today.



LASCO machines and lines for the forming technology* are used in industries such as:

- **automotive industry**
- **railroad engineering**
- **aircraft industry**
- **shipbuilding**
- **medical engineering**
- **household appliances**
- **hand tool industry**
- **mechanical engineering**
- **agricultural machine engineering**
- **renewable energies**
- **power plant engineering**
- **fittings and fixtures industry**
- **off-shore industry**
- **mining**

We offer a broad range of products and services for this large global market and a variety of applications.

*Technology for the building material production cf. pages 30/31

Hydraulic presses for hot, warm and cold solid forming

VPA/VPE/VPZ range & KP/KFP range

LASCO has been dealing with the use of fluids for generating and controlling energy since its foundation in 1863 (Francis, Kaplan and Pelton turbines). As early as 1938 we recognized the advantages of hydraulic drive systems for machine tools for metal forming.

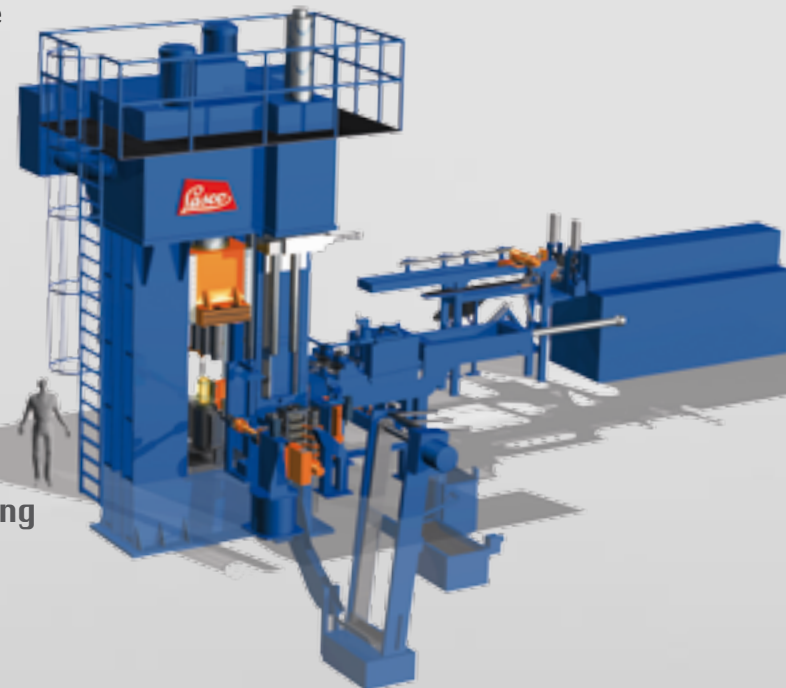
Decades of experience enable us to offer state-of-the-art hydraulic presses for hot and cold solid forming competitively. Preforming, trimming, descaling, chamfering, piercing, upsetting, stretching, forward and backward extrusion determine the most various machine concepts, which we design in numerous variants in the **VP, VPA and VPE range** (hot forming) and **KFP range** (cold forming) in order to meet individual customer requirements optimally.

Precise forming with highest repeatability – either in manually operated or linked fully automatic forging lines – this is the sphere of hydraulic LASCO presses.



Fields of application:

- automotive industry
- railroad engineering
- aircraft industry
- shipbuilding
- medical engineering
- mechanical engineering
- agricultural machine engineering
- power plant engineering
- off-shore industry



Press forces hydraulic presses
for hot forming VPA/VPE/VPZ and
warm and cold solid forming KP/KFP:

2,500 – 100,000 kN



Hydraulic die forging hammers

HO range

Due to their universal application, die forging hammers are among the most important forming machines in the forging industry internationally.

LASCO is pioneer and inventor of the hydraulic drive system for die forging hammers. The electro oil-hydraulic double-acting hammer of the **HO range** with its high efficiency and precise controllability works especially economically in all applications of the die forging industry.

Automated as well as manually operated – electro oil-hydraulic LASCO die forging hammers have provided reliable precision work with high output under the harshest operating conditions since 1951.

Fields of application:

- automotive industry
- railroad engineering
- aircraft industry
- shipbuilding
- medical engineering
- hand tool industry
- mechanical engineering
- agricultural machine engineering
- off-shore industry





Hydraulic counter- blow hammers

GH range

The decision criterion for investment either in anvil-block hammers or counterblow hammers as the optimum forming units should be the size of the parts to be forged.

Heavy forgings demand high working capacity. Therefore the electro oil-hydraulic LASCO counterblow hammer of the **GH range** is preferably used.

The forming features of the counterblow hammer – two masses (upper and lower ram) accelerated in counteracting movements – were a real challenge for LASCO experts.

The mass ratio 1:4 of upper and lower ram became the unique selling proposition of the **GH range**. The final velocity of the rams shows the inverse ratio. This design offers especially favourable prerequisites for automation as well as for forging heavy and flat parts.

Fields of application:

- automotive industry
- railroad engineering
- aircraft industry
- shipbuilding
- agricultural machine engineering
- power plant engineering
- off-shore industry
- mining



Blow energy hydraulic counterblow hammers GH: 100 – 800 kJ

Screw presses

SPR/SPP range

Screw presses are classics among machines for metal forming. Like hydraulic presses with direct drives and die forging hammers electrically driven screw presses are stroke-independent forming machines. There is neither a kinematically fixed dead centre nor any blocking under load.

Screw presses are energy-dependent units and therefore used wherever forming of the workpiece with a comparably short stroke is required and where high repeatability of the forming process at constant energy is expected.

The **SPR range** (slipping clutch as overload protection) and the **SPP range** (able to withstand die-to-die blows, without slipping clutch) offer the optimum forming concept for every requirement – both with manual and automatic operation.



Fields of application:

- automotive industry
- railroad engineering
- aircraft industry
- shipbuilding
- medical engineering
- hand tool industry
- mechanical engineering
- renewable energies
- power plant engineering
- fittings and fixtures industry
- off-shore industry



Press forces screw presses SPR/SPP: 1,000 – 125,000 kN

Forging rolls

Cross wedge/forging rolls

QKW and RCW range

While quality requirements for forgings are constantly on the increase, industry is at the same time under high pricing pressure. One possibility for our customers to adapt to this trend is – among others – the automation of complete forging lines, for which LASCO produces forging units with sophisticated automation solutions that have stood the test under harsh conditions in practice for decades.

In order to reach this high degree of automation in the material pre-distribution through rolling, new machine concepts were designed for the production of pre-forms as well as finish-forms.

The rollers of the **LASCO QKW** and **RCW range** are driven by torque motors independently of each other. Synchronisation is effected in closed loop. Fly wheel, clutch and brake - known from traditional rolling machines - are not necessary. The roller gap is stored in the control and can be adjusted variably during the forming process.

Cross wedge and forging roll processes offer a number of advantages:

- considerable material savings
- improved workpiece surface by descaling
- long die life in the subsequent forging process and reduction of material flow

Cross wedge roll

QKW range

The **cross wedge roll** is designed for pre- and finish-forming of rotation-symmetrical forgings made from steel and non-ferrous metals. Heated round material is fed to the line automatically and formed by rolling through two rollers in the same sense of rotation to get a workpiece in the required dimensions.

During the forming process two guide rules support the billet at precisely the geometrical middle of the rollers. After only one rotation of the rollers the workpiece is ejected and led to further processing steps.



Forging roll

RCW range

The **forging roll** is designed for pre-forming round and square material. In contrast to cross wedge rolling the billet is fed to the rollers of the forging roll radially by a manipulator and formed in individual sectors (passes). The finished rolled billet is deposited on a conveyor belt and led to the main forming unit.



Fields of application:

- automotive industry
- aircraft industry
- shipbuilding
- mechanical engineering
- renewable energies
- power plant engineering
- off-shore industry

Roller diameters QKW:
Roller diameters RCW:

350 mm – 1,400 mm
460 mm – 930 mm

Electro-upsetters

EH/EV range



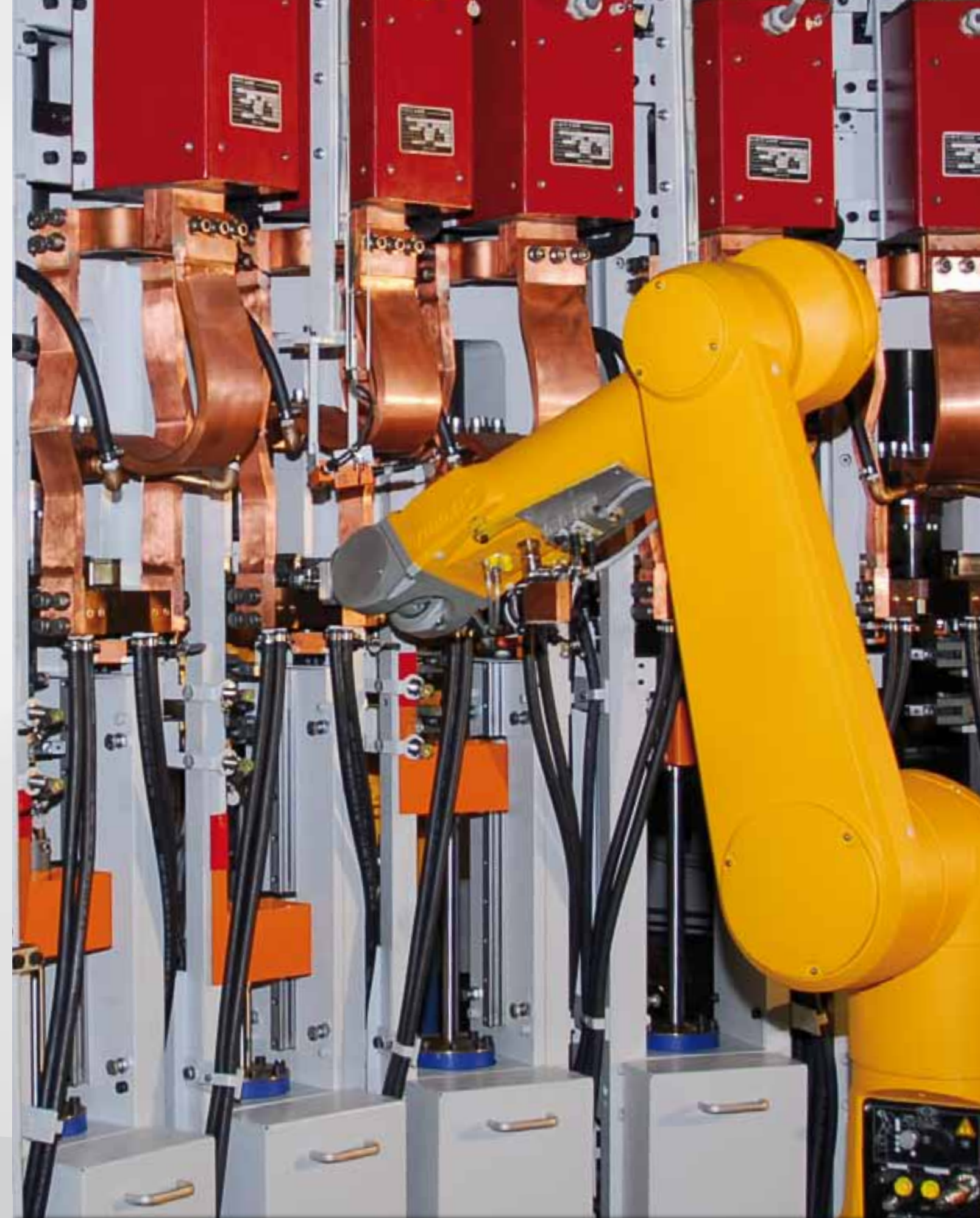
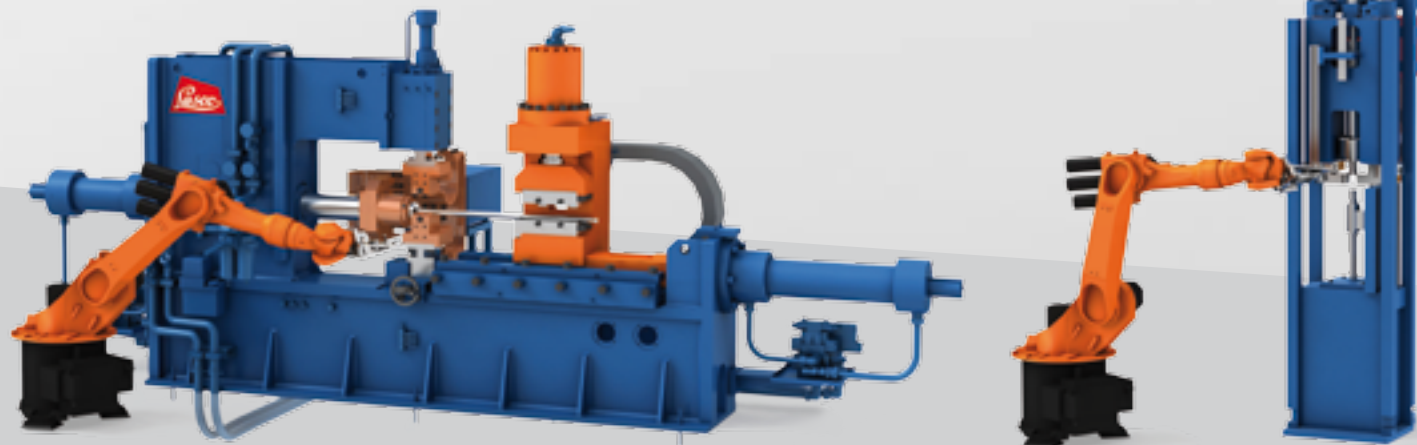
In electro-upsetting a high electric current at low frequency is passed through a bar section which is limited by contact electrodes of different potential and heated by means of high current density and ohmic resistance. The intended volume is gathered by simultaneous hydraulic feed.

The forming degree of approx. 3 x bar diameter - known from alternative upsetting processes in several steps - can be exceeded considerably in the electro-upsetting process. An upset degree of up to 20 x diameter and more is quite common.

LASCO produces electro-upsetters in horizontal (**EH range**), vertical (**EV range**) and special designs.

Fields of application:

- automotive industry
- railroad engineering
- aircraft industry
- shipbuilding
- medical engineering
- hand tool industry
- mechanical engineering
- agricultural machine engineering
- renewable energies
- power plant engineering
- off-shore industry



Performance Electro-upsetters EU/EH: 10 – 750 kVA

Automation

The combination of modern mechanical engineering with sophisticated automation technology allows the automated production of highly complex forging parts under optimum economical conditions. Trend-setting plant concepts and high availability over a long operating life open up clear cost advantages of automated forging lines compared with conventional solutions. Both fully automated lines and automated handling from LASCO are the backbone of success for forming plants in present and future markets.



In times of transparent markets and global purchasing strategies metal forming companies need optimised, streamlined production lines. Labour costs are an essential economic factor for operators of forging machines. In addition, the high physical strain on the staff at the workplace has to be reduced.

LASCO – in its role as technology provider to the forging industry – has always felt bound to the task of developing user-specific solutions for automation and handling tasks in forming processes.





Hydraulic deep-drawing presses for sheet-metal forming

TZP range

Oil-hydraulically driven deep-drawing presses have established themselves in sheet-metal forming due to their versatility. Press force, ram stroke and forming velocity are variable and exactly controllable. Therefore hydraulic drives are particularly suited for drawing parts made of critical materials for forming. Additional aspects of economy are opened up by energy-efficient drives and modern control engineering.

Specialising in hydraulically driven forming units with a worldwide reputation LASCO designs tailor-made deep-drawing presses which meet highest requirements of sheet-metal forming.

The newly designed servo drive guarantees highest output at optimum energy consumption.

The part spectrum for our TZP range comes e.g. from the metal and electrical industry, the household appliances industry as well as medical engineering. Depending on the process, single or multi-acting presses equipped with state-of-the-art press ram and drawing cushion technology (16 point) are used. This also allows the economical forming even of difficult parts from high-tensile materials in repeatable quality.

Fields of application:

- automotive industry
- aircraft industry
- medical engineering
- household appliances
- mechanical engineering
- agricultural machine engineering
- renewable energies
- power plant engineering



Press forces hydraulic deep-drawing presses TZP: **4,000 – 40,000 kN**



LASCO product range

Production of building materials

Current products and fields of application

LASCO has always seen itself as a machine tool builder for customized solutions. Key activities vary considerably and each design generally includes some new aspects.

The enthusiasm and great commitment in the 1990s to gain a foothold in the highly competitive mechanical engineering market for the building industry originates from many sources.

In the first instance it was our customers of today in the sand-lime block industry who confronted us with new requirements, and our highly qualified staff, with their broad experience and expert knowledge, who were ready and motivated to solve these problems of the sand-lime block industry. But also universities and research institutes readily support our efforts to integrate latest scientific findings into LASCO technology for building material machines.

Often the well-tryed is the solution to current problems, like e.g. the sand-lime block itself. As early as 1880 the first patent was granted for a production process for “white bricks” made from lime and sand. And today the sand-lime block is more topical than ever in our society which is more and more concerned about healthy building biology.

Sand-lime blocks combine the natural raw materials with excellent physical properties, optimum thermal storage capacity, resistance to weather and exemplary statics. What is more, they look good and inspire to buildings of fascinating variety.

All these advantages of the sand-lime block captured our attention at a time when we were fundamentally thinking over expanding the established design and production technology of our now 150 year-old company in the early 1990s.

Today LASCO builds machines – as well as turnkey factories – for the production of excellent sand-lime block quality.

Sand-lime block presses with double-acting compaction

KSP range

The LASCO sand-lime block presses of the **KSP range** are the backbone of technology for the sand-lime block production of the 21st century, in Germany as well as in a growing number of other countries.

Developed in the early 1990s and continuously improved by innovative details since then, the KSP presses are the answer of mechanical engineering technology to the market demand for higher efficiency in wall building and – at the same time – highest quality sand-lime blocks. The core aspect of the KSP is the compaction of the green block from two sides by hydraulically driven upper and lower punch.

The computer-controlled movement of the punch optimises the formation of the pressure cone for the compaction of the sand-lime mass in impressive homogeneity and provides uniform block density over its complete cross-section. Measuring systems constantly record punch travel and pressing force for each press stroke. Control systems adjust the filling heights to eject in each stroke green blocks with high dimensional stability at constant compaction.



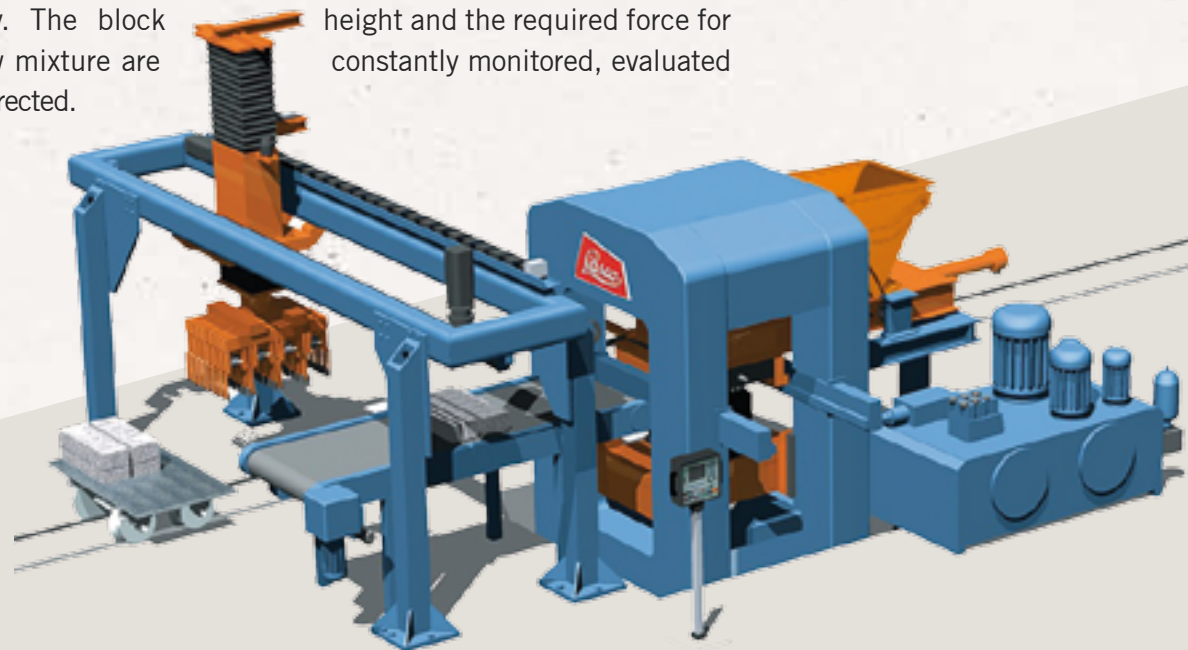
Sand-lime block presses with single-acting compaction

KSE range

The presses of the **KSE range** are LASCO's answer to the demand for highly economical production technology for standard blocks. Due to their very compact design the presses of the KSE range are also suited for installation in existing press basements in the course of plant modernisations. Depending on the design the KSE can be perfectly used both for the production of sand-lime blocks as well as wall bricks with aggregates such as fly ash.

The electro-hydraulically driven KSE compacts in an accuracy range of 1/10 mm. The computer-controlled movement of the press punch optimises the compaction of the block mass. This is the precondition for uniform raw density over the whole block height. The compaction process can be adapted to specific mass characteristics without any problems. This saves energy, as the pressing force is only built up to the level required for shaping and raw density.

Well-tried reliable components are also the basis for constant precision of the machine type KSE, e.g. the particularly rigid press frame with exact guidance, or the advanced valve technology that guarantees exact control of the pressing process. Process-accompanying measuring technique monitors and controls production quality. The block height and the required force for compacting the raw mixture are constantly monitored, evaluated and, if necessary, corrected.



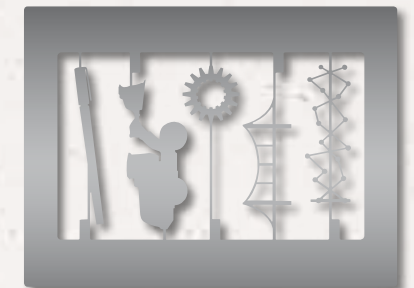


Vario-block presses

PSP range

The **vario-block press marks** the beginning of a new era in the production of building materials. Rectangular supplementary blocks (vario-blocks) required for tailor-made walls need not be sawn any longer.

The PSP compacts the supplementary block with the patented multi-functional mould system from both sides. Four moulds define block height and wall thickness of different block formats. Electronically controlled, the mould (mould frames with mould boxes) is shifted within seconds and the selected mould is used. The block is pressed in longitudinal direction. Thus individual building blocks are produced according to the laying software of the building object. The length-optimised pressing technique reduces material waste, and the saving of cured standard elements can be avoided.



Awarded with the bauma
Innovation Prize 2007



Perfectly tailor-made vario-blocks



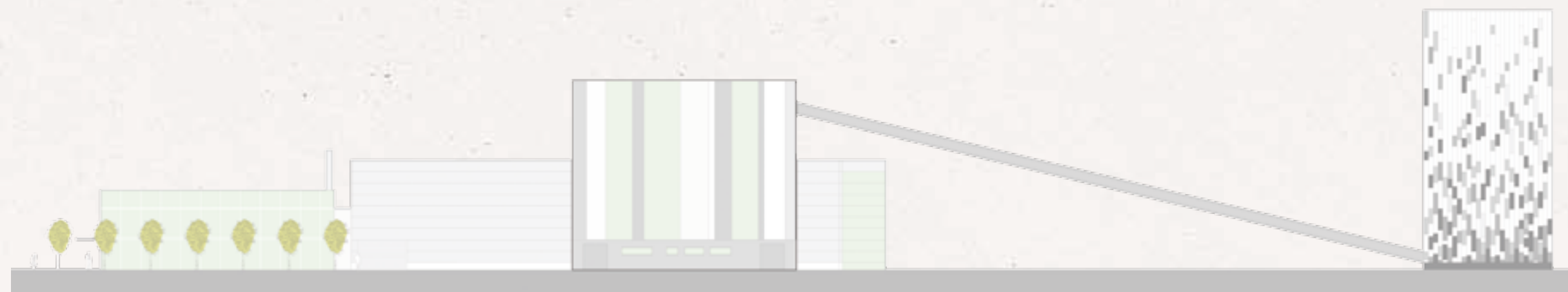


Turnkey sand-lime block plant, Kaltenkirchen

Sand-lime block plants

Occasionally the opportunity for optimum design comes up, e.g. when a new sand-lime block plant is built. Then partners are required who are not restricted in their thinking.

LASCO has qualified several times already as general contractor for **turnkey sand-lime block plants** at home and abroad.



Production

At an early stage LASCO took up the challenge of producing excellent quality at optimum costs and introduced the latest technology in machine tool building in good time. Some examples of our machinery show the production capacity of our company:

- *CNC table and floor type horizontal boring and milling machine Speedram, 1000 (PAMA)*
- *CNC universal machining center 14-10 FPF 200 NC/2 x 3 m (WALDRICH)*
- *CNC table and floor type horizontal boring machine WF 240/135 (SCHARMANN)*
- *CNC boring machine, Speedmat 4/TR25 (PAMA)*
- *CNC boring machine TC 130/TNC436 (UNION)*
- *Cycle-controlled precision lathe E110 x 4500/D3 (WEILER)*
- *Cycle-controlled precision lathe E50 x 2000 (WEILER)*
- *Cycle-controlled precision lathe CD 650-DMT (KERN)*
- *Turning/milling center NT4250 DC6 730 x 1500 mm (MORI-SEIKI)*
- *Table type boring mill FB 75 Opticut (SCHARMANN)*
- *Long-bed planer 4 D 2020 (WALDRICH)*
- *Universal bed type milling machine UBF 3000 (KEKEISEN)*
- *Vertical production center FNC 106 (HEIDENREICH/HARBECK)*
- *Horizontal production center MC 1210 (HEIDENREICH/HARBECK)*
- *Portal precision surface grinder FD 30/15 NC-T (STÖCKEL)*
- *CNC jig boring machine Danumeric 340 (DONAU)*
- *Radial drilling machine BR63R/1250 (WEBER)*
- *Bed type milling machine type Kompakt 1500 (MTE)*
- *3D coordinate measuring machine Globo (POLI)*
- *Universal center lathe W 1103 x 9000 (VOEST-WEIPERT)*
- *Precision lathe CTX520 Linear (DMG)*
- *Oxyfuel portal cutting machine Suprarex SXE4, 500 BIG (ESAB)*
- *Plasma cutting machine 600A (ESAB)*
- *Laser tracker FARO XV-2 Model Head, measuring range 30,000 mm (FARO)*
- *etc.*

With such production capacities LASCO is able to carry out mechanical machining of complicated extremely small components, but also part weights of 100 t reliably, cost-effectively and assuring all tolerances required in state-of-the-art mechanical engineering.





Assembly & service

Skilled, experienced experts install LASCO machines, lines and automation systems in our plant, which - after test run, disassembly and dispatch - are installed and commissioned on our customers' sites at home and abroad.

This work is carried out by the same qualified staff that were already responsible for assembly in our plant.



In addition a specialized service team is in charge of maintenance, technical support and advice as well as training and instruction of the operating personnel with domestic and international customers.

Quality assurance

Operating life, operational safety and economy are of paramount importance to users of machine tools for metal forming and the production of building materials. These features are conceived by LASCO already in the projection stage with the customer. This way our graduate engineers and design engineers make sure that quality is planned from the very beginning of the project development and will become integral feature of the machines and lines via the production stage. Thus quality will be assured right from the start.

The production of new machines/lines does not start before it has been proved by comprehensive theoretical expert reports and/or practical tests – often in cooperation with universities – that relevant performance, quality and safety standards will be met.

System units – produced either by ourselves or by suppliers – are checked thoroughly thus assuring smooth integration into the final product. Tests are carried out according to test plans. The results are recorded in quality assurance documents. The final assurance and inspection of quality standards are the responsibilities of production.

Before they leave the company all LASCO products undergo an organised final acceptance test carried out by **quality and safety engineers**.



Highest quality is our top priority.

LASCO provides annual proof through quality audits by DQS (German organisation for the assessment of quality assurance systems) that its quality management system meets the requirements of the standard “DIN ISO 9001:2008”.





Research & development

"It took mankind 300,000 years to collect 12 exabytes (12 billion gigabytes) of knowledge and information. We will only need 2.5 years for the next 12 exabytes." (University of California, Berkley School IMS).

This statement must be taken with a big pinch of salt. One thing is for certain, however, that knowledge has been growing constantly and rapidly over the last few decades. Various studies show that scientific and technical knowledge doubles approx. every 5 years. The time periods may slightly vary in length, but obviously the intervals are getting shorter.

Due to this development life cycles of machine tools are becoming shorter, as rapidly advancing scientific research results are being applied to design methods, production and process technology, which, in turn, steadily increases quality and economy, thus stimulating competition. Machine builders are therefore under special obligation to innovation and called to develop lines according to state-of-the-art technical findings more quickly and economically in order to promote their customers' competitiveness, thus proving their own competitiveness.

At LASCO the number of graduate engineers and technicians has increased ten times within the last 30 years. Congruently investments in the development department have risen. Regular scientific studies are carried out on our machines, automation systems and control concepts together with universities and institutes, bringing together performances and ideas. These findings are then integrated in LASCO technology within a narrow time frame.

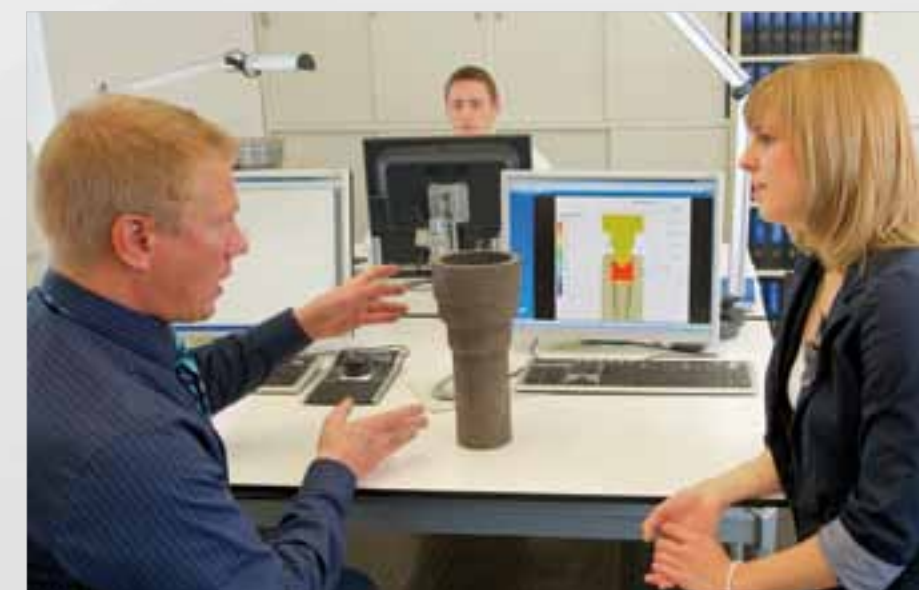
Our graduate engineers and technicians are supported by latest IT technology:

HiCAD 3D
CATIA 3D
FEM simulation system DEFORM
FEM calculation system ANSYS
STEP7/SIMOTION programming
SIMAVIS - image recognition

EPLAN
WinCC/ProconWIN visualisation
RobotStudio ABB
WorkVision/Sim Pro KUKA
Robotics Studio Stäubli
WIN-PED Rexroth

Continuous replacement and expansion investment in research and development keep the company on a state-of-the-art level.

General research and development projects are constantly run. However, customer-related development and design tasks are planned exactly via time schedule and cost development. During the project actual costs are compiled in simultaneous calculation and used for project controlling. This, of course, explicitly includes the estimate of the remaining costs which allows conclusions on the expected total expenditure.



Participation in national and European research and development programs is self-evident.

This serves as the background to which LASCO has been carrying out design engineering with integrated research and development processes for decades.

Product and process know-how which has grown through decades, a large number of patented innovations, but above all the reputation of LASCO machines worldwide confirm the success of our work.

Vision

Growth and change

The pursuance of our company guidelines

service to our customers
respect for our employees
striving for top performance

has brought about growth and change in our 150 year-old company history.

Living up to these principles will again provide a solid basis for the future on which success can prosper.

Sense of responsibility, expertise and motivation will go on enabling us to provide optimum mechanical engineering solutions for the forming technology and the production of building materials.

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