

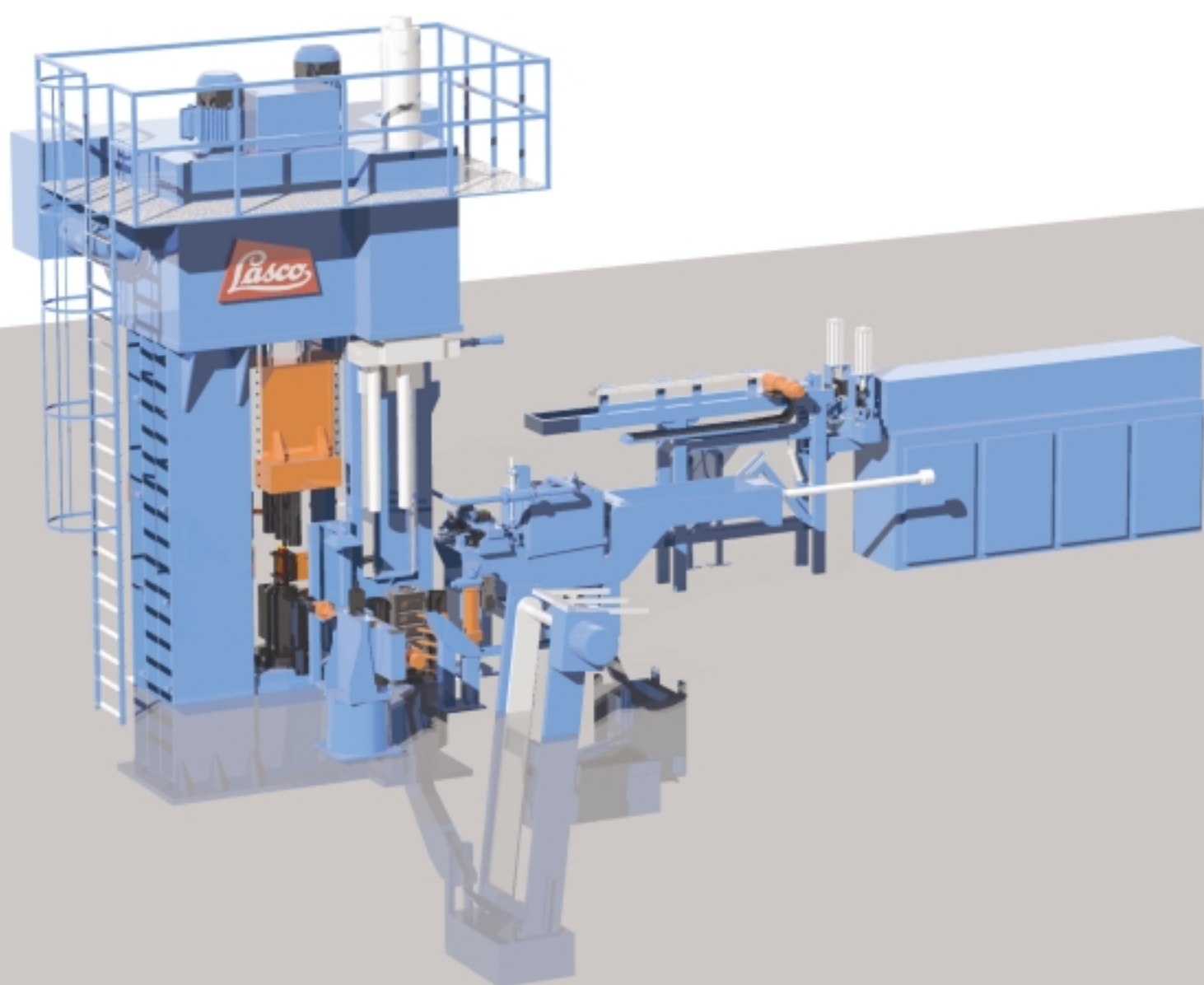
The Idea.
The Products.

Company Profile



LASCO UMFORMTECHNIK
WERKZEUGMASCHINENFABRIK





The Mission

Since its foundation as Eisen-gießerei und Maschinenfabrik Langenstein & Schemann, Ernst-hütte Coburg, in 1863, our company has devoted its efforts to the manufacture of machines that provide the most economic solutions to forming tasks. The efficiency, the quality and the progressive nature of our products is the reason why LASCO Umformtechnik enjoys world-wide recognition as a supplier of technology and as an innovator in the forming industry.

Our focus is on massive and sheet-metal forming, as well as on powder metallurgy. Moreover, LASCO machines and lines have been convincing for many years also in the

production of building material and where machines for special applications are concerned.

The purpose of our activities is the requests of our customers. Based on the foundation of decades of experience and on current technical progress, we look for, find and realise the best solution for your individual demands. This includes automation, handling and interface technology in the same way as the modernising of veteran manufacturing units. We see ourselves as an active partner, and have been supplying production equipment to make our customers competitive on an international level for many years.



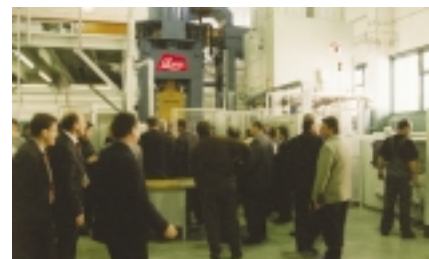
Tool forger.



Cold extrusion press KFP 1000.



Main administrative building of LASCO at Coburg.



Acceptance tests at a LASCO manufacturing cell.

As a seasoned mechanical engineering company we fear neither size nor weight. LASCO forming units are among the most massive of their kind in the world. Admittedly, size alone is not enough. The efficiency of products and services counts in a competitive environment.

As a consequence, we have – at an earlier date than anyone else – started to consider the hydraulic system the central part of our machine conceptions. The lead in know-how gained from this is still the reason for our prominent competitive position where solutions with oil-hydraulic drives are concerned, which we offer for all common types of machinery used in the forge-shop, whether they are work or force related.

The technical knowledge and the competence of our engineers in the field of mechanical engineering and the respective process technology – in particular



The massive one-piece base of a die forging hammer is erected in the installation hall.

The Advantages



Fully automatic press line with presses type TSP 250 and TSP 315.



Fully automatic production of steering gears in a screw press SPR 1000.



The die forging hammer type HO-U 200 forges hand tools

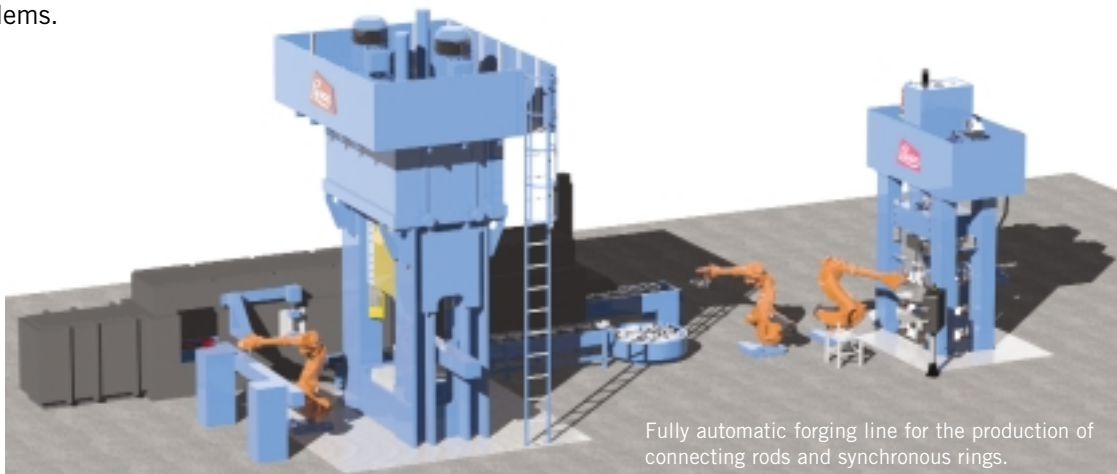
with regard to die forging, upsetting, extrusion, open die forging, sheet-metal forming and powder forging – are reliable guarantors of superior solutions for our customers. They range from manually operated individual equipment to fully automated production lines and also include the integration of components into existing production processes.

Our customers can benefit already in the planning stage from advice based on the comprehensive experience of our process specialists. Together we arrive at constructive solutions to problems.

Moreover, our deep-rooted know-how enables us to solve over and over again tasks related to special forming processes. Such a know-how transfer is, for example, the innovation in sand-lime block production that, within a decade, has made LASCOS the leading provider of sand-lime block presses in the world market. Likewise, it is a synonym of widely acknowledged achievements with respect to building machines for special applications – such as in sinter technology, powder forging, aluminium forming and the machining of hi-tec ceramics.



Automatic forging of connecting rods.



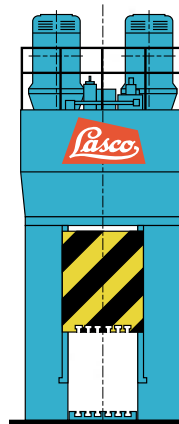
Fully automatic forging line for the production of connecting rods and synchronous rings.

In order to meet the demand for optimum forming units for each application in an economical way we offer a comprehensive range of classic forming machines. This includes:

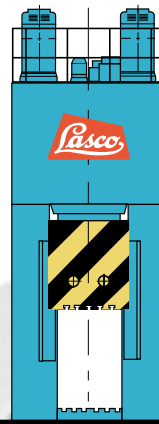
- hydraulic die forging hammers
- screw presses
- hydraulic multi-purpose presses
- universal forming presses
- pre-forming and trimming presses
- calibrating presses
- universal deep-drawing and coining presses
- deep-drawing presses
- cross wedge rollers
- metal powder presses
- stretching units
- electric upsetting machines

Parting from their basic conception, these successful models can be adapted and optimised without difficulty for specific applications. This does not only refer to their processes, tools and control system, but also to their design and construction – for example taking into

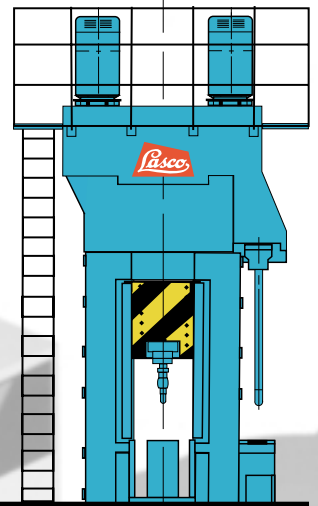
Hydraulic presses for hot and warm massive forming



VP/VPA/VPE
pre-forming,
multi-purpose,
trimming press
2500-50 000 kN



SSP
universal forming
press
4 000-31 500 kN
31.5-80 kJ



LZP
piercing and drawing
press
5 000-31 500 kN

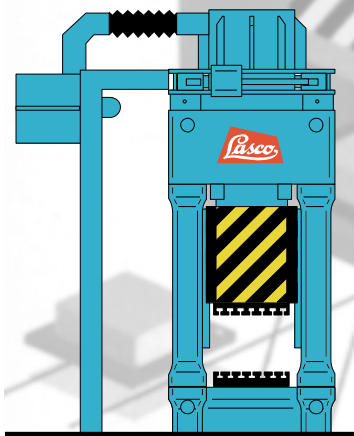
consideration the space available in the user factory.

Our basic series are supplemented by sturdy robot and manipulating systems designed for rough forging operations for parts of very different sizes, shapes and weights, as

well as by automatic tool changing systems and peripheral equipment.

Based on these components, our experienced process, design, drive, control and fitting specialists realise specific solutions for the demands made by our customers.

Screw presses

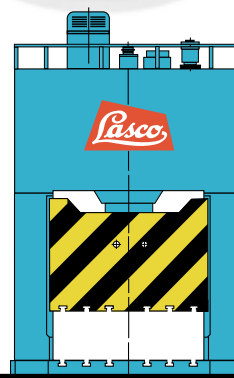


SPR/SPP
screw press
1 000-125 000 kN

Hydraulic presses and hammers for sheet-metal forming



TZP
hydraulic deep-
drawing press
4 000-31 500 kN



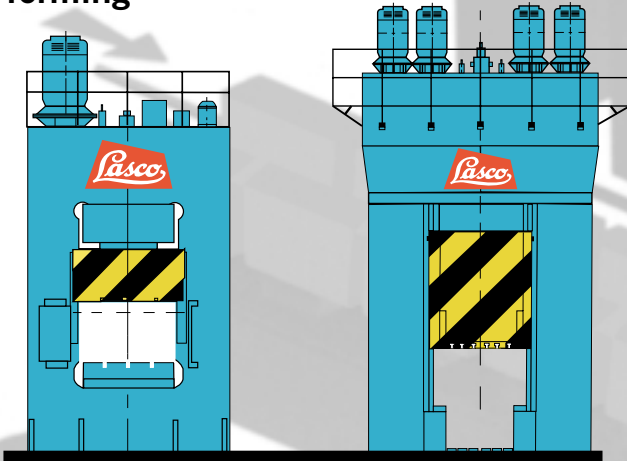
TSP
hydraulic universal
deep-drawing
and coining press
1 250-20 500 kN
6.3-80 kJ



UH
hydraulic forming
hammer
from 20-160 kJ

The Products

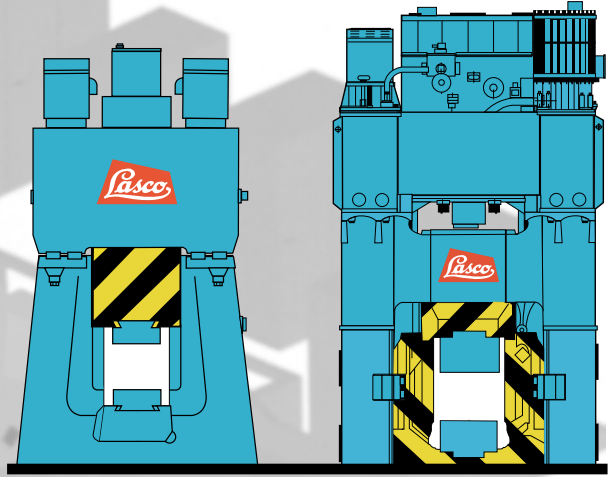
Hydraulic presses for cold massive forming



KP
hydraulic calibrating
press
4000-31 500 kN

KFP
hydraulic cold extrusion
press
2500-31 500 kN

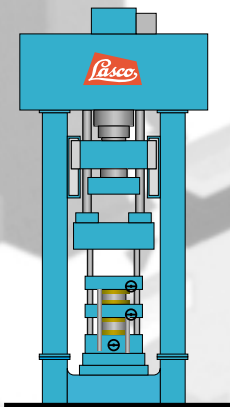
Hydraulic hammers



HO/HO-U
hydraulic double-acting
hammer
6.3-200 kJ
(630-20 000 kpm)

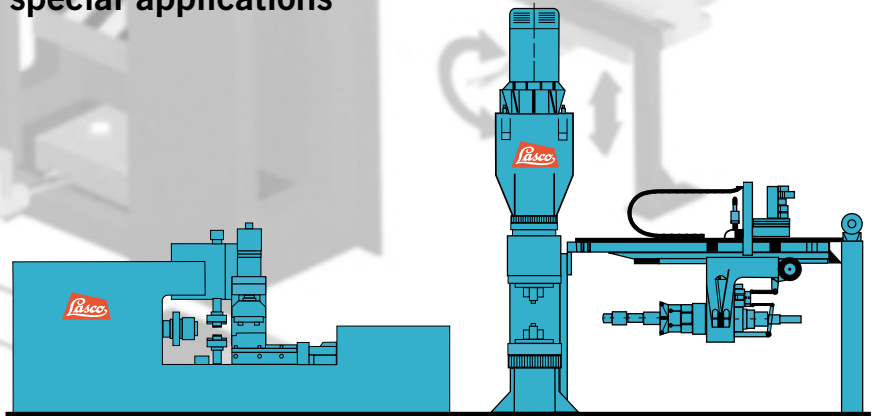
GH
hydraulic counter-blow
hammer
63-630 kJ
(6300-63 000 kpm)

Metal powder presses



MPP
hydraulic metal
powder press
2500 -10 000 kN

Hydraulic machines for special applications



EV/EH
electric upsetting
machines

AR
fully automatic stretching unit with
suspended manipulator for weights
between 50 and 500 kg

Multiple Applications

The Solutions

More than 1 000 companies in 54 countries on five continents place their faith in our technology in order to manufacture continuously competitive products.

LASCO machines and lines perform reliably in industries producing automotive and aircraft parts, machine tools and agricultural implements, hand-tools, household appliances and cutting tools, surgical instruments and implants, petrochemical and mining hard-

ware. Moreover, LASCO technology is also the better choice for special forming tasks, such as pressing of metal powder or the production of building material.

However varied the possibilities of utilising, and various the fields of application for our forming units and production lines may be in theory and practice, the common factor is efficiency in the generation of profit for the end user.



Forging (aluminium pistons).

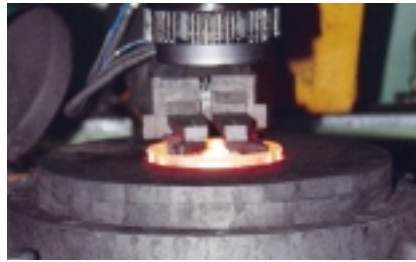


Examples for typical parts manufactured by industrial users on LASCO forming units.

The Benefits



Electric upsetting (valve).



Powder forging (synchronous ring).



Automatic stretching (truck axle).



All around the globe our machines and lines perform reliably for their owners – in part under rough and difficult conditions. Our entire care is devoted to assuring these benefits at any time – not only in the design, manufacture and fitting, but also regarding service.

We see ourselves as a partner of our customers. This is why we offer them the utmost closeness possible for a medium-sized company.

In more than 60 countries all over the world competent LASCO representatives have been entrusted with the task of providing product-related advice to interested parties and of attending to their needs, as well as giving information to our business partners at fairs and exhibitions. In North America (LASCO Engineering Services, Detroit) and in China (LASCO Beijing Office,



Two one-piece hammer frames during normalising.

Beijing) we have our own subsidiaries. Our management, development and sales engineers are in active and personal dialogue with users world-wide. We can explain and demonstrate the conception, quality and performance characteristics of our products at your facilities at any time.

A well-established service team of 40 experienced experts ensures the trouble-free installation and timely



Heavy duty truck leaving the LASCO installation hall.

commissioning of our products at the customer factory. Even if problems arise which the customer can't solve, this team will be present at the customer factory quickly and reliably. In order to avoid the formation of such problems altogether, we provide extensive training for the operating and maintenance personnel.



Presentation of a new development.

The Partnership



Installation specialists starting their work at the user factory.



A LASCO fitter erects a one-piece hammer base.



First test run of a newly mounted die forging hammer.



Guests from Asia in the LASCO showroom.

In addition, we offer for all our products first-hand maintenance and repair service. All machines and lines can be equipped with a modern remote maintenance system. Based on up-to-date picture and data transfer technology, this system enables the service specialist at the parent firm to get access to machine data and control situations – wherever the machine may be installed. Our experts are able to diagnose, make adjustments, and provide help for the respective maintenance and change-over crews so that the customer can take the matter in his own hands. This saves time and money.

LASCO has an independent business section called „LASCO Multimedia Services“ in order to expand services appropriate to the customer by making comprehensive use of the possibilities of modern information technology.

LASCO places the focus of its main competence on machine tool construction for forming applications, sensor technology, automation technology, as well as control and drive technology. About 15 % of the workforce is engaged in research and development to increase the efficiency of products and processes.



Historical LASCO innovations: board drop hammer (left) and spring hammer (right), both built before 1900.

The impulse for this continuous work comes from various sources. The most important impulse is the permanent dialogue with business partners and users all over the world. Ideas arise from and priorities for development set by dealing practically with new or modified tasks and problems. Of similar importance is the exchange of qual-

ified experience with international experts. LASCO representatives regularly put new concepts and ideas on the agenda of symposia, exhibitions, and technical meetings at home and abroad and take part in the discussion of solutions presented by the scientific and technical sector and by colleagues in the industry.



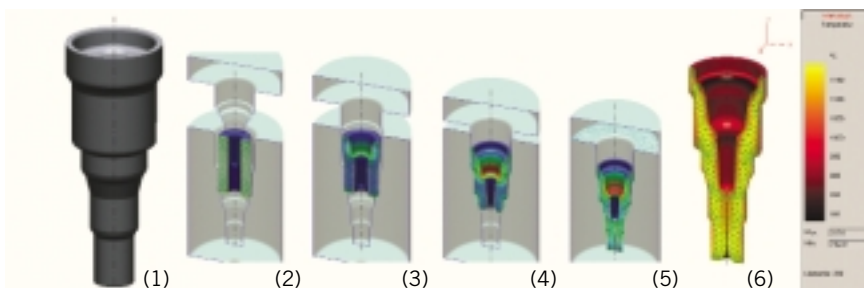
Forging robot built in 1995.



LASCO engineers together with students attending an advanced technical college in its mechanical engineering laboratory.

Active know-how exchange with internationally renowned research institutes and universities keeps the expertise of LASCO up-to-date. The manifestations are research assignments, technical theses and papers and the granting of student apprenticeships.

The innovative power of LASCO is appreciated all over the world. The company, which built the first hydraulic drive for a die forging hammer world-wide in 1951, has patented many inventions during its history.



Computer-aided simulation of the forming process (2 – 5) and the heat flow (6) using steering knuckles made on a hydraulic press as an example.

The Team

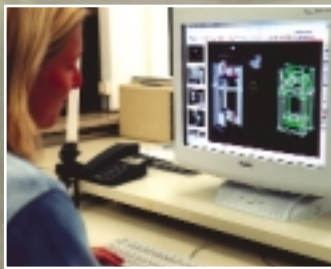
Qualified, motivated and creative employees in all corporate activities are our most important competitive asset and problem-solving power for forming challenges. Advanced training and further education are of great importance along with encouragement and reward for individual commitment. This is reflected in the high proportion of trainees (12 – 14 % of the total workforce) we have maintained in comparison with other companies in this industry for many years now and from the above-average performance our trainees show in their final exams.



Sales engineers heading towards the customer.



Electro-mechanic to be trained. CAD-design.



Technical trainees in the LASCO training department.

LASCO provides trainee-ships for men and women as technical draftsman, electro-mechanic, and industrial mechanic for machine and system technology, energy electronic for operating technology, machining mechanic for turning and milling technology, wood-pattern maker, as well as industrial and information technology white-collar workers.

LASCO supports the practice oriented qualification of students enrolled in courses for electrical and mechanical engineering, as well as for economics, by granting them student apprenticeships, technical thesis and papers. High-school graduates can settle into their new job quickly owing to the profound instructions they get for demanding tasks.

Experts and managers will be confronted with interesting challenges in the attractive surroundings of an industrial enterprise pursuing international activities. Not too distinct hierarchies and quick decision making open up a favourable atmosphere for a career. The professional development of the individual is actively encouraged and appreciated within the frame of company objectives.



Thank you very much for the interest you have expressed in our company. We are glad to enter into constructive dialogues with business partners, those active in the market and the general public. For this purpose we offer to you a variety of supplementary documents and information. We will be pleased to receive your enquiries and requests in writing, by telephone (++49 (0) 95 61 / 6 42-0) or on-line and to forward them without delay to those employees who can give you the desired advice quickly and competently.

LASCO in the World-wide Web

You can always find current information on the company and supplementary services in German, English and French on our web-sites under

<http://www.lasco.de>

or

<http://www.lasco.com>

From there you can, among others, download to your personal computer all printed material available from our company including our company journal "UpGrade", which is published several times a year.

We will be pleased to send you the printed material requested and to put you on the list of recipients of our journal. Please use the attached form.



