

BELGIUM

DENMARK

FRANCE

GERMANY

ITALY

PORTUGAL

THE NETHERLANDS

SPAIN

SWITZERLAND

UNITED KINGDOM

➤ "Dear" energy!

➤ Consuming less: the
Leroy-Somer commitment!

➤ When motors
become drivers

➤ Leroy-Somer
certified ISO 14001:2004

➤ Leroy-Somer@home

➤ We support the innovations
of our customers!



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"LS News", a European success story

The first issue of LS News was published ten years ago. At the outset this was a demanding challenge: how to produce a magazine every 6 months that would interest readers in 10 European countries, working in a huge variety of industrial sectors? Some ten people, all members of the Leroy-Somer European sales network, rose to this challenge and implemented the process that would allow us to distribute LS NEWS to 25,000 European readers with a professional common interest in powerful drive systems.

On the occasion of this anniversary, we conducted a telephone survey of a thousand readers of LS News throughout Europe. A big thank you to those of you who gave your time to answer our questions.

We are delighted to inform you of the highly encouraging results of this survey: almost two thirds of the people interviewed said that they read most or all of LS NEWS before passing it on to their colleagues. More than 80% of you generally appreciate the content, form and editorial quality of the articles. The "Products" section, presenting the latest LS ideas, is the most popular (73%), followed by the "Topical Issues" section (67%), which explores the major challenges of European industry in the 21st century. Also highly appreciated are very specific subjects covering product applications and services. The "Leisure" section was the only one where opinions were more divided.

This information is very important to us as it enables us to continue offering a magazine that reflects your areas of interest and is packed full of interesting information.

The pages of issue 18 cover developments in areas that have become increasingly important in the industry, such as energy saving, process management and web technologies. All of these subjects have appeared in the 17 issues published since 1997.

A springboard of choice from which to explore the future!

/ The Editorial Committee /

"Dear" energy!

Produce more effectively, using less energy: in ten years, this principle has been adopted throughout Europe as a basic pillar of sustainable development. This article examines one of the first commandments of European companies in the 21st century, and the technical developments making it possible.

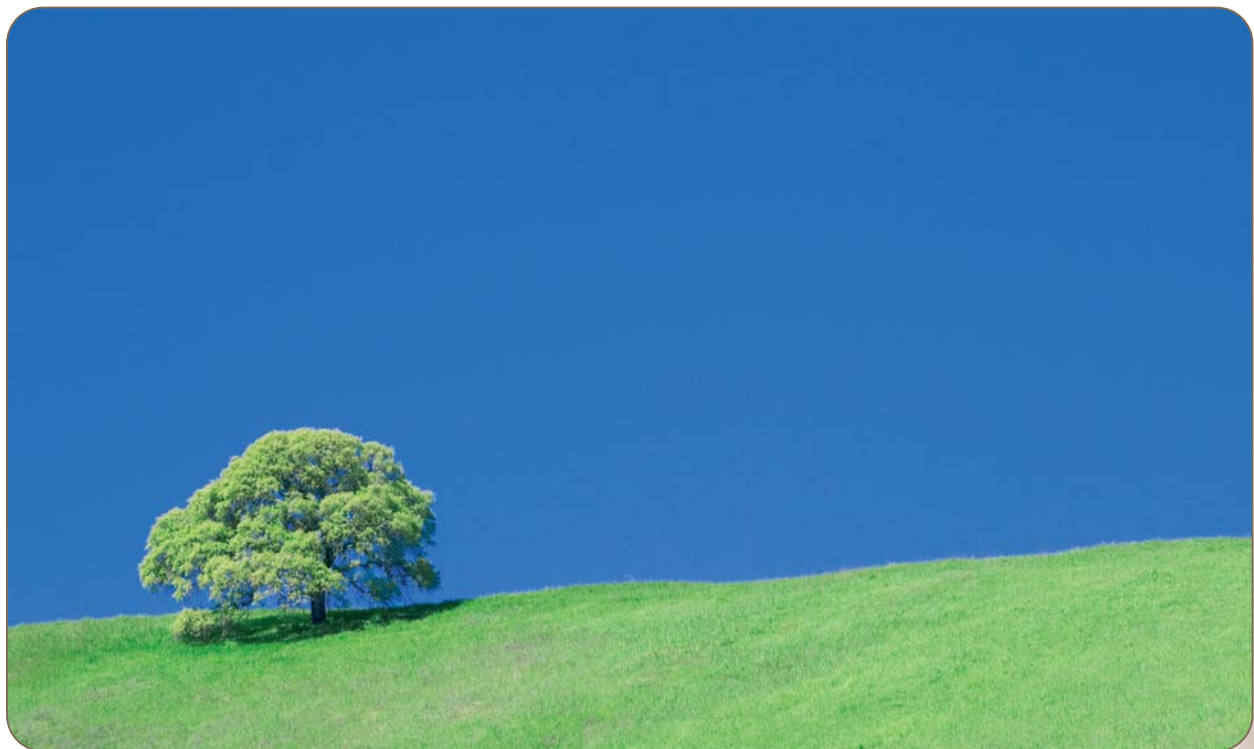
The need to reduce energy consumption is not a new concept. It has, however, changed in nature and is now absolutely essential after the oil crises of the 70s and 80s, when a shadow was cast over enthusiastic industrial development by the spectre of shortages and an unprecedented rise in prices, although these now look remarkably low compared with those of today.

In addition to the depletion of natural resources, global warming, caused by

between 1990 and 2100. The Kyoto Protocol, ratified by the European Union in May 2002, commits the Union to reducing greenhouse gas emissions by 8% for the period 2008-2012, compared with the emissions measured in 1990.

In addition, energy saving is necessary to reduce Europe's dependence on the countries that export oil and gas. Today, half the energy consumed in Europe comes from outside the European

release some 60 billion euros a year for other investments, would strengthen the competitiveness of European industry, allowing the creation of a million jobs in industrial sectors using energy-efficient technologies and associated services. The reduction in greenhouse gas emissions thus obtained would be sufficient for the European Union to meet its Kyoto objectives.



© William Manning/Corbis

intensive consumption of fossil fuels and the atmospheric pollution this generates, is another reason for drastically reducing the consumption of coal, gas and oil, and the secondary energies they are used to produce. According to the United Nations Intergovernmental Panel on Climate Change, greenhouse gas emissions will be responsible for a global rise in temperatures of +1.4° C to +5.8° C

Union. Between now and 2030, the European Union's dependence could climb to 70%, making the economies of the Member States increasingly fragile.

In its Green Paper on Energy Efficiency (June 2005), the European Commission estimates that the European Union is capable of reducing its energy consumption by 20% between now and 2020. This saving, which would

Energy saving: European avenues of research

Energy efficiency varies widely from one region to another. In 2001, North America, Western Europe and Japan used 52% of total world energy to produce 77% of world wealth. Asian countries that have started a process of large-scale industrialisation used 35% of world energy to produce 20% of

world wealth. The former Soviet Union and Eastern countries consumed 13% of energy to produce 3% of wealth.

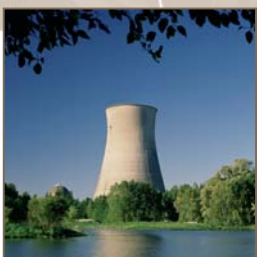
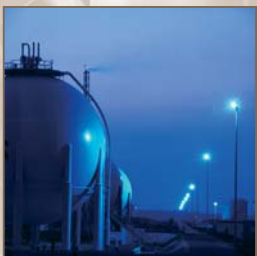
Europe is exploring different avenues to improve energy efficiency and develop the use of renewable energy. Between 2007 and 2013, more than two billion euros will be spent on R&D related to non-nuclear energy (seventh Framework Programme).

Three sectors which are particularly energy-hungry will be focused on: transport (which transforms more than a third of the energy available to Europe into exhaust gases), heating and lighting (40% of European consumption), and the generation of energy itself which, depending on the technology used, wastes 40 to 60% of the energy required for the generation of electricity in the generation process.

In just a few decades, technical progress and more commitment to increasing energy efficiency have very significantly improved the efficiency of many machines. The efficiency of new electric power stations is close to 60%, compared with 25% for older generation equipment. Improved construction techniques have halved the heating requirements in new buildings. In air transport, fuel consumption per passenger dropped by 20% between 1990 and 2001. And in ten years, car engine consumption has dropped by 8% to 27% for the same amount of power, depending on the model. However, the power of engines has increased to meet increased safety and comfort requirements...

A common European energy strategy?

Energy does not currently lie within the domain of the European Union. Energy policies continue to be the exclusive preserve of Member States which sometimes have diametrically opposing points of view on subjects such as nuclear energy. However, as Philippe Busquin, European Commissioner and Member of the European Parliament points out, "energy-related issues are becoming increasingly important in European discussions and in the foreign relations of the EU, for example with Russia, which supplies us with a major part of our energy. It is essential to develop a common vision and strategy". The introduction of a deregulated energy market is a step in this direction. A large number of national markets have for many years been characterised by protectionism and the domination of a few well-established companies, penalising consumers by maintaining high prices and infrastructure that is not competitive. Since July 2004, companies located in Europe have been free to choose their gas and electricity supplier. By the 1st of July 2007, all residential customers of the Member States must also be able to choose any European supplier they like. Deregulation of energy markets will allow fair competition and give Europe a safer and more competitive energy supply.



Consume less, better and alternatively: the Leroy-Somer commitment!

If European companies want to guarantee the security of their energy supplies and continue to be internationally competitive, they must work on three areas: lower consumption, better consumption and the exploration of alternative energy sources.

Consuming less

Did you know? Over ten years, electrical consumption accounts for 95% of the total cost of an induction motor, while the purchase price and maintenance only account for 2 and 3% respectively. It is therefore particularly important to invest in motors that are energy-efficient.

For many years now, Leroy-Somer has continuously improved the efficiency of its product ranges and offered new solutions to reduce electricity bills resulting from the operation of industrial installations.

Firstly, Leroy-Somer offers new ranges of high-efficiency induction motors up to 90 kW, corresponding to the Eff1 and Eff2 labels in conformity with the European agreement. These new ranges

of motor also go well above 90 kW, with levels of efficiency of between 95 and 98%.

Secondly, the efficiency of fixed or variable speed applications can be improved by using geared motors from the new 3000 range, with coaxial, parallel or orthogonal output, designed to optimise transmission. This new range deploys up to 30% more torque than the geared motors of the previous generation.

Consume better

Leroy-Somer has also originated a new type of high-efficiency motor based on Hybrid Permanent Magnet (HPM) technology. These motors are a quarter the size of conventional induction motors with the same power. They can operate at both slow speeds (60 min⁻¹) and high speeds (8000 min⁻¹), with partic-

ularly impressive efficiency levels throughout the speed range.

Finally, the use of variable speed solutions, which continuously adapt the speed of motors to the actual requirements of the application in question, can also be an important way of reducing energy bills. It is particularly useful for centrifugal applications, such as pumps, fans and compressors, where energy consumption is proportional to the cube of the speed. For this type of application, halving the speed of the motor results in an eighth of the energy being consumed.

Consume alternatively

Because electric motors currently account for almost 70% of the electrical energy used in industry, Leroy-Somer has gone one step further and



invested in a complete sustainable development process which aims to reduce energy consumption by offering a rational method for selecting drive systems.

Thanks to its experience in improving the efficiency of electric motors, geared motors and variable speed motors, Leroy-Somer has developed a method that allows its customers to reduce the total energy cost of their motorised applications by up to 40%. It is based on an energy analysis of the application (pre-diagnosis), and on various on-site measurement campaigns which are used to assess potential savings.

For each application, Leroy-Somer can offer an optimum solution resulting in significant energy savings, either in terms of the choice of motor, gearbox and transmission technology, or through association with electronic variable speed technology. In addition, the Leroy-Somer support process includes rigorous monitoring of the installations already in place (preventive and predictive maintenance, and approved repairs).

Centrifugal applications (pumps, fans) are obviously the prime area in which significant savings can be quickly made. However, this method also applies to:

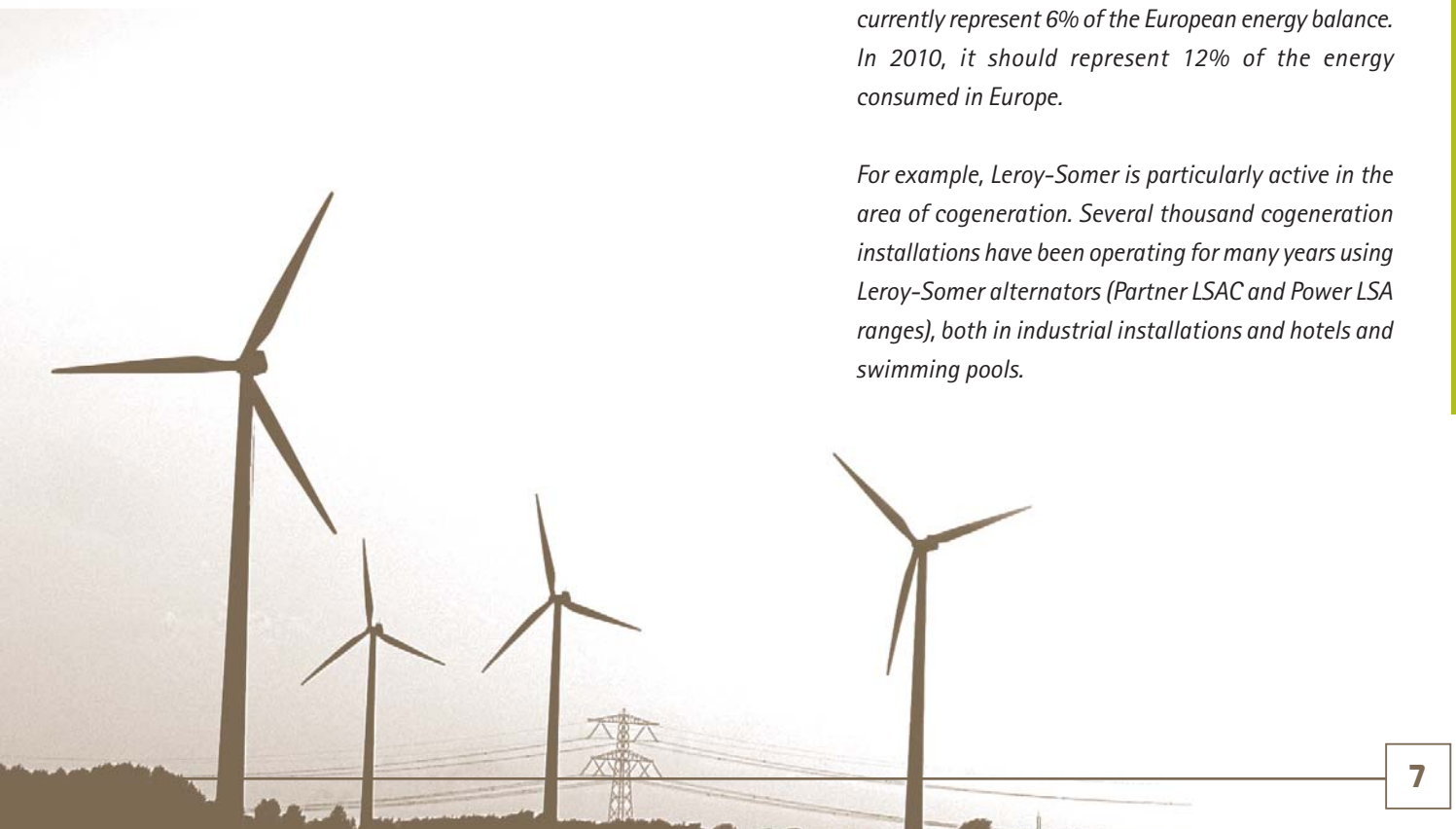
- Applications with mechanical regulation (dampers, sluice valves and slide valves for compressors).
- Applications accumulating a high installed power.
- Applications operating in continuous duty, restoring energy on braking resistors (centrifuges, lifting, winding-unwinding).
- Applications whose mechanical transmission gives poor efficiency.



Exploring alternative energy generation

Alongside the efforts made to reduce the energy consumption of industrial installations, Leroy-Somer is also working on generating alternative energy that respects the environment. This energy, produced from wind, water, sun, organic waste and cogeneration, currently represent 6% of the European energy balance. In 2010, it should represent 12% of the energy consumed in Europe.

For example, Leroy-Somer is particularly active in the area of cogeneration. Several thousand cogeneration installations have been operating for many years using Leroy-Somer alternators (Partner LSAC and Power LSA ranges), both in industrial installations and hotels and swimming pools.



When motors become managers

With skilful management, variable speed drives are capable of performing multiple tasks in sequence, from management of different speed profiles to torque and position control. This means they can be used to manage complex industrial processes. Over the last ten years, Leroy-Somer has successfully established its expertise in the process management market.



Since the introduction of "frequency inverter" type drives, induction motors are no longer simple mechanical systems subject to the random conditions of voltage drops. Correctly regulated, they can be used to adapt the speed of motors on a second-by-second basis to the requirements of the application they are driving, for example, moving an object at a given speed, or controlling the flow rate or pressure of a fluid.

In the most energy-hungry industrial applications (pumps, fans and compressors), the motors associated with a drive therefore consume a lot less energy. In addition, by controlling acceleration rates and limiting the starting current, motor lifetime is extended and the number of maintenance operations can be reduced.

In the past, drives were originally managed by centralised control systems (a PLC, digital control or industrial PC). This was until Leroy-Somer revolutionised the industry and integrated the intelligence necessary for process management.

That was ten years ago. Since then, intelligent drives fitted with programmable modules have won a privileged place in the market because the advantages of decentralised process regulation are so outstanding. To start with, this results in a much simpler system, making it more powerful, faster and reliable.

From drive functions to process management

At Leroy-Somer, integrating control systems into the core of industrial processes has resulted in a commercial revolution. Leroy-Somer has developed standard solutions for each movement (positioning, winding / unwinding, axis synchronisation, on-the-fly cutting, pressure and flow regulation, hoisting, control of lifts) using a variable speed drive in combination with programmable modules and standard application software.

The different solutions offered by Leroy-Somer, from the most simple to the most complex, are all designed with the same objective in mind: to optimise the advantages of decentralisation while allowing manufacturers to reduce total installation costs, for example, by reducing the size of PLCs and development times, decreasing cabling requirements and increasing performance. These new "ready-to-use" products, which are extremely simple to get up and running, today cover more than 80% of normal requirements.

"In order to offer our customers these new functions, we had to introduce major innovations in combination with a highly rigorous approach, both in relation to our standard range options and the made-to-measure solutions developed for the most complex applications that are produced internally or with the assistance of outside partners" explains Thierry Crespo, Sales Manager of the Industrial Electronics

Division of Leroy-Somer. This mission has been very successfully accomplished, since major manufacturers such as Thyssen, Komori and Sidel Conditionnement now use Leroy-Somer to equip their specific drive system machinery controlled by integrated software specially developed for them.

Leroy-Somer and the immediate outlook

As Thierry Crespo explains, astonishing progress has been made in just ten years: "Today, our machines are perfectly capable of communicating with each other and, for example, of performing auto-diagnostic tasks within local networks. However, customers do not always have the necessary electronic expertise on-site to conduct troubleshooting operations. Our current challenge is the development of remote man to machine (or "M2M") dialogue. We can now offer new solutions that allow dialogue with our drives, regardless of both the drive location and that of the engineer. This has been made possible through new communication technologies such as the Internet and GPRS."

With these new solutions, the drive is no longer limited to diagnosing the problem and switching to safety mode if necessary: it can also send the diagnosis to someone located outside the plant, in a Leroy-Somer services centre for example. Remote intervention is then possible so that additional information can be gathered, drive parameters can be modified, or a module requiring on-site replacement by the operator can be determined.

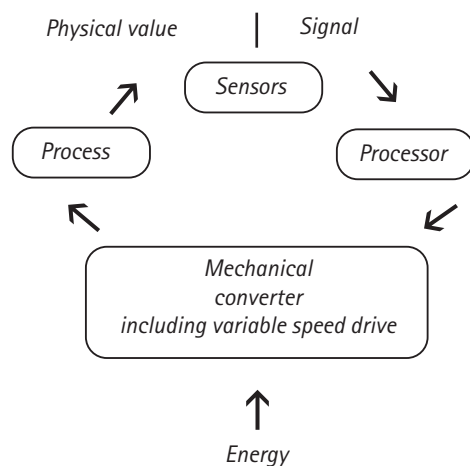
Hierarchical automation, a global approach

As explained by Hervé Buyse, Emeritus Professor at the Université Catholique de Louvain (Belgium), hierarchical (or decentralised) process automation has been developing over the last ten years thanks to the technological progress made in various complimentary areas.

Firstly, the use of "frequency inverters" allowed the introduction of induction motors which are simpler, more robust and therefore more powerful to use than D.C. motors. Powerful smart sensors were also developed which are essential for regulating processes as they allow local provision of information that can be directly used by the processor, for example data on speed, torque or values such as pressure and flow rate. Finally, this information can be processed locally through the development of appropriate processors that vary in complexity according to requirements.

"This global approach, otherwise known as "industrial mechatronics" represents new challenges for manufacturers as they will now require expertise in a wide range of areas (drives, speed control, automation, sensor technology, man-machine dialogue, etc.) in order to optimise decentralised control systems while reducing overall installation costs", explains Professor Hervé Buyse.

Progress continues to be made, for example, in the development of motors with permanent magnets, these being significantly smaller than conventional induction motors but with the same power output. The development of "software" sensors is now also being used to calculate certain values required to control motors (position, speed etc.) without the need for "physical" sensors to measure them. This further increases the reliability of the overall system.



The new "East European" TGV Technicentre

Intelligent drives have proven to be particularly powerful for certain specific movements, such as positioning and axis synchronisation, electronic cams, product winding and unwinding, hoisting, and control of lifts. One of the most powerful lifting applications in the world has been installed by the SNCF in its new "East European" TGV Technicentre, inaugurated near Paris in April 2006. A synchronised lifting line can lift a complete TGV trainset (200 metres long and weighing 386 tonnes!) in just 10 minutes to the nearest millimetre, thus allowing maintenance of the running gear. A world record in terms of the accuracy – volume – weight ratio, achieved through the use of LSMV motors with Unidrive SP drives fitted on each of the 26 jack stands. This will ensure maximum availability of 52 new trainsets, marvels of engineering capable of reaching a commercial speed of 320 km/hr and each requiring close to 100 preventive maintenance operations a year.



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Leroy-Somer obtains ISO 14001:2004 certification



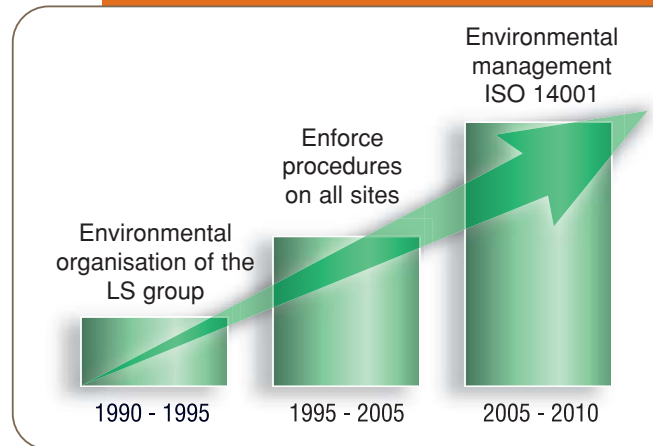
Manufacturing a drive system is not a polluting activity in itself as may be the case, for example, in the chemical industry where sophisticated systems must be set up to control pollution. The environmental approach of Leroy-Somer, started in the early 1990s, was initiated following discussions on how to most effectively manage the waste generated by the different production sites, the

aim being to reduce costs and promote protection of the environment.

This approach was gradually extended to cover all the potential effects of manufacturing activities: management of water and energy resources, emissions in the air and discharges into watercourses, noise levels etc. At the same time, major initiatives were undertaken to ensure that plant were compliant with the complex and numerous regulations in force.

In 1999, Leroy-Somer's management decided to formalise this approach on all production sites by implementing an internal Environmental Management System (EMS). The objective of this mechanism is to measure and continuously improve the progress made in each area.

As a natural result of this approach, Leroy-Somer has now been awarded ISO 14001: 2004 certification on all its production sites in France. More than ever, Leroy-Somer is determined to adopt mechanisms that ensure global sustainable development.



Leroy-Somer@home

Tens of thousands of you already know this and have regularly used it in Europe: a Leroy-Somer expert is at your service, at any time, right in your office...

For the last six years, mouse-proficient professionals have been able to find all the information they need on Leroy-Somer, its products and services on the website www.leroy-somer.com. Today, thanks to new web technologies, this

for visitors in English and French, has been rapidly expanded to include country-specific sites. Professionals from Germany, Italy, the Netherlands, Denmark, South Africa and Turkey can now find an adapted version of the site

base containing the equivalent of 300 Leroy-Somer catalogues, and also provides a data sheet and 3D diagram of the products suggested. The system allows you to transfer all of the results directly to your CAD and to edit the sheets obtained in Word format. You can also request a specific quotation directly online. More than 8000 people in the world already use this system, sometimes several times a day.



original mine of information has now been combined with a truly interactive consultancy service.

"Our aim, through this website, is to facilitate the lives of our customers, partners, design and engineering offices, machine manufacturers, end-users and students, who are all looking for specific answers to their questions or problems", explains Jean-Michel Lerouge, Communication Manager at Leroy-Somer. Usage statistics, which have been constantly rising over the last six years, show how much interest the website generates: 338,000 visitors, 542,000 visits, 5,050,000 pages opened, and almost 40,000 sales documents downloaded.

In order to reach its customers more effectively, the main site, which provides monthly information updates

in their own language. Two other new sites will soon be available for Russia and China. www.leroy-somer.com also provides a gateway to the sites of several subsidiaries, such as Marbaise, Patay, Girard-Transmission and Control Techniques.

A configurator at your service

The most advanced service on the Leroy-Somer site is the configurator: this tool can be used to select the drive systems most appropriate to the functions and constraints of each machine. Based on the information requested from you in the language of your choice (11 languages available), the configurator extracts the different options available to you from a data-

A catalogue for industry

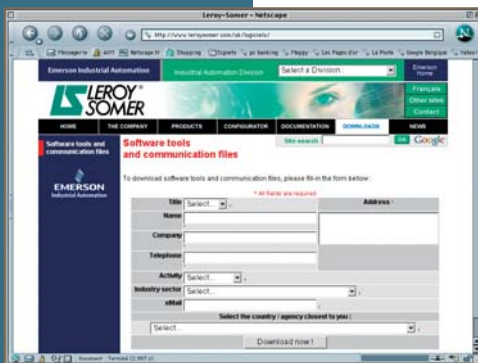
The Leroy-Somer site also has a Catalogue For Industry, the electronic equivalent of the 2000-page paper catalogue, with a host of search options offered by the electronic format. It can be used to select drive systems from 70 product lines and 50,000 standard references.

Software and downloadable instructions

The Leroy-Somer site also allows users to download various documents, such as start-up and maintenance manuals, together with a wide range of product documentation. Drive management software and the latest updates can also be accessed online. Last but not least are the LS News magazines, the complete collection of which can be accessed in the "News" section.

An extranet for LS partners

In 2005, Leroy-Somer set up a specific code-protected website for its partners around the world, including service centres. This extranet is a complete database of online operational services, such as a spare parts configurator allowing online ordering, and the option of downloading product repair sheets. This is an effective support tool, accessible 24 hours a day, that can be used to produce offers for end-customers based on the most recent information. The user-friendly search engine offers different ways of finding information related to a specific product, for example, via the serial number. From 2007, the extranet will also allow LS partners to order products from the Catalogue For Industry online. It will be extended to the partners of all European countries from 2008.



The future of information technologies

For some years now, other information sharing technologies have been used in industry. "Mobile technologies, such as GSM and pocket PCs which communicate via Wi-Fi, are increasingly used in industrial settings to exchange information in real-time, both inside and outside the company" explains Emmanuel Ottevaere of BizzDev, a company specialised in mobile IT applications. "It is now common to see factory mechanics carrying a reinforced, shock-resistant pocket PC. They receive their work schedule on it and use it to enter completed tasks, parts used etc. This data is transmitted via Wi-Fi to a central system which manages maintenance schedules, the tasks required of each mechanic, spare part stocks, etc." A technological luxury yesterday, today an increasingly widespread tool...



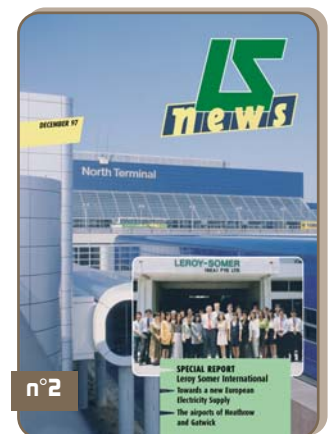
We support the innovations of our customers!

Every day, the teams of Leroy-Somer support dozens of customers in their search for appropriate, innovative and high-performance solutions. An incredible technological and human adventure, which has already resulted in the completion of hundreds of projects in Europe and throughout the world. Check out our sample of ten years of developments reported in LS News.

GREAT BRITAIN (LS NEWS NO. 2 – DECEMBER 1997)

Heathrow and Gatwick: 3600 bags an hour

Since 1999, the two busiest airports in the world, Heathrow and Gatwick in Great Britain, have been able to register some 3600 bags every hour. This feat, essential for airports which have many millions of passengers passing through them each year, is based mainly on super-efficient conveyor belts fitted with 1700 LS geared brake motors, capable of withstanding the 2400 stops and starts an hour which this equipment is subject to.

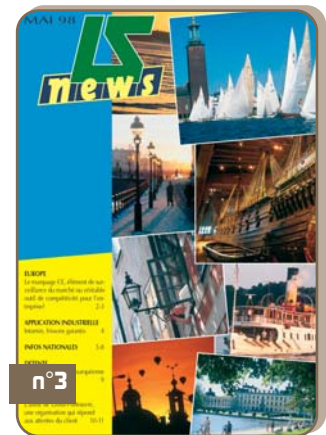


The conveyor belts at Heathrow and Gatwick airports are driven by LS geared motors consisting of an integrated FCO brake motor on a helical bevel gearbox from the Orthobloc 2000 series. They can operate at up to 3 kW of power.

SWITZERLAND (LS NEWS NO. 3 – MAY 1998)

Leroy-Somer reaches new heights with Ride Trade

Leroy-Somer is also behind the exciting thrills enjoyed by fans of amusement parks around the world, through the installations constructed by the company Ride Trade. In 30 years, the company has produced more than 300 rides, many of which are driven by Leroy-Somer equipment.



The train which takes thrill seekers on the "wooden coaster" is fitted with an Orthobloc gearbox, brake motor and an LSK 1804 VL 160 kW DC motor. The Gyro Drop takes its passengers to the top of a panoramic tower before bringing them down again in free fall. It is fitted with two LSK 2804 CL 450 kW DC motors.

BELGIUM (LS NEWS NO. 11 – MAY 2003)

Made-to-measure food conveyors

In Singapore, millions of spring rolls are transported in spotless hygiene conditions on a spiral mechanical conveyor, specially designed for foodstuffs by the Belgian firm Spiromatic. On the other side of the world, the same type of system conveys the dozens of kilos of baguettes distributed every day in the United States. The conveyors of these giant food companies, like those of countless bakeries, biscuit factories and breweries containing Spiromatic equipment, are fitted with Leroy-Somer geared motors designed to operate in explosive atmospheres.



Spiromatic conveyors are fitted with Leroy-Somer Compabloc 3000 series geared motors with LSPx safety motors for use in zone 21.

GERMANY (LS NEWS NO. 12 – JANUARY 2004)

Well-driven harbour cranes

Gottwald Port Technology is one of the world's leading manufacturers of harbour cranes: a crane leaves its Düsseldorf factory every five days. All of them have two LS LSK 2804 DC motors with 280 kW of power for hoisting, and two 100 kW LSK 1604 motors for rotating movements. The power required by the motors is generated by an LS 1200 kVA alternator, as these diesel-electric wheel cranes cannot be powered via an earthed supply.



Leroy-Somer's expertise in electric motors and specially adapted generators allows Gottwald to develop diesel-electric harbour cranes that meet the highly specific requirements of its customers.

NETHERLANDS (LS NEWS NO. 12 JANUARY 2004)

Greener power for the Esperanza

The Esperanza, one of three ocean-going vessels owned by Greenpeace, is currently completing an expedition that took it from South Africa to Europe, via the Americas and Antarctica, to create a worldwide network of marine reserves designed to safeguard the biodiversity of the oceans. After purchasing the ship from the Russian authorities, the Esperanza was given to the Dutch company Croon Elektrotechniek in order to replace its conventional power equipment with a diesel-electric system that is less energy-hungry and produces less CO2. Leroy-Somer has been selected to supply these environmentally friendly engines.



The Esperanza is fitted with an LSAM52.2 1300 kVA alternator which powers the electronic propulsion engines. The onboard power supply network is equipped with an LSAM50.1M6 450 kVA transmission alternator. Two UMV3301-600T variable speed drives regulate the PLS 450lb-400kW 600rpm propulsion engines.

NETHERLANDS (LS NEWS NO. 12 – JANUARY 2004)

Peristaltic pumps with integrated motors

The chemical, pharmaceutical and food industries regularly use peristaltic pumps to transfer liquids and thus avoid the risk of external contamination. For several years now, two integrated motor models developed by Bredel Hose Pumps have been available to these industries. The size of the pumps is almost 30% smaller, they are easier to maintain and have a superior lifetime. These complete, perfectly synchronised machines are the result of close collaboration between Bredel Hose Pumps and Leroy-Somer.



Bredel peristaltic pumps are fitted with an LSMV motor integrated with a CB 3000 gearbox, the output shaft of which has been specially designed for the SPX25 and SPX32 models. An optional Varmeca frequency inverter is also available.

DENMARK (LS NEWS NO. 13 – SEPTEMBER 2004)

**Roll-O-Matic:
High-performance production of plastic films**

The plastic bags you put your shopping in may well have been manufactured on a machine developed by Roll-O-Matic: in thirty years, this Danish company has supplied a thousand plastic packaging manufacturing facilities in more than 50 countries. The company first met with Leroy-Somer in 2001. Roll-O-Matic was looking for a supplier that would allow it to introduce innovations and offer its customers new, better-adapted, more intelligent and better performing machines. Leroy-Somer suggested its LSMV motors, all specially fitted with encoders. Since that date, almost all Roll-O-Matic machines are driven by Leroy-Somer equipment.



Plastic bag and film manufacturing facilities designed by Roll-O-Matic are driven by LSMV motors fitted with encoders.

GERMANY (LS NEWS NO. 13 – SEPTEMBER 2004)

Bitzer blows hot and cold

Bitzer is one of the world's leading manufacturers of industrial refrigeration and air-conditioning systems. Its screw compressors are among an increasingly impressive number of refrigeration, air-conditioning and heat pump installations around the world – a market that is growing at more than 10% a year. The screw compressors are fitted with special rotors and stators supplied by Leroy Somer. The efficiency of the LS motors, which are available in powers up 240 kW, is one of the factors guaranteeing the smooth operation of these applications.



The capacity of the Bitzer screw compressors fitted in refrigeration systems ranges from 46 m³/h to 910 m³/h.

FRANCE (LS NEWS NO. 13 – SEPTEMBER 2004)

Cables for extreme conditions produced on advanced technology lines

If the cables in your installations bear the name Omerin, a world specialist in wiring and cables for extreme conditions (from -190° C to +1400° C), they have been produced on lines driven by Leroy-Somer equipment. In order to guarantee optimum efficiency of its various processes, Omerin has worked in collaboration with Leroy-Somer to develop or renovate all of its production lines. The resulting improvements include the integration of programming cards in drive systems from the outset, thus reducing the number of individual PLCs and lowering the overall installation cost.



Omerin cable extrusion lines are fitted with Unidrive SP variable speed drives that have a new generation of control algorithm, guaranteeing open loop, optimum performance at speeds below 1 Hz.

ITALY (LS NEWS NO. 14 – MARCH 2005)

Ceramics under control

Ingegneria Ceramica, based in Italy, manufactures glazing machines. A collaboration project with Leroy-Somer has resulted in the development of equipment that is better performing, more economical and more flexible than conventional systems thanks to the integration of variable speed drives. The Nebula range, developed for steam glazing, allows highly accurate control of pressure via an LS Varmeca drive integrating a speed reducer with power electronics. In the Vela range, which glazes continuously cast ceramic tiles, the Proxidrive compact variable speed drive, with its high degree of protection (IP66), manages the entire operating cycle.



The LS variable speed drives fitted on Ingegneria Ceramica glazing machines guarantee a high degree of control over the glazing process, with a series of integrated control systems and control mechanisms.

SPAIN (LS NEWS NO. 14 – MARCH 2005)

AFAP: door waste generates electricity

In Villacañas, near Toledo, an energy conversion power plant constructed at the initiative of the company AFAP recovers wood waste from door manufacturing companies, of which there are many in this area, to generate electricity which is sold back to the grid. The wood waste is put through a grinder and then a Scoiner mill driven by 90 and 150 kW LS motors. The sawdust obtained is stored in Mecafa silos fitted with LS Compabloc and Orthobloc type gearboxes, before being used as fuel to generate steam. A Nadrowski turbine then uses the steam to drive an LS 10,000 kVA LSA58 alternator.



The entire wood waste energy conversion process at the Villacañas biomass factory is equipped with LS motors, geared motors and an alternator, all certified to operate in explosive atmospheres (ATEX dust).

SPAIN (LS NEWS NO. 14 – MARCH 2005)

Zitron ventilates underground facilities

What do the underground tunnels of the A86, the second ring road around the Ile de France, and the underground systems of Rome, Istanbul and Kiev have in common? Their ventilation systems, developed by the company Zitron, all use LS high-temperature motors. Zitron offers a wide range of standard fans, but also produces high-power specific systems for a vast range of underground infrastructure: tunnels, underground systems, mines, hydro-electric projects, etc. These custom-built systems have been facilitated through collaboration with LS since 1999.



The underground systems in Rome, Istanbul and Kiev are fitted with Zitron fans driven by LS high-temperature motors. The two new tunnels of the A86 (France), completed in 2006, are equipped with 200 axial and jet motorised fans, driven by the LS single and multi-speed range from 9 kW to 560 kW.



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