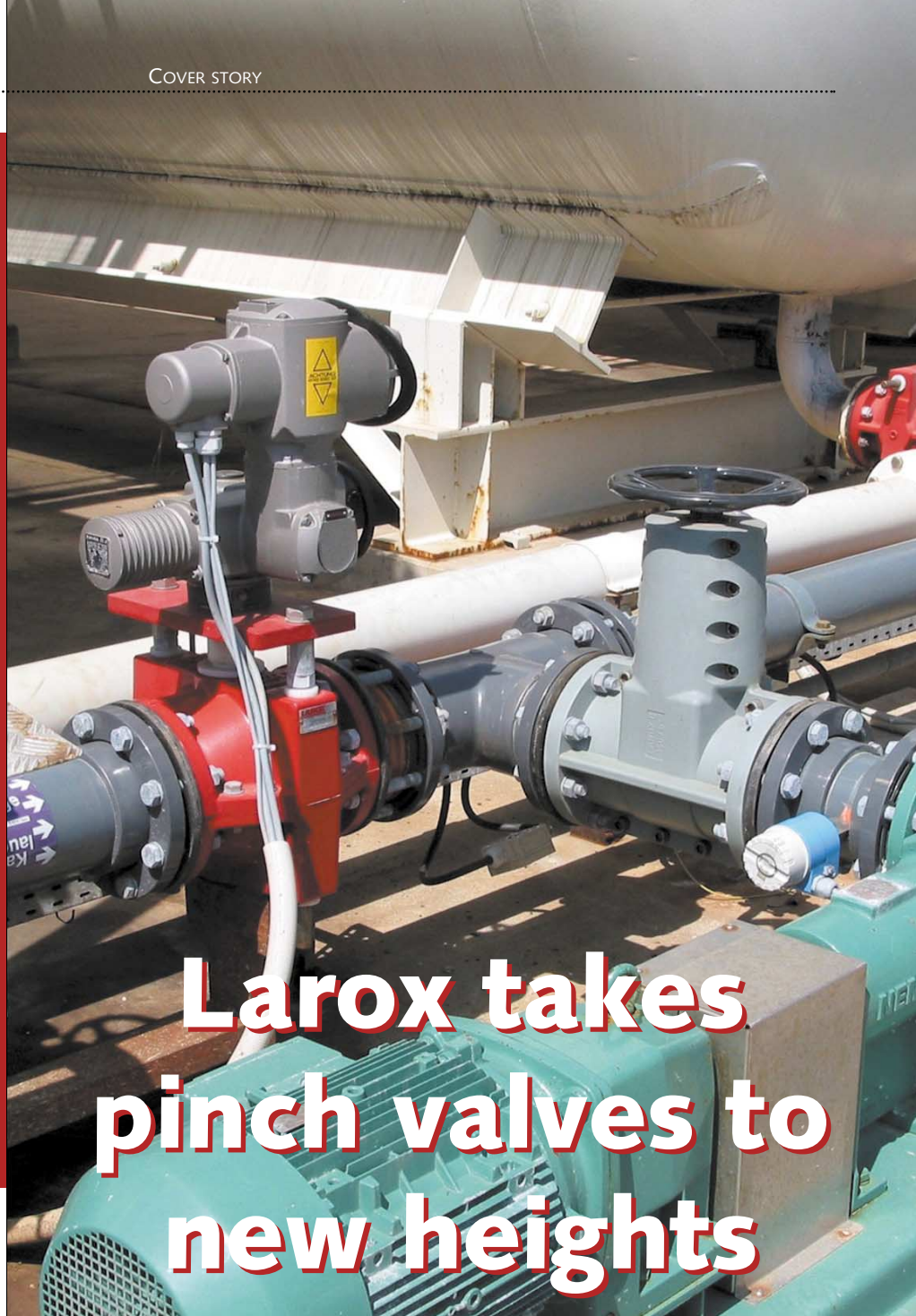


Is there anyone out there who still believes that pinch valves are only for low pressure water applications? Then it is high time you paid a visit to the brand new business headquarters of Larox Flowsys Oy in Lappeenranta, Finland. "Our pinch valves are different," says Larox's President Mr Jukka Aaltonen with confidence. That's not just wishful thinking: the facts prove him right. Absolute sales are increasing strongly year-on-year whilst new technologies are opening up previously untapped markets. So if you are looking for innovative flow control solutions for areas as diverse as cement transportation, fire-water systems or aggressive slurries, then read on.

In Lappeenranta, close to one of Finland's many fine lakes, Larox Flowsys Oy is investing significantly in its new business premises. The company moved here just over a year ago and really needs the extra office and production space as business is booming. Staring out twenty-five years ago as a spin-off from an industrial filter manufacturer, today Larox Flowsys is an independent company with a very healthy order portfolio. Some eighty per cent of its pinch valves are sold outside of Finland. The new location means growing space for a company that is preparing for new market challenges. President Mr Aaltonen has every right to be confident about the future of his company. Whilst the valve and actuator market in general shows a very slow growth of just three to four per cent at best, sales of



## Larox takes pinch valves to new heights

Larox's pinch valves are much higher. "We are operating in a different world. Conventional valvemakers are under considerable pressure to reduce prices whilst changes in distribution channels are also tending to commoditise products. But Larox valves are not conventional valves! With over 2200 pinch valve variations on offer, we can tailor-make flow control solutions precisely in accordance with the customer's specifications."

Pinch valves are often still perceived as 'low technology' items, ideal for water and wastewater applications but precious little else. For most other pinch valve offerings that may be true, but Larox's mission has

always been to take the pinch valve to new heights, with sleeves and body designs capable of withstanding high pressures and erosive/corrosive environments. Mr Aaltonen: "We can cope with a vast range of applications like elevated pressures, high temperatures and aggressive media. Our sleeves, which incidentally are all hand-made, can be designed to withstand 100 bar pressures. That makes our pinch valve an interesting item for a great many industries, as will become evident later."

To ensure a wider range of customers can be promptly served, however, Larox recently decided to introduce their own



standard product, the PVEG. Ideal for wastewater and raw water applications as well as for slurry and waste handling in industrial plants, this valve will be available from stock. Boasting a long service life, the PVEG requires no special maintenance.

### Fighting wear and tear

In essence, all of Larox's pinch valves consist of just a few basic parts: an actuator (manual, pneumatic, electromechanical, hydraulic, etc), a body (open, enclosed or sealed) and a wear-resistant sleeve. In the open position, the sleeve is an integral part of the pipeline, guaranteeing an unob-

structed flow. This is essential in the case of slurries, for example. However, the simplicity of the design concept belies the potential range of applications of the Larox valve emphasises Mr Raimo Lavikainen, Vice President Sales and Marketing. "Larox's main business is making valves which are resistant to corrosion and wear. Our pinch valves are often applied in situations where there are aggressive chemicals, slurries, crystallising or hardening media, or in high pressure applications. They are also ideal for dry solids, as in the case of cement and even grain. That's because our sleeves provide a 100% tight shut-off, even if large particles are entrapped between the sides of the sleeve on closing."

To further widen the range of potential applications much research and development work has been conducted into sleeve materials. Today, sleeves can be offered made from different types of elastomers as well as natural rubber. For very erosive applications Larox offers the SensoMate; an extra stainless steel mesh fitted between the wear layer and the reinforcement cords of the sleeve. Deterioration of the sleeve exposes the mesh, which creates a change in conductivity between the pipeline and the wire mesh. This change is picked up by the SensoMate alarm enabling appropriate measures to be taken. One of the questions often raised about elastomers concerns its useful temperature range. Given that natural rubber has a temperature limit of about 77°C, Larox has come up with hydrogenated nitrile sleeves that can withstand temperatures of up to 160°C. As a consequence, Larox pinch valves have been successfully installed on arduous fly ash applications, where the temperature is a constant 130°C. Such an application was unthinkable only a few years ago, according to R&D Director Mr Juha Häkkinen. "With the range of elastomers now at our disposal we can introduce the advantages of the pinch valve to a great many new industries. That will be our focus for the coming period. In the long-term, though, I can see advantages for sleeves that can withstand even higher temperatures. For example, there's lots of potential in the food and dairy industry, where valves without cavities are a must to prevent bacteria accumulation. That makes

the pinch valve ideal. The challenge is that equipment has to be steam cleaned and sterilised, at around 290°C. Sleeves for such temperatures would also gain us a valuable foothold in applications in refineries, cracking towers and so on. Since these industries have problems with sand and grit transported in the oil, pinch valves would be the

*"Larox pinch valves are often applied in situations where there are aggressive chemicals, slurries, crystallising or hardening media."*

answer to their prayers. Also, there's a definite incentive to come up with an elastomeric sleeve which can withstand toluene, a widely-used solvent in the chemicals sector."

### New applications

Mr Aaltonen then kindly discussed some of the success stories Larox has recently booked with new applications. He first touched on a



**With over 2200 pinch valve variations on offer (easily fitted with manual, pneumatic, electromechanical or hydraulic actuators), Larox's business is providing tailor-made flow control solutions precisely in accordance with the customer's specifications.**

number of Larox pinch valves used to good effect in various cement making, transportation and storage facilities. It appears that one of the issues facing the cement industry is that the various grades of cement have to be carefully handled to

*“Seawater is a natural environment for the Larox pinch valve”*

avoid cross-contamination. Systems must therefore be absolutely leak-tight as otherwise a whole silo of quality cement could be ruined. Mr Aaltonen: “At one facility we visited the cement transfer chutes were isolated using blind flanges. Although this guaranteed tight shut-off, operators wasted considerable time manually disassembling and replacing these flanges every time the chutes had to be switched from one silo to another. After installing several Larox’s pinch valves, this factory is still assured of 110% tightness but has the advantage of automated processes.”

People in the marine and offshore sectors are also likely to see many more of Larox’s distinctive red pinch valves. Firstly, in a good example of a customer-driven development, Larox has had its valves approved for use on ships. Mr Aaltonen: “One of our customers told us that our valves would be wonderful devices to be used on ships. However, they were prevented from specifying them due to the regulations. I’m happy to say that our pinch valves have

now successfully passed the stringent tests for sea water applications.” Mr Aaltonen’s second example also concerns a customer-driven application, this time for fire-water systems on platforms. Valves here are often left unused for considerable lengths of time whilst being exposed to sea-water. This can create corrosion issues in metallic valves, affecting their long-term integrity. Mr Aaltonen: “This is a natural environment for the pinch valve, as the sleeves are not affected by sea-water. Further, the positive opening tags – now fitted as standard on all sleeves – ensure

passed the test with flying colours, remaining operable and without any leakage.” Mr Lavikainen added that this is also a good example of how the standard Larox valve can be expanded by incorporating new features. He also noted that the ‘fire-proof valve’ is also ideal for oil refineries which use sea water in their sprinkler systems.



**Larox’s pinch valve sleeves are all hand-made and can withstand pressures of up to 100 bar. That makes the Larox valve very interesting for a great many industries.**

the valves will open on demand. Now, the real challenge for us was to design a valve that could withstand the requirements of the fire-test – namely exposure to a temperature of 540°C for twenty minutes. We therefore developed a new version of the Larox valve and sleeve design, which

### Supplier of choice

Larox’s on-going penetration of new industrial markets has certainly helped the growth in its sales figures, currently standing at some 4500 units per year. However, Mr Aaltonen is never one to be complacent. “Our growth shows that our people have all worked hard. But in some areas we have hardly started to tap into the known potential. For example, we have a great relationship with an iron mine in Sweden. But there are many more iron mines world-wide, so why aren’t we selling any valves there yet? We have also sold valves to a slaughterhouse, so it makes sense to approach other slaughterhouses all over the world with the same solution. And how can we have three hundred customers in Finland, which is about the size of Maryland, and only a hundred more in the whole of the USA? So there’s definitely room for growth.”

### Hoses for peristaltic pumps

The self-same materials used in pinch valve sleeves have proven ideal for peristaltic pump hoses, according to Mr Aaltonen. “As our pinch valve sleeves are the best in the world, capable of cycling one million times, we came up with the idea of applying that technology to pump hoses. Currently, we can supply a range of NR, SBRT, EPDM and hydrogenated nitrile sleeves to fit into different kinds of peristaltic pumps.”

A key issue in peristaltic pump hoses is high temperature resistance. Typically, such pumps cannot be run for much longer than three hours, otherwise the temperature will rise such that the hose could be damaged. For this reason, peristaltic pumps are often installed in parallel. Larox has therefore developed a special type of material, called SBRT, which is resistant to much higher temperatures thereby extending the time between switch-overs considerably.



**Ideal for wastewater and raw water applications as well as for slurry and waste handling in industrial plants, the new PVEG boasts a long service life and is available from stock.**

Discussing how Larox can reach out to new customers, Mr Aaltonen pointed to the network of sales offices and representatives around the globe – including almost forty sales representatives for North

America. Additionally, Business Development Managers have been appointed in Australia, the UK, Finland (two people) and Chile, whilst Larox just opened up its first subsidiary, called Larox Flowsys, Inc.

in Baltimore. Mr Aaltonen: “We wanted a main representative in the USA, but it was very hard to find a suitable hub. So we decided to become our own distributors. We now have seven people in a brand new, 700 m<sup>2</sup> facility, who are keen to get a firm grip on the North American market – where we have our greatest concentration of customers – as well as Middle America”

To help all its representatives give clients the best possible advice, Larox has recently made its ‘living reference guide’ available over the internet. This guide tracks a vast proportion of the 50,000 valves Larox has ever sold. Mr Aaltonen: “Knowing where our valves have been installed, how they are being used and what the maintenance needs are is a veritable marketing treasure-trove. This information is most valuable when recommending maintenance patterns and stocking requirements to existing clients and of course extremely persuasive when visiting potential new clients. We have conquered many new markets and market segments using this resource. Larox used to be seen as the company to turn to when other avenues had failed. Now we are becoming the flow control provider of choice.” ■

## FACTS & FIGURES

Name:	Larox Flowsys Oy
Headquarters:	Lappeenranta, Finland
Net sales:	EUR 10 million
Number of employees:	40
Approvals:	ISO9001:2000
Products:	Pinch valves (also hoses for peristaltic pumps)
Standard range:	25 to 1000 mm, -50 to +160°C, 0 to 100 bar.
Sleeve options:	<ul style="list-style-type: none"> <li>• SensoMate (early detection sleeve)</li> <li>• Twin Sleeve (separate pressure retaining outer sleeve plus inner sleeve to exactly match application requirements)</li> <li>• Vacuum Sleeve (specially designed for under-pressure (vacuum) applications)</li> <li>• Green Liquor Sleeve (exclusive, EPDM based vulcanized material)</li> <li>• High-temperature sleeve (HNBR material, current limit +160°C)</li> </ul>
Key markets:	Mining and mineral, chemical, pulp and paper, cement, steel, energy, effluent treatment



**Larox is investing significantly in its new business premises in Lappeenranta, Finland.**