Dear Reader,

Economic globalisation marches unstoppable forwards. This means a strong, international presence is vital in many sectors. This is unequivocally the case for SFS intec. The alliance with Unisteel is a logical response to this economic imperative; meeting it head on.

Against the backdrop of an ever-more sub-divided industrial manufacturing landscape, taking care of resources and protecting the environment is now of central significance. We must all do our bit in this regard.

What’s more, petrol and electricity prices are continuously on the rise. That makes it all the more important to use energy carefully. You can read the deeply-considered views of the former German Minister for the Environment, Professor Klaus Töpfer, on this highly topical theme in the article on page 10.

When it comes to energy, it is so fascinating to observe again and again just how much potential for improvement of our products and services is lying dormant. Here’s hoping our InPractice provides you with a thought-provoking and informative read.

Yours truly,

Helmut Binder
CEO SFS intec
Increased productivity with the new CF60 installation tool

A made-to-measure solution

These days, the flooring in modular building systems is generally installed using wing self tappers. The new CF60 insertion tool is ideal for this application. It has been developed for manufacturers of modular buildings.

Wing screws type SC in diameters from 4.8 to 5.5 mm and in lengths of up to 65 mm can be used. They are stored in a fastener pouch directly on the tool, enabling them to be loaded quickly.

Simple operation

The machine is simplicity itself to use. Adjusting the settings means the machine can be matched to the operator’s height. This makes for fatigue-free, ergonomic working.

Though light in weight and easy to use, the CF60 is robust and built to last. It has already proven itself in real-world applications. The powerful drive system ensures rapid, easy installation. Complicated fastening procedures are now a thing of the past.

The new CF60 installation tool demonstrates how close partnerships can help create highly creative solutions, increasing efficiency for customers.

Handy cordless tool for efficient rivet fixing

The peel rivet comes into its own in demanding riveting applications. It can be used for attaching roof coverings, where conventional rivets do not suffice. These exceptionally long rivets cover a clamping range from 10 to 229 mm.

Based on the GESIPA® AccuBird® there is now a new installation tool able to handle very long rivet lengths. The AccuBird® Peel Rivet is characterised by its ease of use, secure fixing and speed of installation. A cordless tool was chosen to simplify installation and thus speed up operation by eliminating the cable.

This development means SFS intec now offers the only battery-driven tool for peel rivets. It is extremely user-friendly and has universal application. The guide nozzle, now extended to 160 mm, facilitates ergonomic operation. Close collaboration between SFS intec and GESIPA® has generated a customer-centred solution, making work on roofing that much easier.

A made-to-measure solution

Thanks to the application-specific controls, the rivet is fully inserted with one squeeze of the trigger.

Christian Arlanch, Electrical Components, arch@sfsintec.biz

Achieving faster, more secure assembly with the ideal fastening system

Domestic appliance manufacturer Calor has drawn on the help of SFS intec to optimise its steam iron production. Application specialists analysed the assembly operation, identifying major improvement potential in the fasteners used. They recommended using TAPTITE 2000® thread forming screws. These create no metal chippings, offer rapid insertion and make for fast, efficient assembly.

The French steam iron producer was looking for ways to optimise its production. In particular mounting the thermostats was constantly creating bottlenecks in the manufacturing process.

Calor approached the fastener specialists at SFS intec, who possess a wealth of experience in application engineering and fastening techniques.

Easy assembly with TAPTITE 2000®

In order to optimise assembly, the application engineers recommended TAPTITE 2000® thread forming screws. These form threads without metal chippings, eliminating previously time-consuming thread cutting and cleaning operations. The zinc plated and waxed surface of the TAPTITE 2000® also solved the problem of the dirty feed on the assembly line.

In addition, a changeover to TORX PLUS® with AUTOSERT® was adopted. This optimised insertion at high revs. and increased the driver life. SFS intec determined the optimum process window based on numerous tests. The established values ensure clean, efficient assembly — allowing Calor to significantly increase productivity.

The customer benefits from custom solutions

This example again goes to show the enormous improvement potential in the field of fastening technology. Thanks to the analysis, advice and system solution expertise of the team, an optimum combination of thread forming screw, power drive and surface finish was established and significantly accelerated assembly operations for this customer.
CAB-R door hinges integrate function and design

The Italian timber specialist CORMO has developed from a small furniture manufacturer into a major supplier of windows and doors. The choice for their latest design range had to be the CAB-R hinge from SFS intec.

Doors as a design concept

With a passion for detail, over the last decade CORMO has developed doors into design classics. Surface finishes, frames and the choice of timber can be combined to meet specific customer wishes.

To guarantee the long term function of these high end doors, a truly top quality hinge was called for. That’s why CORMO chose the SFS intec CAB-R pivot hinge.

Product quality combined with simple assembly

The CAB-R offers maximum 2D setting options and 180 degree opening. Alongside these technical considerations, it also has an appealing design.

Its symmetrical build means that it can be used for both left- and righthand openings, with the side inclination set by the cross member, and the closing force set by the frame element. In other words, both assembly and adjustment are really simple.

The pivot point is fitted with a maintenance-free bearing; guaranteeing permanently fault-free function. A pair of hinges can support 70 kg, and the system has been subjected to a life test of 200'000 cycles. It proved itself to be really stable. The measured drop after completion of the test was less than 0.1 mm.

The function and design

Sonia Malavasi, Hinge Technology, mson@sfsintec.biz

SFS intec

Founded in 1890, the CORMO company is based at San Martino in Rio. The company has developed into one of Italy’s largest window and door manufacturers. The current production set-up allows manufacture of 100'000 doors and the same number of windows per year. As well as manufacture, CORMO offers support services like on site assembly and maintenance.

An interview with Enrico Piccinini, Product Manager at CORMO

How did you come across the CAB-R hinge offered by SFS intec?

We were told about the hinge during face-to-face presentations. We finally chose the CAB-R from SFS intec because the design appealed to us from the start.

Were changes in your production necessary in order to use the CAB-R hinge?

We focus on the needs of the market; not on those of our production people. We designed the door around the hinge. There were, however, very few adjustments required. SFS intec actually met us halfway and modified some components of the hinge assembly.

Which SFS intec services did you particularly value?

We were very satisfied with the support we received in choosing the right solution. Those responsible helped us tremendously in opening up this new market segment. We are still convinced that our belief is right: “Innovation is the best method of winning new market sectors.”

WT fasteners holding the church together

In May 2012 the Kamppi Chapel of Silence was officially opened in Helsinki. It is a timber construction held together with WT fasteners from SFS intec. The architects were assisted by our product planning tool during the design phase. This calculates the number of fasteners required and their positioning, ensuring optimum logistical support on site.

A prize-winning chapel in the style of Noah’s Ark

Back in 2006, several church parishes agreed to build a chapel in the centre of Helsinki. The focus was not on the construction of a large metropolitan place of worship, but rather on the creation of a quiet, contemplative sanctuary of peace and tranquility right in the heart of the busy city. That was the background to modelling the structure on Noah’s Ark, and constructing it almost entirely of timber.

The architects K2S began planning the ambitious project in 2008. In 2010 it won the prestigious Chicago Athenaeum International Architecture Award. The Kamppi Chapel of Silence was opened on 31. May 2012.

WT fasteners: enabling individualistic design

For the architects the completely asymmetrical design of the chapel presented a particular challenge. Every component and fastening point required an individual solution. There are simply no two identical measurements or parts. In order to meet the need for different fasteners throughout, a flexible solution was sought.

The architects found this in the WT product range. It offers flexible, powerful fastening solutions for timber engineering applications, affording architects individualistic freedom of design.

The planning tool that supports design and logistics

WT fasteners connect the horizontal timber profiles of the facade, which creates the frame of the chapel hall. With the help of the electronic planning tool iDesigner, the architects were able to establish the ideal placement of the 125'000 fasteners at the outset – during the planning phase. Being able to communicate with a single point of contact also helped enormously.

The planning tool also guaranteed a seamless build phase. The number and positioning of the fasteners required for each stage were clear at a glance. This meant that the exact components required for each phase were delivered to site. This intelligent logistical solution minimised inventory holding and helped ensure a smooth, fault-free construction phase.
A comet created on Earth: realising a visionary design concept with ease

Mario Bellini is a world renowned architect and designer. He is an 8-time winner of the Compasso d’Oro award and received many other important recognitions, such as the Gold Medal from the President of the Italian Republic for taking Italian design and architecture to the world (2004) and the Gold Medal of Civic Merit from the Municipality of Milan (2011).

He has given speeches all over the world and has been the editor of Domus. 25 of his works are showcased in the MoMa permanent collection in New York, which dedicated a personal retrospective to him in 1987.

He has set up a large number of exhibitions both in Italy and worldwide. Since the ’80s, he has designed the Portello Trade Fair quarter in Milan, the Exhibition Centre in Villa Erba on Lake Como, the Tokyo Design Centre in Japan, the Natuzzi America Headquarters in the USA, the Essen Trade Fair in Germany, the National Gallery of Victoria in Melbourne, the Deutsche Bank Headquarters in Frankfurt, the new Verona Forum complex, the Louvre’s Department of Islamic Art in Paris and the Milan Convention Centre.

The Turin Cultural Centre is currently about to get under way. Projects in progress include the Erzelli Science-Technology Park in Genoa, and the restoration of the Pinacoteca di Brera.

The Milan Congress Centre (MiCo), constructed in 2002, was rebuilt with the support of SFS intec. The project covered the renovation of the existing building and its extension. The building will form part of the 2015 Expo.

The visionary concept for the re-modelling was the brainchild of the world famous architect and designer, Mario Bellini. He envisaged overlapping metal and glass bodies crowned with an ‘airy, silver comet’ (M. Bellini). This surrounds an auditorium already supported by existing columns, producing an ellipsoidal form or ‘boulder.’

The outer skin is made up of micro-perforated plates designed to look like a comet. On the right of the image the ‘boulder’ itself can be seen, supported on columns.

Elena Bonaldo, FasteningSystems, boel@sfintec.biz

Expert on site support

SFS intec has the right fastening system for every job, including any necessary quality approvals and certificates. Planners were able to work with a single point of contact. That made their work enormously easier and quicker, and this imposing structure could be constructed without issue.

As well as supplying fasteners, the project team also received personnel support. SFS intec technicians offered advice on site, avoiding problems before they arose.

Various facade systems securely fixed

The roof construction was based around a comet and covers an area of 15’000 square metres. The micro-perforated plates forming the outer skin are retained using SD8-H15 fasteners, inserted into the building structure.

The building systems specialist Kalzip was responsible for constructing the ‘boulder’ chose SFS intec fastening systems. The clips attaching the outer skin to the ‘boulder’ utilise SDK fasteners.

Inside the ‘boulder’ is an auditorium with 1’600 seats. The main hall has 4’000 seats. Further medium and smaller halls together make up 18’000 seats.

An interview with Elena Mancuso, an engineer in the MiCo Technical Department

What were your considerations in choosing the various fasteners used?

We chose them with SFS intec technicians. Special consideration was paid to the fasteners that would retain the exterior micro-perforated metal panels to the comet. These were tested in advance in a wind tunnel.

Which of the fasteners employed were most useful?

Without doubt that would be the SDK2 and SDK3. These are just about unbeatable in terms of speed and retention strength. The operators could not go wrong with them.

An interview with Mario Cuni, owner of the company Metalcop

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Energy efficiency: opportunities and challenges for corporations

Master Töpfer, you were German Minister for the Environment, Conservation and Reactor Safety from 1987 to 1994. How important was energy efficiency in those days?

Energy efficiency has always been a topic for discussion, because it is so closely related to issues of economic power. However, it used to be rather abstractly discussed, rather than being supported by concrete political negotiations. Germany was by no means bringing up the rear in the field of global energy efficiency in those days, but we were always aware that countries like Japan had come on a lot further.

The importance of energy efficiency, particularly from the economic perspective, was not subject to debate, and a lot of things which could be done were being pointed out, but the implementation was not such that we could be at the forefront globally in those products and processes, and also in the equipment manufacture.

Was energy efficiency better understood by the population at large than the industrialists?

For the majority of the population, energy costs were very important; and indeed still are. That’s not just electricity prices – it’s gas and oil, in other words warmth and mobility. Changes in oil prices affected commuters. These things brought home the significance of energy efficiency to the electorate. In industrial circles it was even more pronounced. Though it is a cost factor, the vast majority of German industries had, and still have, energy costs representing single digit per centages of total cost. That meant changes that were not high up the agenda.

You just mentioned the theme of nuclear energy. What are the ramifications of exiting the atomic arena? Can alternative energy sources meet future needs?

That has to be finely judged with regard to technology and from both sides of the market; namely supply and demand. We can see that renewable energies place certain demands on the grid and on energy storage. We also observe how this affects the demand structure. When we manage to produce renewable energy where it is most accessible it will be of economic viability. It has now been demonstrated that intelligent use of renewable energies can also meet the so-called baseline needs economically. Thus, of course, means a challenging step forward, but it represents an investment in a very secure, reliable and cost-efficient energy source of the future.

SFS intec offers systems for installing photovoltaic equipment. How do you rate the benefits of photovoltaics? Are there alternatives?

We have witnessed revolutionary changes in photovoltaics. When I was Minister we passed the first law governing current feeding into the grid. In those days the cost of a kilowatt hour was just over 50¢ cents. Today, the price from major installations is 10¢ cents, and 16¢ cents from roof panels – and prices continue to fall. We have been on a steep learning curve in a relatively short timeframe, and are now getting towards the grid parity we always aimed for. Renewable energies are always subject to the specific situation and conditions. I was responsible for the environmental programme of the United Nations. I lived for eight years in Nairobi while undertaking that role. There is enormous potential there to use geothermals. There are already three commercial geothermal converters in the Rift Valley. I am just back from the Cape Verde islands and because of local conditions there, energy is largely produced from wind power. The same applies in Morocco and other countries.

Though energy efficiency is an important theme and numerous products like cars and electronic products are getting less "thirsty", energy consumption is still on the rise. What chance do you see for CO2 emissions to fall?

We first have to take on board the rebound effect. Our household electrical appliances are increasingly efficient, but are used more intensively and for longer. Refrigerators now use less energy and can thus be found in every modern kitchen. That doesn’t help if the old fridge is still down in the cellar being used to chill wine bottles. That’s the rebound effect; that we have to take very seriously. The net effect is always the key. If we want to know how much CO2 is actually saved we need to evaluate the entire production and lifecycle of a product. It makes no sense, for example, to address biomass in terms of CO2 savings if we don’t bear in mind that producing the biomass from synthetic fertiliser releases nitrous oxide (NO), which has a very pronounced effect on the environment. But independent of that we have the opportunity to offer market-viable renewable energies. That will enable others in the world to enjoy economic growth, without overall CO2 emissions increasing. So it is important in new growth areas not to use classic fossil fuels or capital-intensive nuclear energy, but renewables.

You were Minister for the Environment and are Professor of Environmental and Sustainable Development Studies at the University of Tongji, Shanghai. Who could you, or can you, best convince of the need for environmental protection and energy efficiency – the voters during your time in Parliament in ‘eighties Germany, or the students listening to your lectures now?

I was effectively the first Minister for the Environment in Germany, after Walter Wallmann was in office for just a short time. People may have found it a bit of a joke to start with, but it was gradually becoming apparent that growth at the cost of the environment and nature could no longer be tolerated. The same applies to the social considerations. Wherever social costs are not considered we destabilise the community and its economic capability. Nobody is sniggering or laughing now. Quite the reverse – every political party has to have a viable position on how we marry economic development and economic stability to the needs of the environment and social justice: how can we achieve sustainable guarantees?

I believe that in modern day China we have extremely committed, active individuals capable of counting the cost of economic growth. Visit Beijing and judge for yourself how much air pollution there is and what effect that has on peoples’ health. Perceptions have changed immensely. The aim now is to generate a resource efficient and energy saving circle economy: taking care of resources and saving energy. For a country with a population of 1.3 billion who all want to enjoy economic development, this is an economic imperative – also from the Chinese perspective. You cannot say they are less interested than we were. It is the other way round. Hard facts are forcing attitudes to change.

You just have to look at the latest five-year plan, concluded by the Chinese last year. Cleaning up watercourses, air purity and wind and solar energy are all central themes; and we know that the Chinese are very focused on achieving their plans. So yes, new thinking is in place and continuously gaining in strength.
The fast, secure way to install photovoltaic panels

More and more electricity is being generated by renewable energy sources. Both environmental concerns and rising electricity prices have contributed to their rising popularity. Above all, solar energy has been gaining in strength due to the low operating costs. SFS intec offers numerous solutions for attaching photovoltaic panels in place.

The following examples represent some of the many construction projects.

**SOL-F fasteners for attachment to flat roofing**

A 500 kWp photovoltaic system was installed in Baesweiler, North Rhine-Westphalia, Germany, across two manufacturing halls. The support structure of the two roofs was investigated in advance. This revealed very little in the way of reserve support strength. An assembly system with additional weight loading was not an option. Even a weight-optimised, aerodynamic PV system was unsuitable for the same reason.

The SOL-F retainer system from SFS intec in contrast fulfils these difficult static requirements. It is fitted directly to the roof sub-frame, and therefore requires no additional support. The roof’s water tightness is also unaffected.

The SOL-F fastening system can be quickly and simply installed. Just three months planning and construction time were required for the project. The photovoltaic installation was connected to the grid at the end of 2011. It withstood its first tough test during the cold winter months of 2012. The textile industry concern Lanz-Anliker AG, based in Rohrbach near Bern, has been producing its own electricity since the summer of 2012. The roof-mounted photovoltaic system covers an area of 1,060 square metres. The 648 individual units are secured by 1,076 SOL-R retainers. The system produces two-thirds of the company’s energy needs.

The SOL-R retainers were mainly fastened centrally to the substructure using SX self tapping screws. SDK self tapping screws were used for fastening to the trapezium section.

According to experienced installation companies, there is no faster or more flexible system than the SOL-R.

**The SOL-R retainer for attachment to metal roofing**

So many installation companies have been won over by the high product quality and comprehensive support services of SFS intec. The complete package from initial advice to on site support is a very attractive proposition.

Proven systems from SFS intec

Among the benefits of SOL-F and SOL-R retainer systems are:

- Robust construction quality
- Simple attachment
- Rapid installation
- Security of advance static calculations
- Comprehensive support from SFS intec

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Proven systems from SFS intec
Central development – local manufacture for system suppliers to the automotive industry

At SFS intec a product and its manufacturing route are developed centrally in one and the same place. Production thereafter can take place in different plants; reducing costs and risks.

Development with an eye to global manufacture

Customers benefit from the pooling of expertise and a single development spend. Developers at SFS intec hold firm to the requirements set out in the advanced product specification, which provides the technical definitions of the final product. An important basis is often surrogate data gathered over the years working on numerous projects.

Local know-how available globally

Flexibility, economic advantage and security are the top targets for SFS intec in their international production network. Identical products are manufactured at different sites on matching machines. Complete respect for technical guidelines produces an even level of quality.

Networking raises efficiency

Having established manufacturing sites in Europe, North America and Asia, SFS intec puts the concept of production in the three global trading blocs into practice. This supports automotive system suppliers operating worldwide in the development and manufacture of safety-critical components.

The total support package of product development, material science, tooling design and manufacture, together with determining inspection plans, are all achieved by interdisciplinary teams on one site. This reduces interfaces and eliminates costly agreement and signing-off procedures between sites.

Local markets

System suppliers aim to establish long-term partnerships with international vehicle builders. It is no longer sufficient for them to offer their products to their local market. The global market is looking for in-depth development capacity, to address local requirements. To achieve this aim, it is sensible to have globally-distributed manufacturing sites. Centrally-conceived developments are conveyed via a company-wide network to all the production facilities. Product standardisations and modular manufacture must be offset against the needs of different local markets.

Which factors influence product development?

The duration and extent of product development work really depends on the technological status of the current production series. Adaptations under time-to-market pressure are now the norm. This means quicker availability to the customer. Adaptations are based on existing, proven concepts. Modifications are only carried out to enable use in the next generation of vehicles, or to introduce additional functions.

Which measures are taken to save costs? When does the decision to manufacture a complete new safety belt kick in?

Because of increasing system requirements, the original concepts have become much more expensive, creating difficulties in the market. To counteract this development, systems have had to become simpler and standardised. A modular concept can fulfil the needs of different markets. Then a rigorous development plan has to be launched quickly. This has to be matched to the new model cycles of the vehicle builders. It also has to be synchronised to ongoing business and be based on a modern, future-focused range of features. This all requires a clear hierarchical structure and a functional network of technology partners and sub-system specialists (like SFS intec). These are introduced at the concept stage and involved in anything from technical tips to inspirational ideas.

How is co-operation with Asian and South American system suppliers organised?

To maintain independence from the European knowledge base, Asian and South American manufacturers often follow their own independent low-tech path. The challenge is to win them over to cost-optimised high-tech solutions. Understanding local conditions opens up tremendous opportunities for European high-tech, best-cost suppliers. In order to compete in these target markets, existing know-how has to fuse with local requirements. Long years of development and manufacturing know-how form the basis for finding effective solutions. This realisation is definitely getting through to these new markets.

Production in the three major economic zones can offer numerous advantages:

- Reduced transport costs
- Increased security of supply
- Elimination of import duties
- Reduced currency problems
- Lower logistics costs
- One-off development expenditure
- Simple communication
- Shorter delivery distances

One development partner with one uniform manufacturing concept
Shoulder to shoulder – SFS intec and Unisteel

In the summer of 2012, SFS intec acquired Unisteel, a Singapore company specialising in miniature screws. This merger created the world’s leading business in the supply of fasteners to the electronics industry. What’s more, it strengthens the presence of SFS intec in the market of the future – China.

A Singaporean success story

When Unisteel was founded in 1988, the focus was on the distribution of screws used in computer hard drives. The hard drive industry was an important economic factor in this flourishing city state at that time. Twenty years later, its position as market leader had been achieved. To reduce its all-too obvious dependence on a single sector, other associated market segments were addressed.

That saw the start of business relationships with mobile phone manufacturers like Nokia, Motorola, Apple, RIM and numerous others. In parallel, the technology palette was enhanced to take in sheet metal forming and plastic injection moulding.

These days, Unisteel produces in four plants in China and Malaysia. The company currently employs around 3000 people. In 2012 a turnover of over 300 mio US$ was achieved with a product spectrum covering:

- Miniature screws
- Threaded inserts
- High-end plastic components
- Precision metal pressings

An ideal basis for joint success

SFS intec and Unisteel share the same core business model. The quality concept enjoys the same level of importance in both companies. Unisteel and SFS intec share the same drive to control the entire value-added chain: from initial advice and product development right through tooling concepts, production, heat and surface treatments to the end market.

With the activities of the two companies so perfectly complementing one another, it follows that each will benefit from this merger. Unisteel is focused on the electrical industry in South East Asia. SFS intec has the bulk of its investment in Europe and North America, serving customers primarily in the automotive and construction sectors.

From this merger arises a globally-operational industry leader in mechanical fastening and the precision forming of metals and plastics. Pooling know-how and resources and offering a strong presence in the three main economic centres of the world, this new corporation will be even more able to meet the needs of its global customer base.
Compact and efficient refrigeration compressors supported by comprehensive technological know-how from SFS intec

SECOP is launching a new compressor for refrigerators. It is smaller and more energy-efficient than previous models. With precision components from various technologies, SFS intec has played a major part in making this challenging project a reality.

Energy consumption as the major purchase decider

These days there is a refrigerator in every household. It keeps food fresh and we can no longer do without it, but being permanently switched on means refrigerators continuously use electricity. They can account for up to 21% of the annual electricity bill for a private home.

Electricity consumption is therefore a central criterion when buying a refrigerator. Manufacturers have observed this trend, and are developing models with continuously improving energy efficiencies. Consumption has fallen on average over the last fifteen years by up to 73%. This has been achieved by the continuous refinement and development of the beating heart of a refrigerator – the hermetic compressor.

Efficiency in size and consumption: the XV compressor

The SECOP XV epitomises the latest model from the new generation of compressors. It actually exceeds the requirements of the latest A+++ class energy efficiency. In comparison to the A+ classification it saves 50% more energy. This is achieved thanks to an innovative motor design with a variable rev count.

Another consideration for refrigerator buyers is storage space, and this is strongly influenced by the size of the cooling system. In comparison to previous models, the XV compressor is considerably smaller. This compactness enables refrigerator storage space to be increased.

A partner with comprehensive manufacturing expertise

Because of the extreme requirements placed on the individual components, SECOP turned to powerful partners like SFS intec from the start. The collaboration between engineers began at the development stage, resulting in various components from different manufacturing technologies. They serve to ensure that the system functions perfectly throughout the lifetime of the refrigerator.

Alongside the purely technical advantages of the chosen manufacturing technologies, SFS intec was able to offer logistical support and simple, clear communications. This made a major contribution to rapid, efficient realisation of this project.

When did the development work with SFS intec begin?

That began in 2008. As SFS intec was able to offer a range of manufacturing technologies, we quickly got down to the detailed designs. The optimum technology was chosen for the manufacture of each of the parts.

Where is development of the compressor going?

Compressors with variable speeds are what the future is all about. Requirements for noise reduction and energy efficiency can only increase, while the components used have to be environmentally friendly.

To what extent did you benefit from working with SFS intec?

It proved to be an enormous advantage for SECOP that SFS intec has several different technologies to offer. We also benefitted from efficient communication and professional project management. Their support has continued to be exemplary after five years of working together. We received samples in really short lead times, which helped us keep to our rather ambitious schedule.
Revolutionary plastic transmission housing: an alternative with huge potential

The two focal points in the automotive industry are weight and cost reduction. Every kilo saved reduces energy consumption. At the same time, choosing the optimum material also reduces costs. SFS intec helps customers achieve the right balance between weight and cost efficiency.

SFS intec was offered the challenge of making a switch box produced as a magnesium die casting in plastic. Thanks to extensive technological expertise and years of experience in the automotive industry, we were able to rise to this challenge, much to the customer’s satisfaction.

The entire product and process engineering took place at the Bratislava plant, series manufacture in the automotive industry. As the customer was going to be much impressed by the fund of know-how in design and tool-making, close adherence to dates and the quality of the tools.

What were the advantages for ECS in working with SFS intec?

Because of the size of the concern and wide range of products offered, we are now able to obtain the threaded inserts from SFS intec as well.

How much input was SFS intec able to bring to the development of the part?

ECS was able to draw on long years of experience on the part of SFS intec engineers when it came to the material and designing the part to enable manufacture.

What advantages were offered by changing from a metal to a plastic design?

Plastics are processed at much lower temperatures than magnesium, so the tooling has a greatly increased lifetime and is far more reasonable in price. Another advantage is the considerably lower material cost of the reinforced polymer. Only low-cost, competitive components can keep up with the price pressure in the automotive sector.

followed at the SFS intec plant in Jánossomorja, Hungary. Transport costs were also saved.

New methods of computer simulation made tool testing unnecessary.

The tight timeframe made producing prototypes in plastic impossible, so technicians at SFS intec instead used state-of-the-art engineering design tools. With the help of the latest predictive technologies (FEM, mould-flow simulation, fill models etc.) and drawing on experience of numerous previous projects, a 3D model was developed. This met the criteria both in terms of function and in supporting the design of the injection moulding tools. The necessary optimisation steps could then be rapidly carried out. It proved possible to further reduce the weight of the final part against the initial assumption. Meanwhile changes to the geometry of the part enabled a lower cost polymer to be used than that which had been originally earmarked. Also the required metal inserts were redesigned to enable them to be manufactured by SFS intec using low-cost cold forming. So as well as lowering costs, we reduced the number of interfaces and suppliers our customer had to deal with.

Stable production processes guarantee defined levels of quality.

In parallel to product development, its manufacturing and assembly route including automation had to be designed. The complete assembly line and logistics concept were set up and tested in Korneuburg. Both were then established at the SFS intec Jánossomorja, Hungary plant and were finely tuned for series manufacture. With annual demand reaching 900,000 units, three injection moulding machines running on three shifts around the clock, fed by robotic systems were needed.

Thanks to close collaboration, the defined targets were not only met, but exceeded. This is a great foundation upon which to build up co-operation with the customer, ECS.

Vehicle door locks have to stand up to a lot of stress. Looking to strengthen an existing lock, the French producer Inteva turned to SFS intec for suggestions. The proposal was to use PUSHTITE® II press-in fasteners. They are simple to use and offer a very high level of security, thanks to their extreme removal torque.

Inteva is a globally active manufacturer of door locks and other automotive sub-systems. The company has been working in close partnership with SFS intec for more than twenty-five years. Together the companies have developed numerous solutions for the delicate interior workings of the vehicle door lock.

In addition to their primary function of anti-theft protection, door locks have to fulfill other safety-critical functions. So they are subject to extensive test procedures to establish their longevity. A door lock will only be released for series manufacture when the design has been shown to withstand 100,000 locking and unlocking cycles.

The peak functionality that the right fastener provides.

An existing design was demonstrating functional faults during long-term tests. There was a cylindrical rivet holding the inner lever in place. This proved to be creating high stresses during insertion, leading over time to cracks developing. These in turn led to too much play in the locking mechanism and inevitable failure.

Inteva turned to the fastener specialist SFS intec for a solution. After extensive investigations, the rivet was replaced with a press-fit fastener: the PUSHTITE® II. It proved possible to use this without further modification to the system.

PUSHTITE® II: ticking all the boxes.

Due to its multifaceted profile, the PUSHTITE® II put far less stress on the plastic housing. The tribological section in turn offers three times the previous removal torque.

That means the lever position is constant, and the lock function is always ensured. Numerous tests were carried out on the modified lock. All the essential assembly criteria such as insertion force were then determined. Once the lock was ready for series production use, it first had to be given the all-important product release.

On time every time, thanks to reliable logistics.

M. Guillemot, Product Manager at Inteva, was delighted with the outcome. The fastener specialists fully analysed the assembly in question before proposing a well-rounded solution to the problem.

Subsequently all the assembly parameters were determined, and production could be re-started in the Czech Republic, India and the USA. Strict adherence to dates was a prerequisite if international logistics were to be properly co-ordinated. Here too SFS intec proved to be a completely reliable partner.

An interview with Patrick Rauber, the ECS Project Manager in charge of the work.

How would you rate the co-operation with SFS intec?

Always positive. We were particularly impressed by the fund of know-how in design and tool-making, close adherence to dates and the quality of the tools.

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PUSHTITE® II fastener guarantees a long, fault-free service-life for this door lock.
The new TAURUS® blind rivet gun for just about every application

On production lines everywhere you will see individual components being fastened together with blind rivets. The quality of the bond point, the safety and efficiency of the installation process and energy consumption are all important considerations. The latest blind rivet guns from the GESIPA® TAURUS® range have been optimised against these criteria. They offer efficient, ergonomic riveting.

Production lines have proven themselves to be efficient manufacturing systems the world over. They enable economic mass production. One material that is being increasingly used is carbon composite. These compounds offer a perfect combination of low cost and multiple applications. Light in weight but with excellent stability, the material enables reduced build sizes.

Tools used in mass production are subject to high stress. Rivets for example have to be inserted in enormous numbers. With reduced build sizes, vertical rivet insertion is generally required, and bonds must not loosen even under high strain.

In comparison to battery-operated equipment, the Axial family offers a faster continuous installation process. The installation force is defined and where necessary can be extremely high. The unit makes double use of the compressed air feed. So usage levels of compressed air sink while the working cycle speed rises. Rivets are installed ergonomically and economically, time after time.

The new Axial series TAURUS® guns can be installed on assembly benches, semi-automated and fully automated work stations. The weight is greatly reduced by hanging the guns on balancers. The grip and the release trigger are in line with the rivet, which helps to prevent off-set insertion and keeps everything square.

The right tool for every application

All 16 units in the Axial family can be supplied with contact release mechanisms. The rivet will only be fired when there is no gap between the work pieces. All units can also be equipped with extensions, rivet counters and remote controls. A process monitoring variant is also available.

The new Axial family of rivet guns from GESIPA® has been developed in close collaboration with customers. They enable an optimum workplace layout, offering efficient, ergonomic working. This new range fulfils every requirement for economic, secure production: simply riveting.
Extensive support services for flat roofing installation

SFS intec offers top-quality fastening and attachment technology. This is complemented by a wide range of support services. From the planning phase through setting up to on site assistance during the construction, SFS intec helps its customers at every stage.

Since the ‘fifties, more and more buildings are being constructed with flat roofs. In addition to private bungalows, primarily commercial buildings feature this type of roofing. They offer a lot of architectural design freedom, and are an economic alternative. These days it’s hard to imagine a townscape without them.

Once the fasteners have been chosen, wind load calculations determine the number required. The calculation will also determine their positioning on the roof.

Professional logistics

SFS intec also supports its customers in ordering the right materials: on the one hand by producing a project-specific material listing, and on the other by efficient ordering process. Supply can be monitored online via an e-portal. Customers are also advised of impending deliveries via SMS.

Rapid attachment thanks to intelligent systems

While developing new products, SFS intec pays a lot of attention to speedy, simple and safe installation. That’s why specially developed installation equipment is available for numerous flat roof applications. These often use pre-assembled and belted components. Product-specific offerings are complemented by services like installation advice and guarantees.

The service package offered by SFS intec ensures a rapid, stress-free project implementation. That means that plan dates can be met and costs saved. From the planning stage through preparatory work right up to project implementation, SFS intec supports its customers every step of the way.

Comprehensive support during every project phase

- Phase 1: Planning
  - Advice on fastener requirements
  - Catalogue, comprehensive product programme
  - Tender document drafts
  - Approvals, CE certifications

- Phase 2: Quotations
  - Detailed advice on the fastening system
  - Catalogue, comprehensive product programme
  - Pull-out tests (e-pullout)
  - Wind load calculations
  - Quotation

- Phase 3: Ordering
  - Project-specific garnering of all the necessary installation components
  - Electronic ordering (eFormat, eShop etc)
  - Status monitoring via e-portal

- Phase 4: Supply
  - e-portal track-and-trace
  - Delivery direct to site
  - SMS alert service

- Phase 5: Installation
  - Pre-assembled fasteners
  - Matched installation tools
  - On site technical support

- Phase 6: Signing off
  - On site checking and sign-off
  - Guarantees
Since launch, every process has been reviewed and restructured. Lean processes improve on-time delivery more efficiently. The concept: cost reduction, quality assurance and using time factors in the forefront of this Japanese manufacturing method of continuous improvement.

In terms of raising customer satisfaction, there are three areas for critical improvement processes. For a company like ours, trying to make them more competitive.

Because it is so global, today’s market is challenging. It is no longer sufficient to offer attractive prices; products need to be striven towards. The core concept is that nothing as it is today is good enough.

In the context of the organisation it means that there is no department, product or process that does not have the potential to improve. KAIZEN is about incremental steps. Companies working with KAIZEN are looking to the long term and constant, cost-optimised improvements. Employee involvement and the support of the management team are vital aspects.

The structure of meetings was readressed. Defined themes are discussed at the daily shopfloor meetings. Using a standardised procedure, those issues posted on the board like quality concerns, CIP suggestions, productivity, absenteeism and improving setting times are all addressed. Where there are deviations from target, corrective measures are taken. The benefit of these regular meetings is the rapid detailed communication to everyone, from those paid hourly up to Production Director.

Closely involving employees in decision processes is a critical aspect of KAIZEN. Above all, direct production personnel can give important improvement ideas. These support the structuring of methods and tools to the needs of the market.

Highly-trained employees volunteer vital feedback

For this reason, SFS intec organised dedicated kick-off meetings at every major site, as well as a range of workshops, the object of the exercise being to bring the essence of the KAIZEN philosophy to the people and to get everybody to the same level of understanding. Well-versed, motivated employees are the first ones to give feedback. This goes directly into production and improves quality.

The key aims are set out in our own handbook based on the KAIZEN/CIP toolkit which makes the various methods available. The proper application of these rules does result in continuous improvement.

**Various sites report on their experiences**

**Ezit Hajdur**
SFS intec CH-Heerbrugg

**Reduction of throughput time via ConWIP**

Introducing ConWIP production control saw a reduction in average throughput time from twenty days to nine days. Around 100 articles are now controlled via the SFS-specific KANBAN system. A simple traffic light system shows every employee what, when and how much to produce.

**Joshua Bewley**
SFS intec USA-Wyomissing

**Increased efficiency through 5S work-place organisation**

We have recorded numerous improvements since introducing 5S in April 2011. Productivity increased through reduced goods movements. There is more space at work stations. The introduction of cellular manufacture minimised throughput time. Thanks to 5S employees have the opportunity to organise their own work stations. That improves morale and efficiency.

**Randy Weber**
SFS intec CH-Altstätten

**Improved organisation of open issues**

With the introduction of ‘lean office,’ the value stream of various business processes was analysed with the objective of improving administrative procedures. Meanwhile the new date issue system freed up a lot of work space. Workplaces are now better organised, and open issues are kept in focus. In conclusion we found that ‘lean office’ freed up space for the most important tasks.

**Sven Spirig**
SFS intec CH-Heerbrugg

**Optimised processes thanks to KAIZEN/CIP**

The Japanese word KAIZEN (from KAI = ‘change’ and ZEN = ‘better’) represents the continuous improvement of all the processes in a company. It can be compared to the drive for perfection. Though unachievable, it exists to be striven towards. The core concept is that nothing as it is today is good enough.

In the context of the organisation it means that there is no department, product or process that does not have the potential to improve.

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**Laurent Cambianica**
SFS intec FR-Valence

**Quicker and more comprehensive communication via shopfloor management**

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**The KAIZEN/CIP toolbox**

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One company – one spirit