



Clean Rails Campaign

Combined street/rail machines
rely on modern, safe pneumatics

Expert Interview

Service expert Harald Wassermann on maintenance and repair
in the era of IoT

Pneumatic Drive for Train Doors

Making heavy-weights 'step aside' with pneumatics

Pneumatics
It's that easy



AVENTICS^A

PNEUMATICS IT'S THAT EASY

Achieve your goals with just a few clicks – AVENTICS simplifies your order process, even for demanding pneumatic products.

Benefit from easy configuration at the click of a mouse, quick conversion to AVENTICS products, and the one-of-a-kind CylinderFinder. Our Engineering Tools take you directly to the most efficient solution for your needs.



The more networked production systems are, the more technically complex they are. All the more important for us to make working with AVENTICS and our pneumatics easier for you.

Paul Cleaver
CEO AVENTICS



Dear readers,

The Internet of Things – hype or a real opportunity? What is clear: Everyone is talking about Industry 4.0/Internet of Things, some are waiting for the great revolution, and only a few are presenting tangible solutions.

For us, the Internet of Things is an evolution – towards smart factories with more and more flexible production systems. This is why we are actively driving this topic, offering you practical solutions. Our focus is on your added value. We are working hard to further develop electronics within pneumatics, for example. And to us it is clear that only open, non-proprietary electric interfaces present future-proof solutions. Being able to call up and evaluate the right information from the machine or system is key for your benefit.

The evolution towards the Internet of Things also means rethinking service. Progressive developments are shaping future service business models. In this edition of the A Mag, service expert Harald Wassermann reveals what this means for end user maintenance and machine manufacturer services.

New things are happening every day, it remains exciting. We would like to take your new and changing needs into account. This is why we are there for you wherever you are. Your local contacts help you to develop and implement tailored, modern

solutions. You will also find a number of examples in this edition of A Mag ranging from industrial automation, to mobile processing machines, through to dentist's chairs.

The more networked production systems are, the more technically complex they are. So it is all the more important for us to make working with AVENTICS and our pneumatics easier for you, starting with online configurators, to ordering processes, through to the commissioning of our products. It's that easy.

Let us face the challenges of tomorrow together. Even and especially in times of permanently increasing networking, it is important to combine different expertise and experience to find simple pragmatic solutions. No matter what ideas you have – we would be happy to help you make them a reality.

Yours

A handwritten signature in black ink, appearing to read 'P. Cleaver'.

Paul Cleaver
CEO AVENTICS

CONTENTS



06 | KALEIDOSCOPE

AVENTICS news

From the Motek to the Pneumobile – news from the world of AVENTICS



10 | EXPERT INTERVIEW

Harald Wassermann

The service expert on maintenance and repair in the era of IoT



14 | RAILWAY INDUSTRY

RTC-TD series

Pneumatic drives make sure any passenger can open train doors in an emergency

03 | Editorial

16 | Products in application

GAteK

Fast pneumatics cuts cycle time in half

18 | New product

ST6

Simplified assembly with the new AVENTICS sensor series

19 | New product

CC02-SL

With its new stainless steel check-choke valves, AVENTICS has supplemented its range of FDA-compliant components

20 | Sales

ES05 starter pack

AVENTICS trains sales partners worldwide in assembling the new valve system

21 | New product

LS04-XS

For this new development, the AVENTICS combined new pilot valves and high-performance polymers with aluminum.

22 | AVENTICS Italy

Danilo Carrara and his team

Small and medium-sized companies are the backbone of Italian engineering

24 | Interview

Dr. Myriam Jahn

The managing director of ifm datalink explains how pneumatics and sensors work together to drive the Internet of Things

26 | International

Tectra Automation

AVENTICS sales partner from South Africa relies on growth

30 | AVENTICS USA

Interview with Rudi Coetzee

The president of AVENTICS Americas on fast service



28 |

PRODUCTS IN APPLICATION

SRT Schörling Rail Tech

Combined street/rail machines rely on modern, safe pneumatics

34 |

PRODUCTS IN APPLICATION

Elopak

The specialist for packaging solutions uses robust AVENTICS pneumatics for the first fully aseptic filling machine for gable top packaging

32 | Products in application

Matti Technology

AVENTICS equips ultra-precise coating systems with pneumatics

38 | Cooperation

AVENTICS researches at the CIIT

Working with CIIT developers and researchers, AVENTICS develops solutions relating to the Internet of Things

KALEIDOSCOPE

TITLE DEFENDED: AVENTICS ONCE AGAIN PREFERRED SUPPLIER



Malte Ihlenfeld, Corporate Lead Buyer Machine Components & Services at Bosch in Stuttgart, hands the "Preferred Supplier" certificate to Dr. Peter Saffe, Vice President Strategic Sales, of AVENTICS




Receiving such a coveted award from the Bosch group once is a success in itself. Winning it several times in a row – this requires real skill.

Especially for critical customers like Bosch that have the highest of standards. In 2016, the world's largest automotive supplier honored AVENTICS with 'Preferred Supplier' status for the second time in a row. With this prize, Bosch aims to maintain sustainable business relationships with its best and most innovative suppliers to achieve joint global growth. The 'Preferred Supplier' award is presented each year. 

WELCOME TO MOTEK




At the 2016 MOTEK, AVENTICS will present numerous solutions under the motto "Pneumatics – It's that easy" on an area measuring around 200 m², ranging from new online tools for simple component selection and configuration, to new products for standardized machine safety. A focus will be placed on the topic of the Internet of Things and relevant solutions offered by AVENTICS. You can find AVENTICS in hall 4 at stand 4402. Motek 2016 will be held from October 10-13. 

► **AVENTICS at the Motek**
October 10 to 13, 2016
Hall 4, stand 4402

TEST BENCHES FOR COMMERCIAL VEHICLE TECHNOLOGY




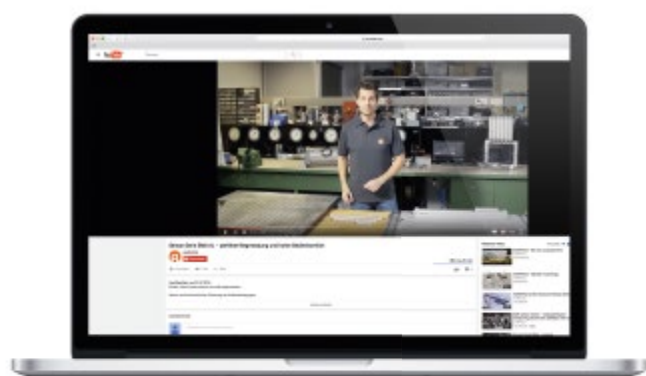
AVENTICS in Hungary and Trigon Elektronika worked together to build two test benches for commercial vehicle clutches for a customer. They are used for endurance tests at temperatures ranging from -50°C to +150°C. A pneumatic cylinder actuates the clutch pedal via electrically operated valves. These test benches allow the clutch manufacturer to optimize its product development and ensure quality. 



SENSOR TUTORIAL VIDEOS

On the website and AVENTICS YouTube channel, three new tutorial videos show just how easy it is to assemble and adjust sensors on cylinders. The hard evidence: The videos are in real-time, showing that both processes can be done

within a minute's time. Just click to find out everything you need to know about the SM6 and SM6-AL distance measuring sensors as well as the ST4 and ST6 proximity sensors. 




MACHINE SAFETY: UNABATED INTEREST




¡VIVA MEXICO!



Mexico is developing into America's workbench at a rapid pace, with a great demand for pneumatics. The newly formed AVENTICS country unit in Mexico will help to meet this demand. The new location in Mexico City will be headed by Jesus German Cardoso Escamilla, who has worked for us in South America for over


20 years. This increases the company's total number of country units to 21. In total, our pneumatics specialists are present in 90 countries. 

Machine manufacturers continue to show a very strong interest in the topic of machine safety and its practical implementation. At a range of events at AVENTICS, at dealers, or Chambers of Industry and Commerce, the safety specialists explain what exactly B_{10} values and other key figures mean, and what engineers have to watch out for to comply with standards. What's especially important:

The landscape of standards is in a constant state of flux, with a series of changes every year. And AVENTICS training courses help to stay up-to-date. 

BUDAPEST TEAM WINS THE PNEUMOBILE


In May 2016, student teams from eight European countries faced off at the ninth "Pneumobile" hosted in Eger, Hungary. This engineering competition and race focuses on designing the most efficient race car using a catalog of specified pneumatic components. In field trials, the teams compete in distance, arcade, and acceleration races. The designs are also assessed based on different technical criteria. The overall winner in 2016 was a team from the Budapest University of Technology and Economics.

The European competition is organized by AVENTICS Hungary. This year's sponsors included Robert Bosch Kft., Bosch Rexroth Kft., Jungheinrich Hungária Kft., FAG Magyarország Ipari Kft., ZF Hungária Kft. as well as Kardex Hungária Kft. The tender for the 2017 Pneumobile will begin in the fall. 



MOST-CLICKED: CYLINDER SELECTION PROGRAM

The new CylinderFinder program presented in the last issue of A MAG has turned into a real hit. The latest AVENTICS tool was clicked a total of 3,382 times within its first hundred days online.

It was used most frequently in English, with German following in second place. 


3,382
clicks
IN 100 DAYS



► **More information**
www.aventics.com/cylinderfinder



PROVEN EXCELLENCE AND SUSTAINABILITY

By recertifying its environmental management system to ISO 14001 and certifying the energy management system at the Laatzen plant to ISO 50001 for the first time (large picture), AVENTICS has proven its commitment to conserving energy and resources. Independent auditor TÜV SÜD performed the certifications. And the plant in Eger, Hungary (small picture to the left), also meets requirements for quality management systems to ISO 5001. With Laatzen, Eger, and Changzhou (small picture to the right), all locations are also certified to standard ISO/TS 16949, often required by the automotive industry. The Bonneville plant in France was also honored with the 'Label Mont Blanc Excellence Industries' (Level 3), an award for excellence and quality. 



STATE-OF-THE-ART SERVICE: “TO RESPOND, OR TO MODEL?”

Interview with service expert Harald Wassermann

Be it the Internet of Things, industrial Internet, or smart production, one thing is sure: data and information will continue to change the world of factories and engineering. What does this mean for end user maintenance and machine manufacturer services? A Mag talked to Harald Wassermann, consultant for service strategy in the capital goods industry, on the topic.



WE WILL CERTAINLY SEE
TOTALLY NEW BUSINESS
MODELS IN SERVICE.

What does the future look like for service provided by mechanical engineering companies and their suppliers?

Harald Wassermann: We will certainly see totally new business models in service. But before a company tackles this issue, it has to do two things first. To start with, it has to take a close look at its customers and make sure it understands their different values to be able to derive future demand from this. Second, it has to optimize its own service processes and get them under control. Those unable to achieve high margins with spare parts and establish customer loyalty with quick response times can forget about new business models in service.

Can't new business models compensate for any weaknesses?

Harald Wassermann: No Service goes through different stages of development. First comes responsive service, that is fast spare part delivery and repair. Building on this, many offer preventive service in the form of fixed maintenance intervals. Only those successfully managing these basic services should add additional ones to their portfolio. Currently, first end users and providers are implementing forward-looking models. Based on sensor information, they can use software to predict events before they happen. They detect wear before it results in machine downtime, and can plan replacement of the corresponding components during production breaks.

Where does this information come from, and who analyzes it?

Harald Wassermann: This spring, one of the largest manufacturers presented a printing press equipped with 3,000 sensors. They identify a wide range of operating states and transmit the data to an IT system. There, it is analyzed using complex software. Presently, the job description of a data scientist is emerging, who filters out relationships in a sea of data. The most well-known IT companies will certainly play a major role here. But even they need the expertise and experience of end users, machine manufacturers, and component suppliers.



Why is collaboration necessary?

Harald Wassermann: *End users can only really assess the macro level of production. When it comes to processes within the machine, they require the expertise of the machine manufacturer. The machine manufacturer in turn needs the expertise of the component manufacturer to make any statements about the future since the machine engineer is unable to recognize what it means if the air consumption increases in a pneumatic system over time or cycle times slow down. The challenge is taking this necessary collaboration and developing business models where the information and knowledge of those involved are paid for.*

What new business models are feasible?

Harald Wassermann: *Those looking to keep developing new business models in service first have to understand the values and challenges of their customers. I know a machine manufacturer that supplies a lot of machines to India. The company's customers there have seen double-digit growth every year. In five years, they have multiplied their sales and are buying new machines. Until then, the sole focus is on availability, then the machines are sold. These customers are ready to pay for a quick response. In saturated markets, machines are often in use much longer. There, it makes sense to keep modernizing them and to invest in their productivity and networking for the long term. These customers are open to process optimizations, encompassing much more than just availability. Sensor data can also identify quality problems in upstream products and prevent manufacturing errors.*

EXPERTISE CAN'T
BE FLYING AROUND THE
GLOBE – IT HAS TO BE
AVAILABLE ONLINE.



How important is service for mechanical engineering?

Harald Wassermann: Service is crucial for customer loyalty, and is one of the greatest stabilizers for a company's economic success. Many years ago, I established a service organization for an elevator manufacturer in Germany. Today, this company makes more than half of its sales in services – in a growing market! You know, mechanical engineering companies really celebrate when they receive a major order. But even with multi-million projects, in the end, the till is actually filled by what service generates each year with a much smaller turnover and risk.

Where do you see service within a company?

Harald Wassermann: Service can't be an add-on to sales or production because it will always be second to their interests. How often does sales promise free maintenance intervals in sales talks? This is fine as long as they mention the value and the price of maintenance, and that the service results in a cost advantage of x thousand euros. This is what makes the value clear. In the future, this will apply even more to information. Companies have to drive home the fact that information has a value that customers have to pay for.

But in hardware development, the service capability of products is also gaining in importance. The faster repairs can be performed, the higher the machine availability. Component manufacturers that design their products to be quick and easy to exchange offer measurable added value. Service-optimized components require no special tools, have captive screws, and feature a modular design.


In your opinion, what role will service specialists play in the future?

Harald Wassermann: Today, service technicians from company headquarters are still frequently sent all over the world. This will change. In the future, expertise can't be flying around the globe – it has to be available online. Soon, the majority of all problems will be able to be diagnosed online by analyzing data. Machine manufacturers will employ fewer, but highly qualified service technicians for extremely complex problems.

“Service can’t be an add-on to sales or production.”

With new business models, much more complex service offers are being developed that also present new challenges to sales. Sales has to develop service offers tailored to customers. And sales has to be capable of pointing out their added value to customers. This requires competencies that are quite uncommon these days and first have to be realized. This is why some companies are starting to establish specific, service-focused sales.

What advice do you have for mechanical engineering firms when it comes to service?

Harald Wassermann: *No one can stop technical advancements and networking. When it comes to their service strategy, manufacturers have to ask themselves: to respond, or to model? Waiting now means later they can only respond, and will be stuck in cost-driven competition. But gearing themselves to their customers and optimizing their basic service business now means manufacturers lay a good foundation for creating new business models and securing their position in the future. *

WITH NEW BUSINESS MODELS, MUCH MORE COMPLEX SERVICE OFFERS ARE BEING DEVELOPED THAT ALSO PRESENT NEW CHALLENGES TO SALES.



After completing his studies as an engineer, Harald Wassermann began his professional career in plant automation. For more than a decade, he headed international service and sales organizations in the capital goods sector at companies of wide-ranging sizes. Over the last 10 years, he has provided companies with consultation in conceptualizing and implementing new service and sales strategies.

MAKING HEAVY-WEIGHTS 'STEP ASIDE' WITH PNEUMATICS

AVENTICS supplies pneumatic drives for train doors. In an emergency, any passenger can now open doors that are as heavy as Muhammad Ali



Simply moving Muhammad Ali, the most famous heavy-weight boxer of all times, to the side single-handedly? Inconceivable. For train doors weighing up to 90 kilograms, placing them in the same weight class as Muhammad Ali, this is a core requirement. With its new RTC-TD pneumatic drive, AVENTICS has developed an extremely efficient solution for train manufacturers that allow even people without any training at all to quickly and easily open the train doors in emergency situations.

Muhammad Ali shaped modern boxing like no other. He combined outstanding power with a light-footedness and speed never seen before – properties that AVENTICS has applied to pneumatics to create intelligent solutions. Drives for train doors are prime examples: Their main task is to automate door opening and closing. Movements have to undergo defined braking before reaching their end position to prevent wear on the mechanics and to ensure a long service life for the drive and doors. Cushioning also minimizes the risk of passengers being trapped. On top of that, passengers have to be able to open doors easily and quickly by hand in emergency situations without power or compressed air.

Previously, many manufacturers used electromechanical drives as a solution. However, train engineers are always on the lookout for more reliable, low-maintenance solutions. After intense comparisons, several train manufacturers have now made the switch to a pneumatic solution from AVENTICS. The decisive advantage: The new solution has been tailored to this application and is more efficient than all its alternatives across its entire service life for both the train manufacturer and the operator.

Absolutely no adjustments necessary

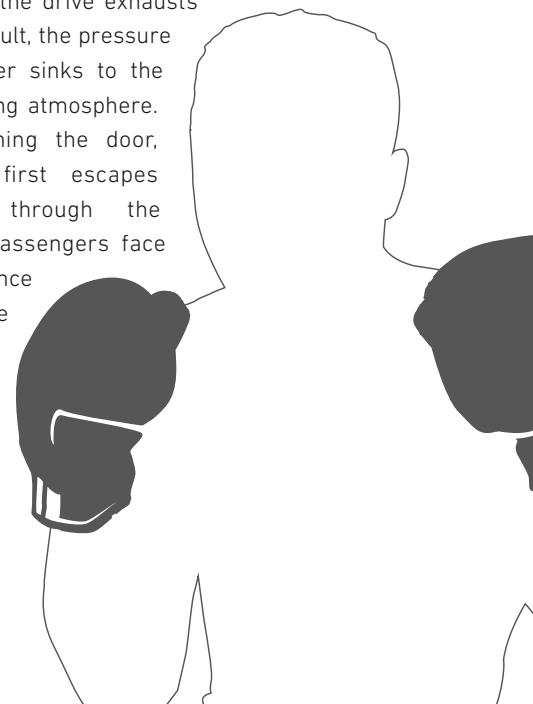
The RTC-TD solution – TD is short for train door – consists of proven system components from the AVENTICS pneumatics range. Railway specialists at AVENTICS integrated cartridge

solutions into the end cover of the rodless cylinder. These accommodate the 3/2 directional exhaust, check-choke, and shuttle valves. The result: The drive is extremely resistant to vibrations, making sure no screws can come loose. What's more, the RTC-TD is much more compact and lightweight than electromechanical and other pneumatic solutions.

At the same time, the system provides a much less complex solution for controlling cushioned end movements. The two-stage throttle with fixed throttle cross-sections is responsible for braking the movement without any electronics. In the lab, AVENTICS tailors the product to the door weight and opening time required by the customer. The fixed throttle settings simplify assembly and reduce commissioning time for the door drives at the train manufacturer's premises.

Minimal resistance

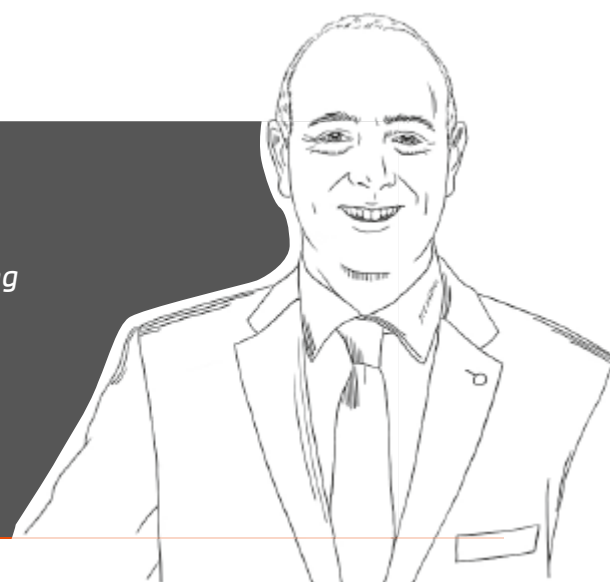
In the event of an emergency, such as a total power failure, the drive exhausts automatically. As a result, the pressure in the rodless cylinder sinks to the level of the surrounding atmosphere. When manually opening the door, the remaining air first escapes outwards directly through the integrated exhaust. Passengers face just a minimal resistance to quickly open the heavy door.





"AVENTICS is always making clever ideas a reality in pneumatics. With intelligent, customer-specific solutions, we are replacing electromechanical drives - both in plant automation and in railway technology."

Florent Orget,
Strategic Product Management
at AVENTICS Germany



Low life cycle costs

Operators of trains equipped with RTC-TD also benefit from low life cycle costs compared with electromechanical and other pneumatic concepts. The units are extremely easy to maintain and repair since they consist of just a few standard components. After exchanges, maintenance technicians do not have to make any adjustments to the speed or cushioning. The drives are practically wear-free, enabling long expected service lives of 30 to 40 years. Even more important is the high mileage that can be achieved. Ongoing endurance tests are proof that the

RTC-TD reliably achieves the minimum service life for door drives of 2 million kilometers as mandated by German law. The similar RTC-BV model achieves at least 5 million kilometers in endurance tests, corresponding to a good 2.5 million cycles. This brings us back to boxing: In the end, the winner is whoever lasts the longest. 🥊

FAST PNEUMATICS CUTS CYCLE TIME IN HALF

Short cycle times save a complete machine per line

Modernizing existing production lines from Bosch while reducing the number of central stations from three to two: Machine manufacturer GAtEK has achieved this feat thanks to AVENTICS pneumatics, which cuts cycle times in half.

There's no car on Earth without a starter, and for decades these have been made by Bosch, the world's largest automobile supplier. The starters, and since 2011 the start-stop technology, are manufactured around the clock on seven production lines at Bosch's plant in Hildesheim, Germany.

The individual production lines consist of around 25 machines, which surround the diffusion welding system. This welding unit was designed and built by the GAtEK association for automation technology and design, a company specializing in planning, designing, and producing tailored engineering solutions. The two managing directors Thorsten Hoffmeister and Volker Thomas have been designing systems for Bosch in Hildesheim for three decades.

A pre-mounted armature is transported on workpiece pallets, aligned for position detection, and brought into position for welding by grippers. After welding, further grippers return the armatures to workpiece pallets and transport them to the next production step. Supply, swiveling, and welding are performed at rapid speeds in parallel to maintain the line cycle times.

The first GAtEK machines had three separate control processes for contact movement during welding. This meant waiting during switching times. "Using proportional valves, we can now take the

three movements and simulate the smooth sequence of a robot. As a result, we cut the time just about in half in this application," explains Thorsten Hoffmeister.

GAtEK uses ED series electropneumatic pressure regulators. "With their dynamically controlled pressure that can be precisely tailored to the application, they form the basis for optimized, energy-efficient processes in the diffusion welding system," emphasizes Volker Thomas. ED series valves combine control electronics, the pressure sensor, and direct drive via proportional solenoids into a single closed unit.

Constant pressure stabilizes the process

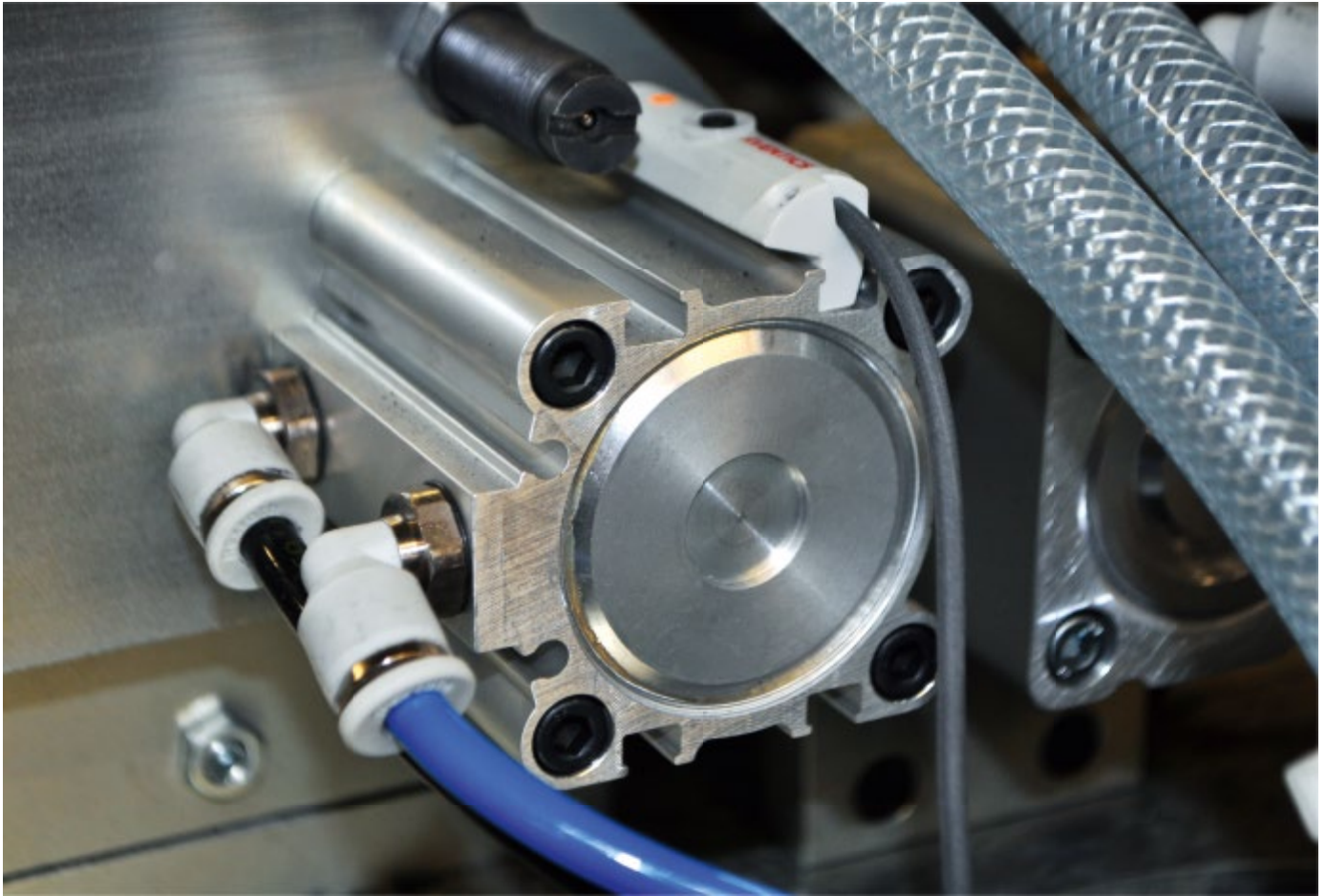
The regulator detects possible drops or increases in pressure. Here is where the pressure regulator shines, with its high dynamics: Based on a target-actual value comparison, it immediately generates the necessary pressure change to ensure process stability. "Compared with the machines used up to now, we achieve a faster, more stable process and thus optimized weld quality. This also extends the machine service life and reduces cycle times by 50%," emphasizes Thorsten Hoffmeister. "As a result, we can reduce the number of machines in a system from three to two." All seven production lines are planned for gradual conversion.



Diffusion welding systems amidst the production line for starters. Fast pneumatics shortens the cycle time. Two machines now do the work of three



The managing directors of GAtEK, Thorsten Hoffmeister (left) and Volker Thomas (middle), talking to Steffen Döhring, AVENTICS, about the new machine concept




SM6 series position measuring sensor provides feedback on wear

The electropneumatic concept also includes the AV03 series valve system. In combination with the pressure regulators, GAtEK achieves ultra-high precision. At the same time, valve interaction delivers pressure values that can be consistently reproduced and documented, thus meeting Bosch's high requirements in all aspects. GAtEK benefits from the innovative inner workings of the AV03, which is extremely compact thanks to its diagonally arranged valve spool. In addition, the flexible AES fieldbus control supports all conventional systems and protocols.

Ready for the Internet of Things

"We have managed to solve all stroke and travel motions with AVENTICS," says Thorsten Hoffmeister, pointing out the large selection of cylinders. To query the exact position and required travel time, some cylinders are also equipped with the SM6 distance measuring sensor. Thanks to the sensor, it is possible to check the guide wear, enabling preventive maintenance while ensuring the quality of the welding process. The concept of the Internet of Things can thus be implemented in new machines as well as integrated into ongoing production.

AS3 series maintenance units ensure not only high compressed air quality and prevent air waste, but also play their part in machine safety: As an inexpensive solution for safe ventilation and exhaust, the integrated 3/2 shut-off valves switch off redundantly in an emergency.

Thorsten Hoffmeister stresses the good collaboration: "As our partner, AVENTICS stood by our side helping us with both CAD and 3D. Based on the data provided, we were able to tailor the entire system configuration to the application ourselves in no time at all, and always had a direct contact." While the newest machines are integrated into the line, GAtEK is already working on new diffusion welding systems for Bosch. "The system is very flexible and viable in the long term. We can keep the concept even though we only have the key figures for the new type of starter to be produced on the line," summarizes Volker Thomas. 


SIMPLY MORE SIMPLE: NEW SENSOR SERIES

ST6

Some manufacturers seem to have perfected their components decades ago and continue to manufacture them in the same design for many years. AVENTICS, on the other hand, has a very different approach to this topic. With its new ST6 sensor series, AVENTICS has significantly simplified fitting of the sensor into the six millimeter T-slot on profile cylinders, as well as sensor mounting on round and tie rod cylinders.

The magic word: drop-in assembly with a universal mounting screw. Technicians insert the sensor into the T-slot from above, fix the eccentric screw with a quarter turn using a flat tip screwdriver or Allen wrench – and voila. Unlike with other manufacturers, it is no longer necessary to disassemble the cylinder end cover. The installer does not need any special tools, and the screw is captive, reliably keeping the sensor in place, even in the

event of impact or vibration. Retaining ribs on the side of the sensor enable simple mounting, including in hard-to-reach locations or for overhead assembly.

Proximity sensors detect the magnetic field of the piston magnet when the piston is moving within the sensor range. Once a specific threshold is reached, the sensor responds. The ST6 sensor series includes a wide range of versions with different line lengths and connections. AVENTICS also offers variants with ATEX certification and covers application temperatures from -40°C to 120°C with its cold and heat-resistant versions. The sensors are cULus-certified, protected against polarity reversal, and short-circuit-resistant in all variants. 

APPLICATIONS IN
TEMPERATURES FROM

**-40 TO
+120°C**




CLEAN AS CAN BE: STAINLESS STEEL CHECK-CHOKE VALVES CC02-SL

Every single little piece of a system has to meet the same high demands – a must for hygiene in food processing. With its new stainless steel check-choke valves, AVENTICS has extended its range of FDA-compliant components.

Stainless steel is the material of choice in the food industry whenever components are subjected to frequent cleaning cycles with the required cleaning agents. Many AVENTICS cylinders made of this material have proven themselves in a wide range of applications, from fish processing, to bottling beverages, through to the production of dairy products.

All materials and surfaces of the new check-choke valves meet the specifications of the FDA. The valves are thus suitable for use in food processing and the pharmaceutical industry.

Available in a number of sizes, the valves in the portfolio are tailored for use with AVENTICS stainless steel cylinders. The swiveling housing with push-in connection simplifies application significantly. With an extremely compact design, the valves offer optimal throttle performance. 



ES05 STARTER PACK: THE RIGHT CHOICE FROM THE START

Sales partners worldwide already certified




AVENTICS trains sales partners worldwide in assembling the new valve systems.

Presented this spring, the new ES05 valve series for standard applications shows just how easy AVENTICS makes working with new products before their marketing launch. The online catalog and configurator were already programmed and just had to be activated for all users for the launch. At the same time, global production began filling stocks to ensure fast delivery times.

Above all, AVENTICS trained not only its sales staff, but also prepared dealers worldwide for the new series. With a starter pack, they have been able to see for themselves and then convince their customers just how easy it is to assemble the new ES05. All they need is a single screwdriver, since all fittings are of the same type,

tightened with the same torque. The starter pack includes ES05 components for five or twenty valve systems, as well as the Essential Test Box, which dealers use after assembling the system to check whether the system is free of leaks, as well as to test valves' electrical function.

After completing courses as well as hands-on training in assembling the ES05, sales partners who have qualified receive a certificate. At the time of going to press, several dozen sales partners from eleven countries had been trained. Thanks to this certification, users can be certain that they are receiving proper support in configuring and assembling the new valve series – right from the start. 

FAST SOLUTION IN THE COMPACT CLASS


LS04-XS

People who buy premium-class cars value their size and space and enjoy a smooth and gentle ride. In contrast, those who opt for a compact car are counting on every centimeter, and don't mind something a bit sporty. With a flow of 200 l/min, the completely reworked LS04-XS valves are ideal for these requirements, setting benchmarks for maximum performance with the smallest of dimensions. Switch-off times have been reduced by about one-third.

For this new development, the AVENTICS engineers combined new pilot valves and high-performance polymers with aluminum. The result: The developers were able to shorten both the length and the height by several millimeters. This makes the LS04-XS the most compact

valve for flows up to 200 l/min. The valves meet protection class IP65 with an M8 connection, and IP50 with a standard connection.

The new directional valves feature much faster switching than the previous generation. Switching times have decreased from 9/24 ms to just 9/18 ms, a 33% reduction. This improves processes and unlocks the potential to shorten cycle times.

As usual, the new valves offer a number of electrical connection options. In addition to the M8 3-pin plugs with a straight cable exit, users can also continue using 2-pin Molex plugs with an adapter cable provided by AVENTICS. 



200
l/min
FLOW

More compact than ever: Both the length and the height of the new LS04-XS have been shortened by a few millimeters



Photo: iStock

AVENTICS ITALY: SMALL, BUT POWERFUL

Small and medium-sized companies are the backbone of Italian engineering

"Italy is the second largest machine manufacturer in Europe", says Danilo Carrara, General Manager of AVENTICS Italy. Worldwide, Italy even ranks number 5 behind China, USA, Japan and Germany. In 2015, for the first time in many years, the Italian machine production increased again – and AVENTICS is growing even stronger.

AVENTICS Italy is based in Cernusco Sul Naviglio near Milan, the industrial heart of the country up in the north of Italy. Although the brand AVENTICS is still young, the pneumatics expert has been present in the Italian market for more than 40 years. Danilo Carrara and his team of 18 associates take care of a broad customer base, concentrating on finding individual solutions based on their pneumatic expertise.

The team focuses on the industry sectors Food & Beverage, Machine Tools, Marble Machining, and Industrial Automation. These are also industry sectors Italian machine manufacturers are very successful in. Compared to other countries, small and medium-sized enterprises with less than 200 employees prevail in Italy. "Doing business with them needs personal enthusiasm and a high degree of flexibility to meet the special requirements",

*"Close collaboration with our customers
is the key to our growth."*

Danilo Carrara,
General Manager at AVENTICS Italy




Carrara explains his approach. The organization is prepared to handle a high number of small orders with short delivery times, making it easy to do business with AVENTICS.

In addition to the direct sales force, the company cooperates with 22 distributors. Therefore the pneumatic components are highly available all over the country. At the same time, e-business is becoming more and more important, as a new generation of engineers enters professional life. The young specialists are accustomed to select, configure and purchase nearly everything via smartphone or mobile devices. Roughly 50 per cent of the turnover of AVENTICS in Italy is already transacted electronically. One reason for this success are easy-to-use online tools for the selection, configuration and ordering of the products.

Italian OEMs more and more increase the modularity of their concepts. Especially the Advanced Valves of the AV series with the newly developed AES electronics meet the requirements of new design concepts across all industry sectors. The

products support a variety of the most commonly used communication protocols in automation.

Another major advantage compared to local competitors is the large international footprint. 75 percent of machines manufactured in Italy are exported. With its global presence, AVENTICS helps the Italian manufactures to offer service anywhere in the world as a major benefit. Being present in more than 55 countries, AVENTICS can support OEMs and end users with short delivery times of spare parts and local experts.

"Maintaining a strong connection with our customers is the key to our growth", Danilo Carrara emphasizes. The success shows that he is on the right track: AVENTICS Italy has been increasing its turnover above market growth since 2014. 

Danilo Carrara is an automation veteran with a professional experience of 30 years in this industry, more than 20 years of them with pneumatics. The engineer joined AVENTICS in 2016. His personal goal: "I want to build up a very motivated team and increase the enthusiasm of every single one in their approach to the customer."

Thanks to motivation, enthusiasm, the high level of team competences and an accurate focalization we will be able to have a stronger presence on the market."

“MAXIMUM KNOWLEDGE WITH MINIMAL ADDITIONAL COSTS”

Interview with Dr. Myriam Jahn, expert on the Internet of Things and managing director at ifm datalink

Everyone wants the Internet of Things, but very few want to spend money on it. Dr. Myriam Jahn, managing director of ifm datalink is convinced that both are possible. Talking to A Mag, she explains some background information and perspectives of how pneumatics and sensors work together to drive the Internet of Things.

What role do sensors and pneumatics play in the Internet of Things?

Dr. Myriam Jahn: Sensors and pneumatics are cost-driven products. The main concern is to leave out the unnecessary and many manufacturers have been doing quite well in that respect. Now the challenge lies in using the sensor data for the Internet of Things with minimal added costs.

Who needs this data and for what?

Dr. Myriam Jahn: The topic of the Internet of Things is driven by end users. Up to now, the focus for both sensors and pneumatics was their functions in the machine. However, now end users are focusing more on higher energy efficiency in production as well as condition monitoring to the availability of machines even more. Together with AVENTICS, we develop scenarios as to how we can achieve these goals with minimal additional costs. This allows machine manufacturers to fulfil end user requests very quickly.

Can you describe the scenarios?

Dr. Myriam Jahn: First, all operating and status data has to be recorded and forwarded by sensors. By now it is clear that this data won't be processed in the machine control since the data volumes are much too large. Instead, superior systems – be it manufacturing execution systems, ERP systems, or cloud applications – will process the data. However, in many cases a local monitor on the machine will perform visualization. We therefore need an infrastructure for networking actuators and sensors with superior systems. ifm datalink supplies IO-Link data directly to the IT systems via TCP/IP.

How exactly does this work?

Dr. Myriam Jahn: Let's take energy management or condition monitoring for example, two topics gaining in importance for end users. With flow sensors and proximity switches, we can collect much more data on the pneumatics than just 'on/off' via IO-Link without any additional costs. With solutions from the ifm enterprise group, users can transfer this status data directly to common databases such as MySQL or SAP HANA or evaluate it with ifm software on their computers. For this purpose, we have developed a software called SmartObserver, a sort of Facebook for sensors. There, we record all data and statuses and make them visible. But this alone is not enough. Together with AVENTICS and its product and application expertise, we managed to generate information and knowledge based on our sensor data.

What is the advantage of this type of solution?

Dr. Myriam Jahn: For end users, it is extremely expensive to realize this type of solution independently. A sensor, for example, may cost less than 100 euros, and only a little more with IO-Link. But to be able to use this data intelligently, end users generally have to program interfaces to controls, MES and ERP programs, and evaluation software. We once calculated that just connecting a sensor to the IT world

“Together with AVENTICS, we develop scenarios.”




costs around 12,000 euros. With the ifm solutions, end users can feed the data directly to IT and visualize it on the machine on the shop floor – and at just a fraction of the cost.

What role does the IT industry play in the Internet of Things?

Dr. Myriam Jahn: *It is currently being determined whether the Internet of Things is going to be driven from above, by IT, or by component and machine manufacturers. In the end, this race is all about who is defining the standards.*

Are there already concrete applications?

Dr. Myriam Jahn: *Of our around 130,000 customers, 80 percent are end users. With some of them, we are already working hard to network existing systems. This ranges from a well-known clock manufacturer that uses this data for quality assurance to system manufacturers. In this type of application, we show that incorporating the Internet of Things can be very inexpensive. At the 2016 Hannover Messe, we worked with AVENTICS to demonstrate how intelligent sensor/pneumatics systems can record and analyze all relevant data online fully, reliably, and independent of the machine control. *

Dr. Myriam Jahn is the managing director of ifm datalink, the ifm enterprise group's endeavor to bundle activities relating to the Internet of Things. After studying business administration with a focus on production planning and control, she also completed a Master of Science in electrical engineering. She has been working for the ifm enterprise group since 2003 and published a book titled “Ein Weg zu Industrie 4.0: Geschäftsmodell für Produktion und After Sales” (moving towards the Internet of Things – a business model for production and after-sales) in 2016.

"SINCE THE CARVE-OUT, AVENTICS IS MORE FOCUSED AND INNOVATIVE."

AVENTICS sales partner Tectra Automation
from South Africa relies on growth





James Bull, Wade Profit, Marno Gloy, Gert Meyer, and Malan Bosman (from left to right)

“We are planning to double sales with AVENTICS products within the next four to five years.”

Malan Bosman
Product Manager Tectra Automation

Visiting factories in Johannesburg, Pretoria or Port Elizabeth shows sophisticated production facilities and state-of-the-art machinery, often built in South Africa. More and more, AVENTICS solutions are part of it, thanks to Tectra Automation.

Tectra Automation is the exclusive supplier of AVENTICS pneumatic components and solutions for the Sub-Saharan African market. „We serve machine builders and industrial end-users in many sectors like Automotive, Food and Beverage or Industrial Automation“, says Malan Bosman, Product Manager of the Pneumatics Division of Tectra Automation. The company, member of the Hytec Group, is a leading designer and installer of automation solutions including pneumatics from AVENTICS. “We are not necessarily the cheapest supplier, but the one to offer the most added value“, smiles Malan Bosman. Together with the project department, the pneumatic division configures and assembles panels and systems in-house and delivers complete modules to the customer. “We are selling more than just components; we deliver knowledge, problem solving and services.”

This approach turns Tectra into a real growth company. “We plan to double the turnover of AVENTICS within the next four to five years.” Tectra already hired additional sales people for pneumatics and has invested massively in their education. With that expertise they are partners for problem solving on eye-level with the engineers of the customers.

“We feel that AVENTICS has become much more focused and innovative, since it is on its own“, the product manager evaluates. “There are new exciting products like the AV valve family or the ES05 and we draw advantages from their compactness, their ease-of-use and their flexible configuration.” The new products are an important success factor as well as their local availability within days all over Southern Africa.

South Africa is Tectra’s home market, but by far not the only one. With own representations in several African countries and distributors in others, the company covers all of Sub-Saharan Africa. Some of these states, like Nigeria, Kenya or Zambia, have the fastest growing economies in the world. Since the turn of the century, Sub-Saharan Africa has seen the longest period of growth with a median rate of six per cent. The perspectives are good and Tectra is clearly set on growth. 

CLEAN RAILS CAMPAIGN

Combined street/rail machines rely
on modern, safe pneumatics



Increased quality thanks to new pneumatic
concept with control cabinets,
valves, and cylinders from AVENTICS



"Collaboration between AVENTICS and SRT Schörling Rail Tech is characterized by short routes and open communication."

Steffen Döhring,
Sales Engineer at AVENTICS Germany



SRT Schörling Rail Tech builds customer-specific road/rail vehicles based on chassis from renowned manufacturers. With efficient components from AVENTICS, the specialist for cleaning vehicles has created a new pneumatic control concept.

With normal street tires, the truck moves onto the streetcar rails and maneuvers a bit. The track boxes with the streetcar wheels are then lowered. They elevate the chassis, allowing the special vehicle from SRT Schörling Rail Tech to begin cleaning the rails, switches, and track beds. Nozzles target the grooves to be cleaned, spraying them with water at a pressure of up to 1,600 bars, rinsing the rail heads and switches at the same time. In its latest vehicle generation, SRT completely reworked its pneumatic system, relying on a new control concept with AV valve systems to actuate the auxiliary consumers pneumatically.

Previously, the valves were used at a range of positions, sometimes difficult to access, and had to be protected against contamination. "We changed this completely to optimize the new concept," reports Thomas Schneider, responsible for designing pneumatics and control technology at SRT. "Now, the overall valve technology features a compact, clean, clear arrangement in the control cabinet, and is easy to access for assembly and maintenance."

At the heart of the solution: AV03 series valve systems. The compact, lightweight structure reduces compressed air

consumption, increasing energy efficiency. What's more, the valves only require a compressed air purity of 40 micrometers. They are connected to the parent control with AES components via CANopen. SRT also uses electrical supply plates with separate voltage segments. "In the event of an emergency off, for example, this allows us to power down specific valves, independently of the control," explains Thomas Schneider. The pneumatics control all the vehicle's auxiliary consumers, starting with the sliders that open and close the suction lines, to swiveling flaps and safety supports, through to the hoist on the trolley with the rail wheels.

Certified safety

"Our collaboration with AVENTICS began when we started looking for new cylinders resistant to heavy contamination," recalls Heinrich Scheiter, managing director of SRT Schörling Rail Tech. The primary concern: pneumatic lifting and lowering of the trolley. Besides featuring a modular sealing concept, the cylinders also have to reliably ensure brief stops. "If we were unable to control the lowering of the device, it would drag across the track, causing major damage. Plus, the vehicles permit a lateral displacement for taking corners, where the rail wheels on the trolley run in the rail. Here, we have to avoid risks caused by the wheels twisting, or even tearing off," explains Heinrich Scheiter.

Certified LU6 series locking units come into play here. Spring-actuated, they hold the piston rods in the event of a pressure drop or failure. The locking unit can be used in safety-relevant applications up to performance level c/category 1. Just a few extra measures and the units can also be used in systems with higher categories and performance levels.

"For us, outright reliable components are crucial to increase the safety and availability of our vehicles. With the new pneumatic control concept in the control cabinet, we have managed to realize a time and cost-saving standard solution, even though for us, constructing two identical vehicles is already considered to be large-scale production," summarizes managing director Heinrich Scheiter. 📌

„ABLE TO REACT FASTER“



Rudi Coetzee, President of AVENTICS USA, joined the company in October 2015. Born in South Africa, the metallurgical engineer had assignments for different companies in Africa, Asia, Europe and the USA.

What is the market situation in the US right now?

Rudi Coetzee: *The US economy remains in a difficult situation because of the depressed crude oil, natural gas and commodities market. This has a negative effect on a wide range of peripheral industries, especially on manufacturers of auxiliary equipment. We see promising demands in sectors like Life Sciences, Rail, Food and Beverage and Industrial Automation in general. In addition, we have recently had very interesting successes in the aerospace sector.*

Which products are most successful?

Rudi Coetzee: *We are finally getting good traction with the AV series. This is an innovative product and our customers are excited about it. We are selling more and more solutions and complete systems. We have established local capacities for testing and the assembly of complete systems in Lexington. This gives us the ability to react much faster to our customer needs. For instance, just a few weeks ago, we received an opportunity to replace a competitor valve bank that failed in the field. The Lexington team assembled AV05 system overnight and shipped it the next day. The product was in the field technician's hand in less than 24 hours! Quick service is definitely one of the strengths we offer the market.*

Do your customers invest in Internet of Things?

Rudi Coetzee: *IOT is obviously a significant evolution and maybe even a revolution of Industry, in short, it is going to make our habitat 'smart'. Customers are looking to accurately and consistently capture data to identify - and ultimately predict inefficiencies*

"Quick service is definitely one of the strengths we offer the market."

Rudi Coetzee,
President of AVENTICS America




and/or problems. Intelligent and connected systems have the potential to proactively respond to changing system dynamics, identifying performance changes which provide predictive failure intelligence and minimizing unscheduled downtime. Good news is that at AVENTICS, we are on track participating and even lead the pneumatics connectivity race. For example, our AV and AES series when combined with connected end point sensors are capable of monitoring real-time performance data, such as leakage, flow and speed which can be used to quantify system performance.

How important is e-business?

Rudi Coetzee: *e-Business is not a choice anymore. It is critical and part of how we will do business going forward. Our customers demand and expect it. Just consider the Millennials entering professional life – e-Business is their way of life. These days, most of us use our smartphones and other handheld devices in more ways we could have imagined before. In the US, we see more and more demand for self-service. For example, a*

maintenance technician wants the ability to hop on the internet to buy a part in minutes. I see e-Business as a fantastic chance for AVENTICS to prove how easy it is to do business with us

What is your philosophy?

Rudi Coetzee: *First, a promise is a promise. What we promise we must deliver, no matter who we make this promise to. Second, on a personal note, I see my main responsibility as creating an environment where our AVENTICS associates can be as successful as possible. In turn this will make our customers and other business partners successful.* 



Focused
Delivery
Program

QUICK SHIP PRODUCTS: FOCUS DELIVERY PROGRAM

The AVENTICS Quick Ship program gives you access to a wide selection of our most popular pneumatic products with fast, reliable lead times that meet or beat market lead times.

HIGH-END PAPER PRODUCTION

Ultra-precise coating system from Matti Technology



The AV03 series Advanced Valve systems have to meet stringent requirements in the coating machine: They control all the pneumatic components, meaning their functionality and precision have a direct impact on product quality



When applying coats in the micrometer range, paper rolls with a width measuring 1,540 millimeters require precise pressure distribution so that the four inks used are applied evenly and do not mix

In the age of digitization, printed materials continue to face new challenges. Today, virtually personalized media tailored to individual users' behavior are in demand, along with the special machines to produce them. Matti Technology offers such a solution with its ultra-precise coating system designed for paper finishing. The new GP Tinter SG-150 inks paper on one or two sides, while AVENTICS pneumatics ensure perfect roller contact pressure, as well as actuation of the ink pumps and safety controls.

Tinters are universal machines for coating paper with layers measuring in the micrometer range. Matti Technology designs and builds tinters that can be used as a stand-alone solution, or integrated into digital printing presses. Depending on the customer's request, ink changes and washing and cleaning processes are performed automatically.

The recently designed customer-specific machine is a first for the Swiss company, not only because it weighs 9 tons. The paper is accelerated at a speed of 100 meters per minute in a width of 1,540 millimeters and guided through the tinter over different rollers. The end user inks the paper on both sides with four colors, with ink changes taking place automatically. Due to the high speed, the wet paper has to

be dried on just a short section.

Thomas Amrein, owner and managing director of Matti Technology AG since January 2015, explains the task: "The speed and contact pressure of the rollers is crucial for the print and thus the product quality. However, certain parts in the coating system are explosive areas due to the alcohol-based inks, which poses a major challenge."

Matti Technology therefore opted to use pneumatics, first performing tests in close collaboration with AVENTICS. "During

Thomas Amrein, owner and managing director of Matti Technology AG, is pleased with the company's close collaboration with AVENTICS: "The extensive application expertise really helped us in designing and optimizing the new GP tinter."



*"Understanding customer processes -
that's the first step of collaboration."*

Hansjoerg Biefer,
Sales Engineer at AVENTICS Switzerland



the project phase, we had to make a number of changes to the system, but thanks to the competence of the AVENTICS employees and their extraordinary technical consultation, we were quickly able to optimize the interaction between all the technologies. AVENTICS offered us real added value in integrating the pneumatics," says Sinan Özönar, project manager, referring to the collaboration resulting in the new control concept.


AV valve system meets high precision requirements

The pneumatic components apply contact pressure to the rollers and control the ink and cleaning agent pumps from a total of seven containers, all while performing additional control functions. The core of the valve technology is formed by an AV03 Advanced Valve system connected to a parent PLC. It meets the high requirements for precision necessary to correctly apply the pressure to the paper web. The AV03 controls not only cylinders and pumps, but also single solenoid axial valves to open and close the respective channels on the ink containers. Furthermore, shut-off valves and pressure regulators control the pressure, while check-choke valves control the flow.

The twelve PRA series cylinders in the tinter play a crucial role in the quality of the print: Controlled application of contract pressure to the rollers determines both the ink thickness and the

contrast. Since this task is central, each cylinder can be actuated separately. Undergoing constant improvements, the ISO profile cylinders convince with short cycle times, quiet running thanks to elastic damping elements, optimized cushioning, and a low weight. The sophisticated roller system is one of Matti Technology's many great innovations. By adapting the roller configuration, the tinters can meet a wide variety of substrate requirements, such as surface tensioning, emulsion additives, and viscosity, allowing the new machine to optimally apply the alcohol-based inks.

The pneumatics system is rounded off with easy-to-program PE5 pressure sensors, PM1 pressure switches that switch in the event of a pressure rise or fall, and the QR1 fitting program with push-in fittings featuring plastic release rings that make it easy to connect and disconnect tubing lines.

Thomas Amrein summarizes the success of the construction designed in collaboration with AVENTICS: "The new pneumatics system allows us to optimally meet high expectations for this customer-specific coating system. Furthermore, we can standardize the system so that we can find and build a solution more quickly when we receive a request for special machines." 

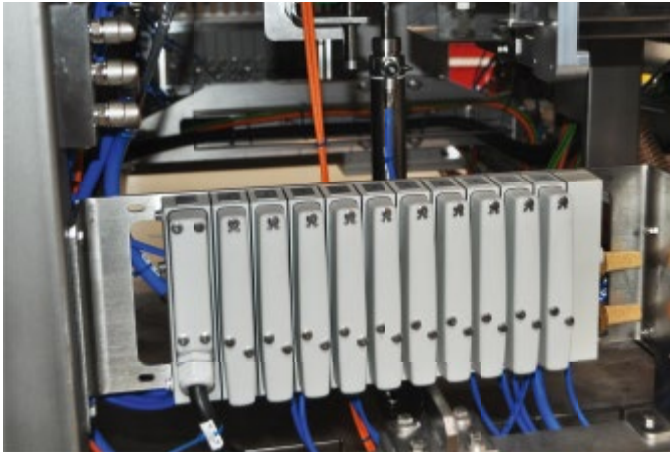
Matti Technology AG is the market leader in integrating digital printing presses in the high-speed sector. Its customers include renowned digital printing press manufacturers as OEM partners, as well as data processing centers, banks, insurance companies, and printshops. The tinter owes its success to flexible operation with multiple inks, an automatic ink changing system, and its wide range of application options such as colors, primers, coats, and reference prints with gravure rollers. Matti Technology is a member of the Matti Group, which also encompasses Matti Engineering AG and Matti Orion.



'SET IT AND FORGET IT'

Elopak equips first fully aseptic filling machine for gable top packaging with robust pneumatics from AVENTICS

Machines for filling milk or juice have to work around the clock. With an output of up to 12,000 cartons an hour, disruptions and downtime are not at all welcome. For this reason, availability plays a major role in selecting machine components. Elopak's motto here is "set it then forget it." The E-PS120A is the first fully aseptic filling machine for gable top packaging. This efficient, powerful solution presented by the packaging specialist ensures high reliability owing in part to robust, food-compliant pneumatics from AVENTICS.



Proven design: Used in many Elopak machines, the HF03 series valve systems will be gradually replaced with the new AV valve series by the packaging specialist



Optimized, energy-efficient solution: The varying pressure when moving the packaging is precisely and dynamically controlled by AVENTICS ED02 electropneumatic pressure regulators

"The latest technical features are not our main concern when selecting components." With this statement, Wolfgang Buchkremer, Senior Manager Research & Engineering at Elopak EQS GmbH in Mönchengladbach, has astonished some system suppliers. His greatest requirement focuses much more on reliability: "We need components that play their part without standing out - we want to be able to install and then forget them. And that isn't possible with just any component."

In developing the first fully aseptic gable top system, Elopak is pursuing its strategy of ultra-functional packaging concepts, becoming a real trendsetter in the area of aseptics with its new Pure-Pak® Advanced filling concept. It meets both increasing expectations of consumers regarding product design, functionality, and quality, and industry requirements regarding maximum efficiency and machine availability. This makes the aseptic machine the next generation of the over 100 year old tradition of the Pure-Pak principle of Elopak, whose gable top packaging is known worldwide with around 13 billion cartons sold.

Based on this expertise, the E-PS120A aseptic filling machine offers top-class automation technology and is divided into six modules. The inserted packaging material is recorded, set upright, and pre-folded. The sealing cap is then applied via ultrasound welding and the bottom is heated and pressed to seal the carton. In a separate chamber, the packaging is sterilized with hydrogen peroxide, and the product is then filled with a single shot. Finally, the packaging is induction-welded and transported out of the machine. With this system, users can choose from three packaging sizes of 500 ml, 750 ml, and 1 l. Since all machine processes are geared to the packaging height, the only adjustment required to switch between them is the height of the bottom of the carton. Performed by a cylinder, this movement takes just a few minutes and provides a major advantage compared to competitor machines.

The design and construction of such a modern filling machine are complex tasks. A sterile environment and aseptic packaging are vital to maintain product quality for the long term at room temperature without cooling the products or using conservatives. This means the ultra-sensitive drinks, dairy products, and liquid foods have to be filled hygienically and securely while the machine components are subjected to high strains by cold, humidity, and splashes.

Elopak owes its success to technical expertise and decades of experience. "Frequently, permanent reliability comes down to the details," emphasizes Wolfgang Buchkremer, referring to the close collaboration with AVENTICS: "Even though the pneumatic components installed here at first appear insignificant, they are crucial to machine availability and aseptics. In addition to reliable components, we also need close contact and collaboration with suppliers based on partnership to detect optimization potentials in good time and drive improvements forward together."



A plus: The system has been optimized by Elopak so that it can easily be adjusted to accommodate different carton sizes. Since all machine processes are geared to the top height of the packaging, the user simply has to adjust the bottom height using the AVENTICS CCI compact cylinder when switching products



Depending on the requirement, Elopak combines shut-off and ventilation valves to create the perfect solution, optimizing the compressed air system's energy efficiency. Compressed air treatment steps such as filtering, regulating, and dehydrating are already integrated in the AS maintenance units from AVENTICS and ensure high compressed air quality

Industry expertise transformed into perfection

Taking cylinders as an example: An AVENTICS SSI series compact cylinder isolates sealing caps by moving them from one side to another. It sounds like a simple task, but it has to function precisely, around 1 million times a week in day-to-day operations. Based on concrete application data supplied by Elopak, the cylinder experts at AVENTICS reinforced the piston package, extending the cylinder's service life, which in turn has a positive effect on machine availability. Further cylinders move packaging forward up to the next processing step. Pressure varies depending on the position and amount of packaging on a rail. Here, the ED02 electropneumatic pressure regulator ensures precise, dynamically controlled pressure, enabling an optimized, energy-efficient process.

Taking throttles as an example: Hydrogen peroxide (H_2O_2) is used to sterilize the packaging, but has an effect on all reactive components, including sealing materials and grease, which are standard for throttles. Here, choosing the wrong material poses a risk to the entire sterilization process in the long run. "We worked with AVENTICS to find a suitable solution, and now use a throttle that has been cleaned on the inside, with a special sealing ring on the sterilization system's vaporizer. These design details allow us to achieve higher stability," states Johannes Platen, responsible for engineering and mechanical design at Elopak EQS.

Taking valve systems as an example: H_2O_2 -impregnated air also resulted in an application-specific development here. To extend the valves' service life, valve specialists at AVENTICS combined a standard valve system with an aluminum corner strip including an all-round seal. Now, the valve pilots engage directly in the

closed cable conduit within the machine, while the outlets exit the machine. This effectively prevents problematic contact between valves and hydrogen peroxide, contributing to optimized reliability.

Taking quick exhaust and soft start valves as an example: The special unit consists of three AVENTICS components mainly aiming for machine safety to meet the required performance level. Combined with a soft-start and a blocking valve, an AS series maintenance unit offers an array of functions. After a safety cut-out and when the system is depressurized, for example by opening the doors, the valve systems should not be subjected to the full 6 bars of pressure immediately upon restart. The application-specific design now ensures the valve systems are slowly filled with compressed air.

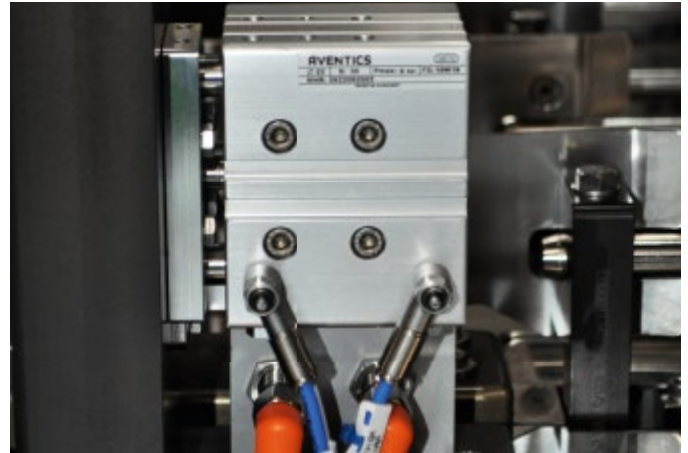
Hygienic safety for series production

AVENTICS realizes such detailed solutions thanks to its many years of experience in designing hygienic components. This is reflected in numerous properties of the 'best-in-class' components customized specifically for utmost food safety. In plain terms, this means no recesses or sharp edges, easy cleaning and disinfection as well as the use of food-compliant materials and lubricants, and resistance to chemicals.

"AVENTICS provided us at Elopak EQS with support right from the start and knows what it means to monitor a near-series machine in development. The pneumatic components made a major contribution in the reliability and low-maintenance requirements of our innovative aseptic filling machine, not least for these reasons. This all boosts machine availability," emphasizes Wolfgang Buchkremer. "Furthermore, AVENTICS and




High reliability despite hydrogen peroxide: A corner strip with an all-round seal prevents the valves from coming into direct contact with H₂O₂-impregnated air in a standard valve system. The valve outlets exit the machine



Designed for high demands: Cylinders in Elopak's aseptic filling machines have to function precisely around 1 million times a week in day-to-day operations

Elopak support the VDMA initiative to standardize consumption measurement so we are on the same level when it comes to determining energy efficiency, able to implement this together to the user's advantage."

Elopak will soon also use the Advanced Valve series, which is optimized for future requirements for continuous data exchange from the control to the lowest field level. "This meets our desire to continue driving fieldbus technology forward, also in pneumatics," says Johannes Platen, adding: "This development, too, will be realized in close collaboration with AVENTICS." 



Joint success: Wolfgang Buchkremer (right), Senior Manager Research & Engineering at Elopak EQS GmbH in Mönchengladbach, talking to Xavier van Aelst, Director Food & Beverage at AVENTICS, (left) and AVENTICS Sales Engineer Christian Broich (center)

ELOPAK: GLOBAL SUCCESS WITH PURE-PAK

If your milk carton doesn't spill or make a mess when you open it, the packaging is very likely from the Elopak Pure-Pak series. The leading global supplier of paper-based packaging solutions for liquid food products is headquartered in Norway and belongs to the Ferd Group. Elopak develops, produces, sells, and maintains complete systems for packaging non-carbonated liquid products, such as milk and dairies, juices, wine, water, and soups. Elopak is the best known supplier of gable top cartons with its Pure-Pak® brand. In 2012, the company and its joint ventures employed around 2,800 staff members, achieving sales of around 940 million euros and producing 12.8 billion beverage cartons.

Since 2011, Elopak EQS GmbH has been headquartered in Mönchengladbach, now employing around 130 staff. EQS stands for equipment supply and includes everything from machine construction to the development and production of pourer sealing systems.

AVENTICS + SCIENCE = PROGRESS

AVENTICS conducts research with CIIT where
science meets automation business




Working together on projects for the Internet of Things: Professor Jürgen Jasperneite (CIIT, left) and Sybille Hilker (CIIT Managing Director, center) with Paul Cleaver (2nd from left), Theo Paulus (2nd from right), and Dr. Thomas Brückner (right) from AVENTICS

As a new strategic partner at the CENTRUM INDUSTRIAL IT (CIIT) research and development center in Lemgo, Germany, AVENTICS is working with CIIT developers and researchers to develop solutions relating to the Internet of Things.

CIIT is Germany's first science-to-business center for industrial automation. Under one roof, independent companies from the private sector and renowned research institutes work and research to combine the worlds of information technology and automation.

"Innovation emerges at the interface between research and industry. We want to use these innovations to make a key contribution to driving forth the Internet of Things," emphasizes Paul Cleaver, AVENTICS CEO. "For us, the innovative research environment in Lemgo ideally complements our development activities relating to IoT-capable solutions."

At CIIT, companies and scientists work together, applying basic research in order to make the Internet of Things a reality. The objective is to develop new industrial production standards and research innovative technologies to support the people in manufacturing environments. "In AVENTICS, we have acquired a new partner with competencies that supplement us in the field of intelligent pneumatics," adds Professor Jasperneite, one of the leading academic drivers of the Internet of Things. He is head of the inIT research institute at the OWL University of Applied Sciences and Fraunhofer Application Center for Industrial Automation (IOSB-INA).

The SmartFactoryOWL research and demonstration factory, a joint Fraunhofer/OWL University of Applied Sciences initiative, will feature AVENTICS pneumatic components and systems. Manufacturers can test out the potentials of digitization and intelligent automation for themselves here and integrate them into their processes with the help of a team of interdisciplinary experts. 

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IMPRINT

Publisher: AVENTICS GmbH
Ulmer Straße 4, 30880 Laatzen, Germany

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Photos: If not labeled: AVENTICS archive
Layout: Windrich & Sörgel,
Agentur für Markenkommunikation
Print: Druckhaus Pinkvoss

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