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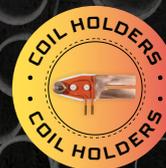
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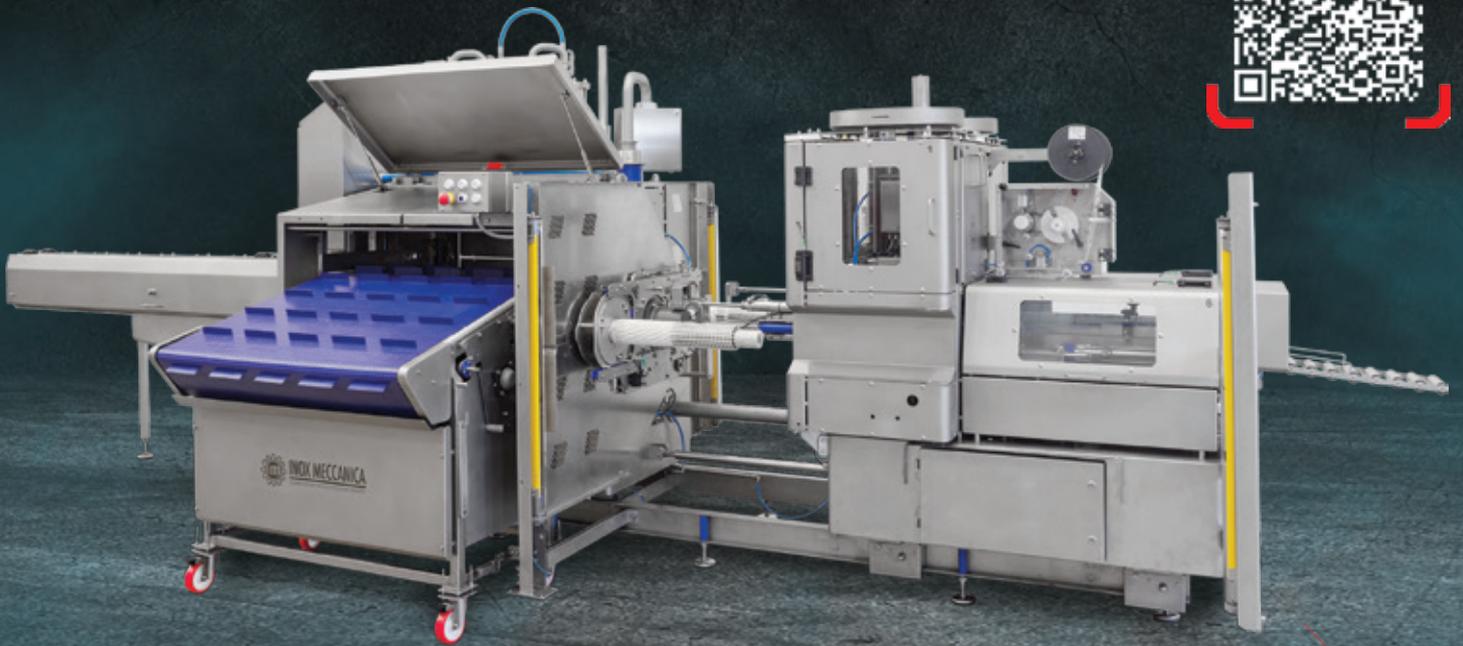
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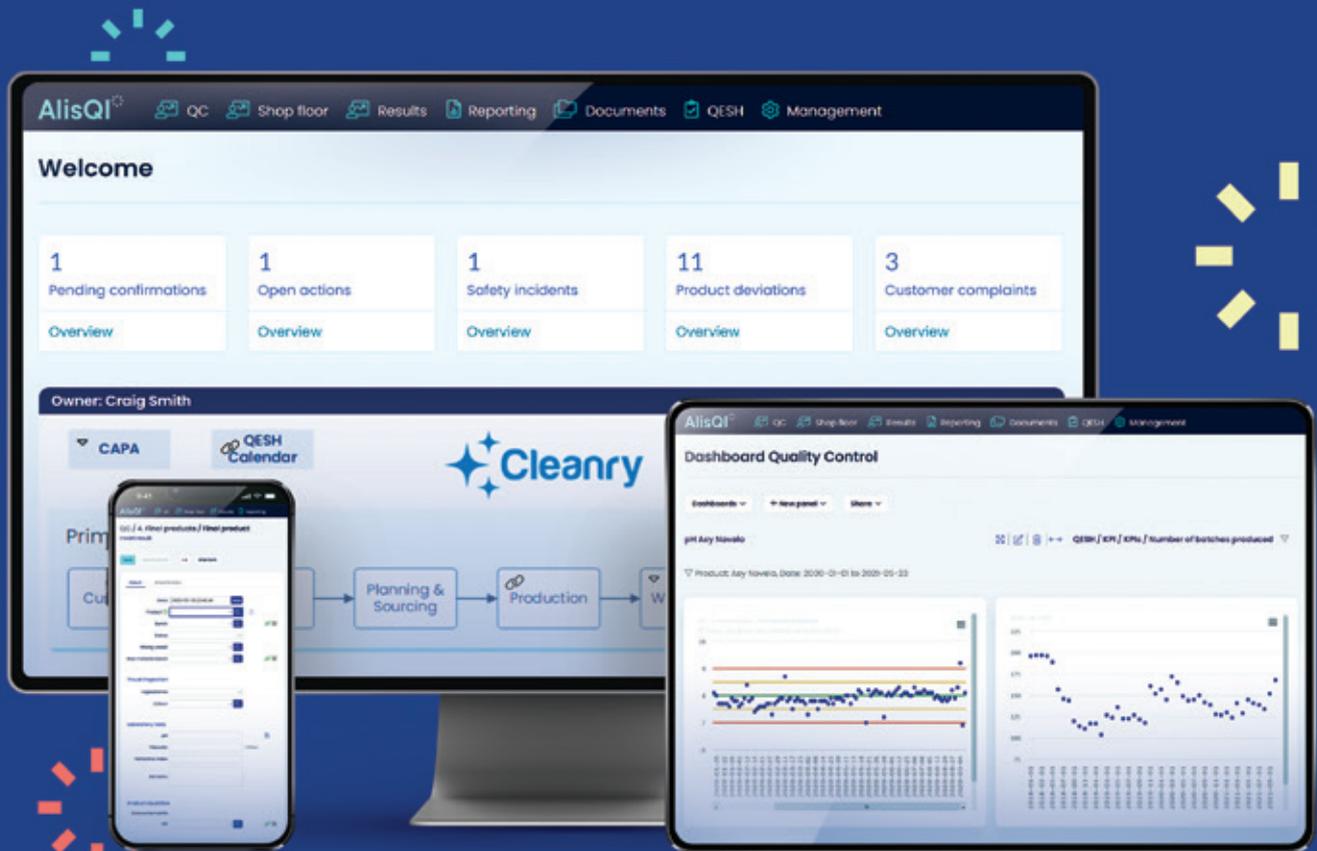
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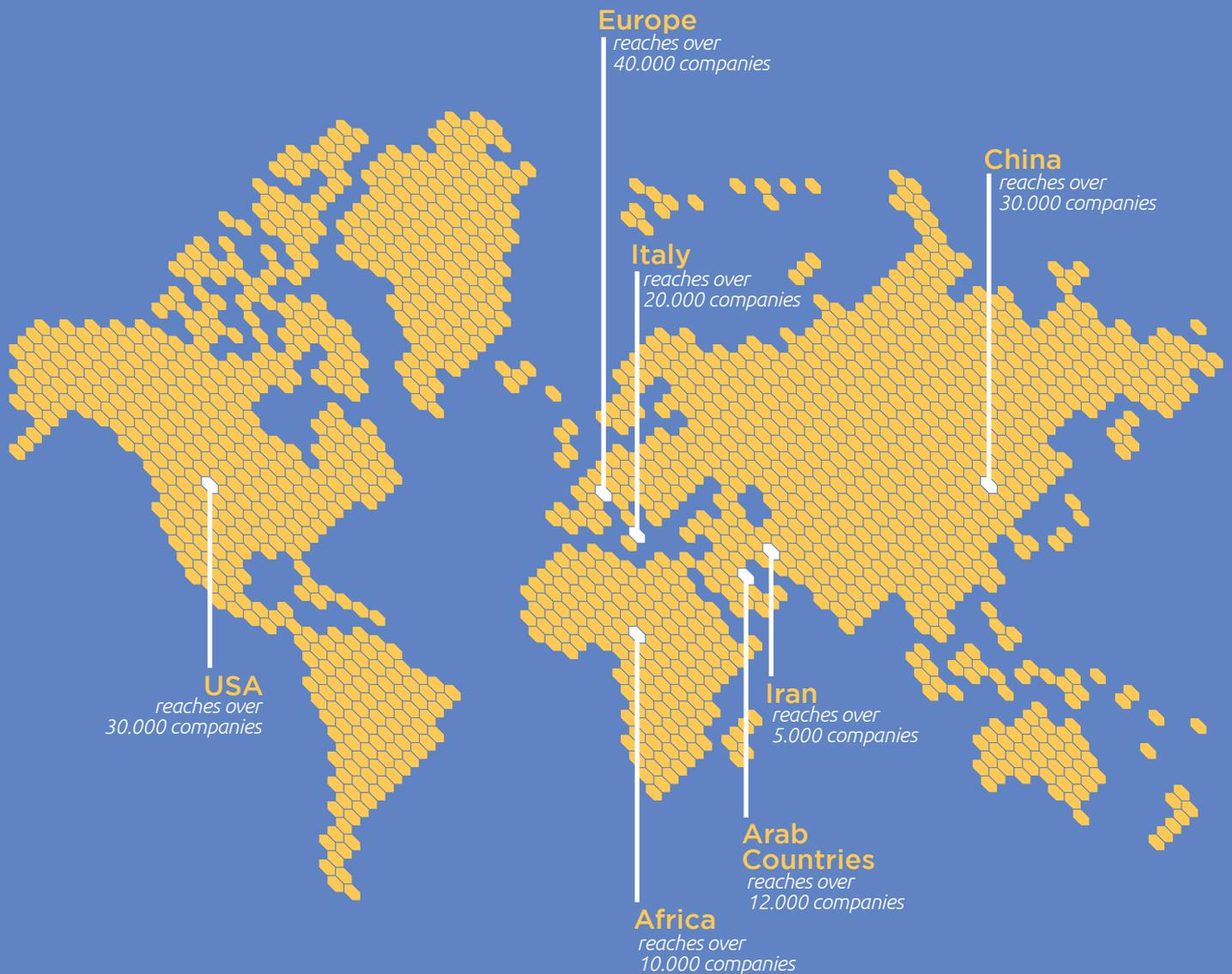
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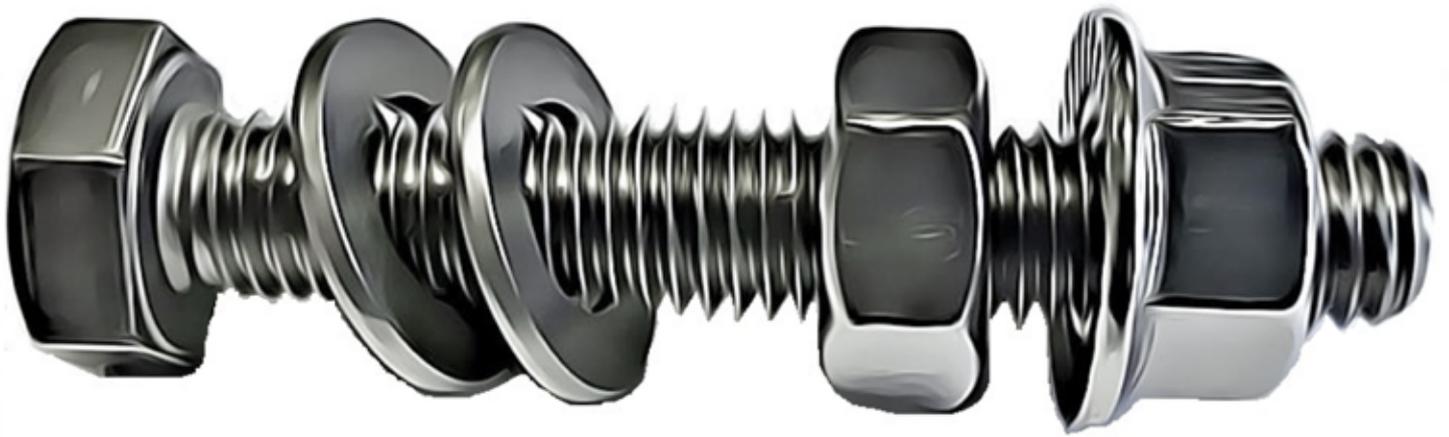
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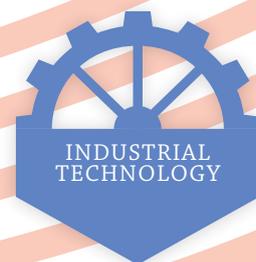


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**The turquoise hydrogen route:**  
can we produce valuable, high-performance carbon materials and hydrogen from hydrocarbons cracking?

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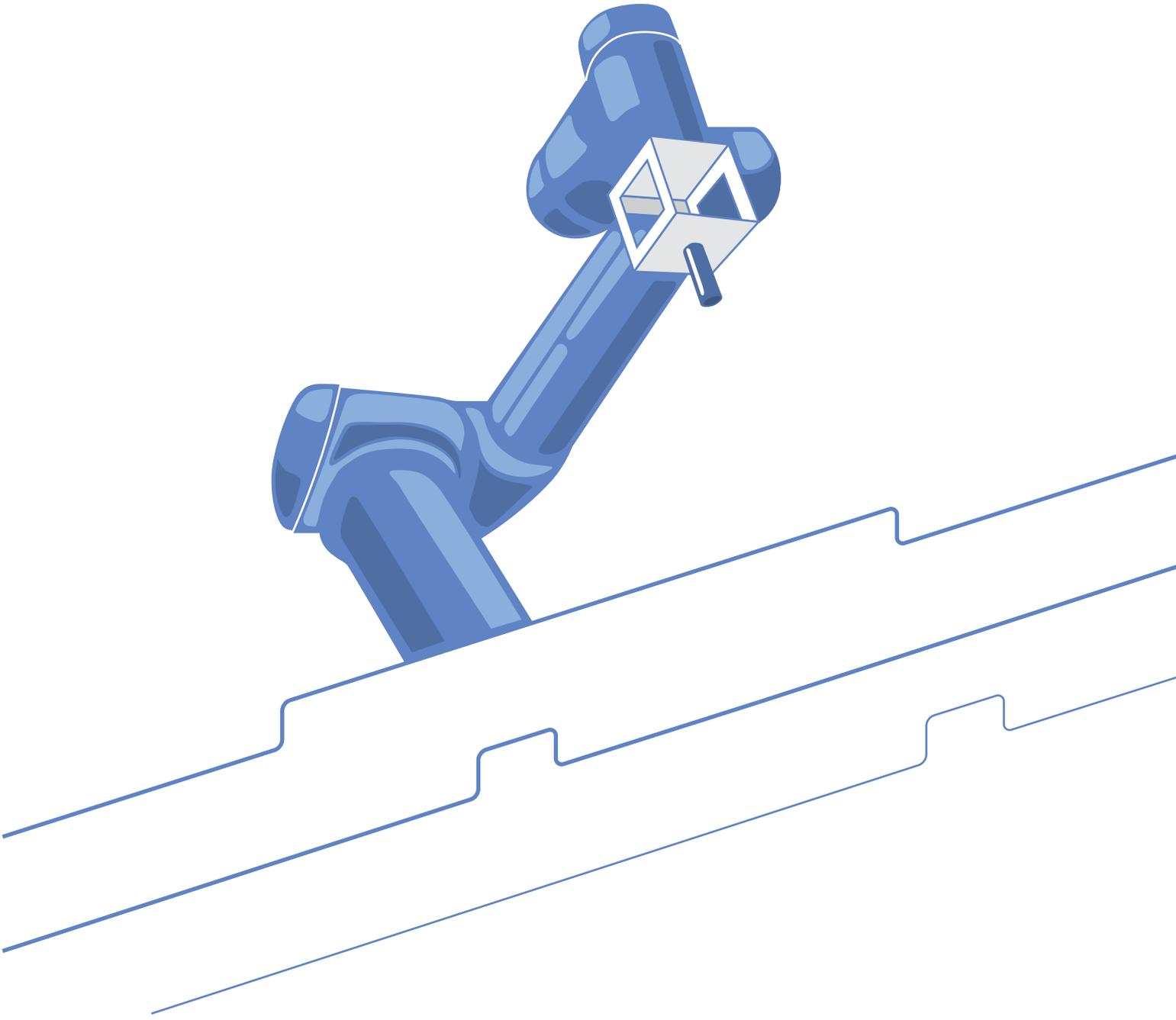
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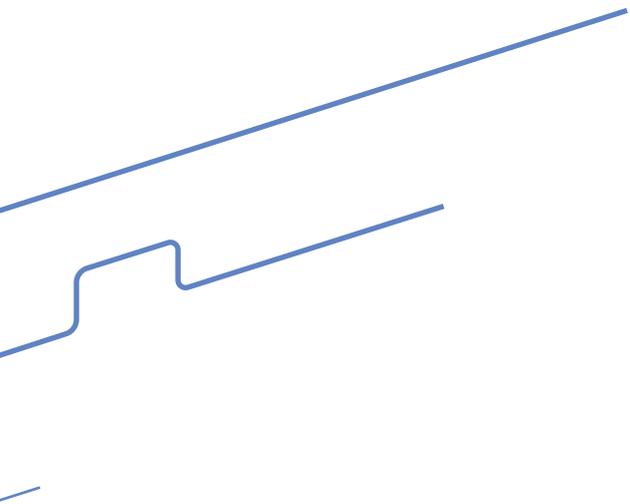
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# *Automation and Industry 4.0*



# Will Latin America's transport mega-projects revolutionise trade?

- *Latin American countries are working on large-scale transport infrastructure projects*
- *The Bioceanic Corridor will link Brazil's Atlantic coast with Chile's Pacific ports*
- *Projects are expected to close the infrastructure gap and bolster international trade*
- *The transport links will also improve economic opportunities in underdeveloped areas*

As Latin America continues its recovery from the Covid-19 pandemic, several countries are undertaking large-scale transport infrastructure projects to improve regional and international connectivity and trade.

One of the region's most ambitious projects, the Bioceanic Corridor, aims to connect the Brazilian port of Santos on the Atlantic Ocean with the Chilean ports of Iquique and Antofagasta on the Pacific Ocean through a series of roads. Alongside this transnational motorway, space is also being left for the eventual construction of a parallel freight railway.

In recent months the corridor has progressed significantly. In February the Paraguayan government inaugurated the first stage of its part of the project, a 276-km dual carriageway from Carmelo Peralta, on the border with Brazil, with Loma Plata in the centre of the country.

The Paraguayan section - which, once completed, will total 544 km and bisect the country from east to west, linking Brazil with Argentina - is seen as key to the broader Bioceanic Corridor.

It passes through the Gran Chaco, a vast stretch of scrub, swamp and forest that has traditionally been so isolated that a large part of the Paraguayan section of the Chaco did not have paved roads until 2019. The Paraguayan part of the corridor, which will also feature a bridge linking Carmelo Peralta to Brazil, is expected to be completed by early 2024.

In a similar vein, Mexico is also pursuing multiple large-scale transport infrastructure projects, one of which is the Trans-Isthmus railway project.

As OBG has previously detailed, this project aims to link ports along the two coasts of Mexico's narrowest section of land, known as the Isthmus of Tehuantepec.



Connecting the deepwater ports of Coatzacoalcos in the Gulf of Mexico and Salina Cruz on the Pacific, the railway will be accompanied by a raft of infrastructure projects aimed at creating a trade corridor, including a natural gas pipeline, and road and port upgrades.

Construction on the project began in 2019, with Mexican government officials confident that the railway will be operational before the end of the year.

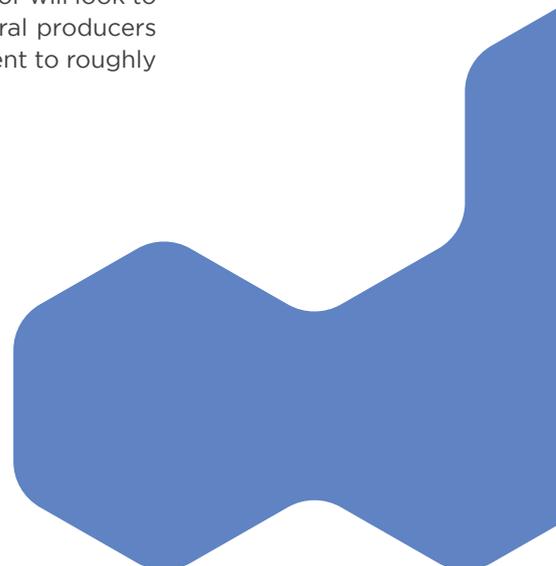
### **Trade and transport benefits**

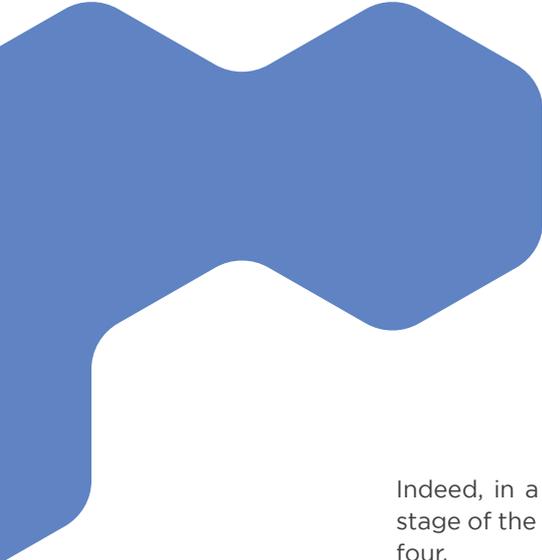
These projects will help to close Latin America's infrastructure gap and unlock economic development in the region.

According to the Inter-American Development Bank, Latin America and the Caribbean would need to invest \$976.1bn in transport infrastructure annually by 2030, equivalent to 1.4% of regional GDP, in order to meet the UN's Sustainable Development Goals.

To this end, the Bioceanic Corridor – although still some years away from being realised – will bring significant benefits to transport and trade.

Arnoldo Wiens, Paraguay's minister of public works, has said that the corridor will look to rival the Panama Canal once completed, arguing that it will save agricultural producers from the Southern Cone around 14 days and \$1000 per container – equivalent to roughly one-third of their current logistics costs.





Indeed, in a sign of the potential efficiency gains, the recently completed -276km first stage of the Paraguayan section has slashed travel time along the stretch from 12 hours to four.

This improved connectivity is not only expected to drive an increase in internal Latin American trade, but also bolster linkages with the rest of the world.

For instance, the corridor would provide the cattle ranchers and soya bean farmers of Argentina, Brazil and Paraguay with a more direct link to lucrative Asian markets, which are presently reached via lengthy seaborne journeys through either the Panama Canal or the Strait of Magellan, at the tip of South America.

Similarly, Mexican officials hope that the dry canal created by the Trans-Isthmus railway will compete with the Panama Canal and draw more trade from Europe, North America and Asia.

The trade corridor would provide an alternate route for those looking to ship goods between the Atlantic and Pacific oceans at a more northerly latitude, thereby improving the competitiveness of logistics.

### **Economic integration**

On a more local level, improved transport infrastructure can also accelerate the economic development of regional and rural communities that currently have poor connections to larger domestic and international markets.

This is particularly relevant for regions like the Norte Grande in northern Argentina, through which the Bioceanic Corridor will pass.

“Regions like the Norte Grande have to deal with historical asymmetries in many areas, such as transport infrastructure, the availability of public and basic services, as well as the macroeconomic problems that Argentina as a country has experienced,” Pablo Dragun, studies coordinator at the Industrial Organisation of Argentina, told OBG.

These landlocked communities within the Chaco, which encompasses parts of Argentina, Bolivia and Paraguay, have long been among the most underdeveloped in Latin America, and have some of the highest levels of poverty.

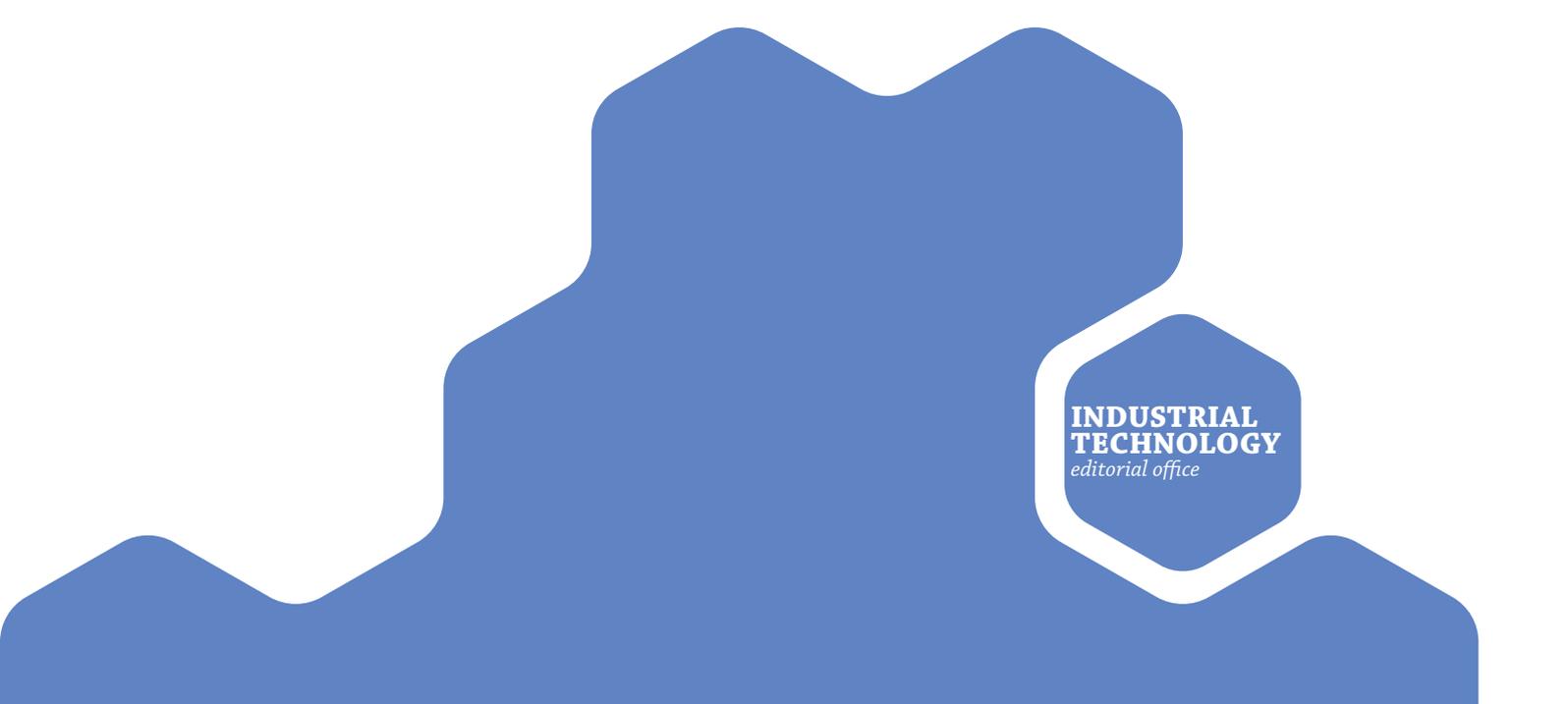
Having long contended with poor access to roads, sanitation and other infrastructure, it is hoped that new projects will improve overall standards of living.

“To reverse infrastructure deficits and attain economic autonomy, the Norte Grande needs to develop its Bioceanic Corridor, which would integrate the region through land, rail, fibre and energy connectivity,” Jorge Capitanich, the governor of Argentina’s Chaco Province, told OBG. “This would not only help create more resilient and competitive provincial economies, but also boost international commerce opportunities.”

Indeed, many political and business leaders believe that the construction of the project will help attract investment in the region and subsequently stimulate an economic boom.

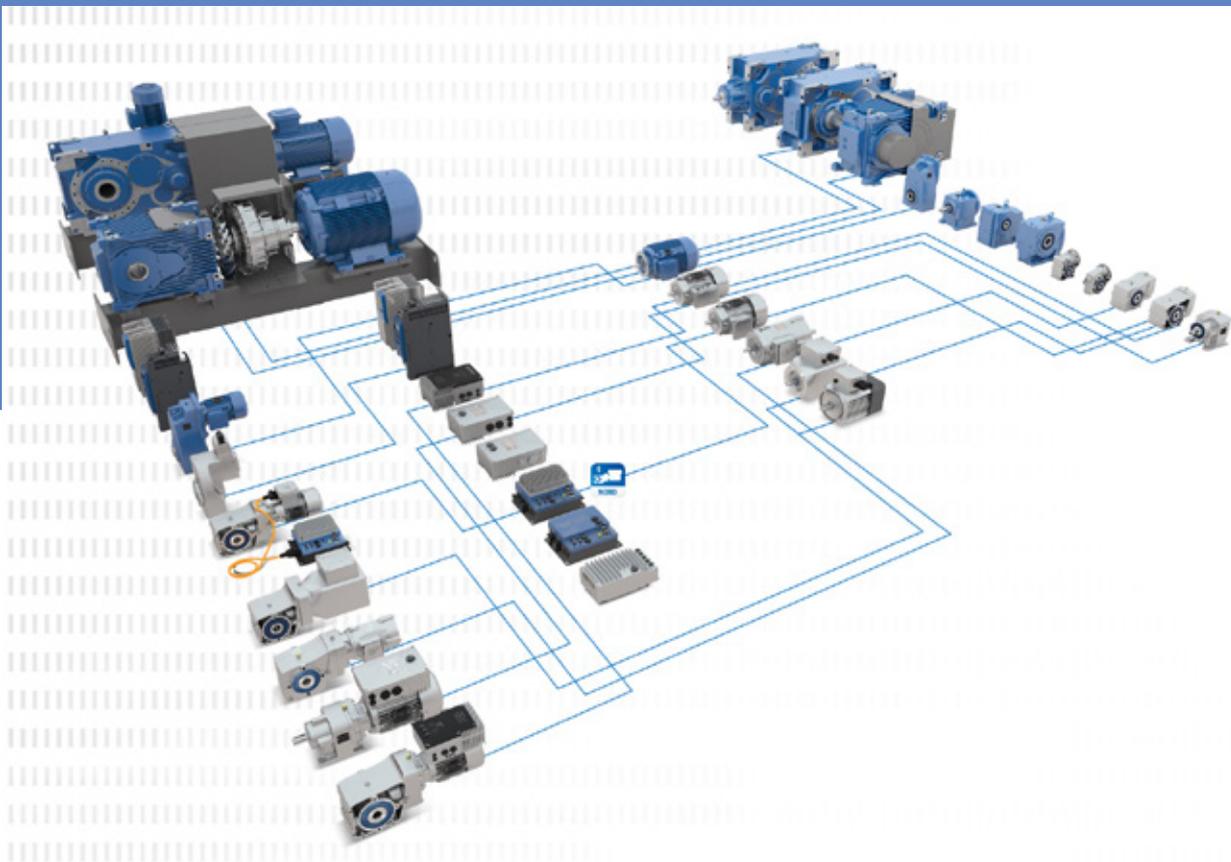
“For companies in the north, access to finance is a key area to address in order to be able to access international markets,” Abel Fernández, the executive director of the Salta Industrial Union, told OBG. “In addition, transport connectivity is also a priority moving forwards, as the Bioceanic Corridor opens up opportunities for increased international trade for the Norte Grande via Pacific ports. These two areas, coupled with the development of industrial parks, can greatly bolster the region’s export potential.”

*Publisher Oxford Business Group on May 2022 ,19*



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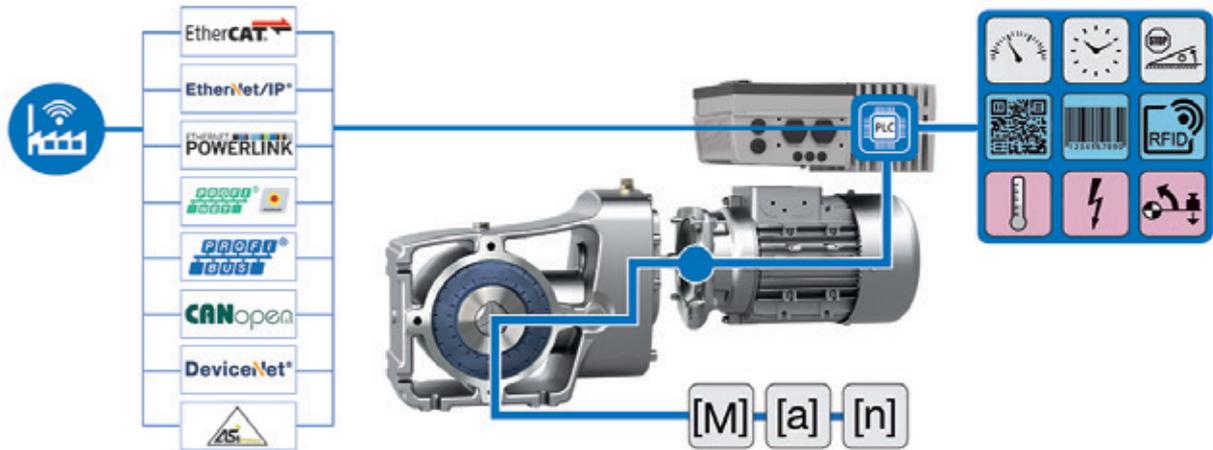


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# Atlanta Stretch: a trip through the Romagna packaging valley



We have the great pleasure to introduce you Atlanta Stretch, an Italian company specialized in the design, construction and manufacturing of automatic and semi-automatic pallet stretch wrapping machines.

**When was Atlanta Stretch born and how has your business developed over the years?**

Atlanta Stretch was founded in 2005 by Mr. Angelo Forni who was also the founder of several other important packaging companies during the 1980's, all of which still exist in the market today.

In 2005 Mr. Forni decided to focus again on packaging and founded a new company called Atlanta Stretch,

with a base at Poggio Berni.

During its first year, the company balance sheets stood at just 1.5 million Euro, but with 30 patents held, safeguarding the entire Atlanta production.

In 2013, a Milan-based company called COMARME was taken over (a company producing taping and box-forming machines) and a partnership was signed with Bologna-based company LP (specialised in producing medium-speed machines in the heat shrink-wrapping and box sectors).

Since 2014, the company has continued to grow, exceeding all expectation. In 2018, turnover reached 39 million Euro. A case history in a class of its own, justified solely by the incredible know-how,



professionalism and determination of Mr. Forni and his staff. And so, we come to the present period with the inauguration of the new Atlanta premises in 2019 - which are huge and particularly beautiful - at Poggio Torriana and two other factories in Italy and in San Marino.

Innovative and full of light, designed to ensure optimal living and working conditions, the premises boast a spacious canteen where meals can be enjoyed with fellow workers and a large gym for employees who like to stay in shape... because work is important, but the wellbeing of his team is fundamental. This is the philosophy that has always guided Mr. Forni.

Last but not least ICME - Specialists for Gummed Paper Taping machines has been acquired in 2021. Step by step Atlanta Stretch is becoming a 360 Degrees specialist in end of the line packaging solution.

**Talking about your stretching wrapping machines: Can you describe your commercial proposal?**

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investments in research and development. These have made it possible to create a range of functional and state-of-the-art semi-automatic wrapping machines, these machines represent many innovations together with a series of proprietary patents.

All of the semi-automatic wrapping machines manufactured by our company are guaranteed to deliver both considerable savings in energy consumption and productivity gains by:

- Technical design solutions that facilitate fast and efficient installation;
- Providing a range of film carriages that are equipped with modern pre-stretch systems which significantly reduce film usage, with each load;
- Designing models where the traditional column has been improved upon, allowing them to operate in low level buildings and require significantly less maintenance.

To be certain we offer our customers solutions that provide the highest quality and the latest technology possible, we regularly study demands in the marketplace.

Many of our competitors choose to produce in-house control panels and motors for each machine model. This often means finding spare parts in the market generates high costs for distributors and, consequently, for end customers.



Furthermore, even management of the warehouse becomes incredibly complex in the face of numerous spare part codes to manage.

The above does not happen to our dealers who, on the contrary, have a warehouse to manage with a much lower number of codes and spare parts.

The commercial strength of our company's range of semi-automatic wrapping machines can be summarised in six points:

1. Single electronic board for all models;
2. Use of commercial components and inverters;
3. Competitive spare part prices;
4. Interchangeable carriages;
5. TP turntable with a variety of different configurations;
6. Low profile turntables;
7. Pre-stretch rollers which are made from anti-cut polyurethane.

**Which is the most important news of 2022 about Atlanta Stretch?**

Ipack-Ima 2022 in Milan marked the return of Atlanta Stretch Fair in the fair exhibitions. It was a happy coincidence that the setting of one of the most important events in the packaging sector in our country was the opportunity to present the last two models that became part of our SEMI-AUTOMATIC range.

Modern and captivating designed and equipped with the latest generation ARYA technology, NEOS and MYTHO S semi-automatic wrapping machines represent an incredible step forward in terms of ergonomics and automation.

**The patented Arya system allows to eliminate the operator intervention, during the hooking and unhooking phase of the film to the pallet.**

**The MYTHO S latest generation turntable wrapping machines, ready to wrap pallets in the most economical, best and intelligent way possible. It even memorizes the name of you products, so that the operators always select one of the 99 pre-selected receipts of the wrapping program.**

**Connected to Wifi. Your best selection Boss!**

Atlanta Stretch takes care of the last step in the packaging process of their clients.

It better be good.

**Atlanta Stretch Turns your business around!**



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# Rockwell Automation Announces Strategic Agreement with Start-Up ZEVx to Accelerate the Adoption of Commercial Electric Vehicles

*MILWAUKEE, April 20, 2022* – Rockwell Automation, Inc. (NYSE: ROK), the world's largest company dedicated to industrial automation and digital transformation, and ZEVx, Inc. (formerly Zero Electric Vehicles), announced today a three-year strategic agreement to work together to use advanced technology to accelerate the adoption of Electric Vehicles (EVs). ZEVx, specializes in the electrification of small and medium duty fleet vehicles, converting its customers' customized Internal Combustion Engines (ICE) to EVs in one day. By leveraging Rockwell Automation's solutions, and a network of legacy automotive service partners, ZEVx will be able to assemble specialized kits for their customers' fleets to accelerate the pace of conversions.

To best capture the in-house expertise needed for its legacy automotive service partners to utilize the company's ICE to EV conversion kits in the most efficient manner, ZEVx has made the strategic decision to leverage Vuforia Expert Capture, a FactoryTalk Innovation Suite solution powered by PTC. This technology will allow for the imperative distribution of knowledge to ZEVx's partners, ultimately increasing the overall rate of conversion from ICE to EV and accelerating the time to market. Additionally, utilizing Vuforia Expert Capture will help ZEVx to ensure consistency among its partners as they perform conversions for customers.

In addition, Vuforia Chalk, an Augmented Reality (AR) remote assistance application, will help ZEVx collaborate in the ever-evolving EV environment. This innovative solution is a powerful collaboration and communication tool that provides real-time assistance to technicians facing complex or unfamiliar challenges. Vuforia Chalk delivers faster resolution without the time and expense of expert travel or repeat technician visits.

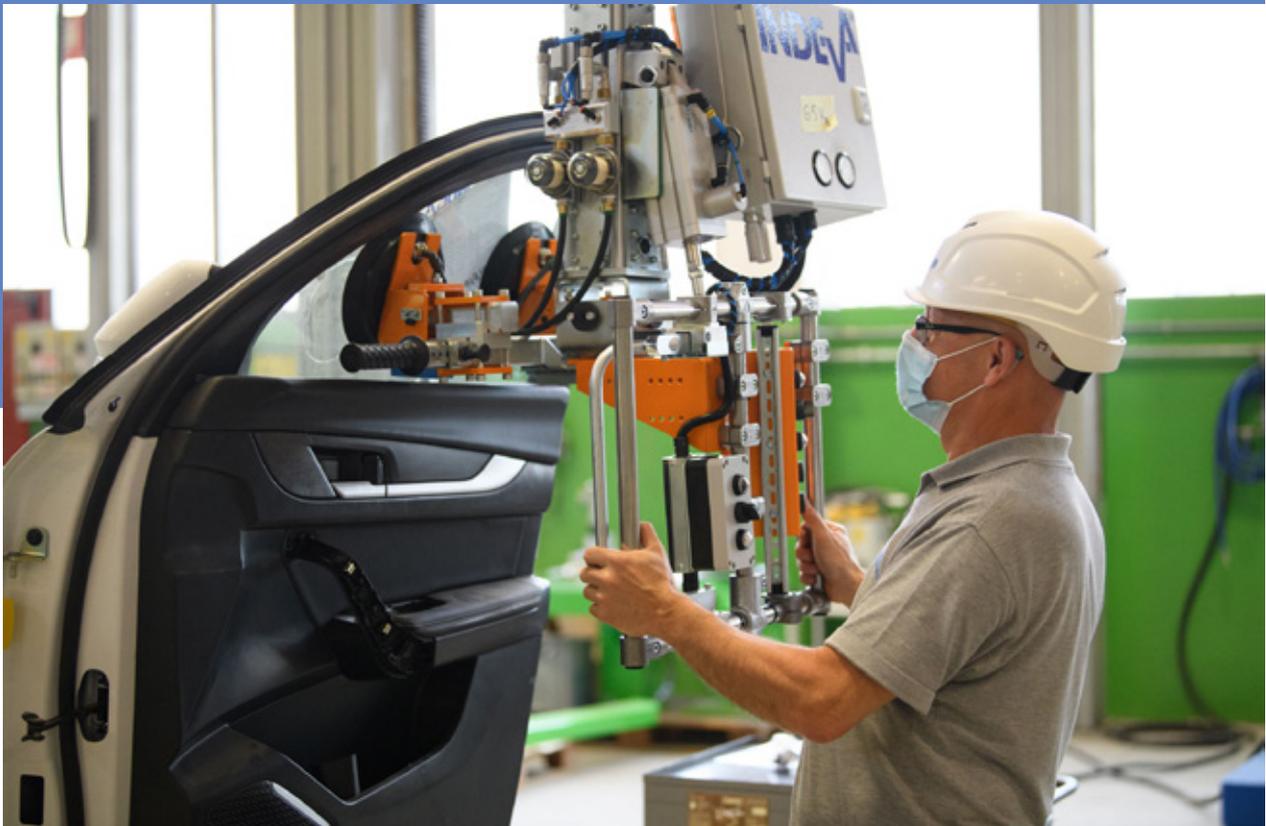
"The Electric Vehicle revolution is here, and Rockwell Automation is proud to offer innovative start-up companies like ZEVx the advanced technology needed to accelerate the manufacturing and distribution of their EV powertrain kits while maximizing safety and production efficiency," said John Kacsur, vice president, enterprise accounts, auto & tire, Rockwell Automation. "The Vuforia solutions provide companies, from start-ups to established automakers, the tools and technology needed to enhance information-driven operations, thereby ensuring faster production, decreasing downtime, and saving valuable resources."

Charles Maury, founder and chief data officer, ZEVx, stated, "Working with the Rockwell Automation team has been incredibly beneficial to the ZEVx production team. Rockwell Automation understands ZEVx's vision to adopt advanced manufacturing techniques that will further optimize powertrain kit production and configurability. We look forward to our continued collaboration and learning from Rockwell while we rapidly expand global powertrain kit deliveries."

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# INDEVA® state of the art materials handling technology for more Ergonomics, Safety and Productivity



The INDEVA® lifting systems are the state-of-the-art technology for manual load handling systems and are an evolution of the industrial manipulators. With forty years' experience in the design and manufacture of devices that comply with all the latest safety regulations and the most complete range of manipulators on the market, INDEVA® technology fully complies with all the latest guidelines related to ergonomics and safety.

To effectively improve operator wellbeing and achieve ergonomically safe handling operations, it is

necessary that the manipulator not only eliminates the strain during load lifting (along vertical axis), but also the inertia during acceleration, braking or direction change.

The INDEVA®, known as intelligent devices for handling or intelligent assist devices (IAD), comply with the above ergonomics guidelines.

#### **VERY LIGHT TO MOVE**

Both Column and Rail mounted INDEVAs are light to move (inertia and gravity forces reduced to almost nothing when starting or stopping the motion, thus



allowing **very precise and quick load positioning** (no over travelling, bouncing and need of lots of little corrective movements)

**AUTOMATIC WEIGHT DETECTION AND BALANCING**  
INDEVA® technology allows to handle different loads without need of adjusting with selectors, in case different parts with different weights have to be handled.

**INDEVA FOR THE AUTOMOTIVE AND AEROSPACE INDUSTRIES**

Scaglia Indeva designs, manufactures and installs a world-class range of industrial manipulators and bespoke handling systems for automotive, aerospace, process and general engineering applications. Manufactured to ISO 9001 quality system certification in our advanced manufacturing and test centre, INDEVA® manipulators have a reputation for innovation, quality and reliability.

**BESPOKE GRIPPING TOOLS**

Scaglia Indeva boasts the greatest expertise in designing and manufacturing bespoke end effectors and is appreciated worldwide for being able to provide tailor made gripping tools for a great variety of different loads and work cycles. Each tool is designed in the respect of ergonomic and safety guidelines and according to INDEVA® policy of creating light, compact user-friendly grippers, which allows good visibility of the working area and load to handle.

**WIRELESS CONNECTIVITY FOR INDUSTRY 4.0**

An INDEVA® can exchange data with the Customer IT System through the Company Network and allows

visualization of manipulator activity by means of interface software.

**REMOTE TROUBLE SHOOTING**

An INDEVA® can be connected via Wi-Fi to App-Indeva, so that machine data can be transferred to a remote tablet or smartphone in real time. This can assist fault diagnosis, so significantly reducing call-out charges and operator downtime.

**ENVIRONMENT FRIENDLY**

Reduced carbon footprint due to low energy consumption.

**SAFETY & ERGONOMICS & INCREASED PRODUCTIVITY**

When all businesses are looking to increase productivity whilst reducing costs, WRMSDs can significantly impact this. Losing key members of staff for several days can affect productivity and therefore profitability.

However grim reading the HSE study is, WRMSDs are preventable when ergonomic interventions are introduced. Scaglia Indeva has been leading from the front when it comes to the design and manufacture of innovative solutions for manual handling and lifting in all sectors, which has considerably improved both ergonomics and safety in the workplace.

INDEVA® industrial manipulators have been designed with ergonomics in mind. One of the cornerstones of the company's mission is to support the manufacturing industry by supplying state-of-the-art material handling equipment which makes



the workplace safer, reduces employee absenteeism, and improves productivity as well as supporting the nationwide trend of an ageing workforce.

The Liftronic® series manipulators are user-friendly intelligent devices for handling, which enables effortless lifting, lowering and move of heavy loads through **finger-tip control**. Equipped with an **advanced electronic control system**, these manipulators allow the operator intuitive control without the need to keep buttons or levers pressed, provide smooth movement, speed of handling and precise load placement with only the lightest touch, thus reducing the stress and strain associated with manual handling.

Working on a **bespoke basis for every application**, Indeva works closely with its customers to identify any issues that may affect the health and safety of their employees. We are then able to design and manufacture a complete material handling solution that not only meets their individual operational needs, but provides solutions to prevent WRMSDs.

The Liftronic® series manipulators are equipped with **advanced safety features** which prevent movement unless an operator is in control, and a mechanism that guarantees against the load falling either by accident or power failure.

Independent studies have shown that INDEVA® industrial manipulators are proven to lower the physical demands of manual material handling tasks, which in turn reduces both the number and severity of WRMSDs. This then is reflected in increased productivity and therefore profitability.



For more information:  
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[info@it.indevagroup.com](mailto:info@it.indevagroup.com)

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# Experience, knowledge And continuous innovation open to technologies



Let's get straight to the point. If you have something to assemble, you just need to know that we have always been recognized for one truly rare gift: genius. Authentic lateral thinking that, for forty years, has allowed us to design and build highly performing and competitive customized assembly machines for manufacturing companies from all over the world in the automotive, electromechanical, hardware and accessories for furniture, taps and valves, jewellery and watches, household appliances and many more.

Solutions that guarantee our customers tangible benefits: the satisfaction of having a high and constant production efficiency and the peace of mind of a quick and safe return on investment.

Our machines are in fact "Ready To Run", that is, ready to be easily transported and installed anywhere in the world and designed to minimize any type of machine downtime. The delicate installation phase takes on average only two days and the ramp-up only 4 hours. While during the entire production cycle, you can count on the speed of production changes that last no more than a few minutes, or in some cases that are instantaneous, with simpler and therefore faster maintenance interventions. Finally, if the production requirement changes, Cosberg assembly machines can be easily reconfigured in a very short time.

Our solutions are also focused towards sustainability, our assembly machines are equipped with systems



that monitor and reduce energy consumption as well as identify any pneumatic leaks. This means, for customers, cost control and zero waste.

To all this, is added the ability of our machines to be flexible and destined to become - over time - autonomous, i.e. able to find solutions autonomously in the event of unforeseen events or anomalies.

Genius, long experience in various sectors and over 10% of our revenue constantly invested in Research and Development allow us to guarantee customers these results.

And we can demonstrate it concretely, with facts.



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# GE Digital Announces DERMS Solution to Power the Energy Transition and Help Keep the Electric Grid Safe, Secure, and Resilient

- *GE Digital and Opus One Solutions have come together to help utilities on their DERs journey with a modular DERMS platform*
- *Software is designed to provide intelligence, operations, economics, and markets in one solution*
- *Designed to enable grid operators to connect, see, control, and optimize DERs, and help utilities provide clean, reliable, and affordable energy to customers*
- *IDC MarketScape: Worldwide DERMS 2022 Vendor Assessment names GE Digital a Leader citing strengths in software innovation and partnering with the most progressive utility customers globally to meet DER orchestration and grid optimization challenges*

DALLAS, TX, May 23, 2022 — GE Digital has announced the first solution resulting from its acquisition of Opus One Solutions to power the energy transition today at DistribuTECH. Opus One DERMS™ is designed to be an end-to-end modular Distributed Energy Resource Management System (DERMS) that can help utilities on their Distributed Energy Resources (DERs) journey to keep the grid safe, secure, and resilient while enabling energy affordability and customer participation in power generation/contribution.

The software is designed to provide intelligence, operations, economics, and markets in a modular solution that can enable grid operators to connect, see, control, and optimize DERs from technical and economic standpoints, while helping utilities provide clean, reliable, and affordable energy to their customers.

Today, utilities face growing DER backlogs, lack of visibility into DER behavior, the inability to control DERs intelligently, and the need to balance market transactions with grid safety. High distributed power generation intermittency, low grid inertia, and masked loads result in significant operational risks. And utilities also need to be prudent in their grid investments, while meeting growing regulatory compliance as DERs lead to new opportunities such as monetizing surplus energy in wholesale and local markets.

Opus One DERMS is designed to grow with a utility's needs use case by use case, feeder by feeder, and substation by substation. It helps utilities optimize the increasing number of DERs while enabling Non-Wires Alternatives (NWA) and facilitating flexibility and transactive markets for Distributed System Operators (DSO). This modular software is designed to be vendor agnostic and provides capabilities that support use cases based on a utility's DER adoption maturity. Utilities can select the modules they need depending on where they are in their DERs' journey, or how DER-enabled their Advanced Distributed Management System (ADMS) is. Modules can also be integrated with existing ADMS or be separate based upon use case requirements. The standards-based architecture is designed to allow flexible deployment.

"The accelerated growth and volume of DERs that are connecting to the grid create both challenges and opportunities for utilities," said Josh Wong, President and CEO of Opus One Solutions from GE Digital. "With Opus One DERMS, our customers gain a flexible solution for every stage of their modernization and sustainability journey while delivering affordability with customer engagement and market-based business models."

Opus One DERMS is designed to accommodate the high growth of DERs, ensure grid reliability and resiliency, and help utilities comply with regulations. The solution can go beyond basic dispatch and control to forecast, anticipate, and resolve system violations while optimizing DERs and grid performance across multiple time frames, from minutes to weeks ahead and beyond. Opus One DERMS can also act as an aggregator of aggregators for utilities by supplying a "single pane of glass" consolidating visibility and control across fleets of DERs for streamlined DER and grid management. It enables a very fine granular view when solving a violation on a single distribution feeder or an aggregated view when solving a violation on a primary substation.

In April, GE Digital was named in a Leader category of the IDC MarketScape: Worldwide Distributed Energy Resource Management Systems (DERMS) 2022 Vendor Assessment 1. "GE Digital has built a foundation of utility and clean energy expertise to address operational needs in both the renewables and DER integration space," said John Villali, Research Director IDC Energy Insights, and one of the authors of the IDC MarketScape 2022 DERMS report. "We have been impressed with GE Digital's level of software innovation and in partnering with the most progressive utility customers globally to meet their DER orchestration and grid optimization challenges. With the company's recent investment in Opus One Solutions and future product roadmap plans, we see great alignment with the future market need."



Let's get  
to the point.  
If you have  
something  
to assemble  
you just need  
to know that  
we have this...

...and that it  
makes the  
difference!

## Genius

This is what we are constantly recognized for and of which we are so proud. Lateral thinking allows us to find unimaginable solutions and helps you achieve more than you could have ever hoped for. **We have been working this way for forty years.**

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# Matching Machine Innovation with Italian Design



Technology, logic, innovation generated by the need to solve a necessity and the pursuit of beauty: design is all of the above. It is the study of an aesthetic perfection that is achieved through the full functionality of an object, whatever its use. It is a *modus operandi* that can be applied to any field, although, in this precise era, industry is perhaps the field that could benefit the most from it. By looking at production through the lens of design, it is possible to improve the efficiency of a product and of its entire production process,

with machinery that is both beautiful and functional, without sacrificing aesthetics - as is almost always the case with machines.

This leonardesque interpretation of design as a promoter of innovation in a continuous quest for intelligent interaction is the very vision that inspires the activities of ICONA Design Group, an **Italian company** historically specialized in the automotive field and now engaged in a path of diversification that



includes product and industrial design.

“Today industry is at a historical turning point,” explains **Teresio Gigi Gaudio, co-founder and president of ICONA Design Group**. “Machine tools in factories around the world must integrate and incorporate new technologies, otherwise they become obsolete. Manufacturers have the opportunity, in rethinking the concept of their machines, to obtain greater functionality while achieving a more aesthetically pleasing and user-friendly result, creating the winning combination: technology + Italian style.”

ICONA Design Group designed two machines for IMS TECHNOLOGIES, a global leader in Converting and Packaging and Automotive.

The first is **Rotomac Icebreaker 165 SG**, a rewinder that produces rolls of aluminum, plastic and baking paper for domestic use starting from large industrial reels. The second is **Riboslit by LAEM IMS**, a machine for flexible packaging. Both machines - which had already sparked great interest at the specialized “K” fair in Dusseldorf - were presented by ICONA Design

Group at the Milan Design Week 2021, attracting the attention of both the Italian and international audience of one of the most important events in the world of design.

The audience appreciated the transformation of these machines, usually characterized by alienating colors like gray or green, and rigid, angular shapes. Instead, ICONA’s design was able to incorporate harmonious, softer shapes, different shades of color, and features to facilitate human-machine interaction, such as the projection of the machine’s brand name on the ground with LED responsive material, able to change color based on the machine’s state of operation.

*“We have been working in this direction for a few years now” ICONA headquarters declare. “The McKinsey Design Index (MDI), which evaluates companies based on their commitment to design by measuring how much it impacts financial performance, showed that companies that excel in design increase revenues and profits by almost twice as much as the industry average. We believe in design as an aggregator of different skills around the same product. Industrial machinery*



*represents excellence for Italy, and we believe that the alliance with design can multiply the international opportunities and competitiveness of the sector. This is why we are increasingly interested in collaborating with companies that believe in these principles and have the courage to experiment with design integration right from the initial phases of machine or product design.”*

Economic benefits aside, a user-friendly industrial environment also satisfies the current major trends of the working world. In addition to this, factories - which are traditionally conceived as closed environments - are beginning to open up to the outside world through communication and cultural projects. Hence, why not make them more and more pleasant?

**Box 1 - ICONA Design Group, from automotive to product and industrial design**

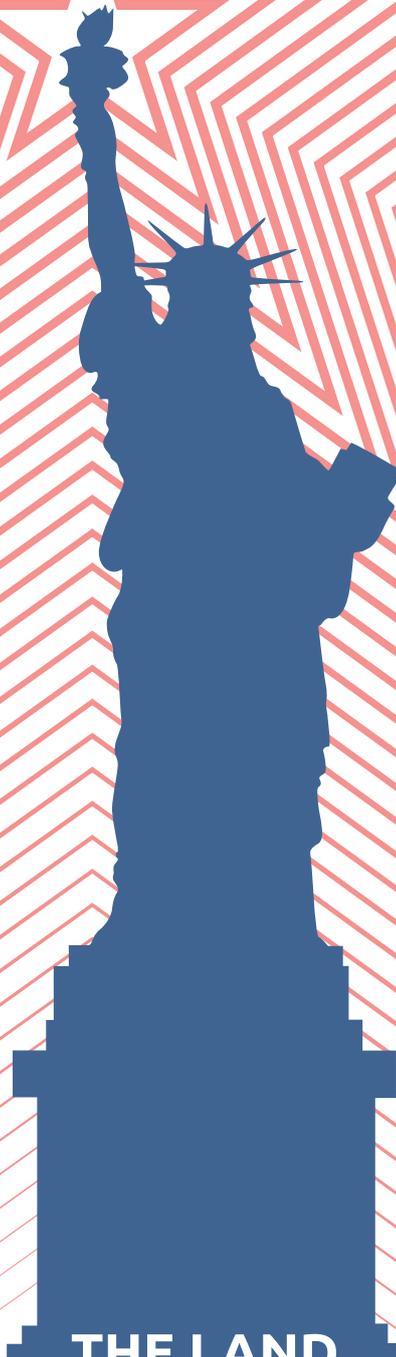
ICONA is an Italian excellence with headquarters in Turin. Founded by three partners highly specialized in the automotive sector, the company operates worldwide: already present in Shanghai and Los Angeles for many years, it has recently opened offices both in Japan and New Zealand. ICONA is profoundly Italian and international at the same time, and this characteristic has decreed its success. Thanks to a young and multicultural staff, with 130 designers with an average age of 30 from more than 20 different nationalities, it is able to provide a unique

and global approach to each project. In its first 10 years of existence, the business focused strongly on the automotive world. Multi-awarded for futuristic concepts in the automotive sector, ICONA has been engaged in a process of diversification towards product and industrial design for several years, and is already actively involved in major smart city and smart mobility projects with leading international industries and government agencies.



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# KOMP-ACT : electric actuation technologies for a sustainable electric manufacturing industry.



According to the United Nations, global emissions of carbon dioxide have increased by almost 50% since 1990; and with our current socio-economic climate causing record high energy and commodity costs, multinationals and local SMEs worldwide are now pressured to reduce their manufacturing costs and environmental impact to ensure a sustainable growth.

In this challenging context, KOMP-ACT aims to drive the transition to a sustainable electric manufacturing industry. The Swiss high-tech company helps machine owners and suppliers replace pneumatic motion devices (such as grippers and actuators) with an electric solution in a quick and cost-effective way.

Established in 2018, KOMP-ACT (short for “Composite Actuators”) was founded by two aerospace engineers and a University Professor with backgrounds in actuators.

Initially specialized in the development of rotary motors and actuators using composite materials destined for the electric aircraft market, KOMP-ACT’s mission shifted towards broader industrial applications after a Swiss-based manufacturer challenged the founders to develop a solution to replace pneumatic actuators with a solution that offers greater energy and maintenance cost savings as well as limit micro-stops (i.e. “jams”).



*KOMP-ACT Linear Motors, 40X40 mm up to 3,7 m/s, 300 cycles/min*



*KOMP-ACT Direct Drive Gripper, 12 N, 6 ms gripping time, Up to 600 cycles/min*

In undertaking this challenge, the biggest obstacles that the company faced were:

- Achieving similar force density of pneumatics using alternative technologies.
- Determining the TCO (Total Cost of Ownerships) related to operating pneumatics
- Educating machine builders and end users on the direct and indirect costs related to operating pneumatics (part durability, replacement frequency, cost of labor, cost of downtime)
- Providing a cost-competitive alternative to pneumatics.

The result? KOMP-ACT introduced an electric actuation system combining a high level of productivity and reliability from electric linear motors with the compactness, easiness of integration and cost-effectiveness of standard pneumatic actuators. In fact, KOMP-ACT electric actuators can produce twice the cycling rate, while generating over 10 times less CO<sub>2</sub> emissions compared to pneumatics, representing up to %90 savings in energy cost per actuator (52-10€ versus 2500-500€) over the same lifecycle.

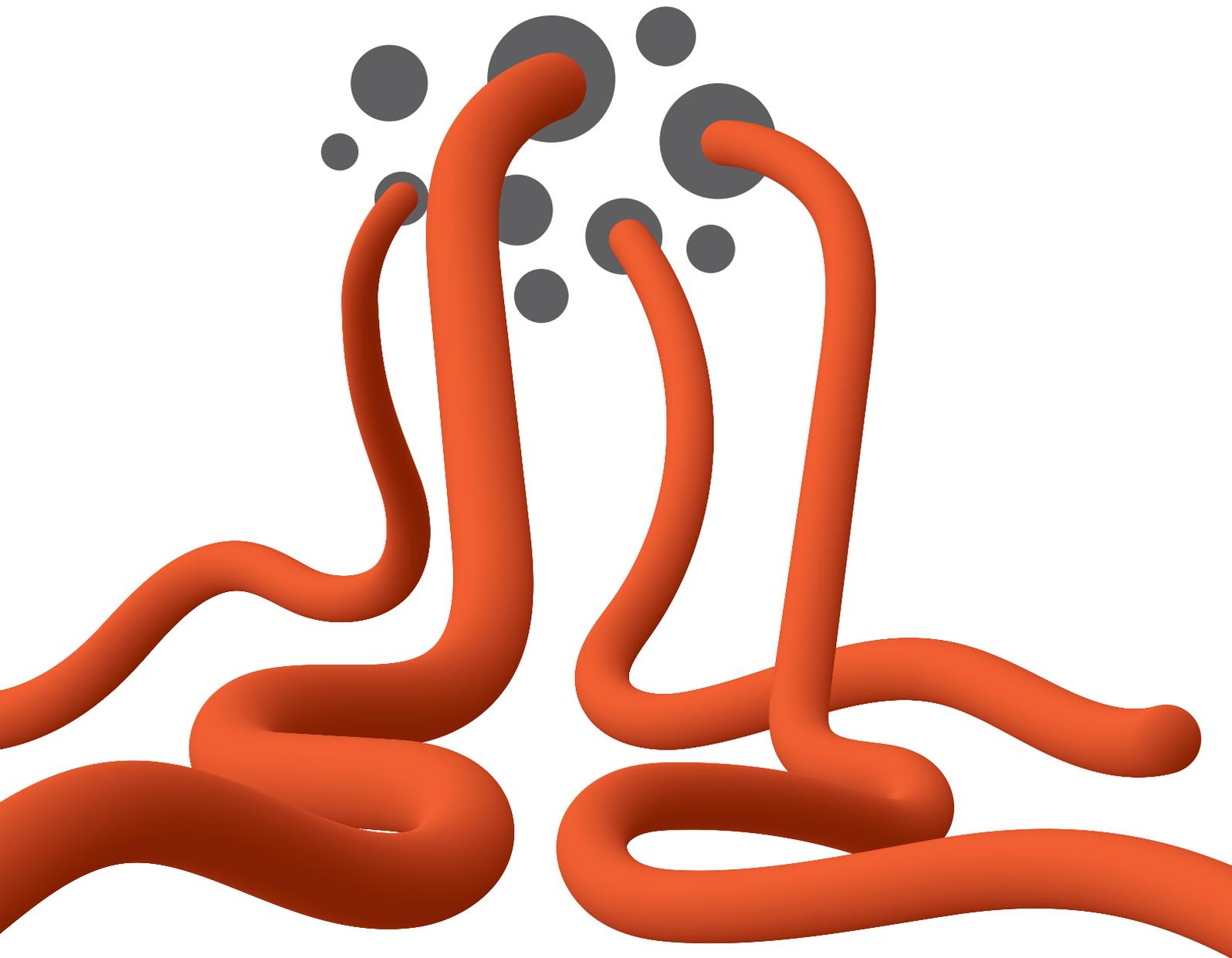
The company estimates that replacing all pneumatics currently in use with its electric motion technologies would reduce CO<sub>2</sub> emissions in the industrial automation sector up to 49 million tons/year. Later this year, KOMP-ACT will be launching its GREEN and GREEN PLUS product lines to better address the cost and performance needs of the market. Its GREEN product line will offer KOMP-ACT's electric technology, while matching pneumatic force, cycle rate and cost, while its GREEN PLUS line will

offer higher cycling rates for applications with higher performance requirements.

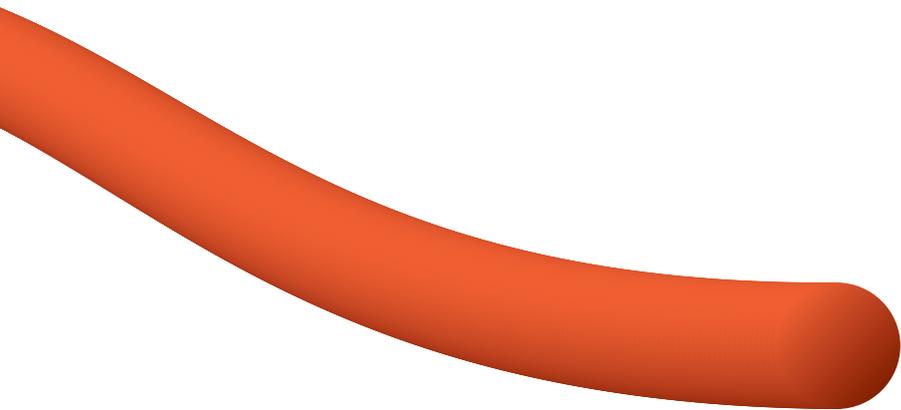
KOMP-ACT products are currently being implemented by manufacturers in Italy, UK, Germany and Switzerland, on fully electric machines destined for the packaging industry.

# KOMP-ACT

For more information:  
[www.komp-act.com](http://www.komp-act.com)



# *Wire Tube*



# The green wave for the steel industry

*wire and Tube in June: Exhibitors present sustainable solutions on the way to the Green Transformation*

The steel industry is already working on nothing less than a historic technological transformation. Direct reduction based on hydrogen will replace the conventional production method as a clean production process – and experts agree with this. Steel production based on carbon will lose its place at the top.

The steel industry has the target to reduce emissions by around 30 percent by 2030. A development that the wire, cable and tube industries are also paying close attention to. For them, climate-friendly steel as the basis for their products is also an important aspect when it comes to being environmentally friendly and competitive. The green transformation covers all industrial sectors – from suppliers to users.

The European steel industry is responsible for 5.7 percent of the total greenhouse gas emissions in the European Union – which means that reducing emissions is a mammoth task. By 2050, it must be producing in a climate-neutral manner. This is stipulated in the Paris Climate Agreement of 2015. But the steel industry has already got off to a strong start.

## **The steel industry is setting the course**

thyssenkrupp Steel is a shining example of this. “If production is converted to climate-neutral steel by 2045 at the latest, we will be the largest single European consumer of CO<sub>2</sub>-neutral hydrogen”, says Dr Arnd Köfler, Chief Technology Officer (CTO), with confidence. In principle, the steel industry will be one of the main consumers of green hydrogen. What in turn shows they are leading the way when establishing hydrogen technologies as the key to decarbonisation.

thyssenkrupp Steel aims to save 30 percent CO<sub>2</sub> in this decade alone. To achieve this, four blast furnaces will be gradually replaced by direct reduction plants operated with green hydrogen from 2025, each supplemented by smelting units, in order to turn the solid raw material into liquid pig iron. According to thyssenkrupp, two billion euros will be needed for implementation by 2030, and up to eight billion euros in investments will be needed for the complete transformation.

### **Decarbonisation cooperation**

Salzgitter AG has also initiated the decarbonisation of its processes and products. It plans to start production of low-carbon on a new production route from the end of 2025. “The expected CO<sub>2</sub> saving after completion of the transformation will be more than 95 percent”, the company explains.

Salzgitter is entering into cooperation to push forward decarbonisation. The Group has entered into an agreement with Uniper to create the SALCOS® project, which is part of the ‘Salzgitter AG 2030’ strategy. This project is to be supplied with green hydrogen for the production of climate-friendly steel by the international energy company Uniper. SALCOS® (Salzgitter Low CO<sub>2</sub> Steelmaking) is a transformation programme to convert production to a hydrogen-based route.

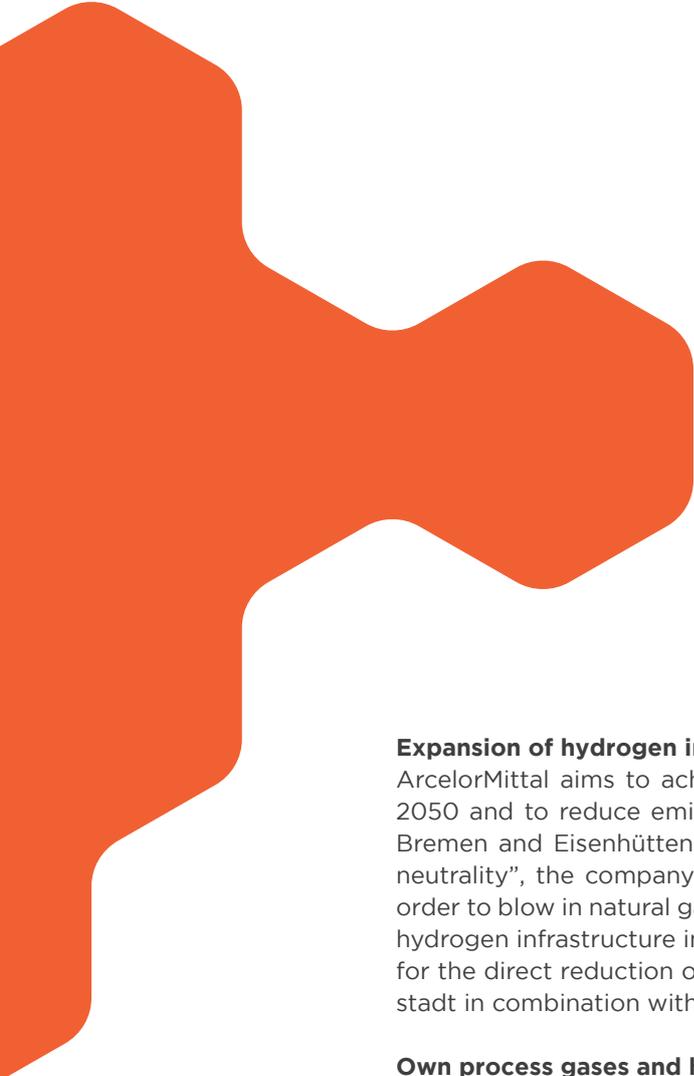
In Wilhelmshaven, Uniper is developing two projects with green hydrogen. Here, the company is planning an import terminal that converts ammonia back into hydrogen. In addition, large-scale electrolysis is provided, which will generate green hydrogen with an output of up to 1,000 MW. For this purpose, a direct connection of new offshore wind farms to be built in the North Sea will be examined.

### **Low-carbon steel for the automotive industry**

Salzgitter has already agreed with Volkswagen AG to supply low-carbon steel from the end of 2025. Volkswagen plans to use this steel in future projects such as the Trinity 1 e-model. The automobile group wants to focus on reducing CO<sub>2</sub> emissions where they are primarily generated, i.e. during automotive production. “In addition to the battery-powered electric powertrain and aluminium components, this is especially the case with steel”, the Group explains. For Volkswagen, the reduction of CO<sub>2</sub> emissions in the supply chain “is a central component in order to gradually become a mobility provider with a neutral CO<sub>2</sub> balance by 2050, as part of the Group’s goTOzero strategy”.

In addition, a closed recycling cycle for steel is to be set up between Volkswagen’s parent plant in Wolfsburg and the integrated smelter plant in Salzgitter. Volkswagen is again making the steel remnants of the production available to Salzgitter AG, which melts them down, processes them into new steel products and delivers them to Wolfsburg for car production.





### **Expansion of hydrogen infrastructure**

ArcelorMittal aims to achieve carbon-neutral steel production at its European sites by 2050 and to reduce emissions by 30 percent by 2030. “The German flat steel sites in Bremen and Eisenhüttenstadt are fully integrated into the Group’s strategy on climate neutrality”, the company explains. Two blast furnaces will be converted at the sites in order to blow in natural gas and reduce CO<sub>2</sub> emissions. With the planned expansion of the hydrogen infrastructure in Germany, ArcelorMittal intends to build a large industrial plant for the direct reduction of iron ore (DRI) in Bremen and a DRI pilot plant in Eisenhüttenstadt in combination with electric arc furnaces by 2026.

### **Own process gases and hydrogen**

With ‘H2Syngas’, Saarstahl and Dillinger rely - together with the engineering company Paul Wurth (part of the SMS group) -, on the use of their own process gases and the use of considerable amounts of hydrogen in the blast furnace process. The corresponding pilot plant was built in cooperation with Paul Wurth.

“The new process developed by Paul Wurth - known as dry reforming - enables the conversion of the coking plant gas produced in the coking plant into a hot reducing gas or synthesis gas”, explains Saarstahl. This is enriched with hydrogen and then used as a reducing agent for the reduction of the iron ores. The injection of the hot reducing gas into the blast furnace “leads to a considerable reduction in coke consumption and thus to a reduction in CO<sub>2</sub> emissions”.

### **The green transformation is also digital**

The green transformation has already begun and is setting itself high targets – but it needs digital support. According to the ifo Institute, the digital transformation of the energy industry – and ultimately the steel industry – is an integral part of the energy transition. It is one of the biggest IT projects of all time. In the future, many new and decentralised producers of renewable energy will enter the market. “These must be connected to the grid and their fluctuating production must be controlled. As a result, suppliers will have to manage large data streams, including data on feed-in or local consumption”, explains the ifo Institute. Digitisation therefore not only supports efficient production, but also a sustainable distribution of energy to steel companies. A mammoth task that must now be mastered.

*The exhibitors at wire and Tube 2022 are prepared for this and will present new technological solutions from the wire, cable, tube and pipe industries at the Düsseldorf Fairgrounds from 20 to 24 June 2022. For further information, industry and company news on both trade fairs, please visit: [www.wire.de](http://www.wire.de) and [www.Tube.de](http://www.Tube.de).*

## Melos; a special compounder for all cases



Melos GmbH from Melle is a leading manufacturer of compounds for the cable industry and customized compounds for the plastics processing industry. In this small town in Lower Saxony, more than 50,000 tons of industrial compounds are produced annually in the Industrial Compounds division.

Insulating, bedding and sheathing compounds are developed especially for the cable industry, but also special formulations. The high-quality low-smoke, HFFR, thermoplastic and radiation-crosslinkable compounds, including halogenated specialties, are used worldwide in cables for a wide variety of applications.

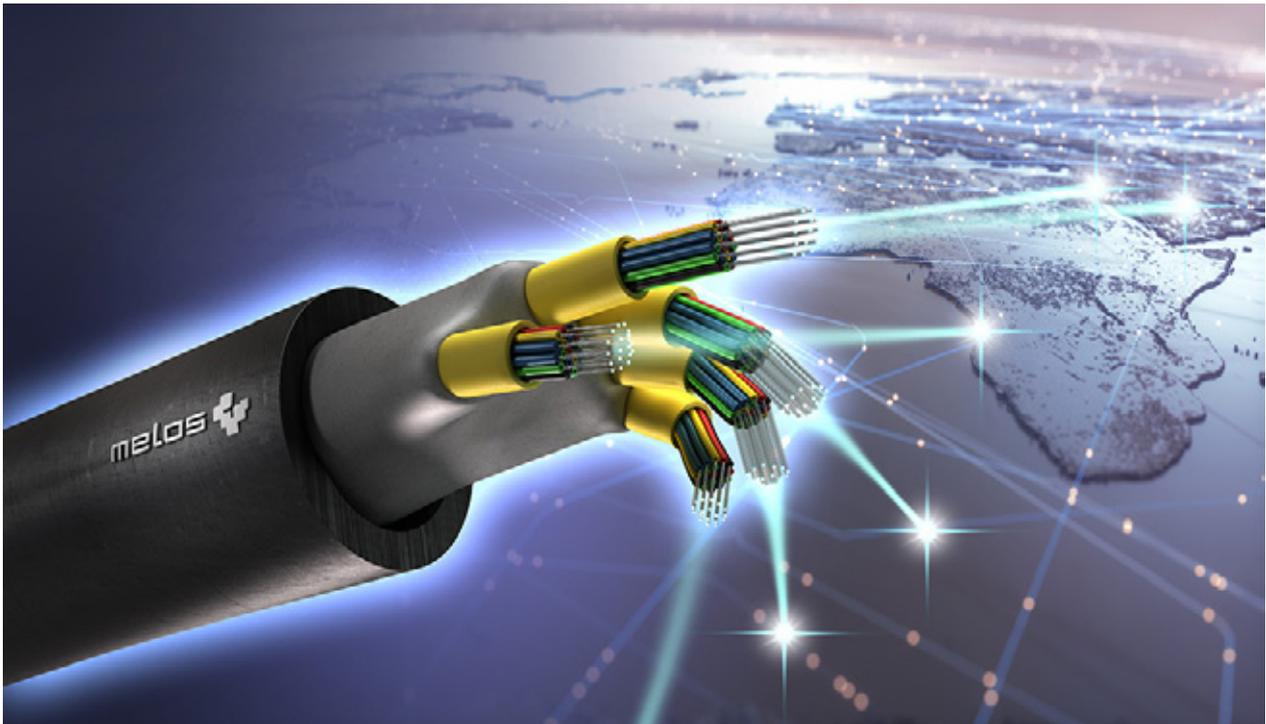
Safety starts behind your own 4 walls - sometimes

things heat up

Cables for building installations are partly covered by the European Construction Products Regulation for public buildings, and not without reason.

- Flame retardant cables contain halogen-free flame-retardant bedding compounds with different degrees of flame protection (LOI 30-67 % O<sub>2</sub>), for example NHXMH power cables. This reduces the risk of fire in case of emergency.

- Migration-stable bedding compounds for PVC sheathing / PVC insulation / XLPE insulation and cable constructions protect the cables against mechanical stresses.



•EPDM- and POE- based bedding compounds in different degrees of hardness and viscosity allow NYM & NYY underground cables to be installed quite flexibly.

Melos compounds are available for tandem- as well as for 2-step extrusion process.

**Green Energy - Wind as a driver for the energy turnaround:**

The energy turnaround now demands quick solutions. Alternative, sustainable solutions are particularly in demand at the present time. Offshore wind turbines as a source of energy are increasingly coming into focus. In this context, the cables of offshore wind farms have to withstand extreme demands. Melos compounds deliver a lot of advantages:

- Halogen-free, highly flame-retardant sheathing materials prevent fire spread in the event of fire
- Low-smoke, halogen-free compounds reduce the acidity of fire gases
- Excellent cable flexibility even at extreme low temperatures down to -70°C
- Excellent resistance to oils and other media ensures continuous use of the cables used
- High UV & aging resistance prevents premature aging of the cables

**Fast and stable Internet**

Home office, streaming, ever-increasing data volumes - these are current challenges that also place special demands on fibre optic cables. In terms of structure and properties, these are not quite comparable with conventional cables.

**Fibre optic cables must:**

- allow thin-walled cable structures, for which HFFR Tight Buffer materials are used
- must allow only slight shrinkage of the HFFR sheath materials to prevent damage to the sensitive glass fibres.
- be easy to process, e. g. with HFFR Tube materials with good melt stability as an alternative to polypropylene
- cover the fire behaviour with respect to the CPR Construction Products Regulation according to EN 50399, which can be achieved with HFFR filling compounds for loose tube applications

Melos compounds offer here an excellent solution for the production of fibre optic cables and thus a stable internet.

**Want to learn more? Visit us at the Wire 2022 in Düsseldorf**

**melos**

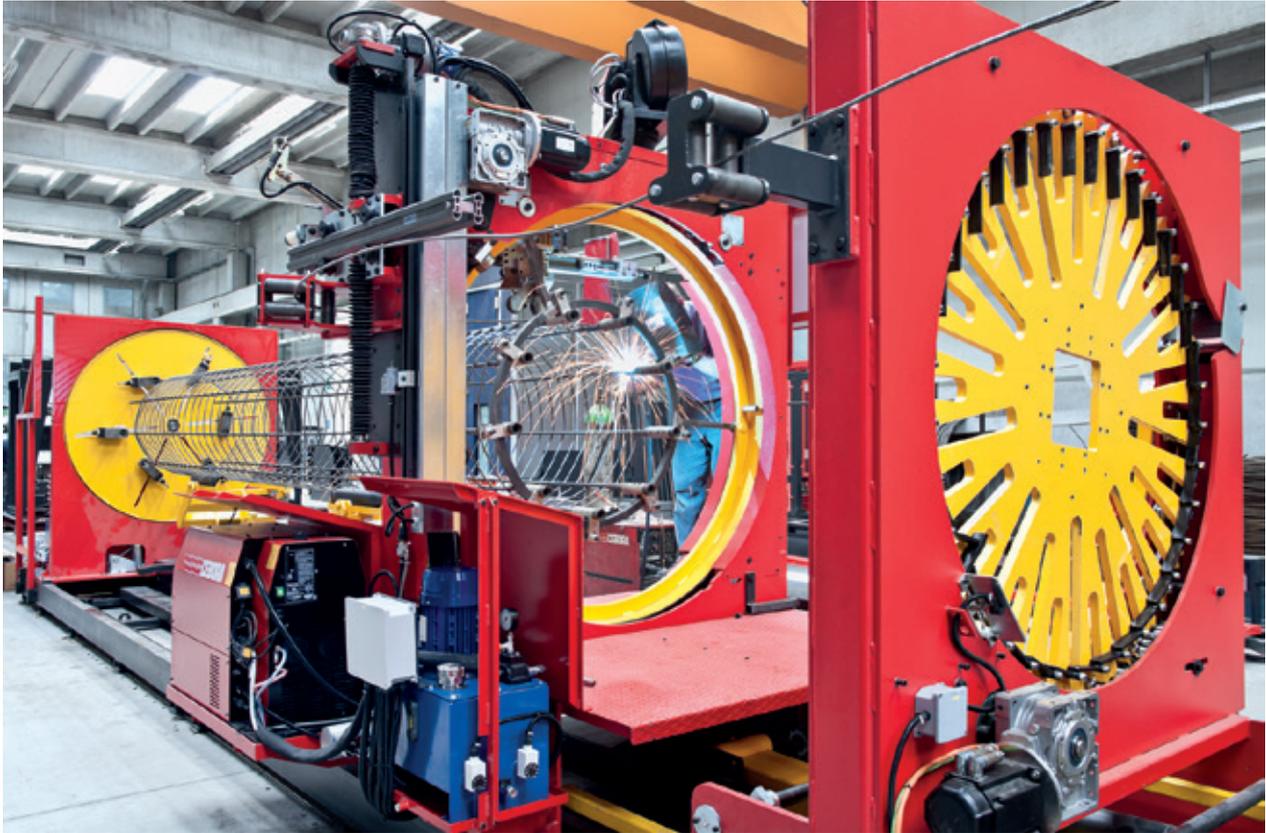
For more information:  
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[info@melos-gmbh.com](mailto:info@melos-gmbh.com)

# MEP GROUP: The Labour as Masterpiece of the Human Life in an organizational ambidexterity



Virus and war, sad pandemics are a valid framework to challenge the epistemology of the black swans and find evidence in the successful capabilities to overcome unexpected, unforeseen, and unpredictable difficulties by M.E.P. Macchine Elettroniche Piegatrici S.p.A.: the rebar machinery corporation, founded on February 8th, 1966, located in Reana del Rojale, UDINE, North-Eastern Italy. In the statement of the MEP CEO - Vito Rotondi, economist: <<the secret to overcome any all the difficulties must deal with People

*daily and we are confronted by the same questions time and again: decision, motivation, result, gratification, team, organisation, change, efficiency, improvement, technology, digital and human platform of governance... The solution is: Labour as Masterpiece of the Human Life, for MEP being able to keep the powerful balance between innovation and stability, to retain and increase competitive advantage by the key one of market leadership. If we encounter chaos, models help to decrease the complexity and structure an overview*



*of it: The Labour and the Technology represent the memorable way and subject of our successful thinking process, on an ethics-digital platform overperforming the business pipeline model>>.*

MEP in 2015 was ranked ELITE Company at LSEG Borsa Italiana, today ELITE at EURONEXT, awarded the 3rd Star Legal Certificate by Competition Market Authority (AGCM-Antitrust), certificate BUREAU VERITAS ISO 9001, ISO 14001, and SA 8000 on the Social Accountability Management System for ethics and sustainability. MEP received high honours, awards for the Corporate Governance, Technology, Communication, HR, Ethics, Innovation and Finance. MEP scored the Financial Rating A+ from the Moody's RiskCalc analytics. In the MEP CEO idea: <<*the ethical honourable compliance of the remarkable Corporate Governance provides a compounding successful society-profit-competition environment where multiple factors, also rules, economics, and finance, could be explained to earn a competitive advantage, the trust to give a true representation of reality to the community of the stakeholders*>>.

MEP is the main leader brand in 128 Counties for turnkey rebar (reinforcing bar)-processing industrial machinery and plants, Technology Solution Provision for civil construction and large public investment. Since the beginning with the first worldwide patent in 1967, MEP further improved its strong R&D technological

connotation guaranteed by the full Organisation on an integrated enterprise-corporate-business platform. The MEP Digital Academy, together with the MEP Business School founded in 2016, support the digitalisation of processes. The Sales Digital Streaming replaced the fairs and the visit to the showrooms in the world, Virtual Reality, IOT, AI belong to daily activities, with the value creation drivers of the HR Capital, the HR Heritage, the HR Future in the words of the MEP CEO - Vito Rotondi: <<*the strategic and social recommendation for the Labour as Masterpiece of the Human Life in an organizational ambidexterity is the key setting of the "Highlander" competitive-profitable-social advantage.*>>.

# MEP

For more information:  
[www.mepgroup.com](http://www.mepgroup.com)  
[info@mepgroup.com](mailto:info@mepgroup.com)

## IVR Industrial Furnaces & Automation is specialised in the realization and supply of systems for the heat treatment



Patenting furnace for heat treatment of wire

IVR has a long-term experience in this field. The design and manufacture of our furnaces and plants are carried out directly in our workshop. Also, the software for the management of our installation is an in-house activity. This working choice give us the possibility to check every project at every stage and to guarantee an excellent construction and realization. Beside this, IVR believes that it is very important to

work closely with the customer at every stage of the project, to confront each other continually together and reach the goal within the set deadline.

Our furnaces and plants are installed directly by our technical teams, that means supervisors and technicians with a huge experience in the field of heat treatment machines. Our technical teams are



Boogie hearth furnace

also available for the after sales; in particular we plan together with our customers maintenance programs, in order not to interrupt the production and use the plants in a correct way.

Maintenance programs are very important because it is possible to reduce the stops of the machines and also the costs of maintenance.

IVR pays particular attention to staff training and its constant updating by researching and applying the most advanced, safe and high-performance solutions.

Another advantage in choosing IVR as supplier for the plants is that we rely on a significant experience concerning the technical part and the heat treatment process, completed by high competence about energy-saving, environmental analysis and cost-cutting. That guarantee to our company a unique

professionalism in the conception, realization and installation of high-quality products with a relevant technological value.

We are always searching for continuous improvement and this is extremely important in this period where we must be ready to face the continuing difficulties resulting from the period of health emergency and the current situation of instability worldwide.

Concerning our production, our plants are suitable for various types of heat treatment, for example: wire patenting process, tubes heat treatment, gas carburizing, hardening with quenching in salt, water, oil and polymer; tempering; annealing; stress relieving; normalization; solution annealing; carbonitriding; nitriding, brazing, sintering, aluminium process T4-T5-T6.



Annealing furnace with atmosphere

Depending on the material and the process, different types of plants can be used such as:

- Seal batch furnaces for hardening, gas carburizing, carbonitriding with quenching in oil, salt or polymers;
- Mesh belt furnaces for hardening, gas carburizing, carbonitriding with quenching in oil, salt or polymers;
- Belt furnaces for brazing with atmosphere, with or without muffle;
- Continuous furnaces for patenting process;
- Cast belt link furnaces for forged parts with or without atmosphere, for several type of heat treatment processes, for example quenching or isothermal annealing, etc.;
- Sintering furnaces;
- Gas nitriding furnaces in horizontal or vertical load configuration;
- Pushing furnaces;
- Pit furnaces for hardening, gas carburizing, carbonitriding with quenching in oil, salt or polymers;
- Special furnaces made on customer specifications;
- Accessories for heat treatment plants, such as endothermic generators gas or electric heated.

*From 20.06.2022 to 24.06.2022 you will find us at the Wire & Tube Exhibition (Düsseldorf Trade Fair Centre // Hall 10 - Booth H50)*



Don't hesitate to contact us!

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[info@ivrsrl.it](mailto:info@ivrsrl.it)



# ADVANCED INDUSTRIAL FURNACES



Phone: 0039 0438 492661 - [info@ivrsrl.it](mailto:info@ivrsrl.it) - [www.ivrsrl.it](http://www.ivrsrl.it)



**IVR Advanced Industrial Furnaces, is an Italian FURNACE BUILDER**, with more than 25 years experience, that designs and builds customised furnaces for heat treatment of metallic parts. IVR's supply includes also installation, client's support and after sales service.



## EXAMPLE OF HEAT TREATMENT POSSIBLE IN OUR FURNACES:

Case-Hardening, Hardening, Oil/Salt/Polymer Quenching, Tempering, Nitriding, Annealing Aluminium processes T4-T5-T6, Aging, Solubilisation, general brazing equipment.



Visit us during the  
**Wire & Tube in Düsseldorf**  
(Germany)

from 20<sup>th</sup> to 24<sup>th</sup>  
**June 2022**

at our booth H-50 Hall 10

# Salzgitter AG and the Mendritzki Group conclude innovative green steel partnering agreement

- *Both companies occupy a leading position in CO2 reduction*
- *Next steps in creating green markets for low CO2 steel*

*April 28, 2022,* Salzgitter AG and Mendritzki Holding GmbH & Co. KG have signed an innovative partnering agreement and are building on their long-standing business relationship, now also in the field of low CO2 steel products and downstream product processing.

The Salzgitter Group's partnering program offers companies the possibility of securing a defined tonnage of green steel upfront as part of an economic commitment. This green steel is to be produced and delivered as from the end of 2025 as part of SALCOS® - SALzgitter Low CO2-Steelmaking. Furthermore, both companies intend to cooperate in advancing and refining the development of steel grades.

As a leading company in the cold rolling industry, the Mendritzki Group is a key customer of Salzgitter AG. Consequently, Mendritzki expects its suppliers to deliver superior quality input material. Both companies achieve the highest standards not only in terms of quality, but also and most notably in sustainable production. In the area of CO2 reduction in the production and processing of steel, the two companies share a common goal of occupying leading positions.

As Roland Neue, CEO of the Mendritzki Group, commented: "For Mendritzki, the company's strong trust in Salzgitter as a certified and homologated supplier that has consistently and reliably advanced and supported developments in this market segment is of particular importance."

Ulrich Grethe, head of steel production at Salzgitter AG added: "The companies operating in the cold rolling industry represent a very important target segment for the Salzgitter Group in the hot strip area. Due to this strategic direction, this customer segment is a perfect fit for our portfolio of highest quality grades. This partnering agreement will enable us to develop processes and products together and confirms our pioneering position in the emerging markets for green steel."

Placing the partnering agreement in the context of the Group's strategy, Gunnar Groebler, Chief Executive Officer of Salzgitter AG, stated: "Transformation toward low CO2 steel production under our SALCOS® program is a pillar of our "Salzgitter AG 2030" strategy. These partnering agreements show that customers trust us in the course we are charting, perceive added value in the transformation toward green steel, and are actively contributing to shaping this change. Partnering for Transformation - our new corporate vision - is now being lived in practice in this dimension as well."

As Christina Eckmann, head of strategic procurement at the Mendritzki Group, commented: "With Salzgitter, we can rely on the input material quality and supply performance being maintained at the highest levels - which is absolutely decisive for us. Given our business relationship of many years standing and the integration of the SALCOS® program into the existing production process we are convinced of the partnering agreements' success."

Low CO2 production through the hydrogen-based direct reduction process With the aim of massively reducing CO2 emissions in steel production, Salzgitter AG intends to gradually switch the production of steel to a hydrogen-based route under its SALCOS® - SALzgitter Low CO2-Steelmaking project.

In contrast to the former process involving blast furnaces, hydrogen and green electricity will replace the carbon formerly required for producing steel. By harnessing this process, Salzgitter AG plans to incrementally lower the CO2 emissions in steel production to less than five percent of the original emissions volume.

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# INDUSTRIAL TECHNOLOGY

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# IMA: THE BEST CHOICE



Founded in 1975, IMA Abrasivi is a leading company in the production of cutting, grinding and flap discs. A member of oSa (Organization for the Safety of Abrasives) since 2007, IMA has a large share of the market in Italy and internationally with its trademarks IMA, GOLD and IMACH3.

The plant is situated in Cava de' Tirreni (Salerno, Italy), an area boasting a great tradition in the fields of ceramic and abrasive products. The production

facility is equipped with the latest machinery and with technologically advanced equipment. Our primary goals are to maximize operator safety, research and experimentation in the choice and combination of components through constant innovation.

#### **RESEARCH AND DEVELOPMENT**

IMA devotes itself to developing the best solutions in cutting, deburring, grinding and all polishing and



finishing operations, providing excellent performance, higher comfort, productivity and duration, with a view to continuous improvement of our product.

#### INNOVATION AND SAFETY

Continuous research and market-oriented innovation allowing us to launch new products and new lines by anticipating market trends, thus meeting the evolving needs as required by our customers. Safety in the use of abrasive wheels and protecting the welfare of the operator: this is real innovation.

#### LOGISTICS AND ENVIRONMENT

IMA logistics allows for the handling and management of orders according to market demands, from Just-in-Time or, if necessary, the stocking of specific products. We dedicate great attention to the protection of the environment and to all forms of renewable energy, with the awareness that the future is already today.



For more information:  
[www.imabrasivi.it](http://www.imabrasivi.it)  
[ima@imabrasivi.it](mailto:ima@imabrasivi.it)

# ArcelorMittal and the government of Spain have signed an agreement in which the government has pledged its financial support for the decarbonisation of the company's steelmaking sites in Asturias and in Sestao, in the Basque Country.

*June 1, 2022\_* The agreement was signed on the occasion of the World Economic Forum in Davos, Switzerland, at a signing ceremony attended by the CEO of ArcelorMittal Aditya Mittal and the Spanish Minister of Industry Reyes Maroto. The funding, which is part of the government's Recovery and Resilience Plan, will support the construction of an electric arc furnace and DRI plant in Gijón, which are crucial to the company's CO<sub>2</sub> emissions reduction goals in Europe.

The implementation of this project represents the first step of the company's decarbonization journey in Asturias.

Thanks to the demand for green hydrogen generated by the project, the Gijón DRI project will become an enabler of new projects associated with the green hydrogen production value chain. ArcelorMittal announced in February this year that it is an anchor sponsor of Hydeal Espana, a consortium which will manage the development, funding and construction of renewable hydrogen production and transmission infrastructure. These complementary projects are expected to have a significant impact on the generation of new economic activity and job creation in Asturias.

In order to implement the described transformation of the site in Asturias, an application has been submitted under the EU's CEEAG framework and is awaiting approval from the European Commission before the project can proceed. Aditya Mittal, CEO of ArcelorMittal, said: "We were proud to announce last year, our EUR1bn plan to build a 2.3 million-tonne green hydrogen direct reduced iron (DRI) unit, complemented by a 1.1 million-tonne hybrid electric arc furnace (EAF) in Gijón - which in turn will enable ArcelorMittal Sestao to be the world's first full-scale zero carbon-emissions steel plant. The agreement we have signed with the government of Spain this week is the next step in our decarbonisation journey in Spain, and provides some of the funding certainty we need to move to the next phase of this project."

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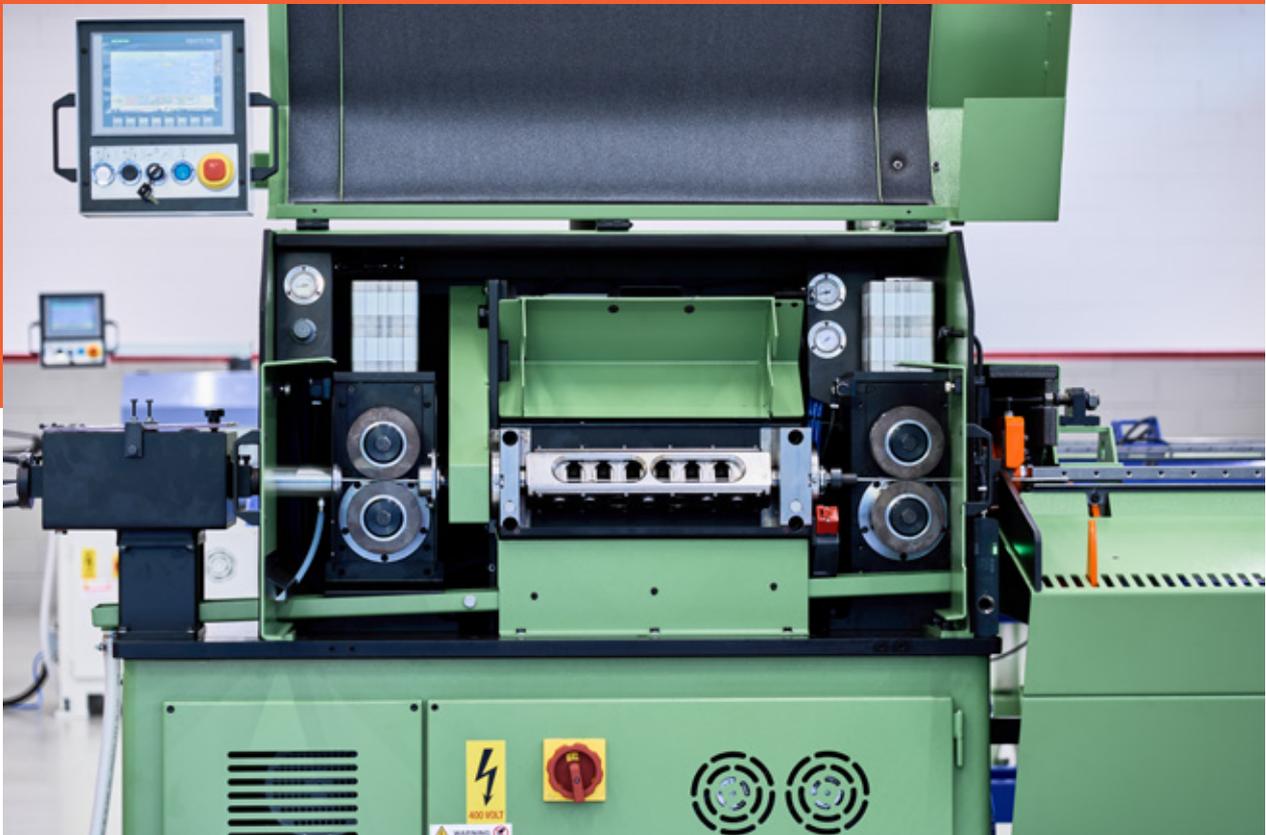
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VARO

## TRF straightening & cutting machine

One of the leading and most representative products of VARO offer is the TRF straightening & cutting machine



Sturdiness of the components, high performance and maximum reliability are the concepts that have guided its design.

To meet the market's need for product supplies in a very short time, shorter response times are also required in the metal wire processing industry.

Aware of this need, VARO has given new impetus to batch production of TRF.

To make this useful machine more efficient and performing, VARO presented a new specialized department in October 2021: VARO STRAIGHTENING EXPERIENCE a new dedicated structure in which



knowledges, skills and client's experiences on straightening mix together to improve TRF on every aspect.

*The exceptional success of TRF straightening machines led the company management to take yet another step forward to increase their production capacity as well as improving the quality control of construction processes.*

TRF is the wire straightener that, in the 4.0 set-up, is able to provide all the necessary and relevant information about production trends as well as about the perfect functionality of the machine itself. All of these data are also available remotely and thanks to the new VARO APP application also on your mobile phone.

Thanks to the extreme proximity and close relationship with its customers, VARO has been able to introduce new and more performing technologies, guaranteeing a better and detailed control of production.

Mechanics and electronics of the TRF are combined to make it fast, reliable, easy to use and maintain and, above all, always precise. The interface placed on the

machine has been developed to be as easy as possible to use and program by the operator.

The remote maintenance system makes it possible to detect, even remotely, the need for intervention and automatically communicates the operations to be performed for correct maintenance of the machine.

These remote operations are performed and coordinated exclusively by specialized and competent technicians.

**Continuous monitoring of working conditions and process parameters**

Sensitive machine data is detected during production, grouped according to the shift and according to the recipe, which can be consulted from the machine or remotely accessible.

The information collected allows you to have a clear view of productivity:

- Alarm history
- Shifts history
- Recipe history
- Production history



The design in 4.0 logic and the components used make TRF VARO always connected: in order to have a complete diagnostic immediately available to the customer.

**Reliability, efficiency, high performance are in TRF's DNA.**

TRF by VARO, thanks to its high productivity and maximum reliability, was able to quickly become one of the main and appreciated references in its product category.

Quick setup times, simple and intuitive interface and standard equipment among the most complete in its category. All this has allowed TRF to establish itself on the market as the best solution for the production of cut wire bars.

- complete equipment for 3 wire diameters (dragging guides, cutting unit, wire straightening bushes)
- reel and straightening rotor with variable speeds and electronically controlled by the machine
- mechanical stops for checking the cutting length
- feeding with reels from 12 to 30 Qt

TRF VARO can be customized both in terms of aesthetics and in the length of the counter and can be combined with dedicated accessories to increase its

capabilities and realization possibilities. Among the most popular options, VARO offers the chamfering machine (with abrasive belt or chip removal) in order to speed up the production of pre-cut and beveled bars useful above all in the world of "white".

**TRF, simply useful**



For more information:

[www.varo.it](http://www.varo.it)

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# Tenova Received Two Contracts from TenarisDalmine for the Steelmaker's New Investment in Special Steel Production

*Castellanza, May 09, 2022* - Tenova, a leading developer and provider of sustainable solutions for the green transition of the metals industry, was awarded two contracts by Tenaris, global manufacturer and supplier of steel pipes and related services, for its mill in Dalmine (Italy). Both contracts are related to the steelmaker's new investment in special steel production. The two companies belong to the Techint Group.

The Dalmine project is divided into three phases, two of which will be supplied by Tenova. The first phase consists of a state-of-the-art melt shop ladle furnace. The ladle furnace will be used for secondary metallurgical treatment of the liquid steel.

The second project phase will consist of a Tenova's designed and supplied heat treatment furnace for special steel bars. This movable hood-type furnace is specifically designed to charge very large bars with a length of 12 meters and is equipped with thirty-four hydrogen-ready self-recuperative burners. These environmentally friendly burners will be capable of using up to 100% hydrogen as a fuel source.

Tenova self-recuperative burners provide energy savings compared to traditional preheated air burners, playing a significant role in reducing CO2 emission levels in steelmaking plants. In addition to fuel savings, Tenova burner flameless technology produces the lowest NOx emission level. Optimal thermal uniformity, extended combustion stability, advanced control technology, low maintenance costs, and continuous product evolution are Tenova regenerative burners main and distinguished features. Flexibility in fuel combustion is also another important advantage, as they are already designed and manufactured to be hydrogen-ready.

Giuseppe Pandini, Tenaris Senior Project Manager has commented: *"the installation of a new furnace 100% H2 ready is part of Tenaris commitment to reducing the environmental impact of its activity, embracing innovation and technological change. Beside selecting the best energy saving technology for the burners, we took the opportunity of this project to make a step forward. Working with Tenova's engineering and R&D, we designed a plant ready to start the substitution of natural gas with hydrogen as fuel for our industrial furnaces"*.

Also M. Marcello Tomolillo Customer Service Manager at Tenova Italimpianti has made his comments: *" We are particularly proud to be part of this new investment by TenarisDalmine, which confirms Tenova's continuous innovation for higher efficiency and sustainable solutions"*.

With this investment, Dalmine will produce high-grade special steel resistant to corrosion in carbon dioxide and hydrogen sulphide environments. The special steel product will also be used for renewable energy technologies such as geothermal wells.

Tenova's equipment will start production within the first half of 2022.

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# MAG Plastics - Manufacturer and Exporter of Hot Foil Marking Tapes



ASHOK GUPTA | CEO MAG PLASTICS

**MAGPlastics from 2010 is engaged in manufacturing, wholesaling and exporting a wide range of Hot Stamping Tape, Marking Tapes, Stamping Foils, etc. Under the supervision of our mentor Mr. Ashok Kumar Gupta, we are able to offer a high quality range to our products.**

MAG PLASTICS', established in the year 2010, are an ISO 9001:2008 certified manufacturer, supplier and exporter of an extensive gamut of HOT STAMPING MARKING TAPES. We use high grade raw material with the use of advanced technologies available in market. Our products are known for good and bright print results, wear resistance, water resistance and durability.

We are a client justified organization, due to which we have attained the strong position in the market. Further, we can produce our products in any color shade as per the requirements of the clients. We also have developed a wide distribution network with the help of which we deliver our products to the clients situated in East Europe, East Asia, North Europe, Middle East, South East Asia, S. Korea, Vietnam, Iran, Turkey and South Africa.

Under prudent guidance of our CEO, 'Mr. Ashok K.

Gupta', we have achieved a tag of commendable name in the domain. Promoter of company has got good name and fame in commercial and technocommercial arena. With a sound technical and commercial background of more than 30 years in domestic and industrial packaging applications, he is helping us to cater to the requirements of specialty packaging applications.

#### **What is MAG Plastic vision?**

Mag Plastics takes utmost care in the production process so that the product gives desired level of satisfaction to our customers. Incidence of complaint in the Tapes is of very rare occurrence. Being a quality oriented organization, we lay emphasis in maintaining a glorious track record for delivering our clients an impeccable range of Hot Stamping Marking Tapes. We are backed by a team of skilled professionals, which possesses profound expertise in field of Hot Stamping Foil business. These professionals are masters of their respective domains.

#### **Use of Hot Foil Marking Tapes?**

Hot Foil Marking tapes are used in Wire & Cable Industries and Plastic Pipe Manufacturing Industrys



to emboss & print company name , logo , product specifications, data and meter length through hot embossing process.

Our products are suitable for marking on Cables sheathed with PVC/ HDPE/ LDPE/ XLPE/ NYLON/ RUBBER and all Plastic Pipes of PVC/ HDPE/ LDPE. Our product Hot Foil Marking Tape provides Bright and sharp emboss printing and requires low temperature for printing. Hence, It is suitable for high speed lines also. Hot Foil Marking Tape Print is durable, resistant to water and scrubbing. There is no dust formation on substrate or on machine. Our product work equally perfect in all weather conditions.

#### How effective is marking tape on Tyre?

Our Tape is used on Run out Testing Machine in Tyre Industries for marking dot of high and low points. Our Tape gives good printing results at low temperature settings and the print is fairly resistant to UV and scrubbing and is long lasting.

Temperature required is from 90 degree celsius to 180 degree celsius. Hence, is suitable for high speed testing lines also.

#### MAG Chemical offers resins application in which systems?

Fibre Reinforced Plastic (FRP) Rod is used as a toughening member in optical fibre cables. The toughening members give exceptional immovability tightness while retaining a high degree of inflexibility, avoiding cable buckling over its entire life.

MAG Chemical resin's special properties are as below;

- Inhibition of Oxidation
- Improved Fires Resistance
- Reduced Shrinkage
- Better Antistatic Resistance
- Increased UV Resistance
- Improved Material Toughness
- Easier Removal from Die

#### What is new feature in MAG marking tape?

Our products are known for good and bright print

results. MAG has manufacture marking tape with features like wear resistance, water resistance and durability. Hot Stamping Marking Tape (more appropriately called as Sequential Marking Tapes, Hot Embossing Tape, Marking Tape or Hot Foil Printing Ribbon) is a widely used product in the Cable and plastic Pipe manufacturing industries.

As we are Marking Tape manufacturers, we have wide range of Hot Foil Marking Tapes in various colours such as Red, Orange, Yellow, Sky Blue, Dark Blue, Green and Black. We have got all the facilities to make hot foil in specific colour choice of customers also.

•Hot Foil Marking Tape are available in width size of 6mm, 7mm, 8mm, 9mm, 10mm, 12mm, 15mm and goes up to 650mm as per customer's requirement.

•Hot Foil Marking Tape are available in length of 610 meters, 900 meters, 1000 meters, 1200meters, 1500 meters, 2000 meters and 3000 meters.

•Hot Foil Marking Tape are also available in the form of Spools/Bobbins in which length of tape is 9000meters(9Km),15000 meters (15 kms), 18000 meters (18Kms) and 20000 meters (20 Kms)

**MAG**  
HOT FOIL MARKING TAPE

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# Find The Best Fiber Laser Cutting Machine Solution In Your Metal Fabrication Industry



Golden Laser is a China laser cutting machine manufacturers and supplier. was established in 2005 and as a public listed company listed on the Growth Enterprise Market of the Shenzhen Stock Exchange in 2011(Stock No.: 300220).

It is a digital laser technology application solution provider and committed to providing laser processing (laser cutting, engraving and welding) solutions for global users for both metal and non-metal materials.

We are integrated with development, production, sale,

and service system, a high-tech enterprise specialized in Fiber Laser and CO2 laser Machine.

High power laser cutting machine, up to 40kw fiber laser source, ground rail fiber laser cutting machine easy to extend the cutting area.

Middle power fiber laser cutting machine, 1.5kw Fiber Laser to 8KW fiber laser cutting machine, with single table and exchange table for choice.

Laser tube cutting machine, more than 7 series



different metal tube laser cutting machine to meet the different customer demand, 2 chuck and 3 chuck tube laser cutting machine for thin and heavy duty tube cutting. Automatic bundle tube loader, welding line recognize, slag remove function ensure the great cutting on metal tube and pipes.

Fiber laser welding machine, robot and handheld laser welding machine meet the different customer demand.

3D robot laser cutting machine, France, Japan robot arm, positioner for choice.

CO2 laser for non-metal. Single, double head machine to meet different production output demand. Vision Cut function to recognize the contour of the sublimation textile.

After more than 17 years of continuous development and innovation, GOLDEN LASER has become China's leading and world-renowned CO2 and fiber laser cutting machine manufacturers, especially in the field of metal laser cutting application industries,

Such as: office furniture, fitness equipment, sports equipment, medical device, metal doors, sheet metal decoration, fitness equipment, agricultural machinery, steel structure, cross-car beam, window crafts, fire

control, automobile, bus and bicycle industries,

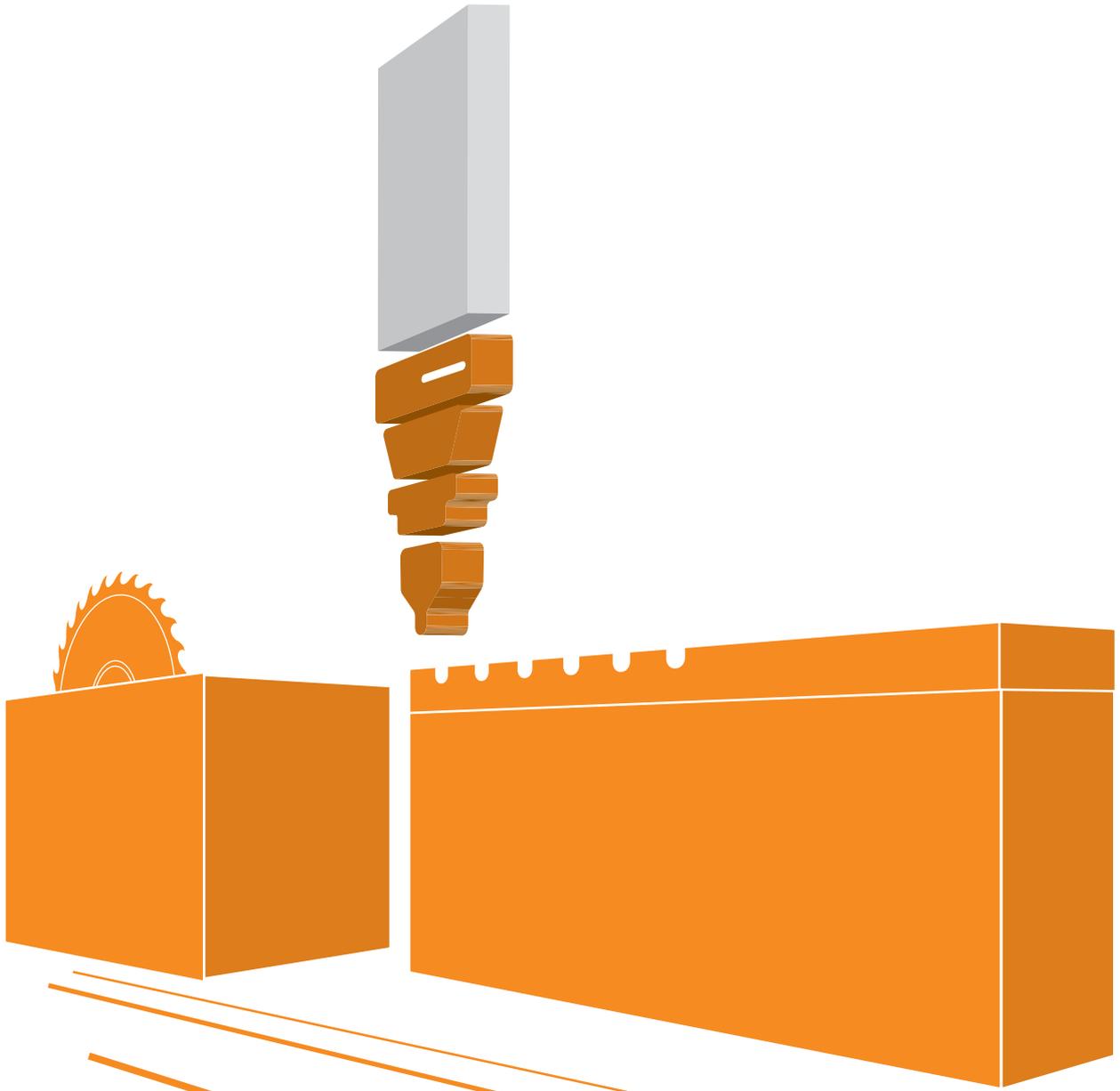
GOLDEN LASER keep moving to be your best fiber laser cutting machine solution supplier manufacturers in 2022.

Golden Laser Certificates:

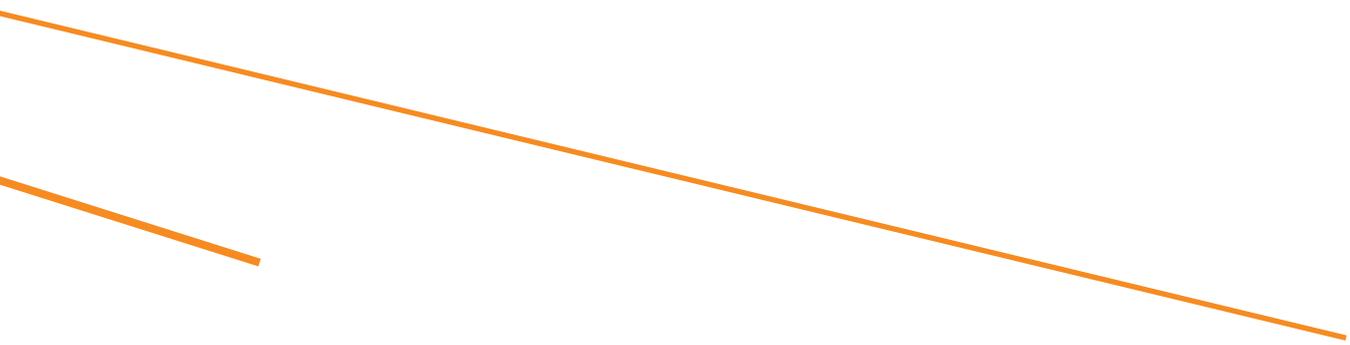
Golden Laser's fiber laser cutting machine has passed the CE, FDA, SGS certification, and it is committed to continuous quality improvement and research to supply the best laser cutting machine to global user.



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# *Instrumentation*



# The turquoise hydrogen route: can we produce valuable, high-performance carbon materials and hydrogen from hydrocarbons cracking?

The large majority of fossil sources (gas, oil, coal, ~10 gigatonnes/yr) are exploited to generate energy through combustion, the main responsible of CO<sub>2</sub> emissions (>30 GT/yr) and of climate change. More than 12% of this energy is used by the metal industry to process materials that currently cannot be fully replaced by plastic polymers (e.g. low thermal/electrical conductivity, insufficient strength). In this context, value added carbon solids (VACS) pave the way for sustainable energy and large-scale advanced materials production as well as climate change mitigation<sup>1</sup>. Specifically, the contextual production of hydrogen and carbon materials from methane and hydrocarbons cracking allows to overcome challenges in storage or disposal of carbon in the form of gas or liquid (e.g. CO<sub>2</sub>) or solid side products, currently limiting the large scale implementation of carbon capture and storage technologies, by creating valuable products that can be used at large scale (above 1 million tons/yr) by displacing metals, ceramics, fertilizers and other materials with high carbon dioxide footprint. Beyond the widely known and implemented technology of carbon black (i.e. amorphous carbon) production, direct conversion of hydrogen rich feedstock such as methane or light hydrocarbons to VACS and H<sub>2</sub> is becoming of increasing scientific and industrial interest. However, the scale-up of such processes to high conversion and yields of structured carbon over amorphous carbon (i.e. particulate matter) requires a multiscale modelling approach, starting from the underlying chemico-physical phenomena to reactor simulations describing key phenomena such as heat and mass transfer.

A semi-detailed chemical kinetic framework, hierarchical and modular in nature, able to describe qualitatively and quantitatively the relationships between catalyst, reaction conditions and VACS (carbon black, carbon nanotubes-CNT) properties in the thermo-catalytic pyrolysis of methane is being jointly developed by the Chemical Reaction Engineering and Chemical Kinetics (<http://creckmodeling.chem.polimi.it/>) and by the Catalysis and Catalytic Processes (<https://www.lccp.polimi.it/>) laboratories at Politecnico di Milano, in the context of the CarbonHub consortium led by Rice University, Texas, US (<https://carbonhub.rice.edu/>).



Matteo Pelucchi  
Assistant Professor  
Department of Chemistry, Materials  
and Chemical Engineering  
Politecnico di Milano, Milan, Italy

An amorphous carbon model (carbon vapor deposition) and a VACS growth model (i.e. carbon nanotubes) are coupled to a homogeneous gas-phase pyrolysis model to follow the transition from gas-phase to particulate matter particles in the gas phase and to carbon nanotubes (CNT) at the catalyst surface. The amorphous carbon model has been described and extensively validated in a previous work<sup>2</sup> and implements recent experimental and theoretical findings on the persistent radical behavior of particles and aggregates<sup>3</sup>. The flexibility of the amorphous gas-phase carbon model (soot) has been extended to include surface adsorption of gas phase species and successive growth of solid carbon deposits according to a similar systematic approach.

Figure 1 summarizes the capability of the model to reproduce both (a) gas species formation and evolution (including hydrogen) and deposition rates as a function of temperature (b) and residence time (c) for propane pyrolysis at  $p=2.7$  kPa in a perfectly stirred reactor, as reported in [5]. Panel (d) shows the competition between amorphous carbon formation (black lines) in the gas stream and carbon deposition (red lines).

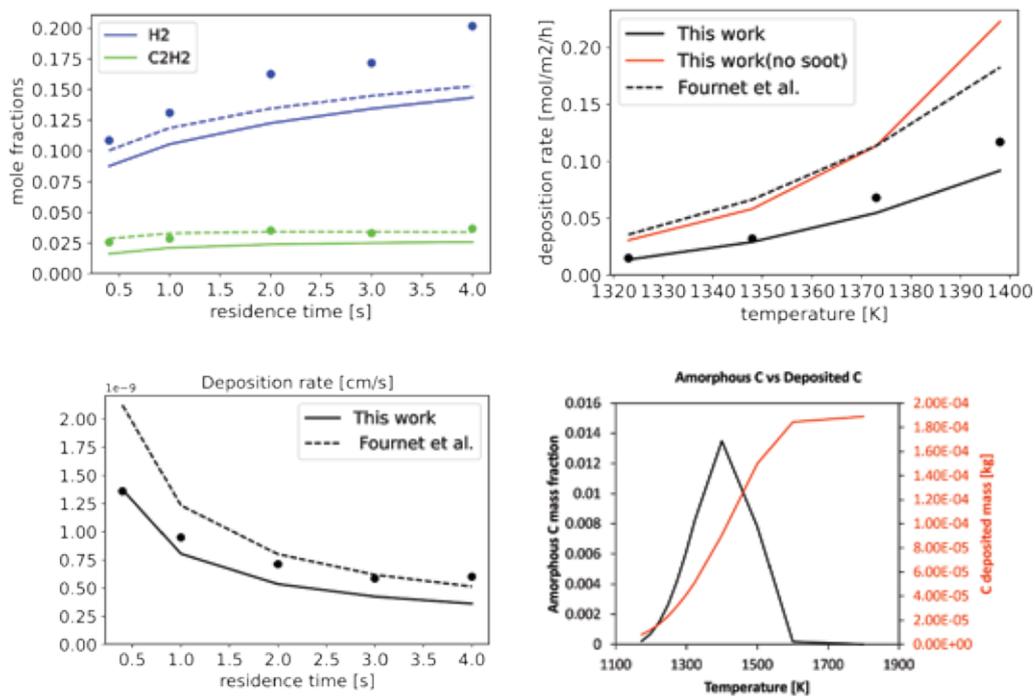


Figure 1. Model performances for methane pyrolysis: from gas-phase (a) to amorphous and pyrolytic carbon (b,c) and their competing formation (d). Experiments and dashed lines from [5], solid lines: this work.

Further extension to catalytic surface deposition mechanisms paves the way for a semi-detailed approach to turquoise hydrogen and carbon materials production modelling. Figure 2 summarizes the steps involved in the catalytic growth of CNT over Fe catalyst particles. A first surface adsorption of C atoms, with contextual adsorption/release of hydrogen is followed by the diffusion of carbon atoms over the catalyst surface. Carbon atoms can rearrange to form a nucleation cap, according to a presumable pentagonal base mechanism. Once a cap of similar diameter to the catalyst particle is formed, upon further adsorption of carbon atoms, the nanotube start to grow.

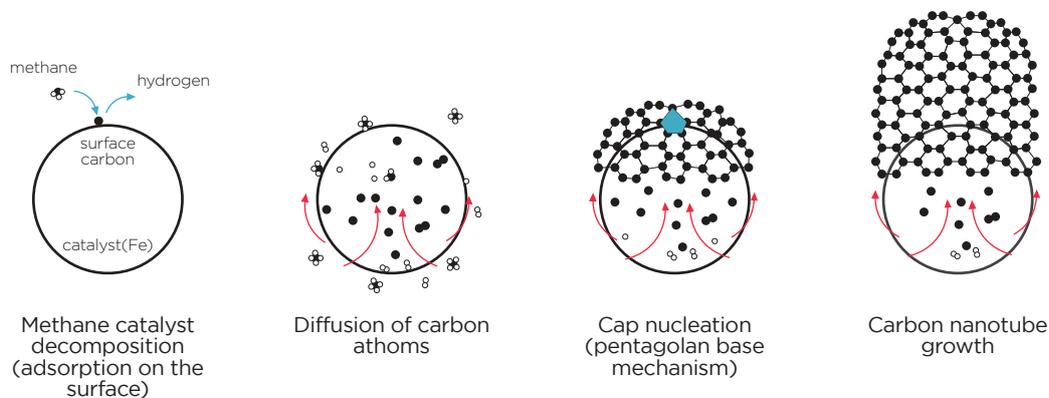


Figure 2: Schematic view of carbon nanotubes growth over Fe catalyst particle.

The same discrete sections approach as for particulate matter formation in gas-phase is being applied to model such complex phenomena, taking into account diffusion limitations and their competition with chemical kinetics. The integrate approach developed at Politecnico di Milano allows to explore reaction conditions to promote the formation of CNT over amorphous carbon, guiding reactor design, design of experiments and reactor scale-up.

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# MASSdiscover: the new device for mass flow real time measuring.

It's a new device that can be used to measure the mass flow in real time and by calculations, the equivalent section or diameter. MASSdiscover uses an outstanding technology that allows measurements with the highest precision to take decisions about the process control. It's been used and tested in several rolling mills with harsh conditions and the results are fantastic.

Rolling mills for long metal products production starts with a billet that is passed through several rolls to get the desired final size and cross-section product.

The metal processing industry's high standards in terms of dimensional accuracy and product quality, added to the lack of control over production parameters often leads mills to deliver extra tons of steel, as it is difficult to delimit quantity with high precision. Thus, rolling mills manufacturers suffer money losses.

## ***MASSdiscover goes beyond limits for fine tuning size adjustments on Long Product Rolling Mill Technology for metals.***

Mass flow measurement is essential to control production parameters and avoid accidents. To date, expensive systems have been used for production optimization, usually based on laser measurement, vision or other image analysis systems even electromagnetic technology. All these gauges have limitations, as they are not designed to control different points in the rolling mill, but only one point in the production process. ISEND has found a highly reliable solution based on Eddy Currents, completely modular and conceived to fit the needs of each production line at a very competitive price. Mass Discover is based on the already well-known Eddy Current Technology for Long Product Rolling giving an electromagnetic signal depending on the fill factor produced in the probe.



#### ***Who can MASSdiscover help you?***

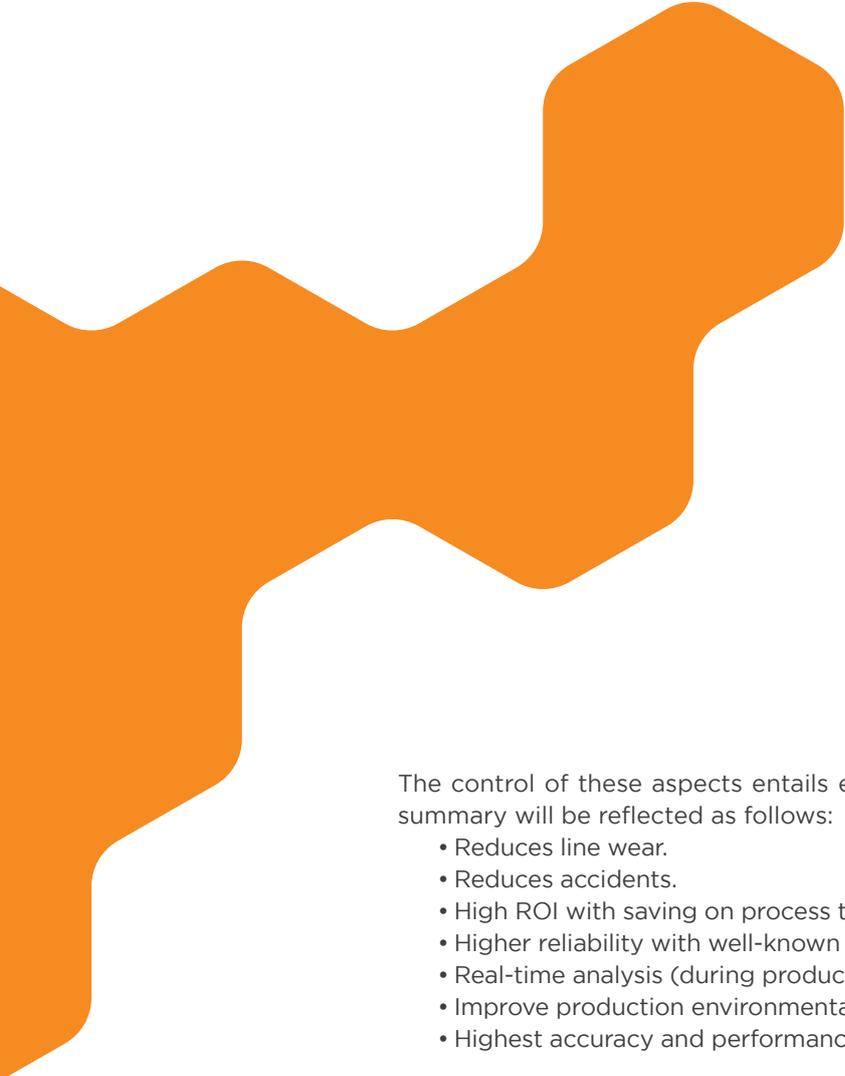
MASSdiscover helps companies to adjust tolerances Product consistency. Allowing customers to:

- Achieve a mini tolerance for longer product for reinforced steel.
- Achieve a mini variation on tolerances to ensure high performance post-treatment for fine drawing, cold heading, final product tensile consistency.

In addition, when the size and speed of the material does not match the parameters of the rollers, accidents can occur. An example are the cobbles. This is why ISEND goes further. The system not only helps to adjust the tolerances but also helps to ensure a good configuration of the production processes.

- Tension adjustments between stands.
- Size variation / Wearing of roller grooves .
- Electric power consumption on each stand or group of stands.





The control of these aspects entails enormous advantages for the rolling mill, which in summary will be reflected as follows:

- Reduces line wear.
- Reduces accidents.
- High ROI with saving on process time, product, control, maintenance cost.
- Higher reliability with well-known technology with less maintenance.
- Real-time analysis (during production).
- Improve production environmental impact.
- Highest accuracy and performance.

***About the solution.***

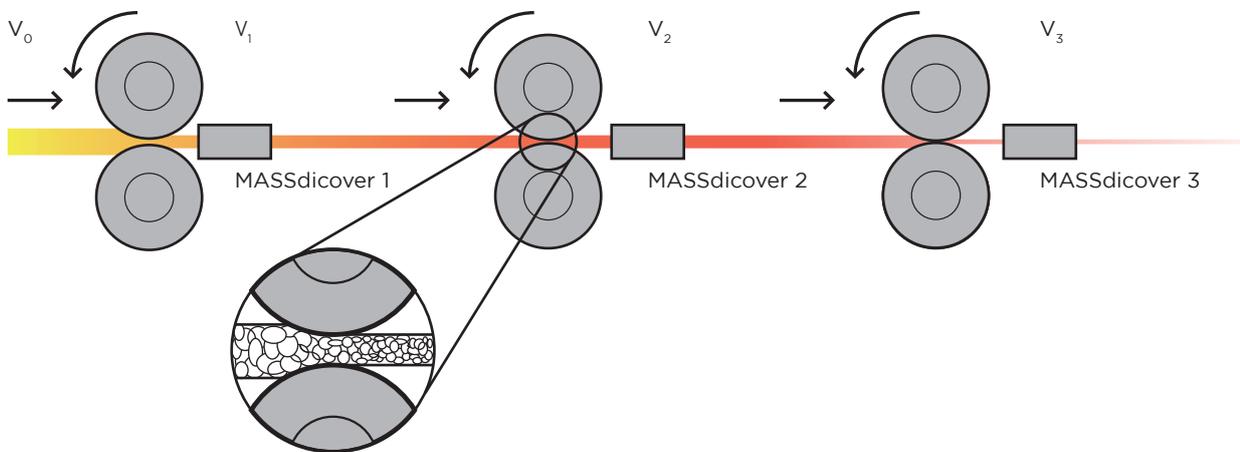
MASSdiscover does not need to be in contact with the product to perform the analysis and its output is not compromised by dirt, powder, steam, water, or other kind of pollution in the environment. The mechanical design is one of the main strong points of the MASSdiscover system. Giving it a high robustness, has no moving parts and requires a little and easy maintenance.

- Highest reliability of ISEND'S eddy current technology.
- Higher frequency measurement than laser gage.
- Easy integration with existing rolling mill computer general data base.
- Highly robust and durable (Low maintenance).
- Internal Cooling System.
- Quick probe change (reducing downtime).
- Special materials to support harsh conditions, such as speed and temperature of hot rolling mills.

### **Installation where and how?**

Due to low cost of ownership and the fact that MASSdiscover is a modular system, it can be placed at different checkpoints on the mill. In this way, the most critical aspects of production can be monitored under each customer preferences, offering an unknown level of production control. The control points can actually be installed from any place from intermediate mill to final stand.

- Post intermediate mill.
- Pre-finishing stands.
- Finishing mill.
- Sizing mill.



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## Italian temperature sensors at a glance



Our Bruino (TURIN ITALY) facility turns out RTD and thermocouple type temperature sensors.

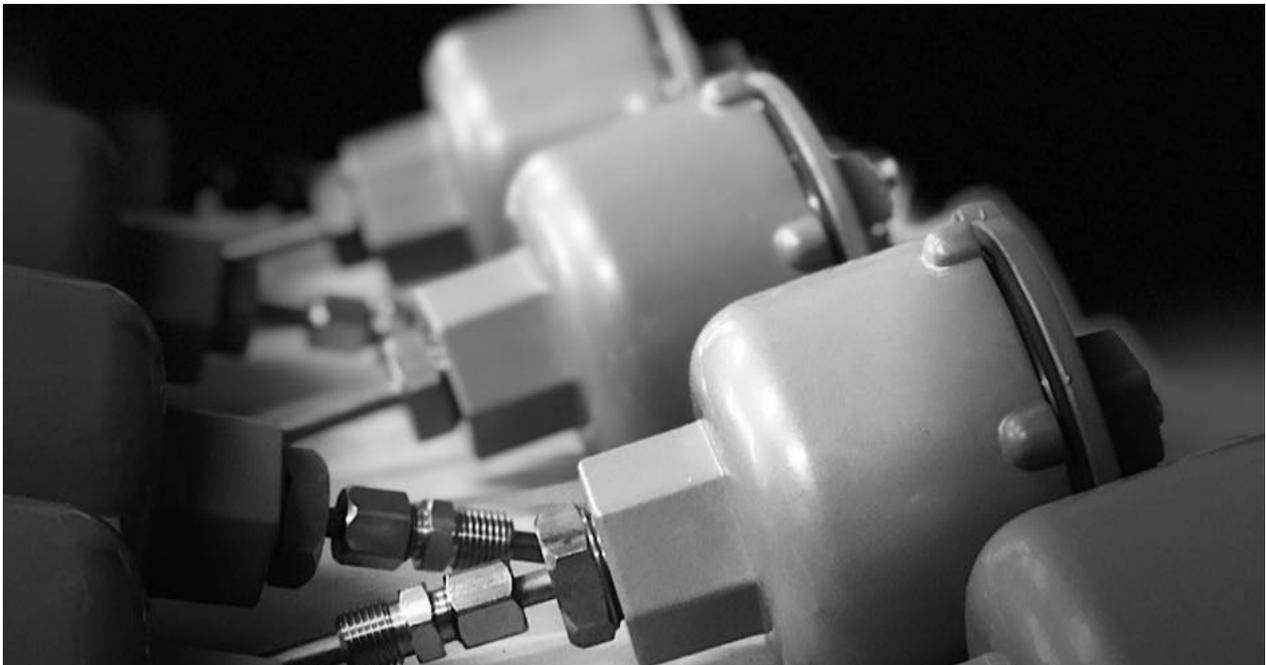
The thermocouples are available in the classical version with calibrated wires and insulators or with MgO (magnesium oxide) insulation both in base and noble metal.

Assembled to DIN, ASTM, CTI-UNI specs. The RTD's in the 50- 100-1000 Ohm series at °C assembled inside protective sheaths according to requirements of use and insulated with ceramic insulators or with MgO (magnesium oxide) insulation.

Assembled to DIN, UNI specs. In both cases, product lines are available according to use (standard series, TSM series, MgO series for aerothermal recordings, full cable series, etc.).

We are renowned for our versatility and flexibility and are able to supply custom designed products adapted to specific requirements and with the precision requested by the customer.

All our products are subject to a process control system that makes it possible to apply a FULL TESTED procedure that guarantees functional testing of each single product before this is declared suitable.



Our production activities are flanked by a set of services including the sale of instruments, Accessories such as extension cables for thermocouples and RTD's, compensating cables, Connection heads, linearized temperature and pressure transmitters, infrared measurement instruments. Our calibration laboratory means we can issue calibration certificates in the range -30 to + 1064°C with ACCREDIA traceability.

-Standard temperature probes

Different type of temperature probes for any industrial

application, that is possible to order following the guidelines of our catalogue.

- Standard thermocouple serie
- TSM serieis
- Mineral insulated serie, thermocouples
- Mineral insulated serie, RTD' s
- Mineral insulated serie, thermocouples with connecting head
- Mineral insulated serie, RTD's with connecting head
- Full cable serie, thermocouples
- Full cable serie, RTD' s



- Duct e pipe aerothermic probes
- Bayonet fitting thermocouples
- Bayonet fitting RTD' s
- Compression fittings
- Thermowells
- Micro thermocouples
- Extension for thermocouples and RTD' s
- Custom designed products

Thermocouples and RTD's for specific applications in the following sectors:

- Automotive
- Avionics
- Marine
- Chemical
- Food
- Petrochemical
- Cement and klinker industry

Most of these products are specifically designed to the customer's specifications and are produced according to the test standard based on the FULL TESTED procedure



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# Emerson's New Emergency Shutdown Discrete Valve Controller Improves Safety, Uptime in Hazardous Applications

*TopWorx DX Partial Stroke Test with HART 7 provides detailed valve assembly data and diagnostics, enabling predictive maintenance and reliable operation*

FLORHAM PARK, N.J., May 10, 2022 — Today Emerson introduced the TopWorx™ DX PST with HART® 7. Units provide valuable valve data and diagnostic information, enabling the digital transformation of process applications. The new DX PST integrates seamlessly with existing valves and control systems, giving operators access to critical valve data, trends and diagnostics that can be used to predict and schedule maintenance.

The DX PST's partial stroke test ensures the system's reliable function without shutting down the process. A safety feature that confirms the valve will fully close and stop the process if an emergency is detected, and the test is activated by simply pressing the local PST button — no additional equipment is required. To prevent critical failure in upset conditions, the unit will override testing to perform an emergency shutdown (ESD).

Certified for operation in harsh and hazardous applications, the adaptive DX PST is designed to ensure the integrity of valves, improving overall safety and facility uptime in oil and gas, refinery, chemical, industrial energy and mining applications.

"The digital transformation of the process industry continues to make operations safer and more productive," said Prayag Vatsraj, global product manager at Emerson's Switchbox. "The DX PST with HART 7 supports digital transformation by providing reliable data that delivers valuable insight into the condition of valve assemblies that ensures the integrity of the system without shutting down the process."

The HART® protocol, the specifications of which are owned by the FieldComm Group, builds another layer of information that ensures data, trends and diagnostics are monitored and tied into the Industrial Internet of Things. This information can be used to effectively predict and schedule maintenance.

Capable of Safety Integrity Level 3 (SIL 3), the DX PST is available with an integrated 2oo2 or 2oo3 solenoid valve redundancy when paired with ASCOTM Series Advanced Redundant Control System (ARCS) to further enhance safety and open terminals that allow an additional pressure transmitter along with two pressure switches. The discrete valve controller offers simple local and remote calibration.

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Trotec has been one of the leading equipment partners for trade and industry in air treatment solutions for more than 25 years. We offer drying systems and all kinds of devices for climate conditioning (heating, humidification, ventilation, air conditioning, air purification). Our product range offers you the

right product solutions in all performance classes and for any application scenario. We also provide manifold measuring devices for building diagnostics, damage detection, quality assurance and industrial maintenance. Perfect equipment technology, comprehensive, long-time application expertise and field-tested 360° solutions.

Germany's no. 1 for mobile high-performance air purifiers for virus-free room air in offices, canteens and production facilities.

Provide optimum protection from aerosols and viruses for yourself and your employees with mobile air cleaners – scientifically proven. Trotec is Germany's market leader for mobile H14 HEPA air cleaners for virus filtering. The high-performance devices are used in countless offices, production facilities, shops and restaurants all over Germany. The air cleaners are specially designed for silent operation and provide a large volumetric flow. High air volume and fan performance quickly dilute aerosol concentrations. The air is no longer infectious. 99.995 % of pathogenic viruses are separated from the room air in a H14 HEPA filter, certified according to EN 1822.

wide range of industrial installations in and outside the country allows us to offer you specialised and custom-fit product solutions.

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Our Italian branch in Affi is located near Verona from where have been serving our Italian customers for more than 5 years. Individual requests, specialised consulting, specific product recommendations or project support – full service from a single source. Trotec – German engineering & high-quality products “made in Germany”.

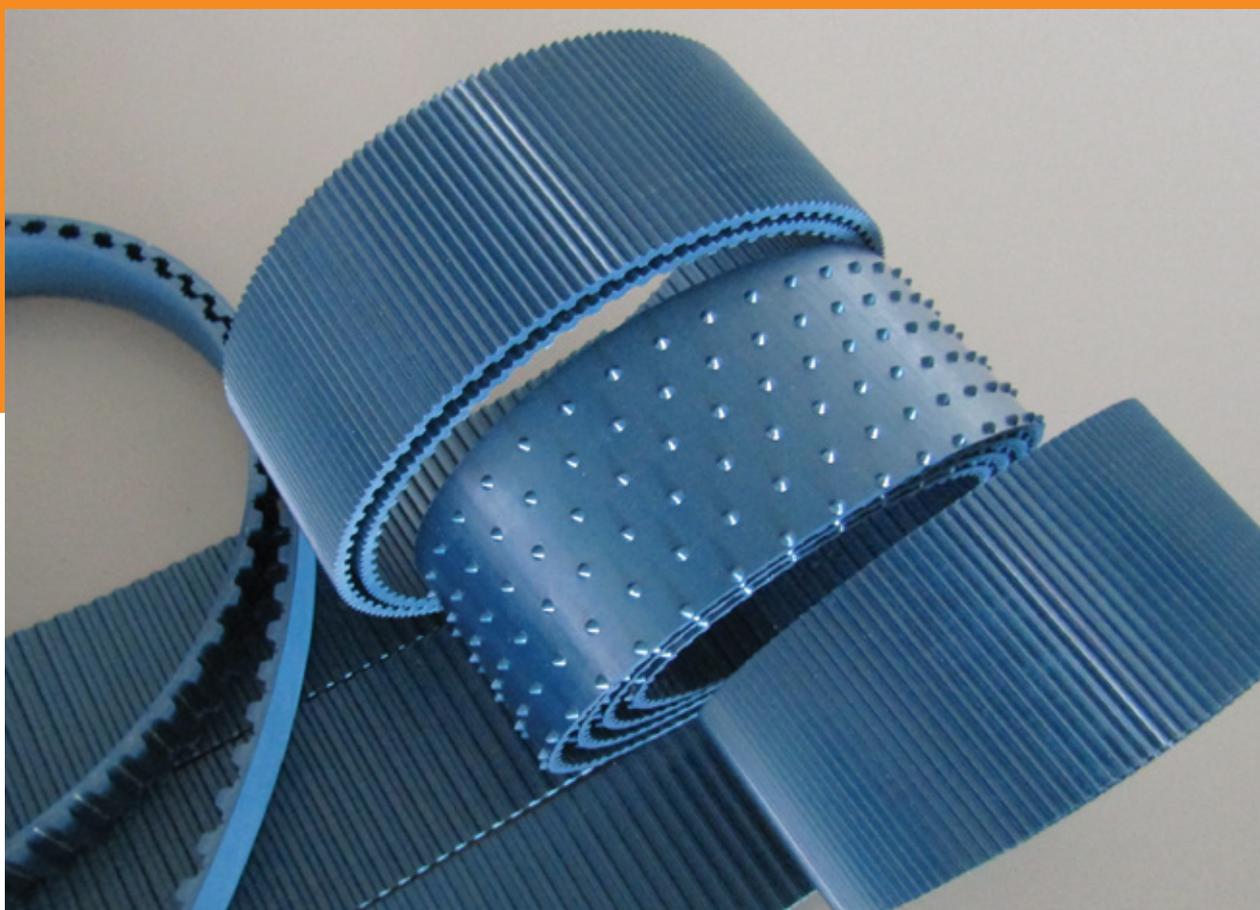


Innovation is a major priority at Trotec  
We are constantly developing new product innovations in all areas. We pay particular attention to special requirements in practice. Only being familiar with needs from practice allows you to find new solutions. We have decades of know-how in climatic optimisation of production processes. The expertise gained from a

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MEGADYNE

## Megadyne reveals the future of Food Safety as it introduces its new XMD metal and X-Ray detectable timing belt range



For the Food Industry, nothing is more important than Food Safety, and contamination from belt or cleat fragments is one of the clearest threats to product purity and brand trust. At the same time, processing lines need to operate at peak productivity to achieve business success.

The Megadyne XMD range of Metal and X-Ray detectable timing belts and accessories are designed so that belt fragmentation and contamination from belt particles can be identified quickly and efficiently, without compromising on superior performance. Megadyne, a global leader in belting and a member of



the AMMEGA Group of companies, introduced these new belts at this year's IFFA, the world's showcase for the Meat Industry as slicers up to the primary packaging equipment needs.

#### How it works

Megadyne's XMD belts – including open end, endless joined, and truly endless belts from the popular Megalineer and Megaflex families – and their accessories are manufactured using a special blue polyurethane; in fact, the belts are made entirely in blue, a colour that contrasts best with most food products for further hygiene benefits. The polyurethane compound can be picked up by Metal and X-Ray detectors, meaning that fragments not readily visible to an onlooker will be spotted by the Food Safety system in place, alerting end users to potential contamination and belt fragmentation.

#### Test cards to proof detection and identify the minimum size

To ensure that this detection is taking place, and to operate at your company's standard level of efficiency, Megadyne has developed test cards that come with the XMD belts. With the help of the test cards, and the presence of the special compound in all the belts and accessories of the XMD ranges, food companies can truly say they're doing their utmost to fight against product contamination due to belt issues, all while partnering with a Food Grade global standard-setter in high-performance belting solutions.

Giuseppe Allais, Global Industry Segment Manager Food, points out that: "With Metal and X-Ray detectable belts and a test card toolkit that enables end users to fine-tune their detection systems, the Megadyne XMD range helps prevent product contamination, and brand damage from expensive recalls. In this way, these belts protect the consumer and the industry at the same time."



# MEGADYNE

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# Xnext delivers food safety with Xspectra: the most performant food inspection technology



Today, as a result of an increasingly global and intensive food industry, producers and consumers are paying more and more attention to food safety.

Traditional inspection systems, however, are unable to meet the increasingly stringent requirements of an extremely important sector such as the food industry. For example they are not able to solve all the problems

related to food contaminations by foreign bodies inside food products coming off production lines.

Xnext was able to identify the problem and designed and developed a solution: **XSpectra**, the revolutionary **multi-energy X-ray inspection technology** capable of changing the paradigm of in-line quality control in the food industry.



Like no other system in the world, XSpectra is able to identify, directly in the production line, high and **low density foreign bodies** such as plastics, bones, cartilages, insects, woods and organic residues in fillings and it's also able to achieve excellent results in the detection of glass fragments in glass and metals in metal, ensuring unparalleled food safety.

What distinguishes XSpectra from the inspection systems currently on the market is that the latter exploit only a fraction of the potential that X-ray inspection can provide.

In fact, XSpectra is the most advanced X-ray inspection system in the world because it is the only one so far conceived that is capable of analyzing up to **1,024 energy levels**, as opposed to only one or two energy levels of its competitors.

This is made possible by a completely in-house developed state-of-the-art detector consisting of **photonics** and **nuclear electronics**.

To this hardware, Xnext was the first in the world in the field of food inspection, to combine an **artificial intelligence** software that is developed for each product and is trained to recognise foreign bodies

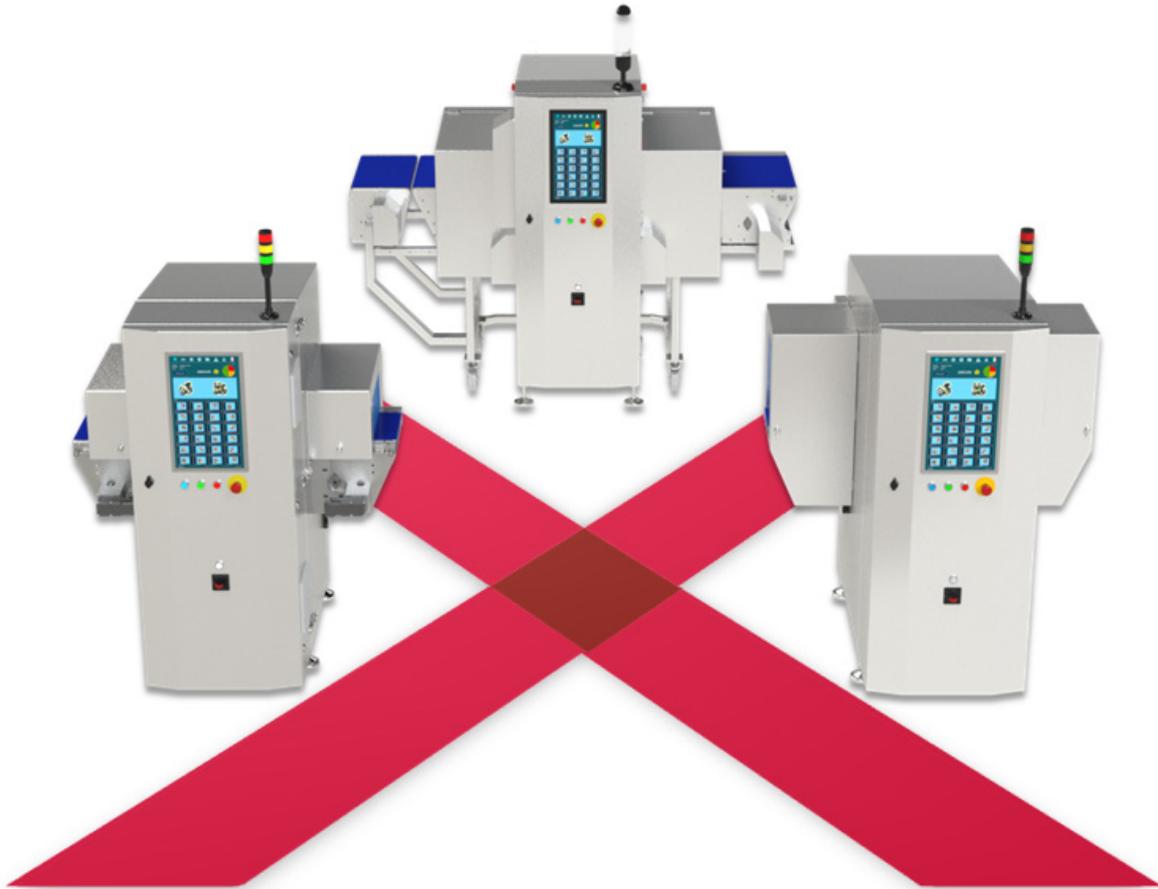
and non-conformities on a wide variety of products thanks to neural networks.

XSpectra can work with both bulk and processed, ready-to-ship products, and can be installed at any point in the production line, thus operating at any stage of the manufacturing process.

In this way, it can immediately decree the conformity of the product to the required quality standards, ensuring a high level of **food safety** for both producers and their end consumers.

By using XSpectra on their line, food companies can also benefit economically as the detection of foreign bodies within the food directly at the production line **reduces the number of rejects and recalls of entire batches from the market**, which also have a high reputational and environmental cost.

To better understand the problem, in the US market alone, foreign-body contamination has an economic burden worth about \$50 billion a year. According to the Canadian Food Inspection Agency between 2015 and 2017 there were 317 product recalls due to foreign



bodies. To quantify the waste of resources and the environmental burden of recalling an entire batch of food products, a study was conducted by the Water Footprint Network, according to which recalling a single can of tomato sauce from the market wastes 225 litres of water and 1.5kg more Co2 emissions.

Xnext is present with its own installations in important food companies active in various food sectors: bulk and processed meat, dairy, filled pasta, biscuits, pulses, salads and vegetables.

There are already 16 active installations, **in Italy and France where a branch was recently opened**, but it is ready, by the end of the year, to land in **North America** where it will install three inspection systems between the **USA and Canada** for an important customer.

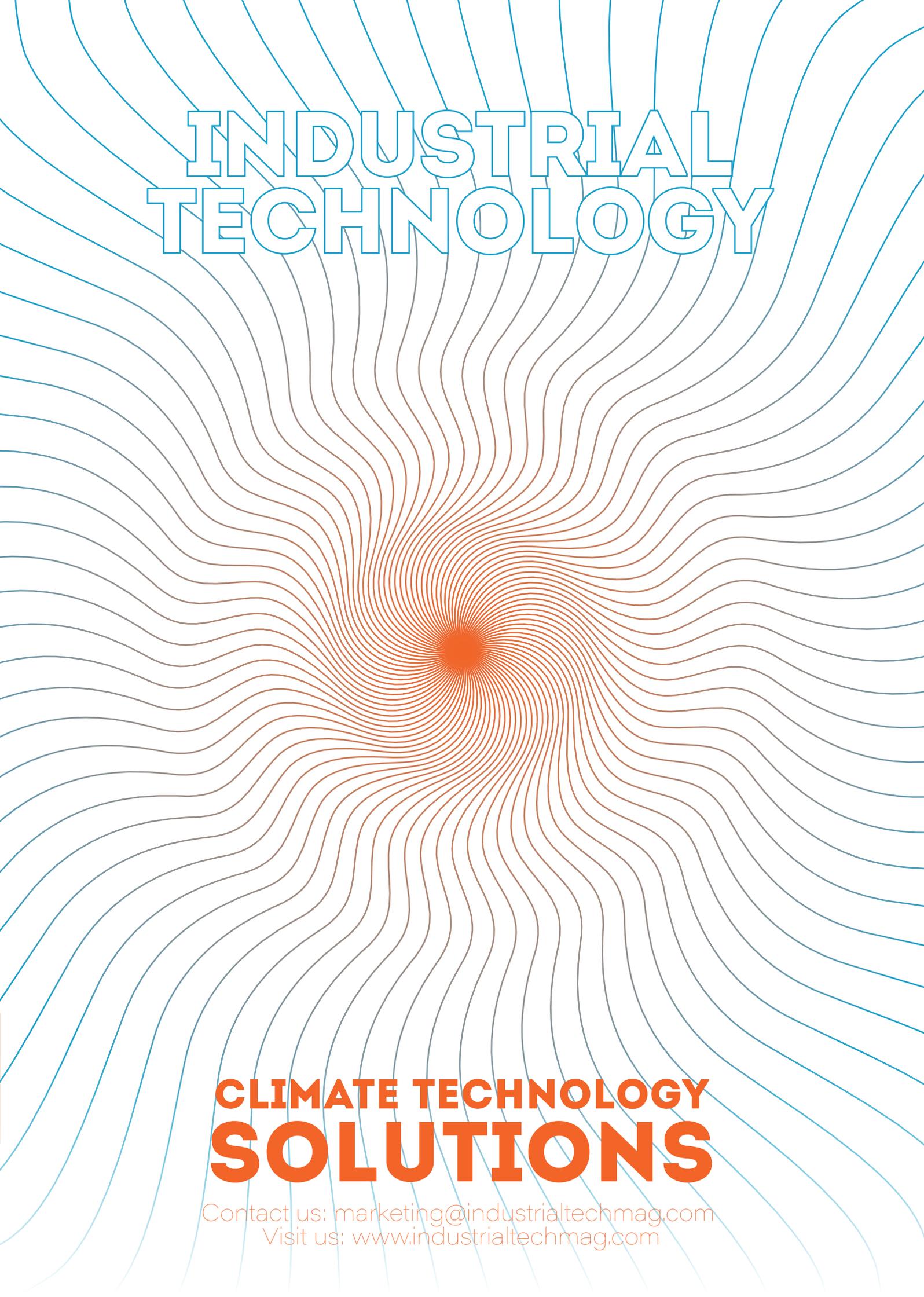
This is an important growth milestone for Xnext which aims to become the world market leader in food inspection systems ensuring the highest level of food safety worldwide.

However, XSpectra's technology does not stop at the food industry as it can also be applied in the

**pharmaceutical** field to detect contamination within medicines, in the **materials recycling** sector by helping to improve recycling efficiency by allowing materials to be characterized according to their different polymer composition, enabling specific selection with maximum precision, in **security controls** and **NDT tests**.

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# Raman analysis proves its worth in LNG custody transfer

Switzerland, May 3, 2022

## *GERG industry study compares methods for measuring composition and energy content in LNG*

Endress+Hauser Raman spectroscopy-based analyzer systems are a reliable and low-maintenance alternative to traditional gas chromatography (GC)/vaporizer systems for liquefied natural gas (LNG) composition and energy content measurement during custody transfer transactions. This is the result of a years-long study of the European Gas Research Group (GERG), representing 33 members from 15 countries across Europe, comparing different methods.

“Raman spectroscopy is swiftly gaining traction around the world as a robust, efficient, and economical analysis technique for LNG composition measurement,” said John Schnake, Managing Director and Corporate Director Process Analyzers at the Endress+Hauser Group. “Our Raman instrumentation allows companies to have confidence in the accuracy and precision of their LNG measurements during critical custody transfer transactions with a significantly reduced maintenance burden.”

### *Supporting the global energy transition*

As the world strives to reduce greenhouse gas emissions and cope with energy supply chain disruptions, demand for LNG as a means to efficiently transport large quantities of natural gas around the world is skyrocketing.

One of the most critical steps in the LNG process chain is the transfer of custody during LNG transport by land and sea. At each key point of contractual exchange, fast and reliable LNG composition measurement is essential. Even tiny differences in calorific value can alter the value of an LNG load by hundred thousand of euros.

### *Certified and validated LNG data*

The aim of the GERG evaluation project was to validate the measurement capabilities of Raman technology to deliver reliable, accurate and precise composition measurements for energy calculation in LNG custody transfer applications. During the multi-year study, thorough testing was performed at a baseload LNG transfer facility at Fluxys LNG in Zeebrugge, Belgium. To ensure the data met LNG metrology standards, reference LNG samples were provided by EffectTech, a leading provider of inspection, calibration, and testing. Measurements of LNG were taken directly in the liquid phase by an Endress+Hauser Raman system comprised of a Raman Rxn-41 cryogenic probe fiber-optically coupled to a Raman analyzer optimized for LNG.

### *Reliable Raman measurements with lower operating expense*

The published GERG report, “Raman method for determination and measurement of LNG composition,” concluded that Endress+Hauser Raman analyzer systems offer equivalent LNG measurement uncertainty with significantly lower operating expense and technical expertise than traditional GC/vaporizer systems.

Not only did the Raman system reduce the complexity of the LNG monitoring system and have faster start-up stabilization times, but it also proved to have better repeatability, responded more quickly to process changes and required no maintenance during the entire evaluation period (experiencing >99% uptime).

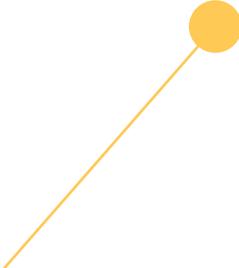
These results demonstrate the value of using Endress+Hauser Raman measurement technology for field installations at LNG baseload, satellite, and peak shaving sites, as well as for LNG truck loading and bunkering ships.

“We are pleased the results presented in the GERG study reinforce the value of our Raman analysis portfolio for LNG custody transfer applications,” added John Schnake. “By providing fast and reliable liquid-phase measurement at such vital points in the LNG process chain, our Raman systems play an important role in the evolving global energy transition.”

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# *News*



# A photograph of US manufacturing in 2021 through facts.

From the Facts About Manufacturing, a collection of the key facts and figures that reflect the state of the U.S. manufacturing industry, we have selected among a very extended list some of the most relevant, to provide a photograph of the US manufacturing during 2020/2021. The facts about manufacturing are the fruit of the collaboration of the *Manufacturing Institute*, the *Manufacturers Alliance for Productivity and Innovation*, and the *National Association of Manufacturers*.

***Manufacturing value-added output increased from \$2.571 trillion in the third quarter of 2021 to an all-time high of \$2.714 trillion in the fourth quarter of 2021.*** <sup>(1)</sup>

Value-added output rose to new record levels in the fourth quarter for both durable goods (up from \$1.381 trillion to \$1.440 trillion) and nondurable goods (up from \$1.190 trillion to \$1.274 trillion). Overall, manufacturing accounted for 11.3% of real GDP in the fourth quarter, the highest percentage in three years. Real value-added output in the manufacturing sector increased from \$2.320 trillion at the annual rate in the third quarter to a record \$2.381 trillion in the fourth quarter. In the fourth quarter, real value-added output also hit a new height for durable goods, rising from \$1.277 trillion to \$1.308 trillion, with real value-added output for nondurable goods (up from \$1.042 trillion to \$1.072 trillion) increasing to its best reading since the second quarter of 2008.

***Most manufacturing firms in the United States are quite small.*** <sup>(2)</sup>

Most US manufacturing firms are quite small. In 2018, there were 246,155 firms in the manufacturing sector, with only 3,960 firms that have more than 500 employees. In fact, three-quarters of these companies have less than 20 employees.

***Manufacturing in the US would be the eighth-largest economy in the world.*** <sup>(3)</sup>

If considered as a single state, US manufacturing sector would be the eighth-largest economy in the world. With \$2.27 trillion in value added from manufacturing in 2019, only U.S., China, Japan, Germany, India, the United Kingdom and France would rank higher in terms of their GDP. After manufacturing in the U.S., the next five economies would be respectively Italy, Brazil, Canada, Russia and South Korea.

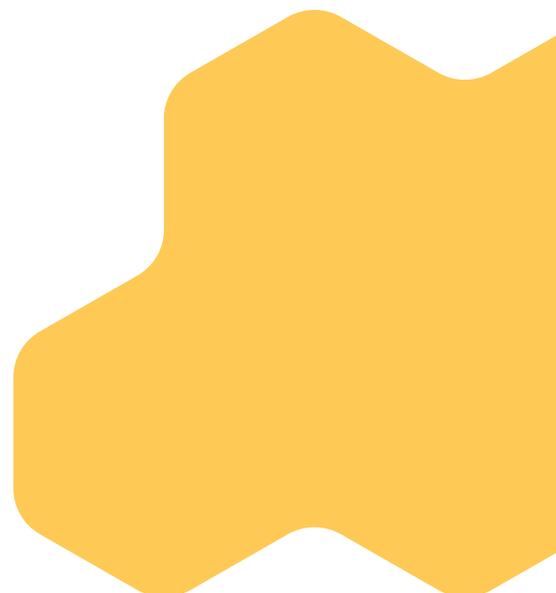


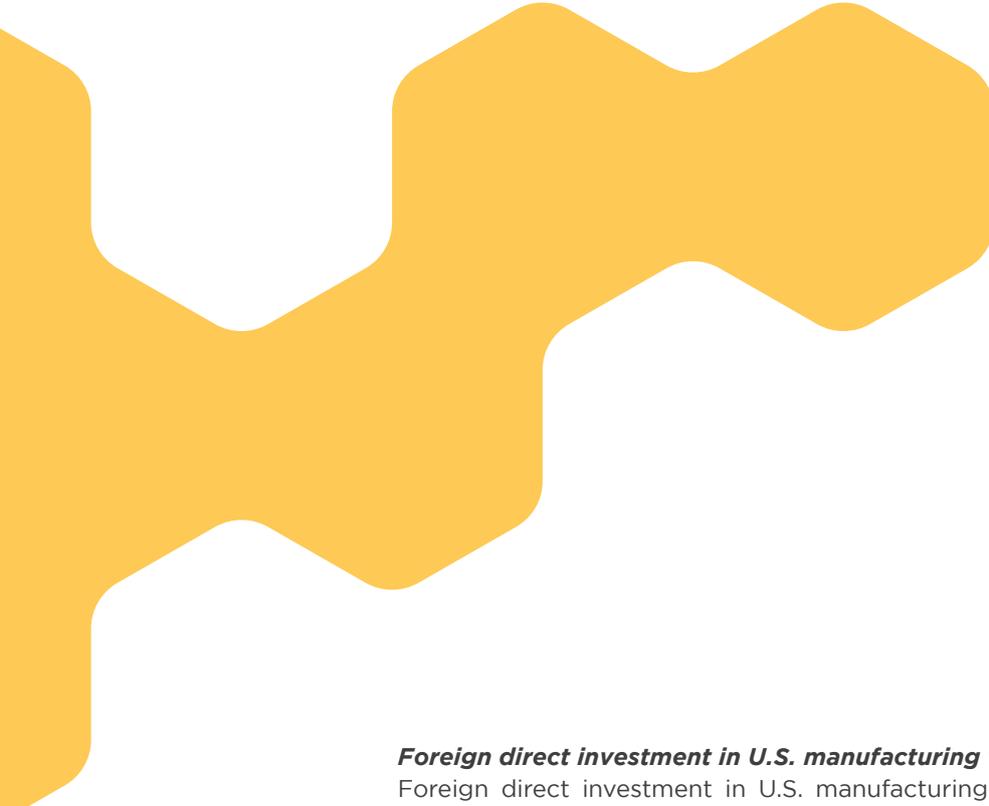
Dr. Eng. Mor Nguirane  
Chemical Engineer



***U.S.-manufactured goods exports totalled nearly \$1.2 trillion in 2020*** <sup>(4)</sup>.

After nearing an all-time high in 2018, the global economy has weakened on trade policy and COVID-19 challenges. Yet, the longer-term trend line has been encouraging, especially if—as expected—trade volumes rebound in 2021 and beyond. In 1990, for example, U.S. manufacturers exported \$329.5 billion in goods. By 2000, that number had more than doubled to \$708.0 billion. In 2018, it was just shy of the all-time high reached in 2014, which was \$1.403 trillion. U.S.-manufactured goods exports have declined from \$1,399.7 trillion in 2018 to \$1,365.3 trillion in 2019 to \$1,171.4 trillion in 2020. Even at that lower level, however, total U.S.-manufactured goods exports in 2020 were 3.55 times the levels seen three decades ago.





***Foreign direct investment in U.S. manufacturing was nearly \$1.9 trillion in 2020*** <sup>(5)</sup>.

Foreign direct investment in U.S. manufacturing has increased over the past decade reaching new record level in 2020. Foreign direct investment has jumped from \$569.3 billion in 2006 to \$1,886.8 billion in 2020. Foreign direct investment is likely to continue growing over the coming years, especially considering the increased competitiveness in the sector globally.

***The cost of federal regulations falls on manufacturers*** <sup>(6)</sup>.

The cost of federal regulations falls disproportionately on manufacturers, particularly those that are smaller. Manufacturers pay \$19,564 per employee on average to comply with federal regulations, or nearly double the \$9,991 per employee costs borne by all firms as a whole. In addition, small manufacturers with fewer than 50 employees spend 2.5 times the amount of large manufacturers. Environmental regulations account for 90% of the difference in compliance costs between manufacturers and the average firm.

***World trade in manufactured goods has expanded strongly over the past couple decades.*** <sup>(7)</sup>.

World trade in manufactured goods has multiplied 2.67 times between 2000 and 2019—from \$4.8 trillion to \$12.75 trillion. The U.S. share of world trade in manufactured goods was 8.1% in 2019.

**Manufacturers perform nearly 58% of all private-sector R&D** <sup>(8)</sup>.

Manufacturers in the United States perform 57.9% of all private-sector R&D, driving more innovation than any other sector. R&D in the manufacturing sector has risen from \$132.5 billion in 2000 to \$295.7 billion in 2020. In the most recent data, pharmaceuticals accounted for 35.7% of all manufacturing R&D, spending \$105.7 billion in 2020. Computer and electronic products (16.0% of manufacturing R&D), semiconductor and other electronic components (13.3%) and motor vehicles and parts (8.0%) also contributed significantly to R&D spending in 2020.

**Manufacturing reported 860,000 job openings in March, a very elevated level** <sup>(9)</sup>.

Manufacturing reported 860,000 job openings in March, in line with the trends of the past 12 months. The number of job postings continued to be well above pre-pandemic levels, as companies ramped up activity and looked for more workers to meet the additional capacity. In addition, total quits in the manufacturing sector increased from 345,000 in February to 360,000 in March.

Source

(1), (3), (5), (8) Bureau of Economic Analysis

(2), U.S. Census Bureau, Statistics of U.S. Businesses

(3), Bureau of Economic Analysis, International Monetary Fund

(4), U.S. Commerce Department

(6), Manufacturers Alliance for Productivity and Innovation (MAPI)

(7), World Trade Organization

(9), Bureau of Labor Statistics

INOXDADI

# INOXDADI; Your Fastener Source



Over the course of more than 45 years of activity, the company Inoxdadi S.r.l. has made its way among European producers and distributors of stainless steel fasteners, enlarging its material range by addition of nickel alloys, brass, titanium, copper and aluminum.

Our company name: Inoxdadi (stainless steel nuts) denotes a strict link to the material stainless steel. Through cold pressing, milling, cutting, rolling, threading and all other production processes, we have learnt to deal with stainless steel in all its

shades, issues and challenges. Achievements and critical situations are still enhancing our knowledge background and help us in developing our technical skills.

Inoxdadi S.r.l. is not only business, but also passion, team working and hereinafter of our family tradition since grandfathers' time. We are proud to be part of the Italian manufacture net, which is worldwide known as a synonym of excellent quality and reliability.



Our experience in manufacturing and supplying fasteners makes Inoxdadi S.r.l. a trustable and performing partner for your business. Quality is our company philosophy and we are continuously looking to get further. Both own production and distribution articles are dimensionally, chemically and mechanically checked in order to guarantee our customers always the best quality.

The test and check equipment is frequently calibrated and new investments are managed, in order to keep the highest control level on all our products. Two movable x-ray spectrometers and a fixed gas spectrometer ensure a deep chemical analysis, to guarantee our customers the best material composition. All kind of certificates can be provided by our quality department. Thanks to our versatile and responsive production capabilities we can supply high-quality products quickly, at a competitive price.

Providing quality products and improving production processes is fundamental for us, that is why we have started an industry 4.0; project that will connect all manufacturing machines and operators in one database, able to arrange the production at the best in terms of quality, product and mechanical features.

INOXDADI S.r.l. always wants to be up to date and is always actively looking for new performing materials and exotic alloys to enlarge our wide material range, which currently includes: **Inconel, Incoloy, Hastelloy, Nimonic, Titanium, Duplex, Monel 400, Super duplex (W. 1.4410 and W. 1.4501) 254SMO... and so on.** These excellent raw materials are characterized by a great strength and extreme resistance to corrosion, caused by alkaline, caustic, acid, oxidizer

or chlorate chemical agents, to elevated or very low temperatures, to marine/sub-marine environment and other awkward applications. These special materials can be applied to various different field, such as: petrochemical processing to marine industry, from aerospace industries to nuclear reactors, from chemical processing to pollution control, from industrial furnaces to gas turbine components, from hydro-carbon processing equipment to heat exchangers, from waste treatment to desalination equipment and so on.

We are able to manufacture special custom fasteners in all grades, in accordance with costumers' own drawings, offering top quality articles and good purchasing conditions. We're always willing to overcome new challenges and to develop our business in the most unexpected fields.



Per ulteriori informazioni:

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**Research, development, and technology are at the core of our projects, aiming to strengthen and preserve our region's traditions and history!**



Inox Meccanica's dream has become reality thanks to a life dedicated to an ongoing pursuit of simplicity, quality and constructive efficiency. That's a fruitful marriage that increases speed in production processes. Here these are the driving forces shaping our industrial automation concept. As global market leaders since 1975, we design and manufacture machinery for meat processing and packaging, focusing on sausage products. Thanks to the experience developed over the years, we jumped

into a diametrically and complementary field; we full immersed into the world dedicated to washing and sanitation of all sorts of production tools and containers, finding the sector cleverly cross-cutting.

1968 is the year of our first patent; a date opening the door to a pride that has persisted for almost fifty years. With the desire to satisfy our customers' most peculiar and diversified requests, we have achieved around 50 commercial partnerships which allow



us today to cover almost 60 countries all over the world. We manufacture more than eighty machines for industrial plants each year, entirely handmade in Italy, in a workplace covering more than ten thousand square meters. However, the beating heart of our headquarter consists of our almost 100 employees divided between production, warehouse, technical/electrical department, administration and sales. Staff to whom we provide an on-going training to ensure a highly competent workforce. So far, our meticulousness has assured the attribute “quality” to Inox Meccanica branded products which, together with a selected dealer network and strategic business partnerships, have ranked the company at the peak of the national and international market. The distinctive quality note associated with the Italianness of our AISI 304 stainless steel products, coupled with our after-sales service, make our global expansion visible, reaching all the way to the Americas and Australia.

The sales procedure is inclusive, on request, of tests, if the customer feels the need to put our machines to a trial with specific needs and their own food recipes. Thanks to an exclusive Pilot Plant we can test industrial production, both for the development of new products and for the optimisation of traditional production processes. However, our testing does not just end with

the packaging procedure. After that, the food can also be evaluated from a microbiological aspect in the new laboratory, and from an organoleptic and taste angle in a modern, purpose-equipped tasting room.

In the last few months we have developed several novelties. Beside an advanced and updated top-of-the-range-PIC 99 BCE, equipped with an automatic loading belt, an automatic tube changing system, and a 1100 mould, we developed a brand new version of this PIC (called PIC 99 DRW) equipped with a product preparation system conceived to fill casings with meat pieces or injected muscles. In fact, it allows the operator the positioning and the assembly of several muscles inside a volume reproducing the forming mould.

The inserted parts’ overall weight can be monitored due to a weight control system featuring a high-precision loading cells and a display viewer. This allows to obtain bagged bars of constant length.

We have to dedicate a parenthesis on a productive innovation brought by a freshly patented smoking system. Warm woody notes are imparted directly inside our Tumbler to both cured and cooked products, whose work cycle normally consists of a



series of technical operations such as osmotic actions, salt distribution, rest or massage in atmosphere or vacuum, and liquid extraction. To achieve this, our R&D department optimized a process which uses a friction generator, such mechanism can generate smoke at low temperature alternated with vacuum phases. Besides the advantage of the considerable time savings, there is a lower weight loss of the product and a milder taste, whereas in respect of the production cycle there is almost zero risk of fire, saving space and plant energy costs.

Inox Meccanica is not just food processing but washing and sanitation too; therefore, we chose to design the best solutions to sanitize all those tools involved in the production process. Such machines have strong transversal applications, just think of the meat production area, the cheese one, the pet-food one, the pharmaceutical one, and the cosmetic one. Plus, our washing solutions focus on maximising energy and water savings by being environmentally sustainable in terms of the amount of resources used in washing, without compromising on pro- and excellent disinfection. The Washing Machine for buggies is just one of the many examples of the how the company materialised its commitment in researching and developing new technologies for washing and sanitation.

Our team upgraded the previous model of the washing

machine for buggies by equipping the washing cabin with two doors; one is used for container entry via an automated system with forks, while the other is placed at the front from which the container is extracted clean and disinfected, again with the aid of automation. In fact, the washing machine is designed to be housed in a wall separating two different areas of the plant, thus eliminating the risk of cross-contamination and the proliferation of bacteria that would compromise the quality of the products together with the safety of the purchasers.



**INOX MECCANICA®**  
TECHNOLOGY FOR THE FOOD PROCESSING INDUSTRY

For more information:

[www.inoxmeccanica.it](http://www.inoxmeccanica.it)

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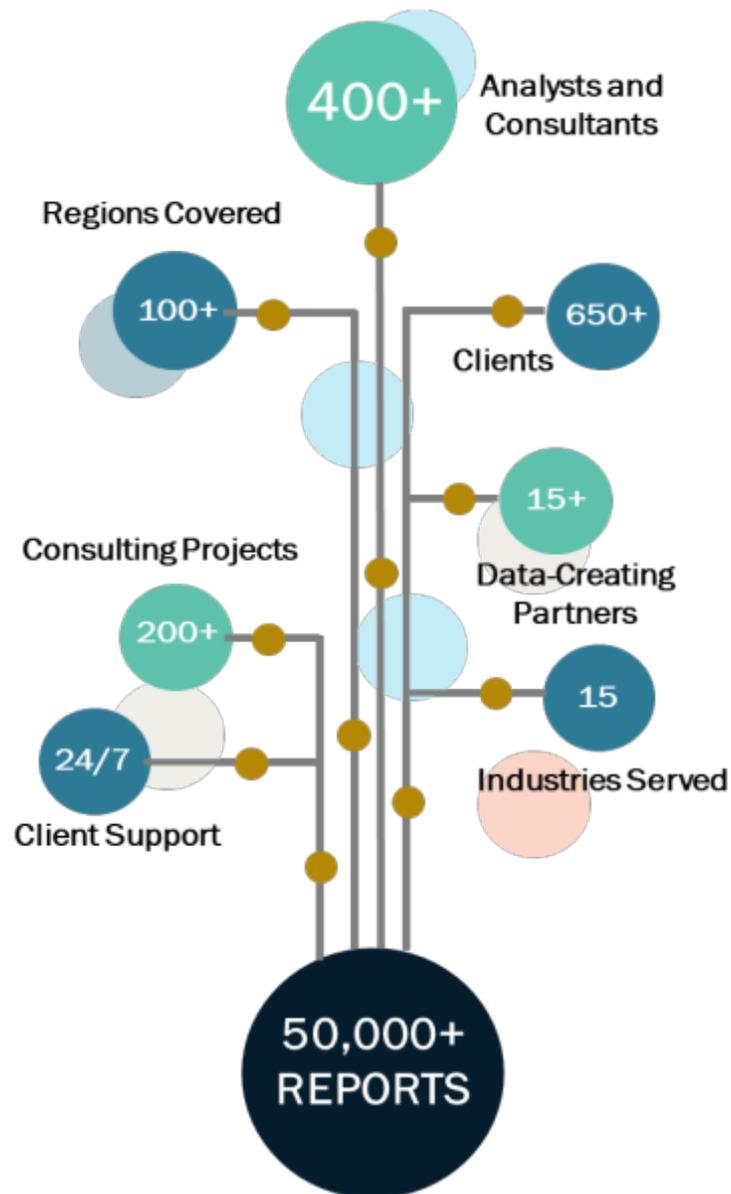
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## Zincatura Bresciana: Italian leader in hot dip galvanizing



### **Protecting products with galvanizing: how does it work?**

Not just an industrial process, but a century-old art that combines human work and high-profile technical know-how to obtain long-lasting results. The hot dip galvanizing treatment is able to protect small and large items from corrosion and wear. This has been Zincatura Bresciana's mission for over 60 years, arranging the sustainable and innovative evolution of this process with flexible services.

Today, the Italian company based in Verolanuova, the

center of the lively industrial district of the province of Brescia, boasts one of the largest galvanizing tanks in Europe that enables the company to galvanize pre-assembled products of any size, guaranteeing an optimal result. Luigi and Dayana Telefri, respectively President and CEO of Zincatura Bresciana, lead the growth of this reality with a careful eye on market changes.

### **Lead-free treatment and sustainability**

The heart of the process takes place through the immersion of the product in the molten zinc tank



with a degree of purity SHG 99.995, higher than the minimum limit imposed by international regulations. The 2.70 meter wide, 3.40 deep, 14.20 long tank adds flexibility, as it allows even the most deformation-sensitive products to be galvanized in the best position.

All this, according to green processes: the company constantly collaborates with universities and experts to implement the chemical composition of the zinc bath, which is totally lead-free. Once the actual galvanizing has been completed, following the customer's request, it is also possible to proceed with passivation, i.e. the coating of the product with a transparent and paintable micro-film that keeps it shiny over time and inhibits the formation of white oxidations.

Furthermore, Zincatura Bresciana offers all-round logistics and assistance. The main services include the indoor storage of galvanized material, the possibility of further interventions (for example grinding, sandblasting, painting, cleaning, etc.) and the packing list service. Lastly, always at the customer's request, it is possible to carry out the re-galvanizing operation on previously galvanized items, after being de-galvanized.

"Another fundamental issue for us is sustainability, which involves many business processes - explains the

President of the company, Luigi Telefri. For example, most of the processing waste is recovered and not disposed of, while the heat of the furnace is also recovered by air / water heat exchangers, which then allow the process liquids to be heated. A few weeks ago we also installed a state of the art filter bag with inverter, which is used for the removal of dust and the cutting of emissions into the atmosphere".



ZINCATURA  
BRESCIANA

For more information;  
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[info@zincaturabresciana.it](mailto:info@zincaturabresciana.it)

# D-Ktc Fluid Control, the Experts in Mechanical Fluid Separation



D-KTC Fluid Control, manufacturer and marketer of a full range of steam and process fluid control products for the oil and gas, petrochemical and chemical, and power generation industries.

With more than two decades of experience in the production of filters, visual flow indicators, sample coolers, discharge heads, steam coolers and flame distributors, D-KTC Fluid Control represents one of

the leading companies in its target industry, capable of responding to the most complex and multifaceted needs of the petrochemical, chemical, energy and nuclear markets. Thanks to excellent production and through the adoption of cutting-edge production techniques, together with Armstrong International or Chero Group, for years, the company has set itself the goal of standing out in the industry and being an important model in Europe and in the world.



Quality, precision, safety and the ability to control production and working methods are the pillars of a company that, while totally in line with the needs of the present, also manages to concretely adhere to one of the important principles of this century: respect for the environment.

With an active market in Europe and the Middle East, the company prides itself on marketing refined products that are always up-to-date with the latest production standards. With ANSI, API, EN, CODAP, and BS 5500 certifications, D-KTC Fluid Control stands on the podium for quality assurance and excellence. With D-KTC Fluid Control nothing is left to chance: a specific internal department in charge of verifying and controlling quality standards during the entire production process cycle.

We met with Riccardo Bondani, sales office manager for D-KTC Fluid Control, and asked him a few questions. Interesting that he mentioned the focus on the environment, a topic that, while visiting the company website, comes up several times. We also wanted to know what the next steps are for a company that has already established itself in the present and is working towards an increasingly bright future.

**Respect for the environment is a topic close to your heart, how do you deal with it?**

Throughout our production cycle, respect for the environment is a factor we hold in high regard.

We deal with complex production costs and processes

to ensure compliance with current environmental regulations.

**You adopt cutting-edge production techniques, can you describe one product that has undergone changes in your production, compared to previous years?**

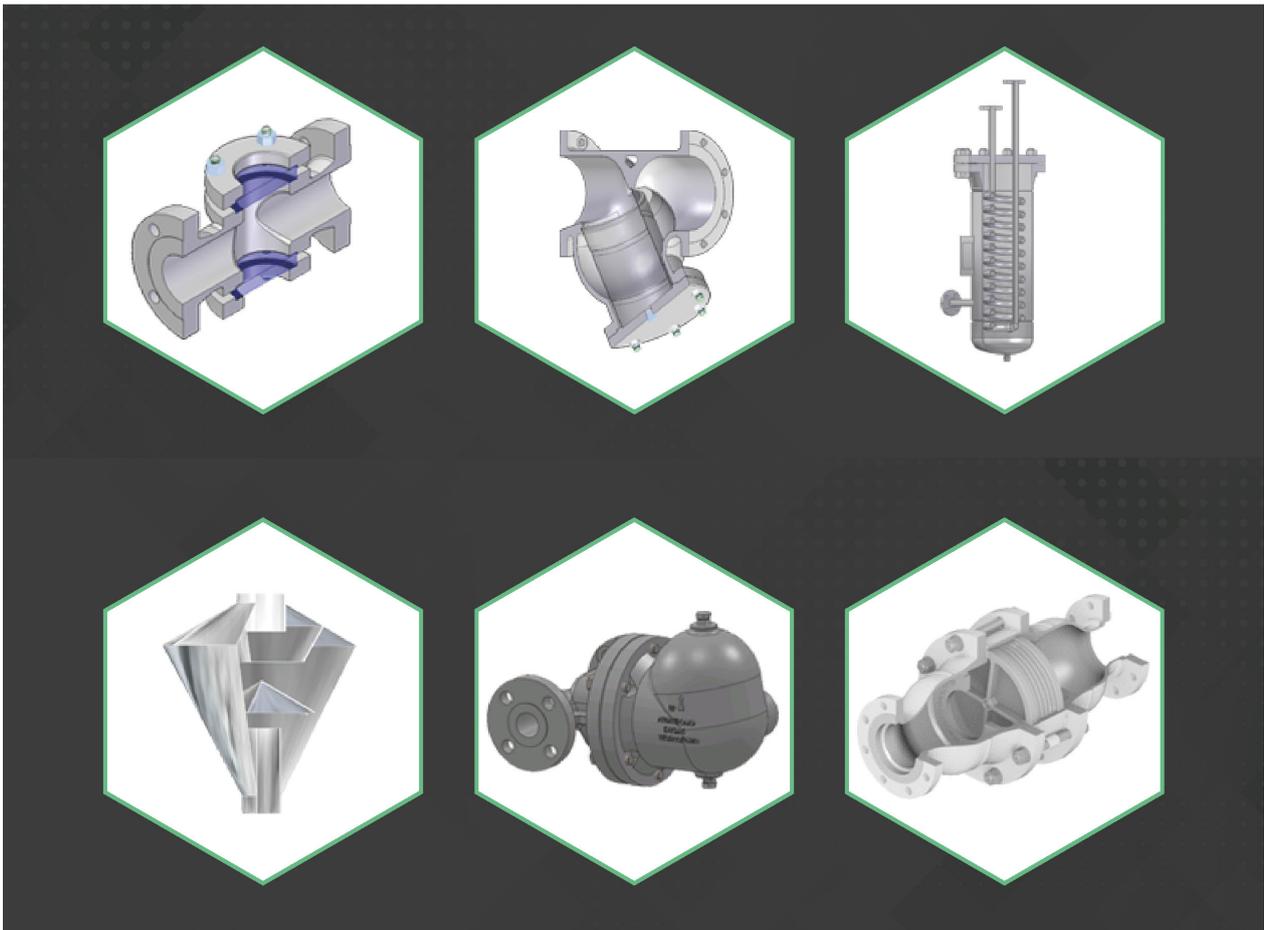
The production of most of the items we deal with has been firmly established for decades, at the moment it is already highly optimized.

There are interesting developments in the area of sampling panels, where there is an opportunity for more efficient and innovative solutions at the moment. Our approach is to propose solid yet affordable solutions, innovating some aspects whenever possible.

**What are the goals for the future and your next steps?**

Our main goal for the future is to consolidate our position in the market by adding a new element. We are currently working a lot on projects involving sampling panels, a very interesting item that we are able to produce.

We are pleased to have collaborated to develop hydrogen service sampling panels, with Russian certifications, electrically traced. A very good business card that we hope will make us known in this area as well. The next steps are just that, to expand a whole range of specializations that can ensure that we can break into new areas.



**Products: quality, excellence and performance**

**VISUAL FLOW INDICATORS**

D-KTC's signature flow indicators ensure efficient sealing and easy maintenance; they are also available in high pressure/temperature combinations.

**FILTERS**

The company offers a wide selection of sizes and materials to meet major filtering needs. All filters are manufactured to the highest standards of quality and are certified

**SAMPLE COOLERS**

The largest possible selection of sample coolers to meet all sampling needs for steam, water, hydrocarbons, and others.

**EXHAUST HEADS**

Exhaust heads are specially designed to safely vent steam into the atmosphere for the purpose of meeting all customer requirements, including noise reduction.

**STEAM PRODUCTS**

The range of steam products is linked to Armstrong International, as D-KTC is its official agent for the EPC market, so the selection of hot water, steam and air solutions is the widest in the world.

**FLAME ARRESTERS**

These are passive devices that prevent the propagation of flames from the exposed side of a pipe to the protected side through the use of a flame cell element of the crimped metal strip type.



*D-KTC FLUID CONTROL S.r.l.*

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POMPE CUCCHI

# Products for Pumping and Metering Non Lubricating Fluids



Pompe Cucchi designs, manufactures and sells transfer gear pumps, metering gear pumps, piston and diaphragm metering pumps. It has been present for over 60 years in the metering and fluid transfer sector and it operates in accordance with the **ISO 9001:2015** Quality System. Our production complies with the **2006/42/CE**, **2014/30/UE**, **2014/35/UE** directives and with the **UNI EN ISO 12100**, **UNI EN ISO 13732-1**, **UNI EN 809**, **UNI EN ISO 14847** standards, **TRCU010 (EAC)**, **TRCU012**.

The corporate mission is to design and manufacture metering and transfer pumps following criteria of product engineering that meet out customers' needs: **quality, reliability in time, simple inspection, maintenance and cleaning and also to offer a competent technical assistance** based on a team of experts in order to find solutions for multiple sectors through the use of **innovative materials**.

Engineering, experience, competence, passion and commitment: this is the formula that Pompe Cucchi



follows in its everyday work to offer you the best.

Pompe Cucchi offers to its customers:

**-60 years of experience in the sector.** Born as a manufacturing company for standard gear pumps for lubricating and viscous liquid products, in time, through the realization of innovative projects, it now offers products that allow pumping and metering non-lubricating fluids with extremely low viscosity at high pressures.

**-A qualified staff.** Pompe Cucchi offers its customers a competent technical assistance based on a skilled team of experts that includes engineers with 40 years of experience in the sector and younger engineers who contribute with innovative ideas.

This allows Pompe Cucchi to find the best application solution of the products in several industrial sectors.

**-Quality and innovation.** Design is assigned to a staff of engineers equipped with **last-generation CAD stations**, continuously updated on the program's evolution. Production is assigned to a **numerical control center** with 18 pallets in line, robotized warehouse with 400 tools and management software for unmanned machining.

**Testing performed on all** assigned to a test stand where all parameters of the pump and motor can be displayed. The training of commercial technicians working for our distributors or customers who wish to

ask for this service is assigned to a **3D CONFIGURATOR visible in stereoscopy**, with passive glasses that allows viewing the entire and exploded pump and the assembly and disassembly of the whole family of pumps we manufacture. This configurator also shows applicative modules related to vacitation phenomena, complete cleaning of the pump and exaples of layouts of a metering system. The 3D configurator in the non-stereoscopic version can also be seen on the corporate website.

Il pumps can be made into metering pumps with the application of variable-speed motors, inverters or servo controls, both of an electric and a pneumatic type.

Examples of sectors in which our pumps are used:

**THERMO-HYDRAULIC**

Petroleum, diesel fuel, emulsions, demineralized water, oils, diathermic oils, gasoline, liquid gas, water in the circuits of solar panels.

**FOOD INDUSTRY**

Yogurt, melted butter, melted cheese, margarine, flavorings, fruit juices, chocolate, olive oil, fats, jam.

**AGRICULTURAL SECTOR**

Liquid molasses, additives for irrigation, water nebulization for small irrigation systems and disinfection systems.

**PAINT INDUSTRY**

Water-based paints, paints plus solvents, solvents, inks.



#### **NAVAL SECTOR**

Fuels, foaming agents, oils for the construction of bronze

#### **MACHINE TOOL INDUSTRY**

Cutting oils, emulsions.

#### **PHARMACEUTICAL SECTOR**

Liquid pastes and creams, syrups, fuelling for small autoclaves for sterilization.

#### **COSMETIC SECTOR**

Liquid creams, essences, aromas, shampoos, liquid soaps, toothpaste, shower gels, lotions.

#### **INDUSTRIAL REFRIGERATOR SECTORS**

Oils plus traces of ammonia, oils plus freon, freon.

#### **CONCRETE SECTOR**

Pumping/metering of concrete additives.

#### **WOOD MACHINERY INDUSTRY**

Glues, adhesives, dyes.

#### **PAPER INDUSTRY**

Glues, adhesives, dyes, cellulose.

#### **FIRE ALARM SYSTEMS SECTOR**

High pressure thrust of foaming agent.

#### **INDUSTRIAL FLOOR WASHING MACHINERY INDUSTRY**

Nebulization of water or saponified water.

#### **PAINT FACTORY MACHINERY INDUSTRY**

Colors, paints, pigments.

#### **DOUBLE GLASS ASSEMBLY MACHINERY SECTOR**

Silicones, rubbers, additives.

#### **ROAD MAINTENANCE MACHINERY SECTOR**

Bitumen emulsion, bitumen, tar emulsions.

#### **PLANT SECTOR**

All of the liquids mentioned above.

#### **CHEMICAL INDUSTRY**

Acetates, acids, adhesives, additives, alcohols, starches, ammonia, waxes, glues, detergents, hexanes, freon, fats, isocyanates, liquid insulators, latex, paraffins, polyol, resins, soaps, shampoos, acid/basic solutions, liquid silicone, solvents.

A worldwide commercial network. Marketing of production is assigned to a network of agents and a series of distributors located all over the world.



**POMPE CUCCHI**

For more information;  
[www.pompecucchi.it](http://www.pompecucchi.it)  
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# Automation Using AGVs Reduces Industrial Walk Time

By Rob Britt

Driven by dramatic eCommerce upticks during COVID, there is no sign that automation in warehouses and manufacturing operations will slow anytime soon. Compounded by the Great Resignation, there are not enough hands to fulfill all the online orders. Consumer expectations are higher than ever, with same day delivery a requirement, and a four hour window preferred.

Reducing the walk time from dock to production (A → B) and production (assembly or kitting) back to the dock (B → A) for ongoing logistics transporting is a quantifiable metric for generating automation cost-justification.



*Workflow mapping illustrates walk time reduction*

The amount of labor costs embedded in walk time is extraordinary especially for manufacturing and warehouse distribution centers operating three shifts a day. The main problem is that pickers can spend more than 70% of picking time simply walking around racks and rooms while looking for items. Reducing walking time by optimizing pickers' routes can be accomplished by increasing pick speed and multiple picking orders. Automation minimizes the time required to pick items, thereby reducing walk time, and collecting items in optimal route.

Since there is often a highly repetitive nature of this back and forth facility product movement, boredom frequently sets in, and employee engagement evaporates. It is far better for raw materials to be transported to various work cells. Many managers have found success with integrating cellular manufacturing work cells to an operation because it brings equipment, people, and processes to a single location achieving higher productivity and throughput.

## Simplifying Workflows

Work should move freely from one workstation to the next, both within the cell and from cell to cell. Cells should be stationed in a linear order for a logical and consecutive flow and operators should be able to move quickly and easily between machines when needed. This can happen in a fork truck free environment using industrial carts tugged or towed by comparatively inexpensive AGVs (automated guided vehicles).



Of late there is a trend to pack on artificial intelligence, machine learning, and other data collection technology on these AGVs. While “cool” and sexy, the truth is much of the functionality required is mundane and highly repetitive. A quick time study will measure the non-productive time of a manufacturing or warehouse laborer performing non-value added functions.

Industrial efficiencies, particularly those driven by an eCommerce model must be quantified by two constant metrics, zero defect picking and rate of accurate product turns.



### *Author Profile:*

*Rob Britt brings more than 20 years of sales and management experience to the Sales Engineer position at Kivnon USA. His diverse background includes technical sales and involvement in large capital projects involving AGVs. Britt brings a dedication and enthusiasm to the company that will ensure customer satisfaction and increased market share for Kivnon in the U.S. Britt can be reached on LinkedIn.*

# Big Data, Data Mining, and AI Arrive at the Warehouse

By Carsten Funke

Finding, training, keeping warehouse workers is described by human resource managers as ranging from difficult to impossible. The average warehouse worker turnover rate averages 100% every six months according to TeamBuilding.com.

The irony is that 94% of those employees report they would have stayed longer if employers had helped them learn. It will not stop the hemorrhaging of warehouse workers, since one in four left to work at a job from home during COVID and wish to continue at-home-work. Professional development is an increasingly important factor in a career choice. Using Big Data, Data Mining, AI, and Digital Twins warehouse managers can demonstrate to employees a commitment to inspire engagement, safety, and ergonomic well-being.

With more than half of all warehouse resignations avoidable, employers fail to ask employees about their future with the company. When providing process improvement data, such as productivity improvements and accurate picking with Google glasses, employees are able to quantify their achievements, improvements, and satisfaction levels. Until now, minus the data, the trend was to scold employees for mis-picks in a warehouse or picking too slowly. Fear of no-shows and new employees ghosting employers is a real concern. Data drives a sense of satisfaction and Google glasses (unlike pick-to-light) allows for data collection and irrefutable analysis.



It is a big shift into VaaS (vision as a service) and AI for warehouse distribution. This model ensures warehouse operations are paying for precisely the needed capacity, functionality for a specific time frame. In the VaaS agreement it is defined in what way extra needs or capacity are handled operationally and commercially. In warehousing one need only think of seasonality concerns rather than capitalizing unneeded equipment when work fulfillment slows down.

Delivering composable smart manufacturing applications enables warehouse managers to scale deployments flexibly. Only with integrated warehouse systems' capabilities, enterprise-level governance, and AI-based process optimization are these data now accessible. These data allow distribution centers to achieve Industry 4.0 smart operational goals of data-driven process optimization at enterprise scale. The combination of the connected worker and asset performance management applications only enhance established artificial intelligence capabilities.

Google glasses move beyond operational accuracy to a cloud-based IoT and AI platform that supports high-speed data utilization generating predictive and prescriptive recommendations and report increased productivity and throughput.

Warehouse performance applications range from predictive maintenance and process health and optimization, extending the length of warehouse employee tenure.

AI-models collecting data via Google glasses are running system-level prognostics that collect thousands of data points which translate into multivariate models to capture deviations early eliminating downtime and poor picking performance.

The top reasons why AI has not been utilized were due to uninformed warehouse staff and fear of technology implementation. Now those limitations have been readily addressed because lack of good data is simply unacceptable.

AI tools that can be easily integrated into warehouses and distribution centers deliver actionable insights. It is no longer possible to avoid these data. No longer can buttons red and green be sufficient to determine the efficacy and best-practices of operations directly impacted by an ever-changing supply chain, global variability, and fluctuating consumer demand. One may no longer be naïve and maintain the status quo. Data driven is a survival mechanism as warehouses clammer for space, workers, and availability of the right product at the right time. The years of lean manufacturing have migrated to every warehouse around the world.



*Author Profile:*

*Carsten Funke is the CEO of Picavi USA. He is a Global expert in the field of logistics processes using AR (augmented reality) concepts.*

**INDUSTRIAL  
TECHNOLOGY**  
*editorial office*

# AlisQI; One platform for all Quality Management needs



**With the switch to a cloud-based eQMS, Berry Global – a world leader in plastics, packaging, and non-woven specialty materials – has instant access to data and better controls the quality of their products.**

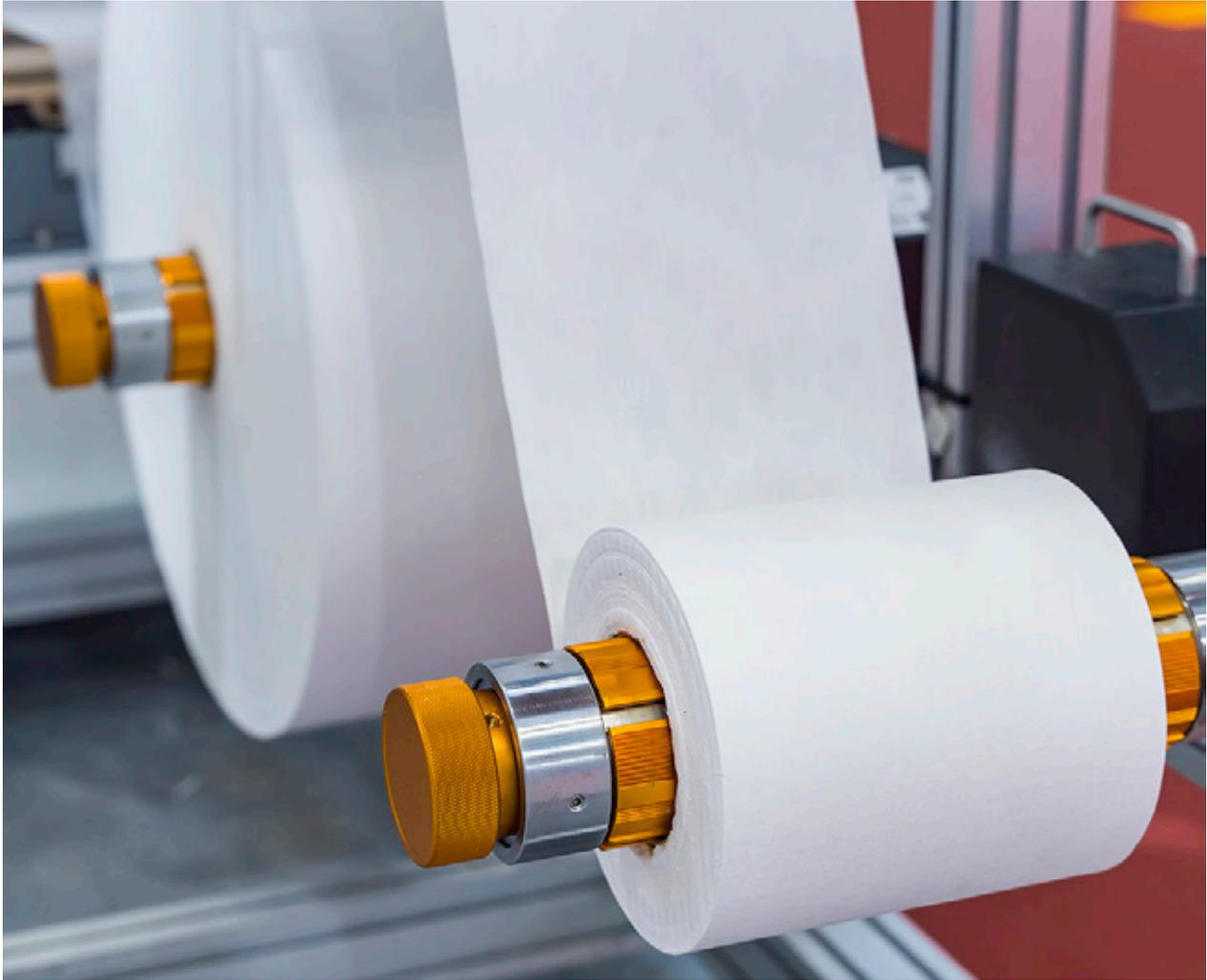
Berry Global, a Fortune 500 manufacturer, decided to invest in modern Quality Management and to automate its quality processes. Before the change to digital, they were challenged with fragmented information, data collected partly on paper, and a time-consuming, frustrating process to produce graphs and any statistics. Digitization was needed to instantly retrieve and contextualize data, and to gain the insights that would boost their Quality Management.

## **A truly transformative software**

After switching from one ERP system to another, the team at Berry Global chose the AlisQI Quality Management software. A 1-month pilot gave them the ability to see how they can overcome the limitations of existing systems with an eQMS that is extremely flexible and customizable.

“We had a brief look at a few other systems but did not take it any further. When we piloted AlisQI we saw at once what it could do and we knew at once: this is the best.”, says the Senior Laboratory Technician.

“Together with AlisQI, we designed the analysis scheme for one of our production lines - the tests we needed to include and against which specifications



we would benchmark the measurements. The software is highly intuitive: it really takes you by the hand. You watch how it's done once, and you're good to go ", she explains. Because the system is no-code and extremely user-friendly, the team at Berry Global could implement the other lines themselves.

#### **Involving the factory floor**

With AlisQI, data is accessible in one central place and onboarding new users is a quick process. "We had real-time data before, but it was highly fragmented," says Berry's Process Engineer. "With AlisQI, it is accessible and transparent, also for our operators who finally have a statistical tool to interpret quality data. How is that data distributed? How reliable and accurate is it? You can show your operators and process engineers trends, which gives them a lot more insight into their own data. It's great."

**"I am learning. I am learning from my own processes." Operator Berry Global**

For process engineers and operators, AlisQI has been a real eye-opener. The new culture of insight and growth is boosting quality in every part of the production process - and is giving insights they had

not anticipated. "It's much easier to observe the differences between production lines," the Process Engineer explains. "Some give us more problems than others, and always the same kind of problems. We now see that these problems are not really caused by the process itself but by the way we measure it. We have to resolve this because these are crucial quality parameters."

# AlisQI

For more information;  
AlisQI Quality Management Software  
[www.alisqi.com](http://www.alisqi.com)  
[sales@alisqi.com](mailto:sales@alisqi.com)

## Valtorta AND Battaggion Group: Professionals in the mixing field



Valtorta Battaggion Group S.r.l. started its business in 1926 under the name of Valtorta Costruzioni Meccaniche. After having experienced different fields, Valtorta focused its business on the development and the manufacturing of mixing equipment, as well as process plants for the chemical industry. The continuous development of the plastic materials led Valtorta to a deeper specialization in all those plastic related processes, with the consequent expansion of its own production range. Starting out from the first Horizontal Blenders, the company quickly moved into high-speed turbo-mixers for PVC, making of technical development and construction quality its motto and growing as a company capable of satisfying and anticipating the market technological needs.

Sturdiness, high production efficiency, easiness in operating and flexibility in meeting each Customer's needs, have always been the peculiar characteristics of our work philosophy.

With the aim of a technical, commercial and production range increase, in 2010 Valtorta joined the Battaggion Group, a well-known and established organization which has been active in the mixing world for more than 100 years. Main focus of its machinery is the processing of high to very high viscosity products. Within the Battaggion Group, Valtorta has then become the specialized division in the production of machinery for powders and granules, as well as for all liquid and pasty products, characterized by low to medium viscosity. The combination of the two



companies has therefore boosted the already wide product range of the Battaglion Group, granting a deeper market penetration in the mixing technology. Valtorta is nowadays in the position to provide turbo-mixing plants for PVC production, single coolers, feeding and dosing lines (both mechanical and pneumatic type ), dispersers and vertical mixers for solutions (plastisol, PU, varnishes, paints, etc.), horizontal mixers (single or two-stages type both cooled and heated), homogenizing and filtration units, conical mixers for powder, high speed horizontal mixers, as well as special plants.

During the last decades the company built a great experience not only in the manufacturing of stand-alone machines but in their integration into complete production plants too. More and more the same customers which require Valtorta machines for mixing processes, also require that these same machines become one of the many sections which compose their production line. This means that most of the Valtorta machines need to be interfaced with upstream feeding systems, as well as with downstream systems for the movement of the mixed product. It is in this stage that all the experiences and the synergies allowed by the different companies which compose the Battaglion Group can make the difference. The deep knowledge of the materials to be processed, their initial and final

properties as well as the customers' final expected results are essential for us to grant complete systems which must be able to integrate today's state of the art of the mixing technology. It is with this spirit that during the whole course of management of a complete plant project, an open and professional exchange of opinions with our customers becomes the basis for the Valtorta's and the Battaglion Group's technical staff to head towards a feasibility study first and towards the design, the construction, the installation and the successful start-up.

#### **VALTORTA'S BIGGEST PROJECTS**

The ME mixers are the Valtorta horizontal slow speed mixers, to be used mainly for those processes which require a not aggressive slow mixing action: they can provide a high quality of the compound, even when the product to be processed is fragile or it must keep unchanged specific physical characteristics. Main applications are the mixing of TPR, PVC, powders or dry granules but, if necessary, also powders and low viscosity pastes, added with liquid components. In 2002 Valtorta manufactured the biggest ME ever assembled in the facility: the 30.000 liters bowl horizontal slow speed mixer. The project was challenging, but Valtorta demonstrated to be capable of accomplishing the final task, as always, which is



to supply high performance plants. At the time the customer purchased two of these machines at once. The two ME 30.000 were designed to homogenise granules or powders in the petrochemical industry. Each one of the two machines had a thermally conditioned, 30.000 liters bowl made of stainless steel and the action of a continuous ribbon blender driven by a 110 kW electrical motor granted high mixing performances. The discharge of the mixed product was done by a pneumatically driven shutter valve installed on the bottom of the bowl. The huge dimensions of these machines did not stop Valtorta from jumping into this project.

The TSOR are the most efficient combination of machines for the PVC mixing and preparation for the extrusion line. The output rhythm is the highest of all these various systems, this choice demands that the manufacturing materials and equipment should be the best and most suitable to the customers' needs. In 2020 Valtorta manufactured a 2.000 liters TS with 6.000 liters OR: the biggest TSOR ever assembled by the company. Made by stainless steel AISI 304 and driven by 450 and 75 Kw motors, this plant was purchased by the customer for rigid PVC. The 4 impellers installed inside the Turbomixer bowl and the Cooler Horizontal high speed mixing

shaft with paddles profiled blades, ensure the best homogenization of the product. Valtorta is always ready for new challenging and exciting projects. Be the next one!



For more information;  
[www.valtortamixer.com](http://www.valtortamixer.com)  
[www.battaggion.com](http://www.battaggion.com)

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# Manufacturer of Industrial Fasteners and Engineering Components



Rajal industries is providing multi-discipline engineering services with remarkable result. We lead in advance technology of producing fasteners, screws and bolts and meeting the high requirements in the market. Our better performance in services and higher tensile strength in our products are the result of our work-oriented approach.

Rajal Industries is leading in the making of SS products. We stand as a precious manufacturer, supplier, trader and service provider of multiple industries for fasteners, gratify in providing a wide range of High Tensile Studs, Bolts, Nuts, Washers. These products are extensively appreciated for their accurate dimensions and sturdiness. The best quality and our friendly approach make us well-known in the market. All products are supplied to the customers

within the recommended time.

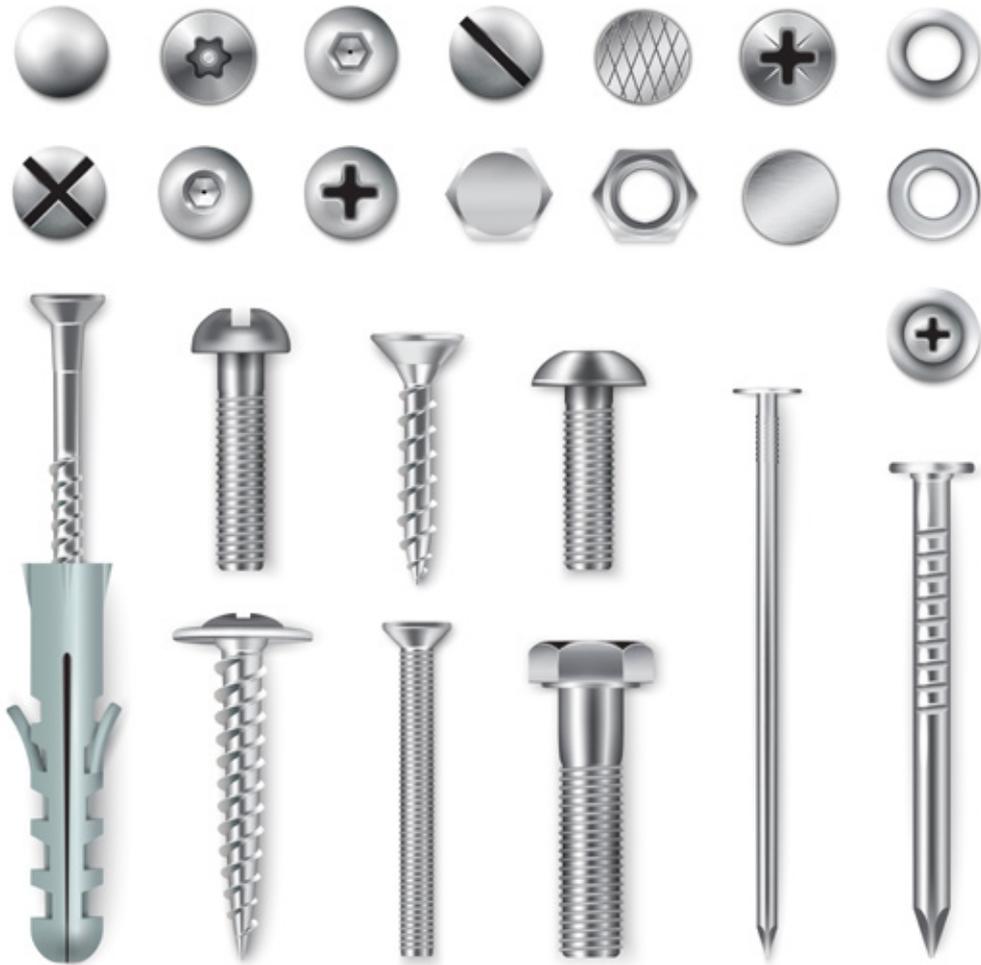
Our team of highly experienced engineers and trained CAD draftsman offering various technical and drafting services at low costs. We work on an international project where we have good abilities of outsourcing technology and business transformation.

#### **Fasteners**

Fasteners are the most useful device which append two or more objects and the non-permanent joints belong to the mechanical industry. We are in the topmost list for offering eminent in quality with economic prices.

#### **Stainless steel screws**

We are the most conspicuous manufacturer of stainless-steel screws and offer a variety of SS screws



that are in high demand in the business. The Types of SS Screws are:

**Stainless steel Bolts**

Threaded fasteners that have male thread and open the other side but not a screw. Stainless steel bolts have been manufactured with the latest technology and the high quality of raw materials.

**Stainless steel nuts**

Nuts are part of fasteners that have a threaded hole which used to joint bolt to fasten multiple parts and held it collectively. We promise for best quality to provide.

**Stainless steel studs**

SS stud which also known as a threaded rod that is long and threaded on both ends and designed to be in dimensional continuous object. We present a wide range of superior quality stainless steel studs.

**Automotive Components**

Automotive industry is one of the fastest-growing industry and also have a large share in exports. This

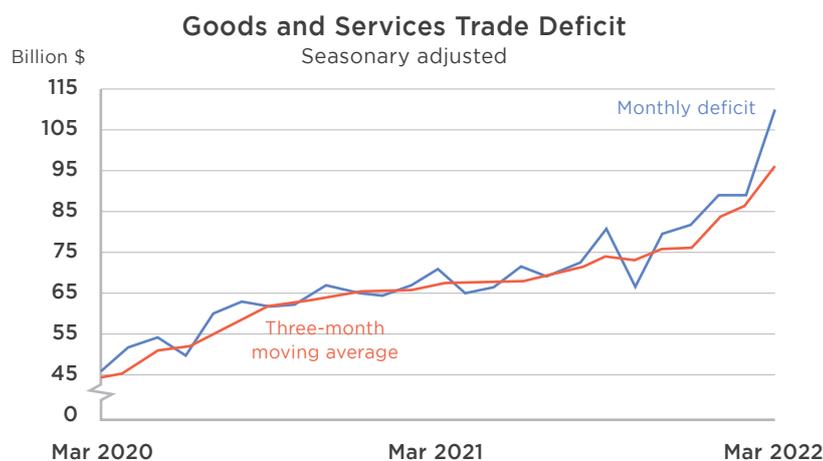
industry includes a big number of products and components which are required in automobiles. Automotive components and the sub-components are majorly used in the productions of heavy-duty vehicle



For more information;  
[www.rajalindustries.business.site](http://www.rajalindustries.business.site)  
[rajalfast@gmail.com](mailto:rajalfast@gmail.com)

# U.S. International Trade in Goods and Services, March 2022

*Bureau of Economic Analysis, May 2022 ,4\_ The U.S. Census Bureau and the U.S. Bureau of Economic Analysis announced today that the goods and services deficit was 109.8\$ billion in March, up 20.0\$ billion from 89.8\$ billion in February, revised.*



U.S. Bureau of Economic Analysis  
U.S. Census Bureau

U.S. International Trade in Goods and Services  
U.S. Bureau of Economic Analysis  
May 4, 2022

## Exports, Imports, and Balance (exhibit 1)

March exports were 241.7\$ billion, 12.9\$ billion more than February exports. March imports were 351.5\$ billion, 32.9\$ billion more than February imports.

The March increase in the goods and services deficit reflected an increase in the goods deficit of 20.4\$ billion to 128.1\$ billion and an increase in the services surplus of 0.4\$ billion to 18.3\$ billion.

Year-to-date, the goods and services deficit increased 84.8\$ billion, or 41.5 percent, from the same period in 2021. Exports increased 104.5\$ billion or 17.7 percent. Imports increased 189.3\$ billion or 23.8 percent.

## Three-Month Moving Averages (exhibit 2)

The average goods and services deficit increased 9.3\$ billion to 96.3\$ billion for the three months ending in March.

- Average exports increased 4.5\$ billion to 231.7\$ billion in March.
- Average imports increased 13.7\$ billion to 328.0\$ billion in March.

Year-over-year, the average goods and services deficit increased 28.3\$ billion from the three months ending in March 2021.

- Average exports increased 34.8\$ billion from March 2021.
- Average imports increased 63.1\$ billion from March 2021.

## Exports (exhibits 6 ,3, and 7)

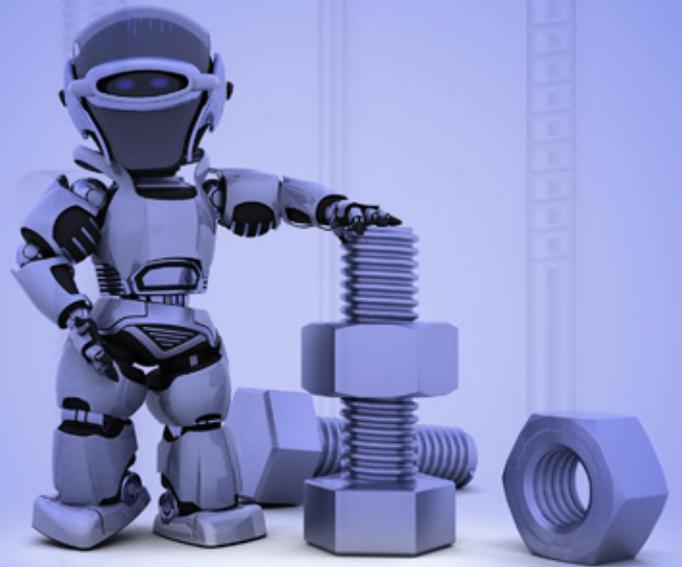
Exports of goods increased 11.6\$ billion to 170.7\$ billion in March.

Exports of goods on a Census basis increased 11.0\$ billion.

- Industrial supplies and materials increased 7.4\$ billion.
  - Other petroleum products increased 2.0\$ billion.
  - Crude oil increased 1.7\$ billion.
  - Fuel oil increased 1.3\$ billion.
  - Natural gas liquids increased 1.1\$ billion.
- Automotive vehicles, parts, and engines increased 1.0\$ billion.
  - Passenger cars increased 0.5\$ billion.

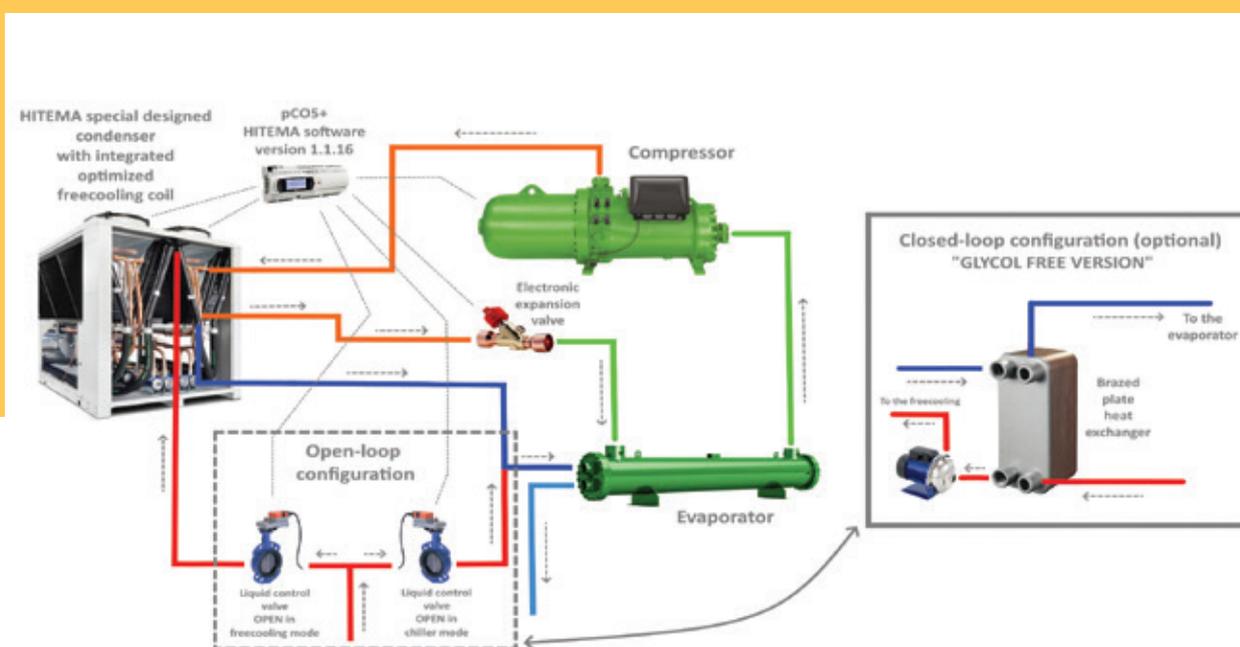
continue  
to page 134

# Manufacturer of Industrial Fasteners & Engineering Components



- » Exporter of Automotive Parts , Engineering Components
- » CAD Designing Service Provider With Drafting , Modelling
- » Product Sourcing & New Product Development
- » New Product Design & Development with Prototype Testing and Approval
- » CNC Machined Components

# HITEMA®, Advanced Freecooling Solutions For HVAC Industry



A simplified free cooling scheme

Hitema® International is a specialist manufacturer of customized solutions for process cooling and industrial comfort applications. In this article we would like to explain the advantages of using our Chillers with Freecooling technology.

### FREECOOLING TECHNOLOGY

Process applications for cooling systems that have constant production loads and generate high process fluid temperatures (water 20/15 °C or higher) are particularly good candidates to take advantage of low ambient temperatures and therefore the functionality of Freecooling. Low ambient temperatures can be used as a “free” energy source, replacing the electricity

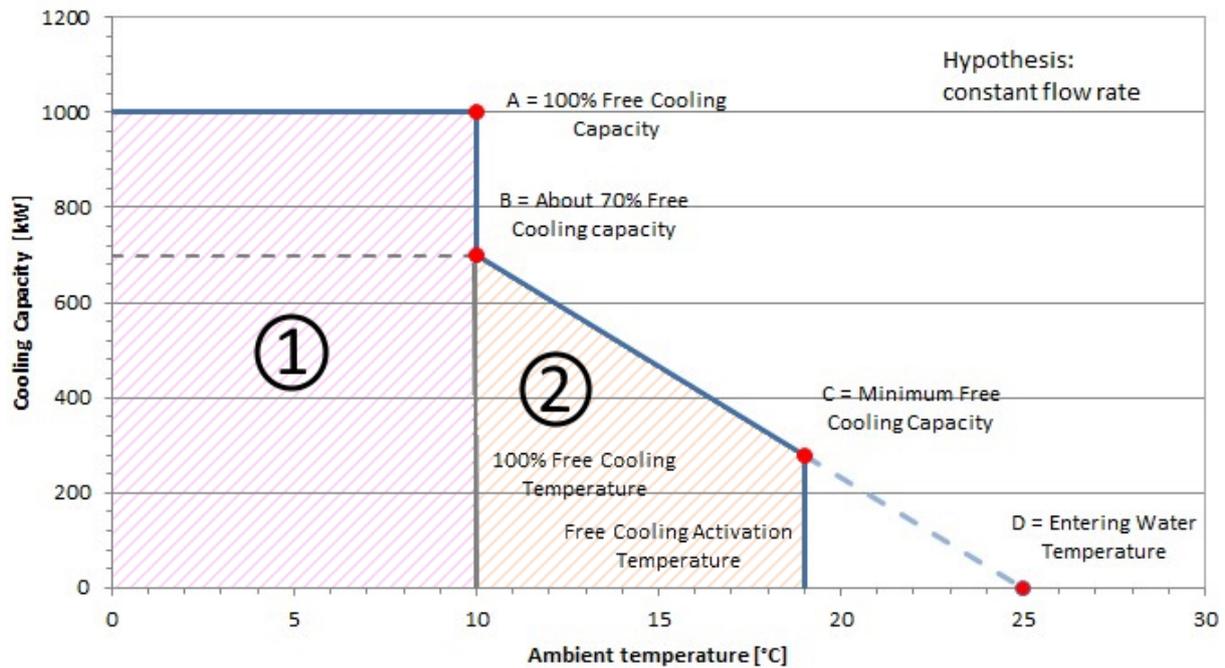
needed to run the compressors, in what is known as a Freecooling or Freecooling system.

### FREE COOLING METHODS:

Freecooling technology can be:

**-TOTAL:** The external air temperature allows to satisfy the entire refrigeration request. All the cooling capacity is therefore guaranteed by the only external air that passes through the Freecooling coils while the compressors remain off. In this case, maximum energy savings are achieved.

**-PARTIAL:** When the external air temperature is lower than that of the return water, but not enough to



obtain total *Freecooling*, there is a partial one. A part of the cooling capacity is supplied by the external air while the remainder by the compressors, thanks to the optimized management of resources, hybrid refrigeration is therefore achieved.

The *Freecooling* system developed by Hitema® International is in partial mode. This system allows to use the most of the low temperatures of the winter months and also offers significant advantages in terms of energy savings even in transition seasons such as autumn or spring. Integrated in a chiller system, the system automatically decides, based on the ambient temperature and the operating logic, whether to operate as a chiller or as a partial or total freecooler.

The *Freecooling* of the water can be carried out in all seasons of the year, both with the refrigeration compressors “ON” (Partial *Freecooling*) and with the compressors “OFF” (Total *Freecooling*).

*Freecooling* in partial mode is made possible by the separation of the chiller and *Freecooling* systems, consequently the **chiller and the *Freecooling* will have their respective fans.**

In partial *Freecooling* mode, the system starts cooling when the ambient temperature is 3.6 / 4 °F below the fluid inlet temperature. The water is conveyed through a three-way valve first to the freecooler and then goes to the Chiller. The controller automatically reduces the work of the compressors by limiting the cooling capacity by controlling the 3-way valve (or two gate valve) (which controls where the incoming water goes).

During the transitional months of autumn and spring, *Freecooling* acts as a pre-cooler and significantly

reduces the power absorbed by the compressors and consequently the energy consumption of the chiller. In the case that the ambient temperature drops to extremely low levels, the 3-way valve (or the two gate valve in this case) modulates and bypasses part of the flow, mixing it with the fluid leaving the coil, always maintaining perfect control of the fluid temperature at the outlet.

#### CONCLUSION:

The use of *Freecooling* technology allows users to achieve a **reliable payback** time compared to traditional water Chillers.

Depending on the weather conditions and the fluid temperatures, the return on investment is almost always close to the year.

An innovation in *Freecooling* has been developed with the introduction of *Freecooling* in partial mode, allowing for a significantly wider range of application temperatures and significant energy savings.



For more information:  
[www.hitema.com](http://www.hitema.com)  
[customer.care@hitema.it](mailto:customer.care@hitema.it)

Net balance of payments adjustments increased \$0.6 billion.

- Exports of services increased \$1.2 billion to \$71.1 billion in March.
- Transport increased \$0.5 billion.
- Travel increased \$0.4 billion.
- Financial services increased \$0.2 billion.
- Other business services increased \$0.1 billion.

### **Imports (exhibits 6 ,4, and 8)**

Imports of goods increased \$32.0 billion to \$298.8 billion in March.

Imports of goods on a Census basis increased \$31.5 billion.

- Industrial supplies and materials increased \$11.3 billion.
  - Finished metal shapes increased \$6.8 billion.
  - Crude oil increased \$1.2 billion.
  - Nonmonetary gold increased \$0.9 billion.
  - Other chemicals decreased \$1.0 billion.
- Consumer goods increased \$10.0 billion.
  - Other textile apparel and household goods increased \$2.0 billion.
  - Cotton apparel and household goods increased \$1.4 billion.
  - Footwear increased \$1.3 billion.
  - Furniture and household goods increased \$1.3 billion.
  - Toys, games, and sporting goods increased \$1.1 billion.
- Capital goods increased \$5.2 billion.
  - Computers increased \$1.5 billion.
  - Computer accessories increased \$1.3 billion.
- Automotive vehicles, parts, and engines increased \$3.2 billion.
  - Passenger cars increased \$2.5 billion.

Net balance of payments adjustments increased \$0.5 billion.

Imports of services increased \$0.9 billion to \$52.7 billion in March.

- Transport increased \$1.2 billion.
- Travel increased \$0.8 billion.
- Charges for the use of intellectual property decreased \$1.2 billion.

### **Real Goods in 2012 Dollars - Census Basis (exhibit 11)**

The real goods deficit increased \$21.9 billion to \$137.8 billion in March.

- Real exports of goods increased \$3.8 billion to \$150.2 billion.
- Real imports of goods increased \$25.7 billion to \$288.0 billion.

### **Revisions**

Revisions to February exports

- Exports of goods were revised up \$0.2 billion.
- Exports of services were revised down less than \$0.1 billion.

Revisions to February imports

- Imports of goods were revised up \$0.5 billion.
- Imports of services were revised up \$0.3 billion.

### **Goods by Selected Countries and Areas: Monthly - Census Basis (exhibit 19)**

The March figures show surpluses, in billions of dollars, with South and Central America (\$6.7), Hong Kong (\$1.3), Brazil (\$1.2), and United Kingdom (\$0.5). Deficits were recorded, in billions of dollars, with China (\$48.6), European Union (\$15.6), Mexico (\$10.6), Canada (\$10.3), Germany (\$6.2), Japan (\$6.1), Taiwan (\$4.9), Italy (\$3.4), India (\$3.2), South Korea (\$3.1), Saudi Arabia (\$1.0), France (\$0.8), and Singapore (\$0.1).

- The deficit with China increased \$7.4 billion to \$48.6 billion in March. Exports decreased \$0.1 billion to \$12.9 billion and imports increased \$7.3 billion to \$61.5 billion.
- The deficit with Canada increased \$3.7 billion to \$10.3 billion in March. Exports increased \$1.8 billion to \$29.1 billion and imports increased \$5.5 billion to \$39.4 billion.
- The deficit with the European Union decreased \$1.3 billion to \$15.6 billion in March. Exports increased \$2.2 billion to \$28.4 billion and imports increased \$0.8 billion to \$44.0 billion.

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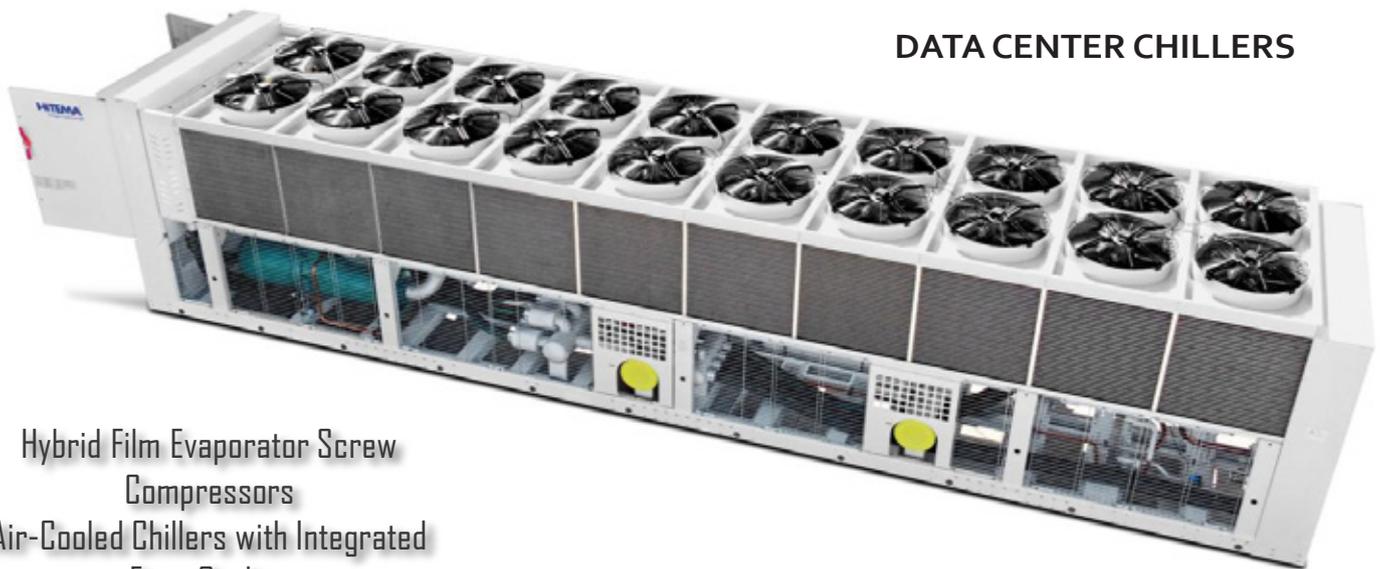
# HITEMA®

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**DATA CENTER CHILLERS**



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Compressors  
Air-Cooled Chillers with Integrated  
Free-Cooling

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# CANCEL SMELLS WITH GRP COVERAGES

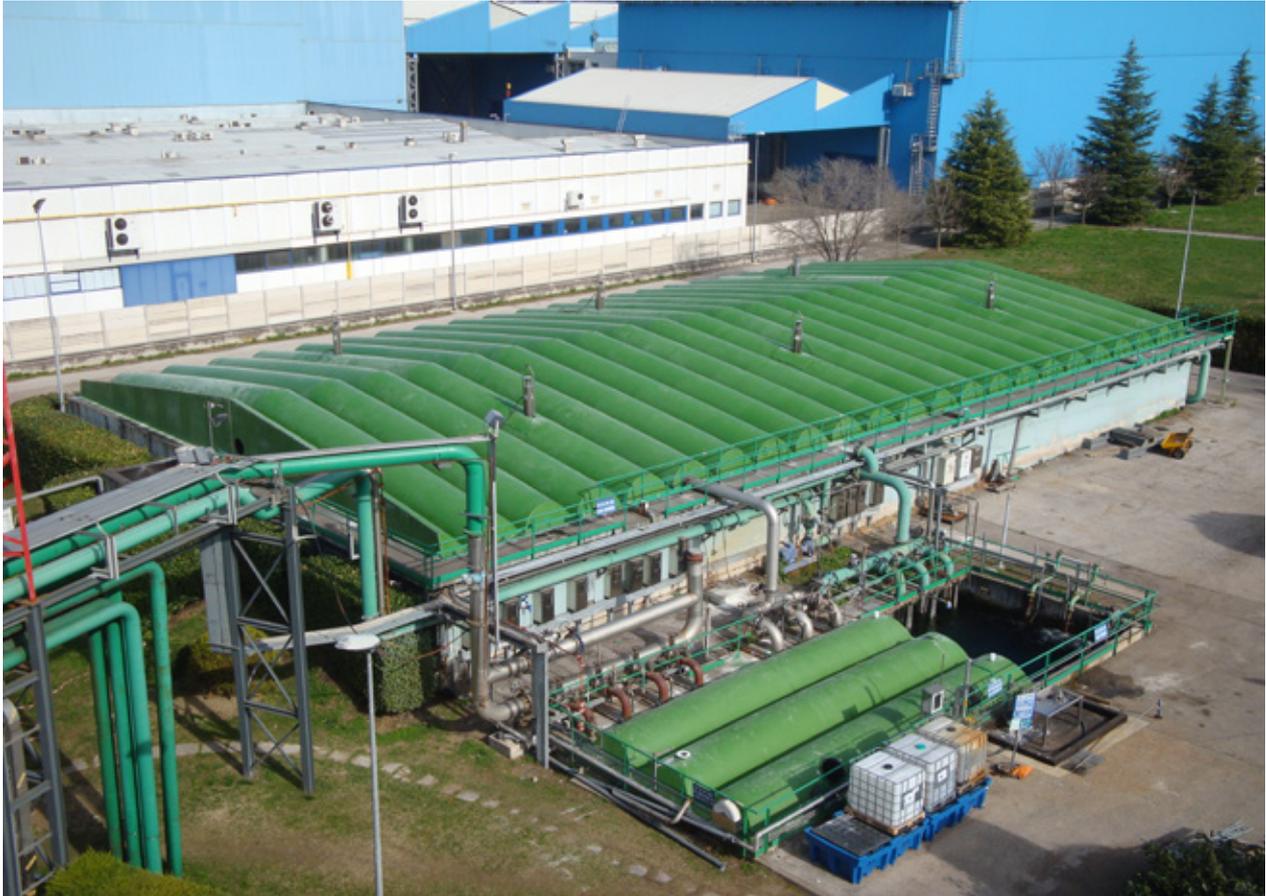


Ongoing research carried out by Delta Cover in the structural and technological field enables it to respond concretely to the increasingly urgent problem of the co-existence of purification plants with the surrounding habitat, respecting the environment.

The constant intention to evolve and improve, through professionalism and valid collaborators, means we

can deal with needs expressed by an evolving sector to the best. The most precious added value we can offer those who use our company is our experience and know-how. Experience and know-how acquired year after year, mean we can offer and advise clients with that little bit extra.

Delta Cover's well-trained, capable personnel is at



your full disposal for contact and meetings needed to understand the problem and provide the best solution.

The high product quality level, a wide model range and 30 years experience has enabled us to operate successfully in contact with the market's most important water treatment firms and satisfy a growing, increasingly demanding clientele.

Our company offers GRP coverages solutions in for any type of civil, chemical and industrial cover, self-supporting roofing suited to support snow loads established by laws in force. The wide range of moulds available mean we can guarantee a ready response and fast implementation.

GRP covers compared to other materials have the following advantages: lightweightness, elasticity, resistance to strain, resistance to atmospheric agents, very long-lasting, no maintenance needed, easy to remove when any intervention is needed, simple to assemble, can be walked on and are designed for the plant in question.

More specifically, we can design and make any type

of cover such as: domes for circular basins, covers for cochleas, covers for circular basins with fixed and rotating bridge, covers for rectangular basins also of big dimensions.



For more information:  
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[commerciale@deltacover.com](mailto:commerciale@deltacover.com)

# Manufacturers Unveil Landmark Campaign to Close Gender Gap in Workforce

*The Manufacturing Institute Launches “35x30” Initiative to Add 500,000 Women to Manufacturing Workforce by 2030*

WASHINGTON, D.C., March 8, 2022 — The Manufacturing Institute, the workforce development and education partner of the National Association of Manufacturers, announced their “35x30” Women’s campaign, an ambitious, industry-wide effort to close the gender gap in manufacturing.

By 2030, the “35x30” campaign will work to close the skills and talent gap in manufacturing by adding half a million women to the industry, increasing women’s representation in manufacturing from 29% today to 35%. The campaign will also lead a nationwide movement designed to change perceptions by engaging face-to-face with emerging leaders and young women students, leveraging more than 1,000 women mentors and collaborating with manufacturers on strategies to attract and retain female talent and broaden the pipeline by supporting women throughout their education.

“For nine months in a row now, manufacturers have had more 800,000 open jobs, and we can’t make meaningful progress toward filling those jobs without closing the gender gap,” said MI President Carolyn Lee. “The 35x30 campaign is an unprecedented plan to strengthen our workforce and build the talent pipeline. We are thrilled to see the industry unite and recognize the power of women in the workforce. This initiative will help many women of all ages find their way into a successful, rewarding career in modern manufacturing, and I can think of no better day to make this announcement than on International Women’s Day.”

The biggest challenge facing manufacturers continues to be the growing workforce crisis. Studies show that manufacturers can close the skills gap by 50% by bringing 10% more women into the industry. Women account for about half of the U.S. labor force but represent less than one-third of the manufacturing workforce.

As part of the campaign, the MI announced an initial sponsorship of \$250,000 from Arconic Foundation to support programs and activities in 2022 and beyond. The MI also recognized Stewards of the “35x30” campaign, stressing their support in narrowing the gender gap facing manufacturing in America. “35x30” Campaign Stewards include:

- Ryan Kish, President and Treasurer, Arconic Foundation
- Dee Dee Fultz, GM of Assembly, Harley-Davidson Motor Company
- Erika Peterman, Senior Vice President, Chemical Intermediates, North America, BASF
- Courtney Silver, President, Ketchie Inc
- Keira Lombardo, Chief Administrative Officer, Smithfield Foods

The “35x30” campaign will add to the MI’s ongoing work to bring women into the manufacturing workforce. Launched in 2012, the STEP Women’s Initiative is the nation’s marquee program to close the gender gap in manufacturing. STEP consists of the STEP Ahead Awards and professional leadership development program as well as regional STEP Forward events throughout the year. The initiative works to foster a 21st-century manufacturing workforce by elevating and inspiring women in the manufacturing industry through recognition, research and leadership, as well as by motivating alumnae to pay it forward by mentoring the next generation. Click here to learn more about the “35 x 30” campaign.

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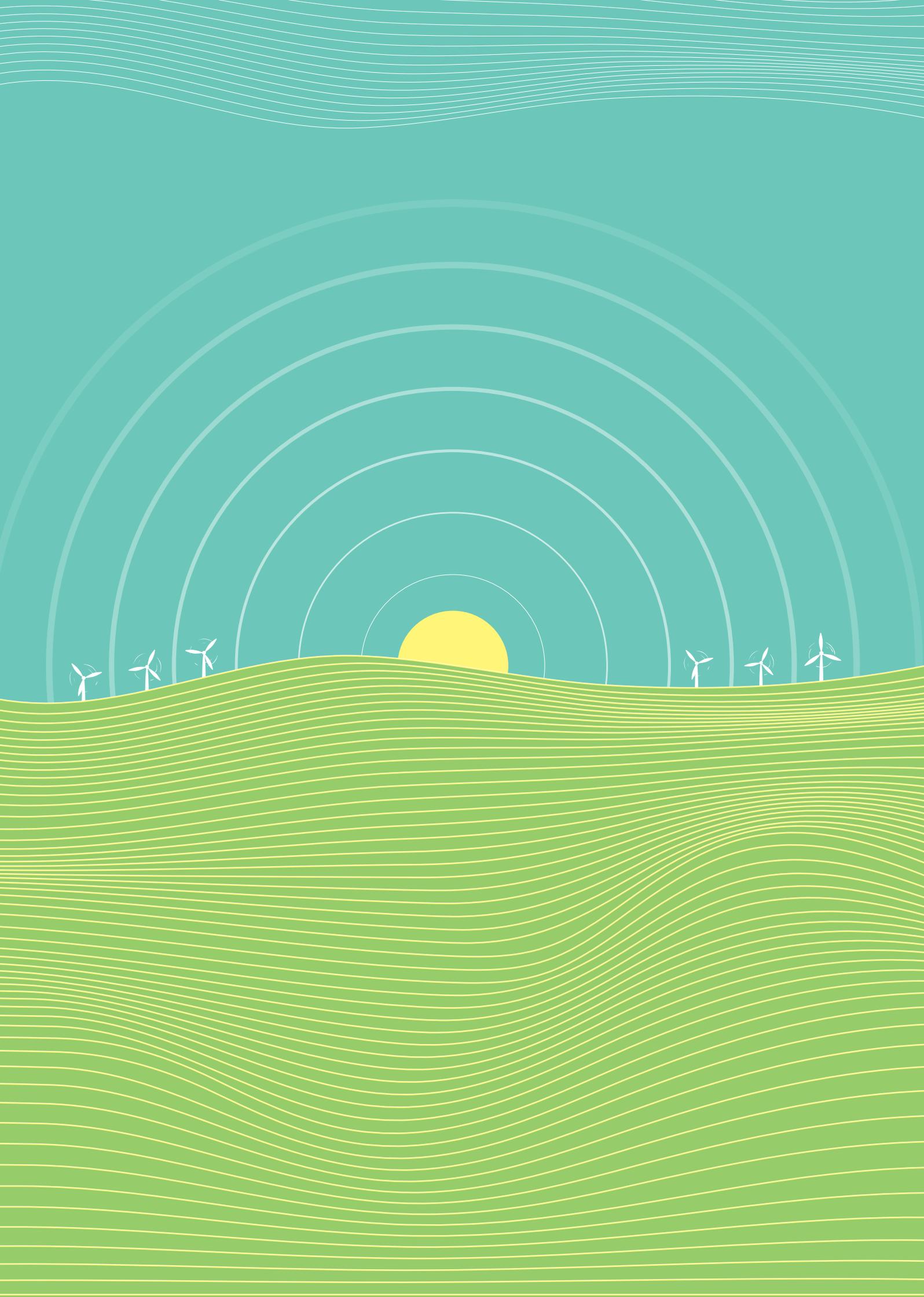
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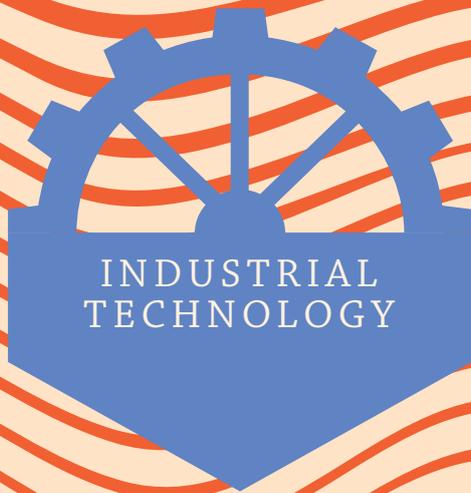
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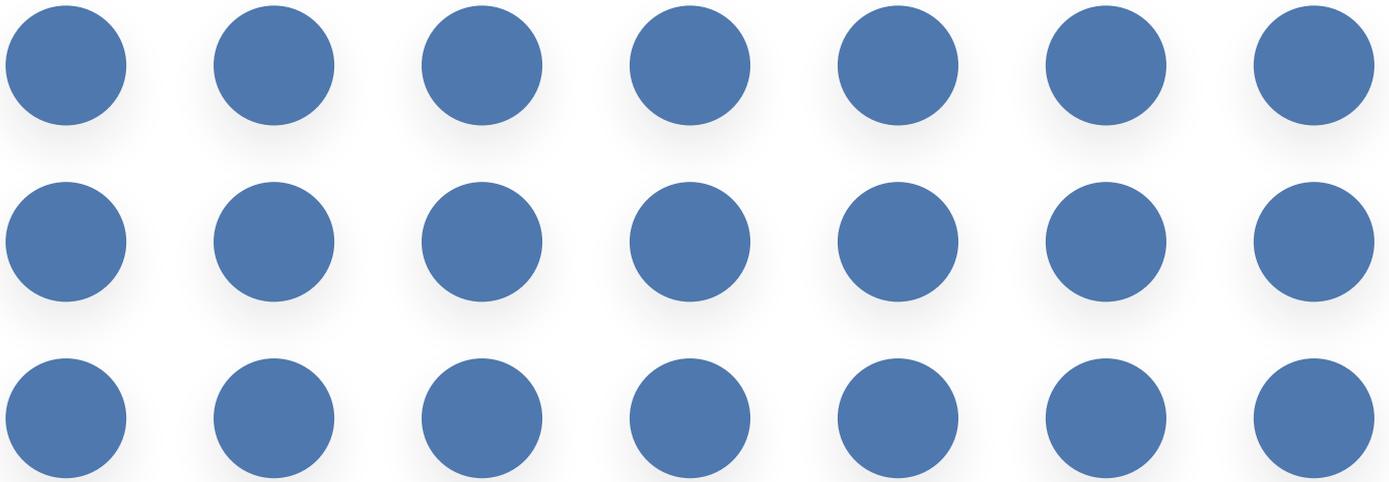


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- Boiler Repowering
- Automation

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