

INDUSTRIAL TECHNOLOGY

Machines. Components. Automation.

USA

Number 2, April-2021



AQrate



CSM TUBE

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High Quality Components



MEP



FOX



Viro®
Made in Italy Locks

IPI Packers
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Perform better

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Furnaces
Furnaces

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EMMEGI
RECINZIONI | GRIGLIATI | CANCELLI



NAFTTECH

PETROLEUM TECHNOLOGY

Starting from process, passing through the project, management, engineering and thanks to the manufacturing capabilities, NafttechTrading is able to provide a complete service focused of customer satisfaction in the range of its activities.

WE TAKE CARE ABOUT THE FUTURE

Main activities

Boilers, Heaters, Fix Equipments and Flue Gas Treatment Systems

- Fire Water Tube Boiler
- Heat Recovery Steam Generator (HRSG)
- Waste Heat Boiler (biomass or RDF)
 - Vertical Heater
 - Hot Oil Package
- Fix Equipment (Reactors, Columns, ecc.)
- Flue Gas Desulfuration System (FGD)
 - Flue Gas DeNOx
- Dust Filtration System
 - Revamping
- Boiler Repowering
- Automation

Water Treatment Systems

- Reverse Osmosis Desalination (RO)•Heat •Water
 - Treatment
- Waste Water treatment
 - Polishing
 - Ion Exchange
- Biological Plant Refinery
- Filtration and Ultrafiltration Plant
- Mtbe Treatment Plant
- Groundwater Treatment Plant
 - Water Engineering
 - Turnkey Facilities
- Rental of Emergency and Mobile Systems

Sea Water Thermal Desalinations (Distillation)

- Multi Stage Flash Distillation (MSF)
- Multi Effect Distillation (MED)
- Thermal Vapor Compression (MED-TVC)
 - Remineralization Water Systems
- Upgrading and Revamping of Existing Plants

Control System, Electrical System and Instrumentation

- Gas Turbine Unit Control System UCS
- Burning Management System BMS
- Emergency Shutdown System ESD
- Fire and Gas System Monitoring
- Generatore Control Protection Panel GCPP
- Steam Turbine Retrofit System Control and Woodward)
- Local Panels, Power distribution, MCC and MV panels
- Instrumentation and Instrumentation Panels

INDUSTRIAL TECHNOLOGY



SPECIAL
USA
2 0 2 1

INDUSTRIAL TECHNOLOGY

A stylized graphic featuring two robotic arms in the foreground, set against a background of a factory floor with various equipment and a grid of blue lines. The title 'INDUSTRIAL TECHNOLOGY' is at the top, and 'SPECIAL AUTOMATION' is in the middle. Contact information is at the bottom.

SPECIAL AUTOMATION

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ITALIAN MANUFACTURER

Threading taps: standard and special

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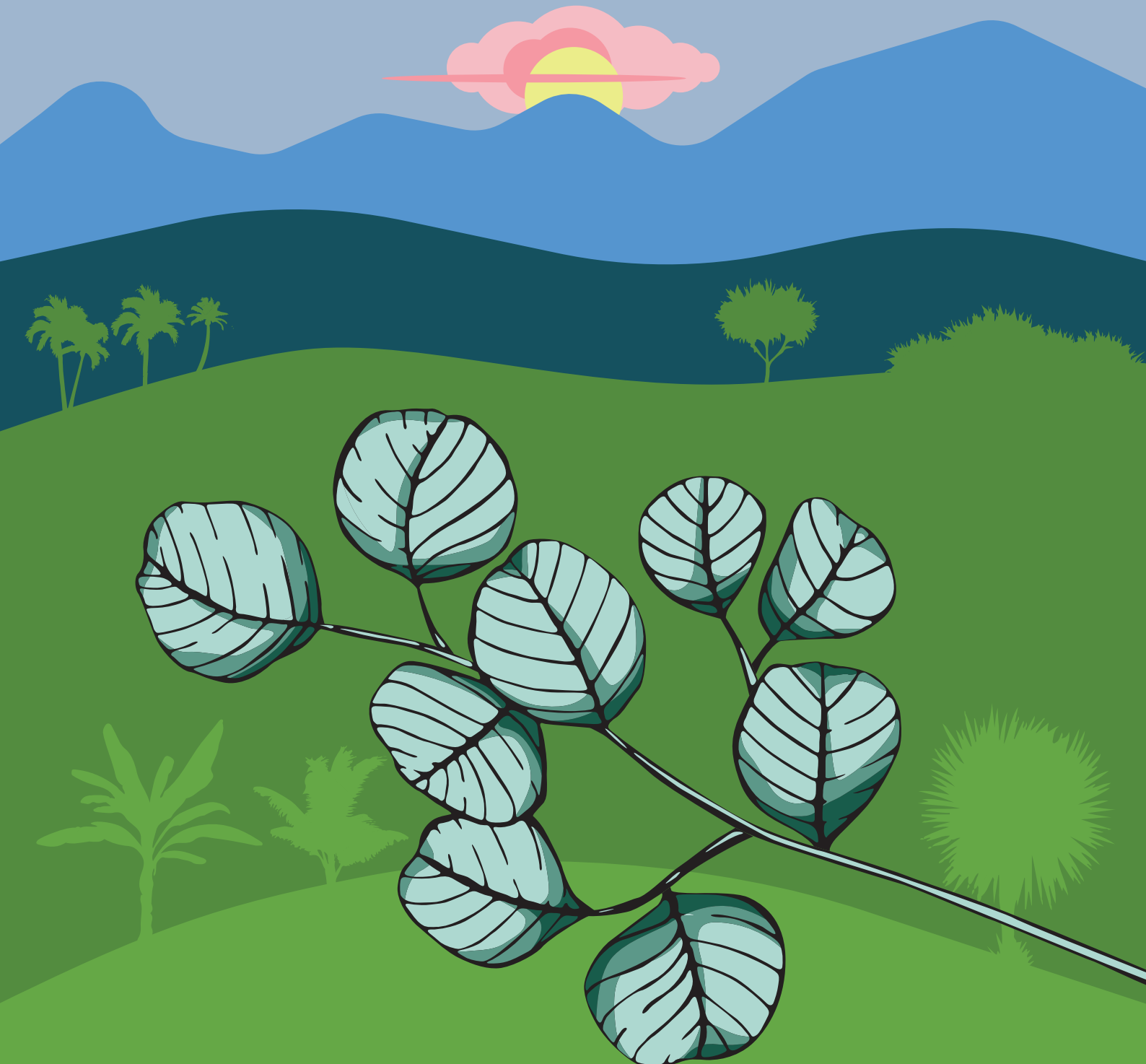
- ✓ DESIGN
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- ✓ PRODUCTION
- ✓ ASSISTANCE



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INDUSTRIAL TECHNOLOGY

let's be green together



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Grazioli Group is a **trusted partner** and a great reference point for commercial machineries. We work to create solutions; for your production, for smaller mechanical issues but also for specific problem on different products. We create a continuous relationship with our clients.



TUBE CUTTING

Cutting machine built to be installed in complete production lines, with a choice between orbital or saw cutting.

TUBE DEFORMATION

It is our core business ; we are able to offer solutions for every market.



INDUSTRIAL TECHNOLOGY



**THE LAND
OF GROWTH
AND OPPORTUNITIES**

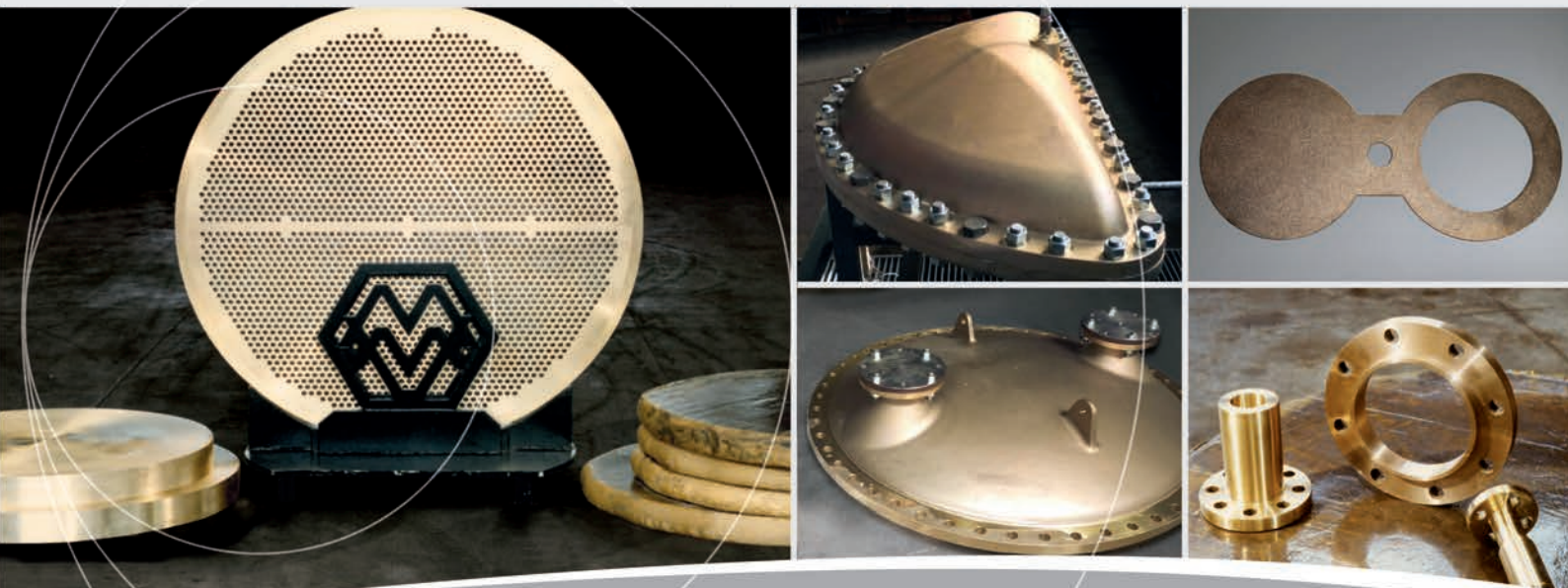
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METALMINOTTI

UNCONVENTIONAL COPPER ALLOYS SINCE 1924



TUBE SHEETS, BAFFLES, FLANGES, TIE RODS, DISTRIBUTORS, FLOATING HEADS, RETURN END COVERS

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- COPPER NICKEL 90/10
- ALUMINIUM BRONZE
- NAVAL BRASS – OT 60
- OTHER CORROSION RESISTANT ALLOYS

MANUFACTURING PROGRAMME

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- FORGINGS UP TO 5 TONS (THE LARGEST SIZE FORGED IN EUROPE)
- ROLLED RINGS AND PLATES
- EXTRUDED RODS AND PROFILES
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- HEAT-TREATMENTS ARE PERFORMED WHEN REQUESTED, I.E. ANNEALING

CNC WATERJET MACHINE

To face the most urgent requirements, Metalminotti stocks a large inventory of sheets which can be cut according to customers' drawing in order to supply finished items with tight tolerances and very short lead-times.

METALMINOTTI
is an ISO 9001 and PED
(Pressure Equipment
Directive) qualified company
and the first Copper
producer
certified in Italy (1994)
working in conformity with
international
quality standards.

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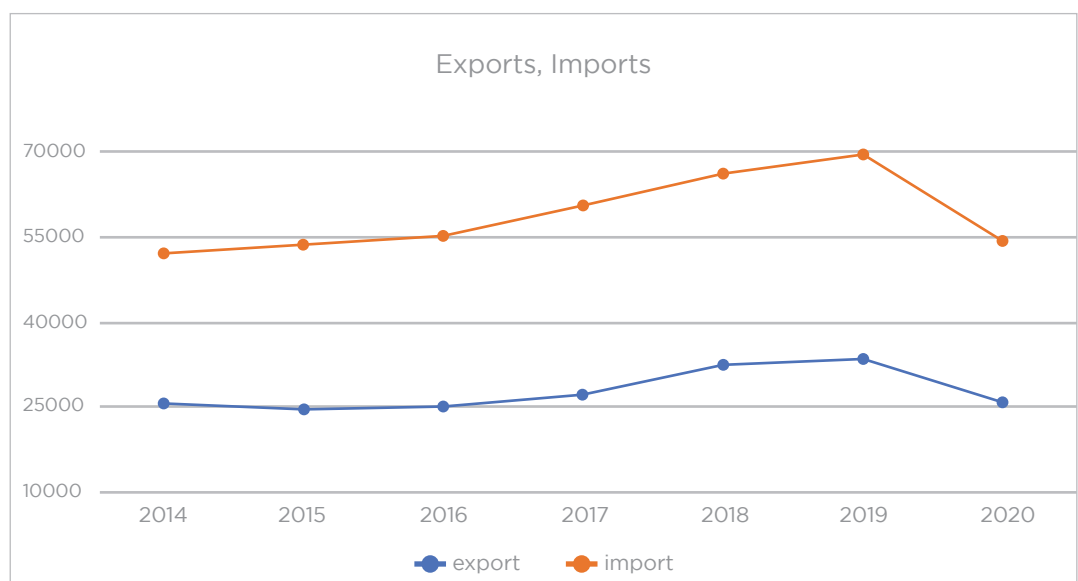
U.S. International Trade in Goods and Services with ITALY

In 2020, U.S. exports of goods and services to Italy were \$25.8 billion, down 22.9% from 2019, and imports from Italy were \$54.2 billion, down 22.1% from 2019. As a result, the trade deficit with Italy decreased to \$28.4 billion.

2020's exports and imports performance are very similar to those back in 2014 after five years of sustained growth. These is a clear consequence of COVID-19 pandemic.



Dr. Eng. Mor Nguirane
Chemical Engineer



	2014	2015	2016	2017	2018	2019	2020
Export	25531	24622	25049	27234	32576	33500	25828
Import	52124	53787	55174	60542	66204	69612	54243
Balance	-26593	-29165	-30125	-33308	-33628	-36112	-28415

In 2020, exports to Italy accounted for %1.2 of total U.S. exports, and imports from Italy accounted for %1.9 of total U.S. imports. Exports were led by industrial supplies and materials, which accounted for %30.4 of U.S. exports to Italy, and imports were led by consumer goods (excluding food and automotive), which accounted for %31.5 of U.S. imports from Italy.

Exports and Imports by Type 2020

Exports	Imports
Industrial supplies and materials \$ 7.8B	Consumer goods except food and automotive \$ 17.1B
Consumer goods except food and automotive \$ 4.5B	Capital goods except automotive \$ 12.9B
Capital goods except automotive \$ 4.3B	Industrial supplies and materials \$ 6.6B
Financial services \$ 1.4B	Foods, feeds, and beverages \$ 5.4B
Other general merchandise \$ 1.2B	Automotive vehicles, parts, and engines \$ 4.7B
Other goods and services \$ 6.5B	Other goods and services \$ 6.4B





U.S. Direct Investment Position with Italy

In 2019, the U.S. direct investment position in Italy (outward) was \$34.9 billion, an increase of 5.5% from 2018. The direct investment position from Italy in the United States (inward) was \$32.8 billion, an increase of 6.7% from 2018.

	2014	2015	2016	2017	2018	2019
Outward	30154	30869	30573	27617	33080	34900
Inward	23508	27709	30072	29450	30749	32811

Activities of Multinational Enterprises (MNEs)

In 2018, Italy-based majority-owned affiliates of U.S. MNEs employed 250.00 thousand people, an increase of 7.5% from 2017; sales were \$126.9 billion, up 10.6%. U.S.-based majority-owned affiliates of Italian MNEs employed 93.7 thousand people in 2018, an increase of 8.1% from the previous year; sales were \$41.4 billion, up 1.6%.

U.S. MNEs: Majority-owned affiliates in Italy

	2014	2015	2016	2017	2018
Thousands of employees	218	215	224	233	250
Sales, millions of dollars	119115	109878	108284	114756	126924

Italian MNEs: Majority-owned affiliates in the United States

	2014	2015	2016	2017	2018
Thousands of employees	74	77	77	87	94
Sales, millions of dollars	40708	36685	35819	40735	41373

Source: Bureau of Economic Analysis

INDUSTRIAL
TECHNOLOGY
editorial office

Kilton – fasteners production



MILLIONS OF SCREWS EVERY DAY

Founded between the 70s and 80s, it was immediately brought to the attention of customers as a leader in the manufacture of special fasteners and is now one of the most important companies in the field of fasteners and fastening systems for industrial applications aimed at the automotive and mechanical field, appliances, hardware, and construction.

QUALITY TARGET

To offer a product that meets the expectations of the most demanding consumers, Kilton adopts management methodologies able to ensure reliability, efficiency, and quality. In the production unit, there are the most modern machines for the production of screws and bolts, all supported by computers that regulate their production processes.

SELECTION: GUARANTEED UNIFORMITY

To prevent, for example, the pollution of foreign bodies in the packages, Kilton acquired an automatic machine of control, measurement, and selection equipped with artificial vision systems, laser sensors, and non-destructive controls that guarantees 100% uniformity of product.

IMPORTANT POINT OF REFERENCE

The high quality and reliability of our products turned Kilton in an entrepreneurial activity in constant growth: the company's solidity and the acquisition of important Clients even beyond the boundaries of the national market, allowed Kilton to become a clear and effective point of reference in its sector, where it has reached the highest standards of design and production in accordance with Italian and international regulations.

**VALUE FOR MONEY OPTIMIZATION**

Market knowledge and possession of specific technical competences are a warranty for the Client of a service characterized by a perfect quality/price ratio.

QUALITY PRODUCTION AND IMPORTATION

The search for continuous improvement and the main goal of ensuring the quality of our products has allowed us to progress constantly and always be at the forefront of both structures and professional skills, developing a technical know-how of the highest level in our industry that allowed us to be able to import the main standard products, guaranteeing first-hand the quality of the product itself.

OVER 40.000 PRODUCTS ALWAYS READY

In the second facility, thanks to a dynamic warehouse of 10,000 pallets, screws, and bolts always ready for

delivery, Kilton S.r.l. offers a fast service to customers regarding the availability of the most common products.

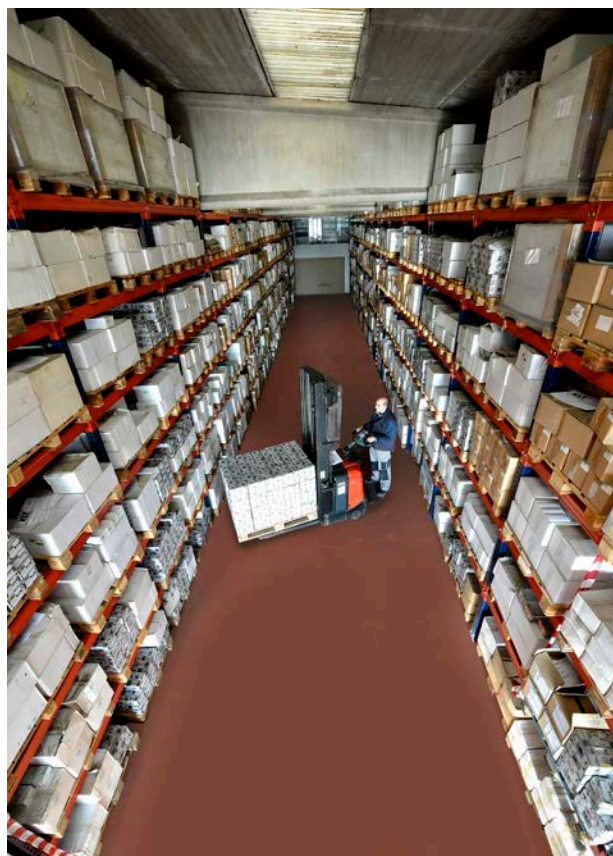
CUSTOM PRODUCTS

Our customers expect from us the simplification and the ability to identify at a glance the possible solutions to their problems by studying with them the fastening systems that are more suitable for their applications. Kilton, thanks to the knowledge acquired over the years and its production flexibility, is able to create specific products to meet the special needs of its customers. Our highly-qualified staff is available for the study of custom projects for many fields of application.

www.kilton.it

e-mail: vendite@kilton.it

From our website you can download technical data sheets of our products and check the availability.



Net.Fluid celebrates 20 years!

2021

Catalogo *Catalog*




VALVOLE E RACCORDI - INOX
Valves and fittings - Inox



High Quality Components

RACCORDI <i>FITTINGS</i>	
VALVOLE A SFERA <i>BALL VALVES</i>	
VALVOLE UNIDIREZIONALI <i>UNIDIRECTIONAL VALVES</i>	
RACCORDI A FUNZIONE <i>FUNCTION FITTINGS</i>	
Elettrovalvole <i>SOLENOID VALVES</i>	
RUBINETTI A SPILLO <i>NEEDLE VALVES</i>	

We would have liked to celebrate our **20th Anniversary** together with our PRECIOUS customers, suppliers and collaborators, but the rules of the social distancing are now more important than our birthday.

Twenty years have passed and many have been the prod-

ucts we conceived, designed and manufactured strictly in stainless steel - **Aisi 316L**.

In 2001 we started making customized products in all shapes and materials; right after we reached a specialization into what was a small market niche: "**stainless steel**"

components for pneumatics and fluidics in general”.

Our specialization in working Aisi 316L only was the consequence of the demand to reproduce a component in brass, steel, or aluminum in stainless steel, one might say a courageous choice in 2003 but correct just in 2004 (**first Net.Fluid catalog**)

It took almost 2 years before we could see the effect of this catalog, 2006 we have to move our headquarters: **warehouse needs more space!**

In 2008 the design activity continued even if a large part of our forces were dedicated to the standard production and our sales began to expand beyond the Italian borders.

The crisis of 2009 did not affect us, but we realized that the choice to focus on **INOX** first and then on our product range had sheltered us from the problems that forced many small metal parts companies to close.

In 2011, the standard components represented 90% of our turnover, customers were mainly small OEMs and dealers, it was from this last category that came the impulse to expand our commercial proposal in support of the established ranges of:

CHECKL VALVES (CVX)
FLOW REGULATORS (FRX)
QUICK EXHAUSTS (SVX)
SOLENOID VALVES (EVX)

We were asked for the FITTINGS, first the THREADED ACCESSORIES (AXH / BXH) and then all the other main technologies:

PUSH-IN (RXH)
PUSH-ON (CXH)
COMPRESSION (DXH)

From 2012 to 2016 we mainly dealt with promoting the new and more complete commercial program, many customers were more tied to a single product rather than to the entire product range.

It was time to better structure ourselves internally, insert



new collaborators, and outsource some organizational and production processes. We consolidated relationships with strategic suppliers and created new and important partnerships.

Between 2017 and 2018, thanks to the new opportunities arising from the FITTINGS range, we were forced to expand again, the current building!

In 2019, the impossibility by a potential customer to find on the market an INOX UNIDIRECTIONAL PILOTED VALVE (aggressive environments), saw us ready to take up this opportunity: the **VBX** valve is launched!

And here we are in 2021. We are almost ready to print out the new **Net.Fluid Catalog 2021**, unhappily, it will be still a difficult year from a pandemic point of view and therefore in the year of our 20th Anniversary, we would like to send our best wishes to you all!

www.net-fluid.com

Meccanica Nicoletti: cable winders and unwinders



Excellence is the result of a serious and coherent work between professionals with a passion for innovation, always searching for new ideas to improve the product. A study in technological innovation, in the security of use and the quality and reliability of the instrumentation supplied.

This is Meccanica Nicoletti.

That's why, in a short time, we have revolutionized the field of winding and unwinding the cables, improving the production methods of our customers, reaching the world leadership in the production of fully automated



handling equipment up to 500 m/min.

High quality performance and, above all, a high level of customization with solutions to meet every processing need, thanks to the advanced dedicated design.

At Meccanica Nicoletti, design is a value in the hands of highly skilled staff, consolidated thanks to the high corporate know-how developed over time.

To exceed the expectations is always possible if there is a possibility to provide customized machines, adaptable to your needs.

We are able to provide this service and support you timely all around the world with our technicians direct

at place or by remote service through connecting to the machine software. Project and customer care are also available with Nicoletti, excellence in performance.

Meccanica Nicoletti manufacture equipment able to be interfaced with your ERP/SAP for order lists uploading and worked file downloading in automatic way. All in line with the current integrated world.

Project and service complete the Nicoletti offer with high performance of excellence.

For more information:

www.meccanicanicoletti.com



A new approach to managing translation costs



The goal? Cost efficiency coupled with translation quality.

Transparency in translation costs can be elusive yet there is a simple key to regulating both translation costs and their quality: taking control of translation memories and word counts.

Translation memory (TM) is a repository of your former translations divided into segments, which, using current technology, can be recovered and re-used in new translations. This plays a large part in reducing word counts, saving significant time and money.

TMs and word counts are typically managed by your Language Service Providers (LSPs) who dictate how many

words can be recovered from memories and how many require fresh translation.

In other words, the people who are selling their translation services are in charge of your costs and potential savings.

As a rule, if you want to address your translation budget, you have two options:

- a) negotiate the price
- b) reduce your translation volume.

Companies commonly tend to focus on price negotiation while, in fact, reducing the volume is eminently more effective.

Frankly, however, managing TMs and word counts is not



an easy task and available software requires expertise your staff is unlikely to have. You therefore need to rely on the LSP to provide an accurate analysis as a basis for developing a cost proposal.

With an eye to bridging the gap between you, the purchaser, and the LSP, your service contractor, we at AqrRate came up with a solution that grants you full control over word counts and TM's by centralizing them in your organization's own repository.

Thanks to the work of our team of linguistic analysts, whose target is to substantially increase the reuse of past translations, every department in your company will benefit from your organization's collective memory and your LSPs will be able to provide quotes based on an efficiently

established word count.

Moreover, considering that the quality of translations depends on the caliber of the source content, AqrRate also provides a service which affords you the opportunity to check and improve the overall nature and consistency of the content you provide for translation, consolidating and clarifying the information to be translated to ultimately facilitate greater reader comprehension.

In sum, managing translation costs efficiently requires accurately measuring your data and taking control of your resources.

For more information please visit:
www.aqrRate.biz

EMMEGI, from south of Italy to global markets: leader in the production of gratings, fences and gates

EMMEGI SPA is a Puglian company with over 25 years' experience in the production and global distribution of electrofused steel material. From gratings to fences and safety stairs, all the material is CE approved.

The company is based in Puglia, south of Italy, and headed by its CEO Paolo Montemurro. They have two plants with headquarters located in the strategically positioned Gioia del Colle, 40 km from Bari.

The company also has a hub and a warehouse in Cortenuova, Lombardy, in the north of the country. This is a strategic location from which EMMEGI distributes its material across North Europe and the Balkans.

EMMEGI SPA is an evolution of a previous company, Meridionale Grigliati, with over 30 years of know-how and experience in the steel industry.

Today EMMEGI SPA brings to the market a large range of products and designs, in various colours, and priced competitively. The company remains aware and committed to working sustainably, with particular attention to reducing its emissions at source.

EMMEGI SPA distinguishes itself by offering its customers, besides its core products, the ability to discover ingenious ways in which steel gratings can be used and adapted, both in construction and industrial applications.

Since 2012, the company has started to explore new, international markets and now has a presence in USA, South America, North and South Africa as well as the rest of Europe.

Thanks to continuous investments to improve its production, the company has grown over time. Their investments have centred around new technologies, to improve chain production and growth in new markets as well as new joint venture in several North African countries.

Among the most important projects recently completed, they count large fence installations for oil platforms around the world, fencing around Ground Zero in New York and gratings supplied for the Qatar football stadium for the World Cup 2022.

In their own country, EMMEGI materials were used to build the new Genova's bridge, led by the famous architect Renzo Piano.

EMMEGI has always been active in the social field with various initiatives to support its territory.

info@emmegigrigliati.it
www.emmegigrigliati.it





Group Glarix adds value to the Alternative Energies

Since the foundation, Group Glarix O&M has set itself the goal of bringing added value to the field of Alternative Energies.

The experience of our employees, grown in the most important companies operating in the assembly of industrial plants and maintenance, allows the company to meet the different needs of its customers in the industrial and construction sectors, as well as specialized service.

Our O&M group is specialized in the management of third-party photovoltaic systems, both from a technical and asset management point of view, with a portfolio of 50 MW.

The maintenance operations include all the procedures necessary to reach the highest values of energy production and the conservation of the systems and the prevention of any breakdowns.

According to the customer's needs, the maintenance service can include preventive and corrective maintenance of the transformer substation and MV connection lines from the field to the connection point.

Our technicians daily visit the plant, to assure a stable work able to anticipate the problem, giving a strong reduction in terms of productivity loss.

Thanks to a vast network of branches, it is possible to guarantee operation and intervention at the plant in only one hour, allowing the reduction of lost production.

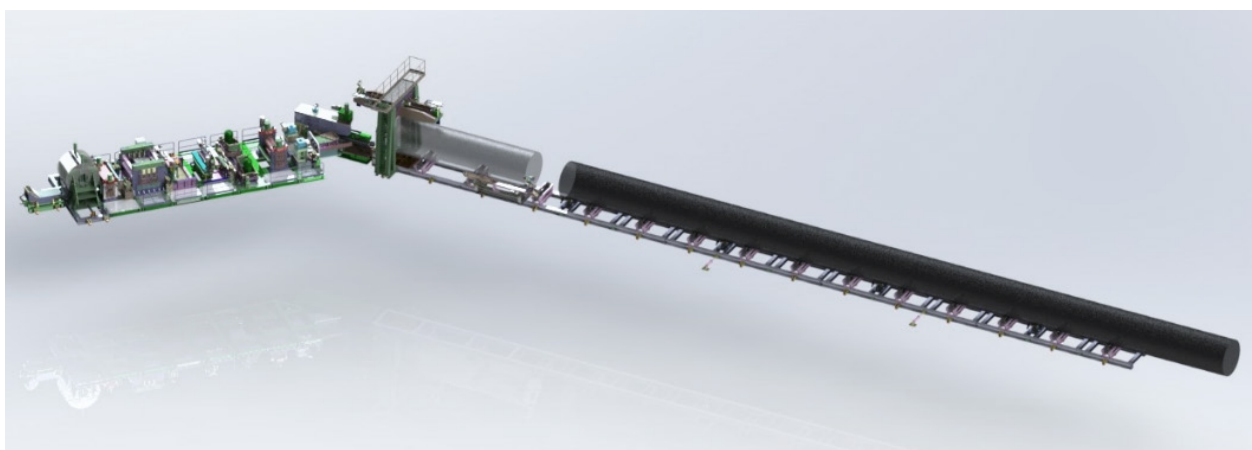
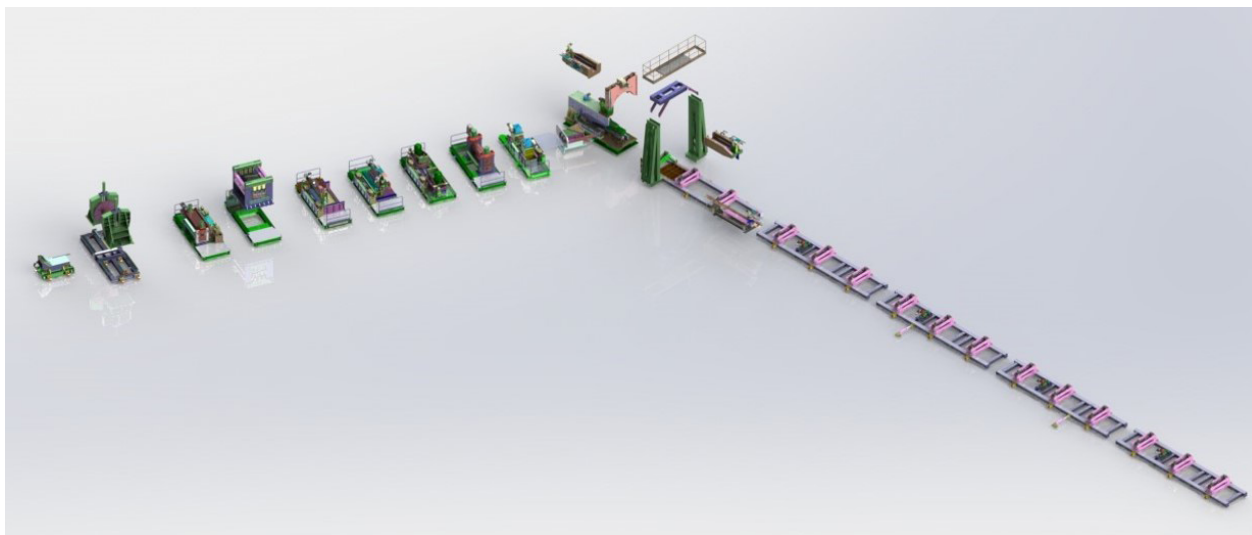
Group Glarix O&M, together with its high-level partners, is now authorizing new photovoltaic systems and electric vehicle charging networks.

For more information please visit:
www.groupglarix.com





Innovative Tube Production Processes



Large diameter steel pipes - new proposal for on-site production

Big constructions often need very long large diameter steel pipes, having high wall thickness, maximum 3 m outside diameter, 50-60 m length and 30 mm thickness. Typical applications are big buildings foundations and piling, dams and port constructions, piers and jetties. The transportation of such very long large diameter pipes is very expensive and sometimes impossible.

Vavit srl has developed a new concept design of a mobile pipe mill that can be easily dismantled and relocated on the job site in a few days, by the mill's operators themselves, without special skilled technicians' intervention. The complete mill is a complex machinery having a total weight of about 400 tons.

The proposed mill is made of independent modules that can fit into 25 standard containers, each module having already on board all the electrical and hydraulic facilities

needed for automation & control. The mill does not need special foundations and can be easily assembled on a regular concrete floor, just putting the modules in line and connecting the flanges.

The minimum production lot needed to justify the relocation of the mill is about 10-15.000 tons. This means that with about 5-6 weeks dedicated to dismantling, shipping and re-erection, the mill can re-start into a different site to work for a new project for minimum six-eight months.

Off-line tube squaring system – a reversible rolling concept

Vavit srl has patented a new rolling concept to transform round tubes into square and rectangular tubes.

The round tube is gradually squeezed into the new shape with a reversible rolling, moving the tube back and forward between the forming rolls.

The reversible rolling is a very old concept, applied for



rolling steel plates. Vavit srl has extended the idea in 2D – X-Y, moving the forming rolls up-down and right-left to gradually squeeze and form the tube. The reversible rolling is processing one tube at a time, with a universal squaring stand that can be easily adapted for different dimensions. The production can be done just in time, starting from a stock of mother tubes (round) that are transformed into square and rectangular shape on demand. The complete process can be developed in a workshop of about 5000 sqm, with a capacity of 50-80.000 t/y. The process is very interesting for medium-big carbon

steel hollow sections, up to 500 x 500 mm.

It is less interesting for medium-small carbon steel hollow sections, where on-line forming is preferred.

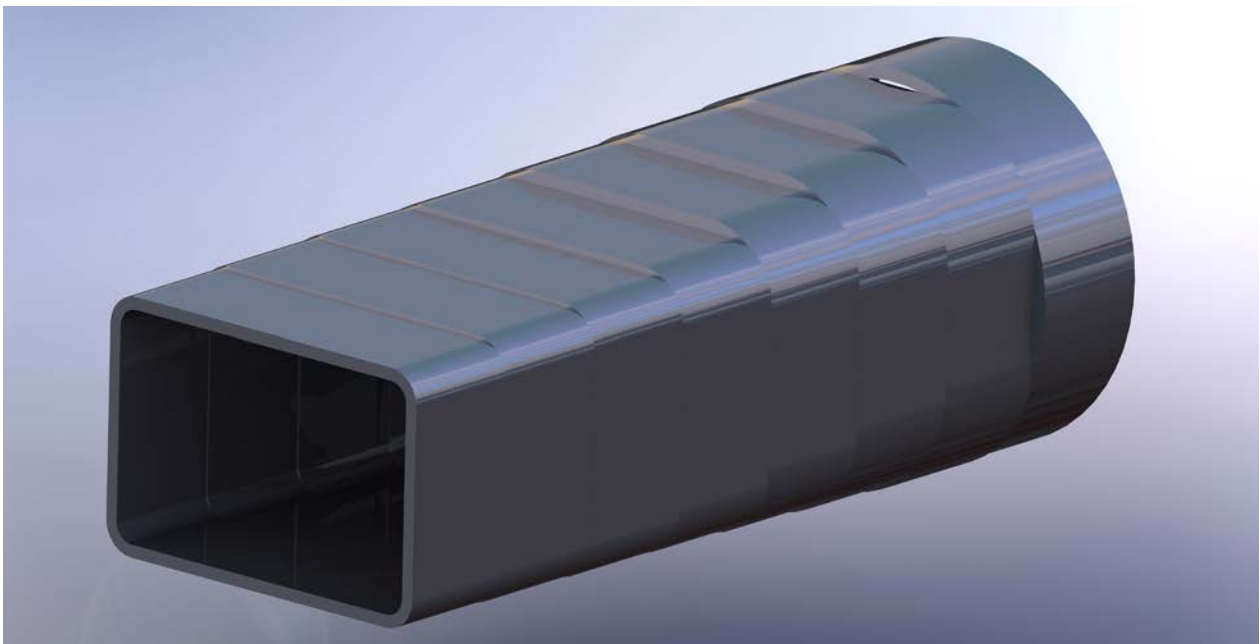
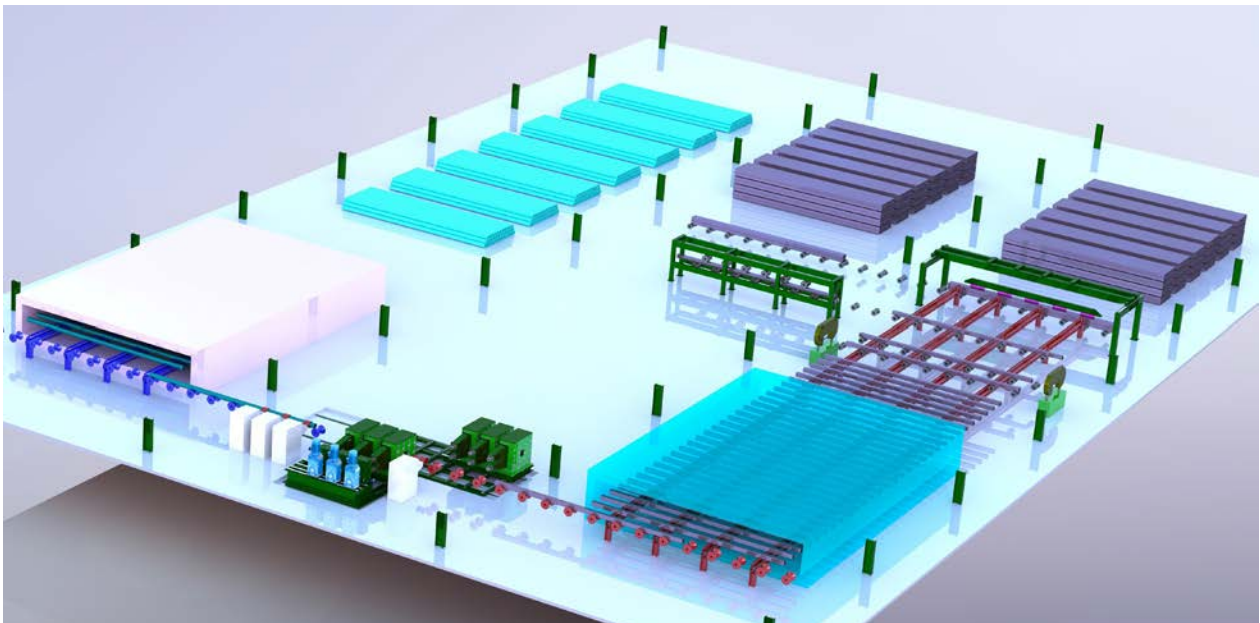
It is interesting for medium-small hollow sections made in special steel, nickel alloys, titanium, copper, etc.

The typical application of big carbon steel hollow sections is for the construction of big buildings.

For more information:

info@vavit.it

www.vavit.it



BMW Group and Daimler Mobility join forces with bp as a partner for Digital Charging Solutions GmbH, to further accelerate the growth of electrification

- Daimler Mobility AG and BMW Group significantly strengthen the customer offering of Digital Charging Solutions GmbH (DCS) by adding bp as the third shareholder with a stake of 33.3%.
- DCS is a leading developer of digital charging software for automotive manufacturers and vehicle fleet operators. Its in-car software integration provides EV drivers with seamless access to one of Europe's largest charging networks.
- DCS already offers access to 228,000 charging points in 32 countries. The addition of bp is expected to provide DCS customers access to an additional 8,700 charging points across Europe including ultra-fast charging (more than 150kW) and develop new integrated offers for fleets (including Fuel & Charge) as a first step.
- The partners intend to drive forward the transition to electrification.

March 30, 2021, London/Munich/Stuttgart: bp agreed to join BMW Group and Daimler Mobility AG in their drive to extend and significantly improve electrification, making electric vehicle charging more convenient, simpler and seamless for drivers. Under their agreement, bp will become a 33.3% partner alongside BMW Group and Daimler Mobility AG in Digital Charging Solutions GmbH (DCS), one of Europe's leading developers of digital charging solutions for automotive manufacturers and vehicle fleet operators. bp's acquisition of the stake in DCS will be subject to regulatory approval. The terms of the transaction are not being disclosed.

DCS's services are important for the electrification strategies of the automotive industry. The company works with OEMs to integrate its charging solutions into vehicle operating systems, offering Plug & Charge for vehicle and charger to communicate seamlessly without the need for additional customer authentication. For example, DCS already operates "Mercedes me Charge", "BMW Charging" and "MINI Charging" services.

DCS already offers access to 228,000 charging points in 32 countries giving OEMs, fleet customers and EV drivers extensive access to charging infrastructure across Europe.

This collaboration allows additional access to a growing network of chargers across Europe

As part of the agreement, bp's European charging networks will be integrated into the DCS's software system as well as Fuel & Charge for fleet customers, as a first step. Electrification is at the heart of bp's convenience and mobility strategy and the company aims to grow its network of public EV charging points by 2030 to over 70,000 worldwide. They currently have around 8,700 charging points in Europe and its UK network bp pulse is already the most used EV charging network in the UK. The company is also rapidly growing its network of ultra-fast chargers and plans to have around 250 ultra-fast chargers operating at bp retail sites in the UK and 500 ultra-fast charging points across its Aral retail sites in Germany by year end. DCS customers will gain access to these additional charging points and bp will gain access to a wider customer base.

This collaboration will help to get more EVs on the roads and, ultimately, help move towards more sustainable mobility.



Mechanical Engineering

40 years industrial engineering experience

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- > Process studies & Plant Lay-out



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Industrial Technology is an international magazine that deals with machines, components, instrumentation and automation for Oil & Gas industries, petrochemical, chemical and energy. It contains news, information and case histories of products, technologies, suppliers and manufacturers.

The insights are mainly related to complete installations, automation, control, instruments, valves, pumps, compressors, blowers, boilers, heat exchangers, process units, pipes, systems, software, seals, PTFE, bolts and fasteners, tanks, analysis and control, and in general to every product and service that can be used in the industrial process.

PARTICIPANT COMPANIES - WHO ARE THE ADVERTISERS

The magazine has a broad and targeted distribution, and is an excellent tool to promote manufacturers, OEMs, suppliers, installers, engineering companies. There are interests, either for the companies that want to be known by the end user, the contractor, the EPC, also the companies that want to promote themselves with OEMs. Thanks to a specialized work distribution and reporting, advertisers are guaranteed to have a commercial return in terms of expendable contacts.

THE TARGET OF READERS - WHO READS

Industrial Technology reaches more than 50,000 companies worldwide, with a particularly careful and effective distribution in the Middle East.

Readers belong mainly to the oil and gas industries, chemical, petrochemical, or are distributors, engineering companies, consultants, contractors, OEM and EPC. The magazine also reaches the main fairs and major trade associations of various countries, in order to have the widest possible dissemination among stakeholders.

THE EDITORIAL TEAM - ABOUT US

The magazine is produced by industry professionals to meet the technical and commercial needs of companies. In addition to publishing specialists, marketing and communications, they collaborate with the magazine engineers and active trading in the market. The team is international in order to cover the most of the major distribution areas - Europe, Arab countries, Iran and Africa - and takes advantage of a partnership with an import-export company in Tehran.

Write to marketing@industrialtechmag.com We will send you a proposal tailored to you

Heat Exchange Solutions for commercial and industrial applications



North America Operations

ADIABATIC SYSTEMS MARKET EXPANSION

Chicago, IL.

Thermokey, a world leader in heat exchange solutions, keeps increasing its presence in the North American market. Our **commercial office, in the heart of the Midwest region, has been developing a solid network of Distributors and Representatives** since 2014.

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Adiabatic Fluid Cooler

FEATURES

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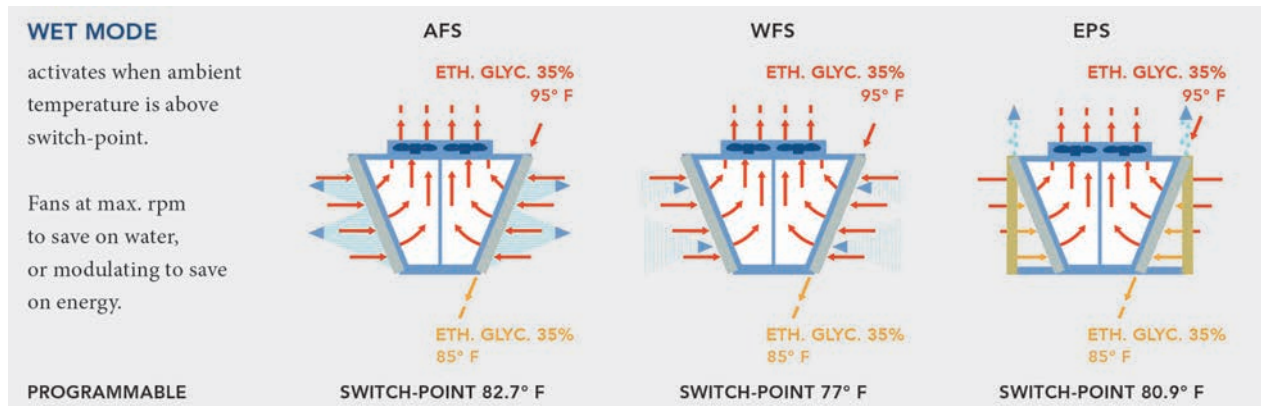
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Running to the Top: Italian THREADING TOOLS



"Where there is a screw, there must also be a thread. Taps are crucial for creating the thread and therefore for joining metal parts to exclude welding or gluing."

This is what Graziano Doglietto, President of UFS Srl – and great enthusiast of American motorcycles – says.

"Our website, www.ufs.it, well shows our reality. The services available to our customers, before and after the sale, are numerous and various.

The R&D and the technical department answer to all of the questions useful to identify the best product, based on the processing needs. Customer Service is also a very important interface to processes the commercial inquiries. It is an online B2B service, which can be used by customers through a simple login with their credential. It allows you find the right product for your job and gives you an overview of the tool warehouse and the possibility to order online very easily- taking advantage of a quick order placement.

After the purchase, our after-sales technical department helps the customer, if necessary, to show him the correct

use of the threading tools. UFS is very proud to provide support to the customer also is in the production phase. "

UFS is an Italian company specialized in the design and construction of threading tools; in particular of standard taps and special custom taps.

Founded in 1947 by the Doglietto family, today UFS has about one hundred units, including employees, collaborators and agents: a family that has gradually and proudly expanded over time.

UFS designs, tests, builds, strengthens and internally covers all instruments in three different operating locations:

in Site number 1, together with the offices, there is the production of standard instruments and tools.

A well-equipped research and development laboratory is located in Site 2. Here we work on the controls of the metallographic processes and coatings for the entire product development cycle; both for the aspects of technological advancement and for the maintenance of



technical and design parameters. And then, Site 3 is dedicated to the creation of special products, which require different times and customized production processes, and for hardening and coating furnaces.

Over time, the company has reached a very high level in terms of product quality, above all thanks to the intense work carried out in the Research and Development plant, where increasingly specific tools for threading in specific fields of application have evolved.

Experimentation for technological innovation has not only had the task of analyzing and solving internal production problems, but also is addressed to emerging scientific issues, with national and international research plans, in synergy with some universities and polytechnics. The result of this continuous evolution, aimed at identifying the best product for each specific use, could not fail to consider the economic aspects.

Ways and times of use of a threading tool are fundamental components, together with quality and technical char-

acteristics, to identify the most suitable product.

For this reason UFS has included in its range of proposals 3 product lines, with increasing functional and duration performances, to offer the customer the possibility to choose the best economic administration of their production according to specific needs.

The hardening of the tools is assisted internally and is certified. The surface treatments, from vaporization to painting with chromium nitride, titanium nitride, titanium carbonitride, titanium and aluminum nitride, are calibrated and customized in relation to the performance required by the product.

The UFS technical office takes care of identifying the best reference suitable for specific needs on a daily basis.

Some examples, among the most important in the entire UFS production.

In High Strength, designed to work materials up to 52



HRC, they are produced in PM sintered super rapid steel with high percentages of vanadium and cobalt and available with surface treatments that have a high resistance to wear and oxidation.

For stainless steel, ideal for hard-to-machine and long-chipping steels. The basic steels are of the HSSV3 type, with 3% vanadium, or in PM sintered steel with a high content of vanadium and cobalt. The cutting geometries and the TXC treatment prevent the formation of built-up edge.

For light aluminum alloys, long-chipping copper alloys and soft magnetic iron (Fe) and aluminum alloys with silicon.

Available with AZ alternating thread that avoids the formation of the chip skein with a reduced number of cuts and large unloading compartments.

In cast iron, the items are made of super-rapid steel sintered in metallurgy powders with a low cutting angle and combined with an accentuated rake angle that render these types of taps suitable for working abrasive materials. They have an increased tolerance of type 6HX and a TiAlN coating, combined with micro surface finishing processes. Also with short intake for tapping with a reduced-dimension or 25° helical discharge chamber for applications on steel cast iron (steel castings).

For titanium, products come in steel sintered in metallurgy powders bearing special cutting geometries. They bear a 15° left helix for through holes and 15° right helix for blind holes. They are also available in 4HX tolerance and with TiCN treatment for processing the most de-

manding alloys.

For nickel, the pieces have a reinforced body structure. They have a 10° left helix for through-holes and 10° right helix with chip breaker for application on blind holes and also come with a 4HX tolerance and 25° helical taps with rear tapering.

For synchronised rigid tapping, in quality powder-sintered steels, the taps are rebored with h6 shank tolerance to ensure maximum precision at high cutting speed. They can also be used with thermal coil spindles.

Full-thread carbide has straight cuts for machining very abrasive materials. Available with a central hole for the passage of lubricant and with TiCN surface coating.

Thread mould taps in steel sintered in metallurgy powders. The coatings are combined with special surface preparation processes to minimise friction between the tool and material being worked. Available with and without ducts, also with 6HX and 6GX tolerances and an internal lubricant type FOR central hole or with radial FOR-type outputs.

"Our future projects? Our philosophy is to grow, as clearly emerges from the claim of our company, in one of the most delicate mechanical processes.

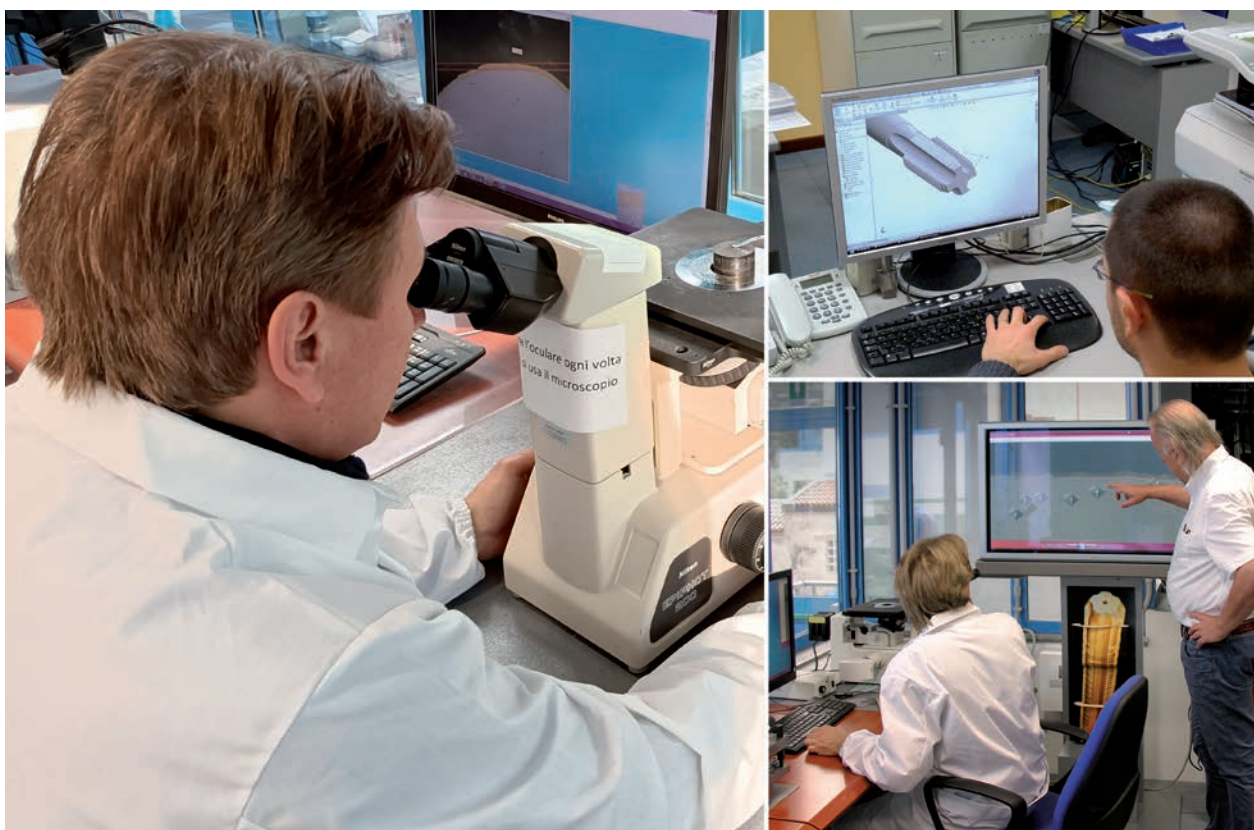
Our sales are currently divided for 50% on the Italian market and 50% on the foreign one.

Seriousness is fundamental to our work, and is the basis on which we have continued the business started over 70 years ago. We intend to intensify our presence on very competitive markets, such as the American one, where product quality is fundamental.



UFS is a bit like a tailor's shop: the creativity, typical of Made in Italy, in designing and building creates taps that perfectly meet the customer's needs. There are many variables that affect the performance

and duration of the tools and, in order for the customer to be truly satisfied, it is necessary not only for them to be customizable from a technical point of view but also to evaluate in advance the real application specifications."



The American Jobs Plan



Dr. Eng. Mor Nguirane
Chemical Engineer

On Wednesday, March 31 at an event in Pittsburgh, the president of the United States of America, Mr. Joe Biden has introduced out his next big proposal: a roughly \$2 trillion plan for improving USA's infrastructure and shifting to greener energy over the next 8 years while ending gender gap and race injustice.

The president Joe Biden Plan aim to address the crumbling US's road, bridges and water systems, the vulnerable electric grid and the lack to access to affordable high-speed internet and to quality housing. According to the White House, it has never been more important for the USA to invest in strengthening their infrastructure and competitiveness, and in creating the good-paying, union jobs of the future.

But unlike past major investments, the plan prioritizes addressing long-standing and persistent racial injustice. The plan targets 40% of the benefits of climate and clean infrastructure investments to disadvantaged communities. And, the plan invests in rural communities and communities impacted by the market-based transition to clean energy. The White House plans to pay for the proposal by raising corporate taxes and eliminating tax breaks for fossil fuels over the next 15 years. Furthermore, the US President Joe Biden has welcomed any other ideas for raising funds for the American Jobs Plan as far as they do not impose any tax increase on people making less than \$400,000 dollars.



Here below the main points of “The American Jobs Plan”.

Fix highways, rebuild bridges, upgrade ports, airports and transit systems.

A \$621 billion investment plan to:

- modernize 20,000 miles of highways, roads, and main street;
- fix the ten most economically significant bridges in need of reconstruction;
- repair the worst 10,000 smaller bridges;
- replace thousands of buses and rail cars, repair hundreds of stations, renew airports, and expand transit and rail into new communities;
- invest on electric vehicles in service of improving air quality, reducing congestion and limiting greenhouse gas emissions.

Ensure clean, safe drinking water in all communities

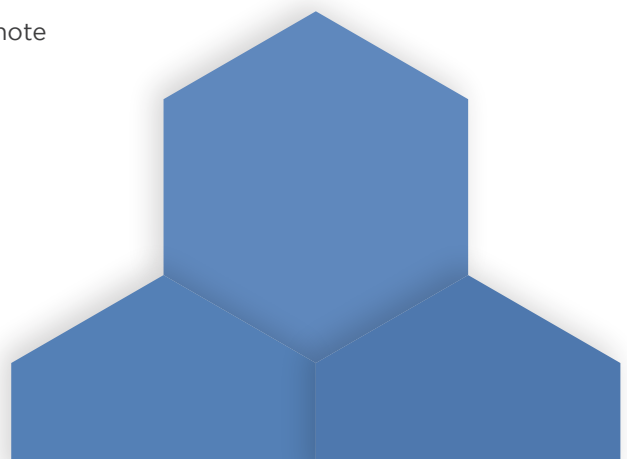
President Biden’s plan invests \$111 billion to:

- eliminate all lead pipes and service lines in water system;
- upgrade and modernize America’s drinking water, wastewater, and stormwater systems, tackle new contaminants, and support clean water infrastructure across rural America.

Revitalize America’s digital infrastructure

Through a historic investment of \$100 billion the US President aim to:

- bring affordable, reliable, high-speed broadband to every American, including the more than 35% of rural Americans who lack access to broadband at minimally acceptable speeds;
- build high-speed broadband infrastructure to reach 100% coverage;
- promote transparency and competition;
- reduce the cost of broadband internet service and promote more widespread adoption.



**Reenergize America's power infrastructure:**

US President is calling on Congress to invest \$100 billion to:

- build a more resilient electric transmission system;
- spur jobs modernizing power generation and delivering clean electricity;
- put the energy industry to work plugging orphan oil and gas wells and cleaning up abandoned mines;
- remediate and redevelop idle real property, and spur the buildout of critical physical, social, and civic infrastructure in distressed and disadvantaged communities;
- build next generation industries in distressed communities;
- mobilize the next generation of conservation and resilience workers.

Build, preserve, and retrofit more than two million homes and commercial buildings to address the affordable housing crisis:

The plan invests \$213 billion to:

- produce, preserve, and retrofit more than a million affordable, resilient, accessible, energy efficient, and electrified housing units;
- build and rehabilitate more than 500,000 homes for low- and middle-income homebuyers;
- eliminate exclusionary zoning and harmful land use policies;
- address longstanding public housing capital needs;
- put union building trade workers to work upgrading homes and businesses to save families money.

Modernize schools and early learning facilities:

A \$137 billion investment to:

- modernize public schools;
- invest in community college infrastructure;
- upgrade childcare facilities and build new supply in high need areas.

Upgrade Veterans Affairs' hospitals and federal buildings:

The American Job Plan provides \$28 billion for:

- the modernization of Veterans Affairs hospitals and clinics;
- the modernization, sustainability, and resilience of federal buildings, including through a bipartisan Federal Capital Revolving Fund to support investment in a major purchase, construction or renovation of Federal facilities.

Solidify the infrastructure of the care economy by creating jobs and raising wages and benefits for essential home care workers.

President Biden is calling on Congress to put \$400 billion to:

- invest in the infrastructure of the care economy, starting by creating new and better jobs for caregiving workers;
- provide home and community-based care for individuals;
- expand access to long-term care services under Medicaid.

Invest in R&D and the technologies of the future:

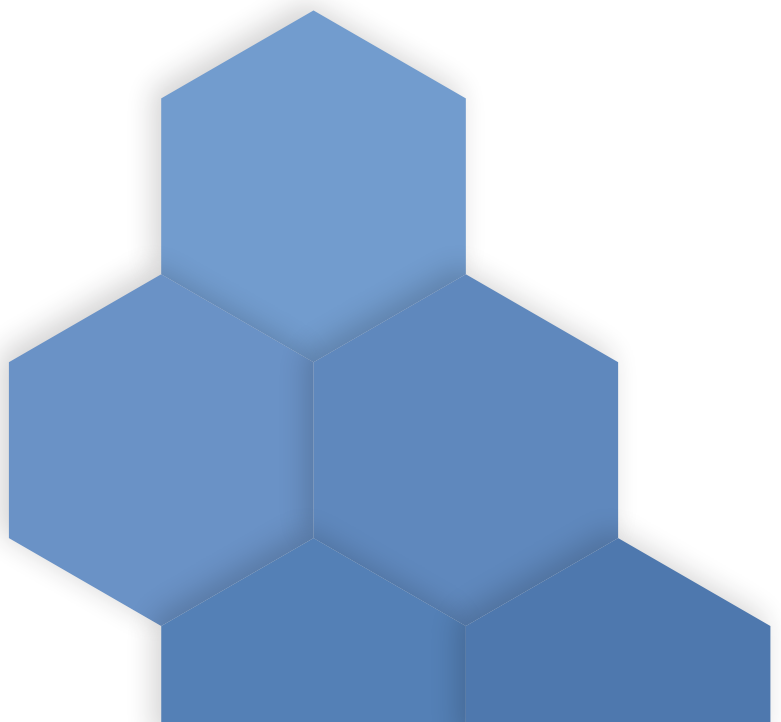
The US President plan an \$180 billion investment that will:

- advance U.S. leadership in critical technologies and upgrade America's research infrastructure;
- establish the United States as a leader in climate science, innovation, and R&D;
- eliminate racial and gender inequities in research and development and science, technology, engineering, and math.

Retool and revitalize American manufacturers and small businesses:

An investment of \$300 billion to:

- strengthen manufacturing supply chains for critical goods;
- protect Americans from future pandemics;
- jumpstart clean energy manufacturing through federal procurement;
- make it in ALL of America;
- increase access to capital for domestic manufacturers;
- create a national network of small business incubators and innovation hubs;
- partner with rural and Tribal communities to create jobs and economic growth in rural America.



**Invest in Workforce Development:**

The US President is calling on Congress to invest \$100 billion in proven workforce development programs targeted at underserved groups and getting our students on paths to careers before they graduate from high school. The plan will:

- pair job creation efforts with next generation training programs;
- target workforce development opportunities in underserved communities;
- build the capacity of the existing workforce development and worker protection systems;

Create good-quality jobs that pay prevailing wages in safe and healthy workplaces while ensuring workers have a free and fair choice to organize, join a union, and bargain collectively with their employers.

The plan is to:

- ensure that American taxpayers' dollars benefit working families and their communities, and not multinational corporations or foreign governments;
- require that goods and materials are made in America and shipped on U.S.-flag, U.S.-crewed vessels;
- ensure that Americans who have endured systemic discrimination and exclusion for generations finally have a fair shot at obtaining good paying jobs and being part of a union;
- overcome racial and other inequalities, expand the middle class, and strengthen communities;
- ensure domestic workers receive the legal benefits and protections they deserve, and tackles pay inequities based on gender;
- create good jobs;
- protect workers by ensuring that employers are providing workers with good jobs with fair and equal pay, safe and healthy workplaces, and workplaces free from racial, gender, and other forms of discrimination and harassment.

Alongside the American Jobs Plan, President Biden is releasing a Made in America Tax Plan to make sure corporations pay their fair share in taxes and encourage job creation at home. A recent study found that 91 Fortune 500 companies paid \$0 in federal taxes on U.S. income in 2018. Another study found that the average corporation paid just 8% in taxes. President Biden believes that profitable corporations should not be able to get away with paying little or no tax by shifting jobs and profits overseas. President Biden's plan will reward investment at home, stop profit shifting, and ensure other nations won't gain a competitive edge by becoming tax havens. Together these corporate tax changes will raise over \$2 trillion over the next 15 years and more than pay for the mostly one-time investments in the American Jobs Plan and then reduce deficits on a permanent basis:

- set the Corporate Tax Rate at 28 percent;
- discourage Offshoring by Strengthening the Global Minimum Tax for U.S. Multinational Corporations;
- end the Race to the Bottom Around the World;
- prevent U.S. Corporations from inverting or claiming tax havens as their residence;
- deny Companies Expense Deductions for Offshoring Jobs and Credit Expenses for Onshoring;
- eliminate a Loophole for Intellectual Property that Encourages Offshoring Jobs and Invest in Effective R&D Incentives;
- enact A Minimum Tax on Large Corporations' Book Income;
- eliminate Tax Preferences for Fossil Fuels and Make Sure Polluting Industries Pay for Environmental Clean Up;
- ramping Up Enforcement Against Corporations.

The American Jobs Plan launched by President Joe Biden is a very ambitious plan that has the noble scope to overcome social and racial injustices and the economic disaster accentuated by the Covid-19 pandemic. It is an exciting step towards an inclusive economic recovery. The President Joe Biden plan is a very complex plan and it won't be easy to make it succeed considering his vastity and all the different actors and interest groups involved. But it worth to fight and make it happen effectively.

Source: The White House



INDUSTRIAL
TECHNOLOGY
editorial office

Custom-tailored for you: from logistics to interior design to turnkey solutions

Innovation, experience, customized solution, and customer care. These are the cornerstones that make **Smetar** a company in step with the future. But not only this, the attention paid to safety at work makes this company a point of reference in the conception and realization of large working spaces, such as warehouses and shopping centers Large-Scale Distribution.

The warehouse represents a starting point for **Smetar**, which for more than thirty years has been dealing with logistics, design and furnishing of shops and shopping centers but also with “turnkey” solutions. Many years of experience have allowed the company to realize innovative solutions and proposals not only in line with the principle of affordability and efficiency, but also feasibility. In fact, the realization of metal shelves, industrial and modular systems in the field of corporate logistics allows maximizing spaces but, above all, to reduce the costs related to them. In addition, their constant presence in this sector, allows paying appropriate attention to the market demands that are constantly evolving. **Smetar**, in fact, aims at creating surfaces (small, medium or large) that make large spaces, such as those of supermarkets, more ordered and colorful places, for a design always in step with the times. Valuing the goods will be a breeze.

A certain attention is also to the worker: the design of safe and efficient spaces is the pivot of **Smetar**'s project, which increasingly aims at creating safer work environments, even under the anti-seismic aspect. The yellow colour, for example, is used to ensure that the lift-truck operator has greater visibility while, the protective bumpers, allows avoiding impacts.

Another strong point is the “turnkey” solutions: in full respect of costs and delivery times, **Smetar** makes projects “ready to use”. A team of twelve experts, including architects and engineers, will be able to provide solutions tailored to your needs.

Last but not least, **Smetar** can be everywhere! The company, as a matter of fact, is able to be a consultant and partner not only in Italy, but also abroad.

Finally, the global health emergency has certainly required the reorganization of work process in order to maintain the proper distance between the operators. However, the company has not lost sight of its objective: it offers a fully customizable consulting service on the needs of each individual customer, who increasingly require wider corridors to ensure and comply Government health directive.

For more information please visit:

www.smetar.it

info@smetar.it





Viro, security made in Italy since 1942



Since 1942, Viro has been manufacturing and exporting in more than 80 countries various ranges of security items, from locks and padlocks to chains and saves.

As Italian manufacturer of a wide range of security products, Viro allows industries and wholesalers, the same as final users, to obtain the right quality, according to the specific required use.

Most of the attention in the design and manufacturing process is paid to the **materials choice**, the **thermal and chemical treatments** and the **specific features** needed to prevent undesired attempted thefts.

Armoured Padlocks - Viro Panzer

- Practically impossible to grip thanks to the exclusive shape.
- Pull-resistant due to the grip with programmed break-age dead-bolt head and the 7-pin plug for a very high number of combinations.
- Pick-resistant thanks to the “mushroom” shape brass counterpins.

Furthermore, the case-hardened, tempered, copper, nickel and chrome plated steel rotating dead-bolt and the Viro Top Security profile keys make them more resistant to attack.

The versions with 2 independent dead-bolts can be easily and perfectly combined with the chains and the closing eyelets of the truck containers.

One-piece padlocks - Viro Euromonolith

The new generation of elegant padlocks, offering maximum resistance and security.

-Cut-resistant and drill-resistant thanks to: the hardened and tempered steel of the one-piece body, the great thickness dead-bolt and the anti-drill rotating plate of the cylinder.

These padlocks are treated with the “NIPLOY PROCESS”, an innovative chemical nickel-plating which ensures a high corrosion-proof standard.



Security padlocks with chains - Viro Supermorso, Totem and Bloccacatena

Over 35 years ago, Viro designed and launched an armoured padlock range, which includes the “Supermorso” and “Bloccacatena”, specifically designed to be used longitudinal to chains.

The two aforementioned practical antitheft systems together with the sturdy “Totem” are particularly suitable for securing (e)bikes, scooters and motorcycles, also thanks to the following technical features:

-Cut-resistant (an alloy of steel and manganese) chains with semi-squared section (generally, counter shears

have blades for cutting rounded profiles) and case-hardened, tempered and galvanized.

-Chain protection from knocks and scratches thanks to the protective customizable in fabric nylon cover that minimizes its bulk.

-Large wire diameter of the chains (from 0.27” to 0.39”) and wide range of available lengths.

For more information please visit:
www.viro.it

The right comfort for the environment



Our History

In 2002 Mr. Aliano Francesco, after important technical experiences in companies in the refrigeration and civil air conditioning sector, founded AF Frigo Clima Impianti S.r.l., meeting the market demand to establish a new reference for the installation, maintenance of air conditioning systems, cleaning and sanitizing of pipelines, in the railway sector. In fact, the need arose on the part of the main suppliers of air conditioning systems in the railway sector to guarantee a service network for the assistance of the installed systems.

AF Frigo Clima Impianti, thanks to an in-depth knowledge of the machines installed and a consolidated technical competence developed over many years of activity, it has responded, with a capillary distribution of resources throughout the country and with the necessary flexibility, to the needs of customers, whether they are plant suppliers and services.

However, since 2019 AF Frigo Clima Impianti has expanded its offer with the design, revamping and construction of complete air conditioning systems.

Today AF Frigo Clima Impianti is organized with a design office made up of a team of professionals, able to deal with the development of installation engineering projects, the analysis of breakdowns on rolling stock, the identification of solutions to any problems. of operation that should emerge on installed systems, also by interfacing directly with the manufacturers of the systems themselves.

In the Bomporto plant, the units designed are produced or solutions for improving HVAC units already installed are found in order to comply with the increasingly high standards of comfort required today by transport companies.

The systems are tested in a new generation climatic chamber capable of verifying the compliance of the air



conditioning units with the reference functional specifications.

Compared to the large manufacturers of air conditioning systems for the Italian market *AF Frigo Clima Impianti*, even if with the right proportions, is on the market as the only Italian company in the sector capable of owning all phases of process, i.e. designing, building, upgrading, installing, maintaining and sanitizing air conditioning systems in the railway sector.

AF Frigo Clima Impianti is currently designing, building and installing 380 HVAC units for as many Trenitalia Intercity carriages on behalf of Hitachi Rail S.p.a.

In particular with regard to cleaning and sanitizing *AF Frigo Clima Impianti* has recently designed, developed and patented, in collaboration with the University of Urbino - Department of Biomolecular Sciences - an innovative system of continuous operation sanitation with UV ray technologies. -C and ionization with application on air conditioning systems of railway, underground and tramway vehicles called CSA System, Continuous Sanitization Air System, capable of obtaining a 99% reduction of bacterial and viral loads with continuous operation, exceeding the problem of stopping the vehicle for sanitization and ensuring the health of users even in crowded conditions and / or long journeys.

The project participated in and won the tender issued by the Emilia Romagna Region to support research and innovation projects for the development of solutions aimed at combating the COVID-19 epidemic (D.G.R. 342/2020). Currently, in collaboration with Hitachi Rail, *AF Frigo Clima Impianti* is installing the system, in prototype form, on the carriages of Trenitalia's Vivalto regional train and is in contact with the main national and international players to extend the application to other carriages / trains

CSA System

Developed by *AF Frigo Clima Impianti*, in collaboration with the University of Urbino, "Carlo Bo", the CSA (Continuous Sanitization Air) is an integrated system of various modules aimed at ensuring the sanitization of the air within the passenger and of the train's cockpit.

The CSA System sanitization device, thanks to a closed-circuit air analysis control, carried out via the ECU (Electronic Control Unit), using the air flow rates of the HVAC unit,

is able to:

- Kill all microorganisms present in the environment (kills 99.99% of microorganisms, pathogenic and not, circulating in the ventilation systems and to prevent the formation of biofilms).
 - Analyze the air quality parameters.
- Change the settings of the modules to obtain the required air values in the most efficient way.
- Share the air quality parameters according to the needs of the operator / maintenance technician.

The CSA System uses the combination of different technologies to achieve its goals.

Among the various possible options, the one considered best has been selected. The technical-scientific support of the University of Urbino has provided us with reliable data on ionization, filtering and UV-C irradiation technologies to offer a system that combines technology, efficacy and safety.

The system has been patented both in Italy and abroad and certified with verification of conformity by ISARail Spa.

Thanks to this system, the air that will soon be able to be breathed on the carriages will be PURE, free of particulate / smog and microbiologically sanitized.

There will therefore be no bacteria (*Legionella*, *Staphylococci* and gram negative), fungi (*Cladosporium*, *Penicillium*, *Alternaria*, *Fusarium*, *Aspergillus*) and their products (endotoxins, mycotoxins, spores), viruses (*Rhinovirus* and influenza viruses, Covid-19), mites and pollen (including any variants or drug resistance).

Targets

- Consolidate and expand the positioning of the company for the design and production of new HVAC units.
- Consolidate the position of a company capable of upgrading, maintaining and improving the performance of air conditioning systems already installed.
- Develop the new CSA System on the national market and, also proposing it on the foreign market through commercial agreements with the main international players.
- Expansion of the Bomporto production site for the parallel production of new CSA System groups and plants.

Design and production from 1980 for the world market

The experience gained in all these years, allows us to export our products all over the world. FOX, has become an important partner of the most important companies operating in the industrial world (Oil & Gas, petrochemical, water treatment and similar) and in the pneumatic and hydraulic world (from steel to machine tools, automotive, naval, construction machines, lifting, agriculture, etc ... As a confirmation of almost 40 years of production of hydraulic accumulators and pulsation dampeners, FOX has the capability to supply along with the products, a several certifications for all type of market, like ASME U-Stamp, ASME VIII Div.1-2, PED, NR13, ARH, SELO, CUTR-EAC-Gost, UL-CSA, EN, ect...

Our production is divided in two principal lines of products; one dedicated to production of hydropneumatics accumulators (and his derivatives), pulsation dampeners and calibration pots, and one dedicated to the construction of instrumentation for the control of pressure, level, temperature and flow.

The first line of products, are dedicated to production of a complete range of hydropneumatics accumulators, thermal expansion vessel and pulsation dampeners of various types; from simple and most used (bladder, diaphragm, piston, bellow) to customized, patented and engineered construction such as spherical maintenance free, flow trough, suction stabilizer and execution till 1379 bar or big volume till 5000 liters. For the materials, we have the possibility to design and manufacturing all products in special material (Duplex Stainless Steel, Super Duplex Stainless Steel, Alloy20, Inconel, ecc...) with elastomer in NBR, HNBR, EPDM, FPM, PTFE, ALCRYN, POLIURETHANE ecc...

The second line of products, is dedicated to production a complete range of instrumentation for the control of pressure, flow, level and temperature. For the control of pressure, we can propose electromechanical pressure switch, electronic with display, pressure transmitter with output signal. For the control of flow and air, we propose flow switch electromechanical and electronic with display. For the level, we propose a range form simple external level indicator to interior (of tank) level switch, with simple contact or external display with remote signal or infrared. At the last but not the least, a complete range of temperature sensor; from typical thermostat with fix setting, to adjustable type, or electronic with display and remote control. For the material, we have the possibility to provide special execution with separator, apply in difficult operating condition with pumped fluid corrosive or with solid particles, also material as brass, stainless steel, aluminum, zinc plated steel with seal in NBR, HNBR, EPDM, FPM, PTFE, ecc..

For more information please visit:
www.fox.it





FOX



Mintor: the safety of metal

Founded in 1962 by Giancarlo Losi and since then under the control of the same family, Mintor from Pavia has specialized since its origins in the production and marketing of components and in particular caps for the most varied hydraulic applications. After moving in the late 1960's from Pavia to nearby Cura Carpignano, the company embarked on a growth path that led to acquire new spaces and expand its facilities several times. The most recent restyling work dates back to 2014 and was the last - for now - of a series of expansion initiatives that involved logistics, development, assembly and administration. UNI EN ISO 9001:2015 certified, the company has gained knowledge of the problems and needs of end customers and attention to the technical-commercial evolutions of the industries served two of its main strengths. A "demanding" mission, according to the definition of the brand, but which if pursued with passion allows staying competitive. The longevity and success on national and international views are then due to the completeness of the offer that the Mintor catalog presents. There are loading and unloading caps with hexagonal head, hexagonal hollow, gripable, in a variety of different shapes and sizes, and magnetic caps for the elimination of ferrous residues from lubricating liquids. A variety of solutions, including double valve solutions, characterize the range of breather caps - "to normalize the pressure differences within the containment volumes to the desired conditions" - and fill. The latter include more traditional models together with others equipped with a controlled opening system with padlock or lock. And also caps on inclined flange, level indicators (vertical, rod, float, visible) without forgetting the importance of custom models.

We are certainly also working on renewing the range. For this reason, we are dedicating important efforts to the installation of new machinery, warehouse equipment and methodologies. We consider it the fundamental premise to be able to give impetus to authentic improvements on the technical side. We are automating warehouse procedures for raw materials and internal handling of goods. As for machines, lathes are the systems we are focusing on the most: they are the heart of Mintor's business and represent a return to our origins: we were born as a turnery. We are proceeding on the road of the fourth industrial revolution in small steps and always trying to harmonize our internal needs with those of the users.

For more information please visit:
www.mintor.com



mintor®

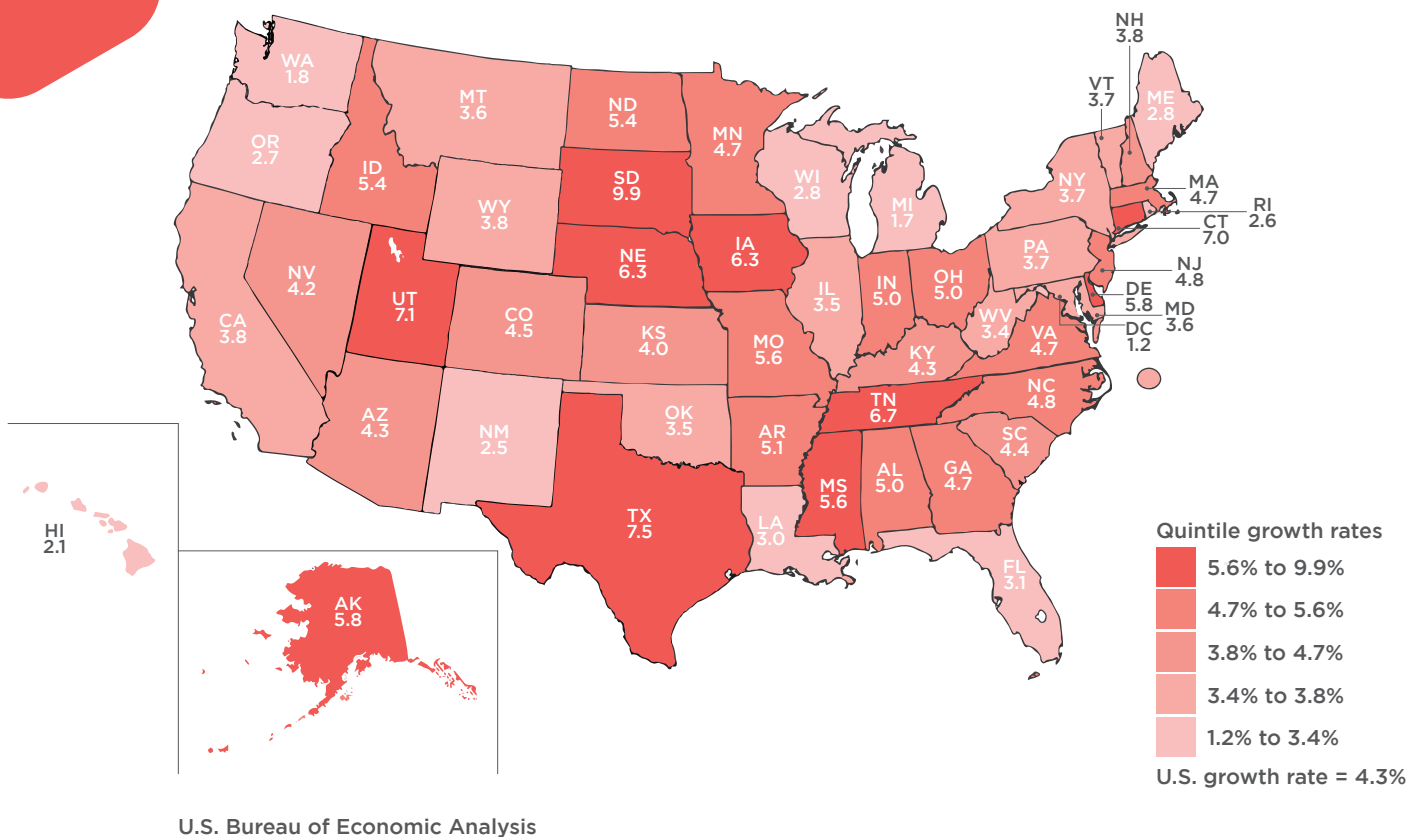



Gross Domestic Product by State, 4th Quarter 2020 and Annual 2020

- South Dakota had the largest increase in the fourth quarter

March 26, 2021- Real gross domestic product (GDP) increased in all 50 states and the District of Columbia in the fourth quarter of 2020, as real GDP for the nation increased at an annual rate of 4.3 percent, according to statistics released today by the U.S. Bureau of Economic Analysis. The percent change in real GDP in the fourth quarter ranged from 9.9 percent in South Dakota to 1.2 percent in the District of Columbia.

Real GDP: Percent Change at Annual Rate, 2020:Q3-2020:Q4





Finance and insurance; healthcare and social assistance; and administrative and support and waste management and remediation services were the leading contributors to the increase in real GDP nationally.

Other highlights

- Finance and insurance increased 12.9 percent nationally and contributed to the increases in all 50 states and the District of Columbia. This industry was the leading contributor to the increases in 25 states including South Dakota, Texas, Utah, and Connecticut, the states with the four largest increases.
- Healthcare and social assistance increased 8.3 percent nationally and contributed to the increases in all 50 states and the District of Columbia. This industry was the leading contributor to the increase in seven states including Tennessee, the state with the fifth largest increase.
- Administrative and support and waste management and remediation services increased 21.1 percent nationally and contributed to the increases in all 50 states and the District of Columbia.
- Accommodation and food services decreased 7.1 percent nationally. This industry moderated increases in real GDP in 38 states.

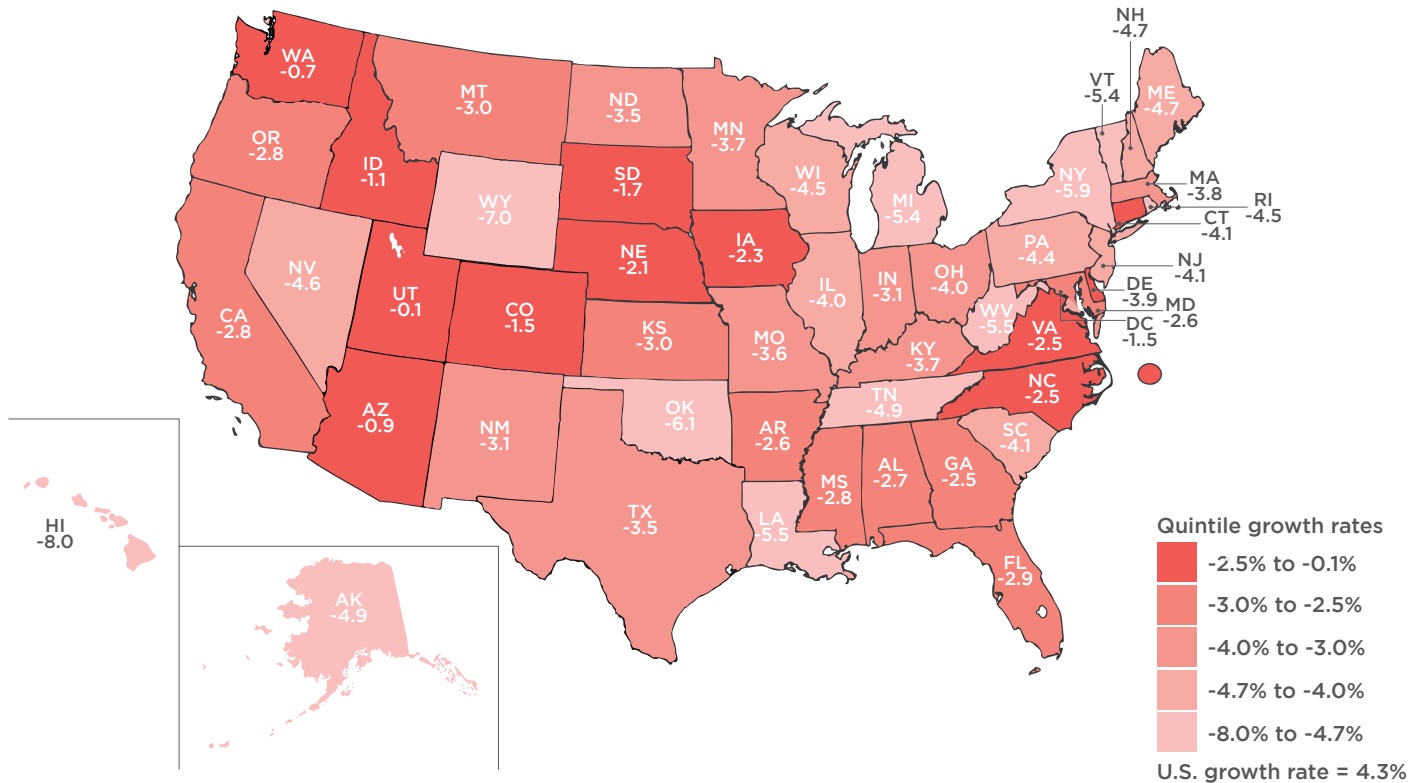
Coronavirus (COVID-19) Impact on Fourth-Quarter 2020 and Annual 2020 GDP by State Estimates

The increases in fourth-quarter GDP by state reflect both the continued economic recovery from the sharp declines earlier in the year and the ongoing impact of the COVID-19 pandemic, including new restrictions and closures that took effect in some areas of the United States. The annual 2020 estimates of GDP by state reflect the rapid shifts in activity, as business and schools switched to remote work, consumers and businesses canceled, restricted, or redirected their spending, governments issued and lifted "stay-at-home" orders and government pandemic assistance payments were distributed to households and businesses. The full economic effects of the COVID-19 pandemic cannot be quantified in the GDP by state estimates because the impacts are generally embedded in source data and cannot be separately identified.

GDP by State, Annual 2020

Real GDP decreased in all 50 states and the District of Columbia in 2020. The percent change in real GDP ranged from -0.1 percent in Utah to -8.0 percent in Hawaii.

Real GDP: Percent Change, 2019-2020



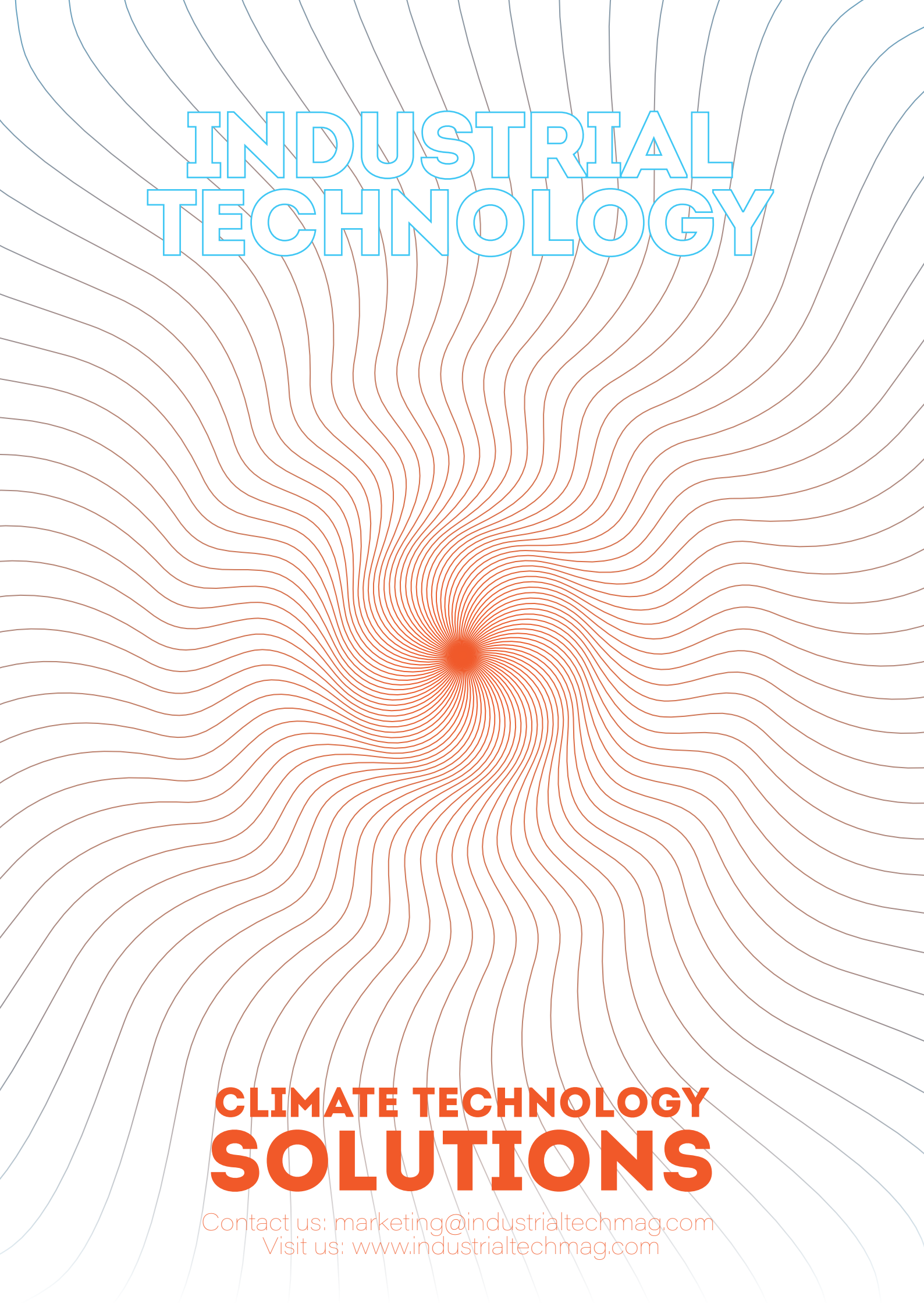
U.S. Bureau of Economic Analysis

Other highlights

- Accommodation and food services contributed to the decreases in all 50 states and the District of Columbia. This industry was also the leading contributor to the decreases in 38 states and the District of Columbia, including New York, the fourth slowest growing state.
- Both arts, entertainment, and recreation and healthcare and social assistance contributed to the decreases in all 50 states and the District of Columbia.
- Construction and finance and insurance were the leading contributors to moderating the decrease in Utah, the state with the smallest decline.

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MEP GROUP: The Labour as Masterpiece of the Human Life



M.E.P. Macchine Elettroniche Piegatrici S.p.A., founded on February 8th, 1966 is located in Reana del Rojale, UDINE in North-Eastern Italy.

MEP is: ideation, design, prototyping, engineering, manufacturing and marketing of rebar (reinforcing bar)-pro-

cessing industrial machinery and plants.

MEP is the main leader brand on the global market for civil construction and large public investment works present in 128 Countries.

The MEP GROUP operates in the following segments: cut and bend – rebar processing equipment, cold rolling, straightening, cutting, precast engineering, welding & handling, and downstream engineered production process in mesh welding plants.

MEP has been an innovation-based company from the very beginning of its activity, in 1967, with the first worldwide patent of the first stirrup bender machine.

Since MEP further improved its strong technological connotation thanks to the essential contribution of the investments in R&D.

The Primary Income Generating Assets, are now integrated with digitalization optimizing the Value for Customers worldwide.

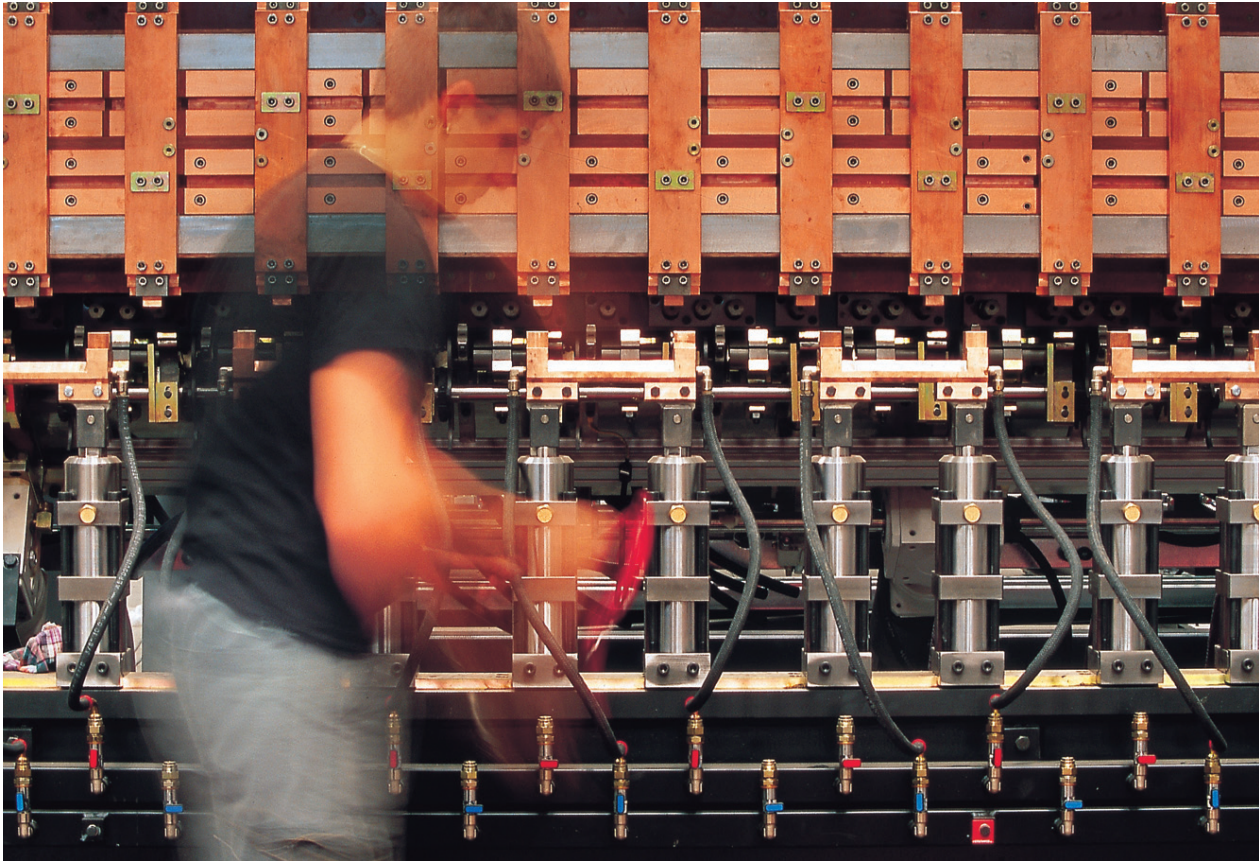
Moreover, Client satisfaction is guaranteed by pre and after-sales assistance, customer experience and a strong services platform. MEP engages in the Technology Solution Provision, meeting all the customer's needs and requirements as installation, spare parts, in-plant layout, software control and other digital operations.

In 2020 MEP GROUP was able to overcome COVID's diseases through the overall organisation by the Digital Academy, inside the MEP Business School, with the digitalisation of many processes, the agile work, the smart working.

The Sales Digital Streaming replaced the fairs and the visit to the showrooms in the world. The Company became a *Covid Safety Capsule* where to work with sustainable immunity, digitally and physically, with an accurate Corporate Governance's attitude and ethical positive behaviour.

The fourth Industrial mindset has permeated the already-existing technological substratum. Instruments

MEP



such as Virtual Reality, Internet of Things and Cloud Computing are employed in the Group's daily activities. Although MEP is an innovation and technology-driven company, ultimately the value creation derives from the Human Capital: competence, expertise, passion, and know-how of people makes in the words of the MEP CEO - Vito Rotondi: *all of us must deal with People daily and we are confronted by the same questions time and again: decision, motivation, team, organisation, change,*

efficiency, improvement, technology... The solution is: Labour as Masterpiece of the Human Life. If we encounter chaos, models help to decrease the complexity and structure an overview of it, but not the way and subject of our thinking process.

For more information please visit:
www.mepgroup.com

IVR Industrial Furnaces, the right choice for your HEAT TREATMENT



IVR designs and manufactures furnaces and plants for heat treatment, all completed by an excellent after sales service.

IVR relies 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.

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.

We are always searching for continuous improvement!

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

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.

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.

Don't hesitate to contact us!
info@ivrsrl.it - www.ivrsrl.it



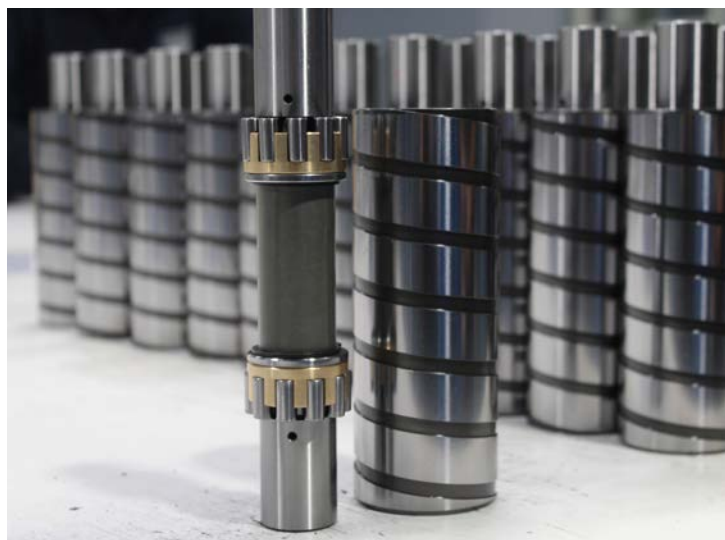
Bearings: custom production exported worldwide

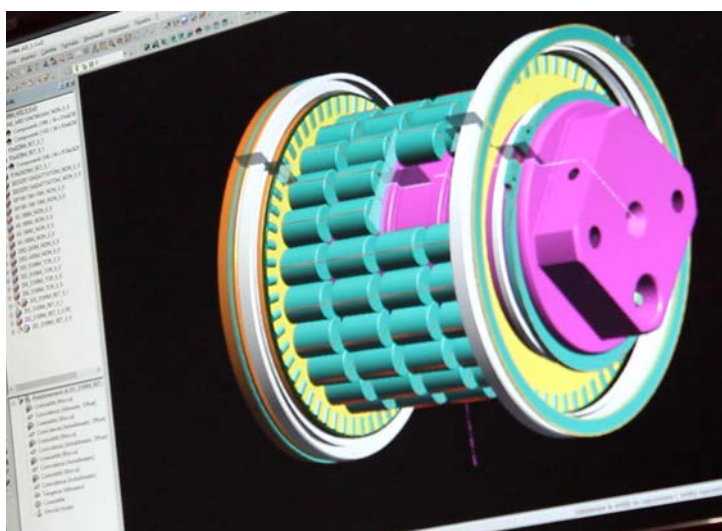
The mission pursued by Faro Industriale has always been designing radial and axial bearings, up to diameters that can reach 2,100 mm, and manufacturing them with the utmost quality level. A highly customized production exported by almost 80% worldwide, confirming competences, know-how and an organization able to satisfy the most different market requirements on a global scale.

The FARO customers are from the most various sectors: from iron and steel industry to railway, from the historical field of machines for corrugated board to tubular rope-making machines and wire processing, from material handling to the diversified machine tool sector. The latter field is highly satisfactory for FARO, which hold the role of a protagonist side by side with outstanding manufacturers, through the design and implementation of axial and radial bearings, with or without cage for rotary tables, supplied in P5 or higher precision class. The 40 years of activity have allowed FARO staff to gain experiences in various industrial sectors, permitting to acquire all-round technological competence and skills so much needed in the design and implementation of advanced engineering products.

Technological innovation and a highly skilled staff, currently around fifty employees, brought FARO to become a competitive player in an increasingly global market, with a forefront diversified machine fleet, a feather in the cap for our processes. From this point of view, precisely aiming at a constant improvement, through the 2019-2020 biennium investments, interesting integrations have been accomplished. First of all, last year took place the implementation of a new metrological laboratory taking up 100 square metres and hosting two new 3D measuring machines. The metrological lab hosts in fact two Zeiss CMM, a Prismo Ultra and an Accura 2000, which have allowed increasing the dimensional control capacity, reaching a diameter of 2,100 mm, and perfecting the shape control of very heavy bearings up to a diameter of 1,000 mm. The two new grinding machines, new Novamatic PGE external grinding machine and a new Novamatic 4GP internal grinding machine, integrated into manufacturing lines will allow further improving of machining precisions guaranteeing the most accurate controls in the order of micrometers. Faro can count on about 1,200 dedicated measuring instruments and equipment, constantly calibrated with the aid of a certified calibration bench.

For more information please visit:
www.faro-bearings.it





One machine for everything: Weatherproof shredder for processing a wide range of materials



The material is fed into the feed hopper of the shredder by means of an excavator with a polygrab – the RM1350/2-2000 itself is conveniently controlled by means of a remote control from the excavator cab.

More than 50 percent of Swiss municipal waste was recycled in 2017, according to an OECD study. Maag Recycling AG, a regional waste management company in Winterthur, is also a factor in this high rate.

It is difficult to find spare parts for the long-serving rotary shear

In order to process the raw materials appropriately, the recycling company has had a rotary shear in use since 1999, which is operated in a primary treatment stage for shredding various input materials - mainly components made of aluminium, copper and zinc.

However, with the increasing age of the plant, the maintenance effort had increased and the search for spare

parts became arduous. "Based on the problem we contact Erdwich for the new acquisition", reports Maag.

The frequency-controlled twin-shaft ripper, based on the RM1350/2-2000 model developed by Erdwich, no longer produces strips - instead, the input fractions are processed into a homogeneous output material thanks to 24 ripper blades.

Depending on the material and the configuration of the cutter set, parts measuring 6 x 1 x 0.5 m can be shredded to a size of approximately 100 x 100 x 100 mm. To this end, control programmes can be stored or the machine can be freely programmed to adjust it for the different input materials.

Another factor contributing to a high throughput rate is



After shredding, the material falls onto a vibrating conveyor chute directly below the plant.

the radial feed press integrated into the hopper, which presses voluminous and light materials. These features result in a higher hourly throughput.

Since the power of the plant, with 2 x 55 kW, is designed in accordance with great importance being placed on a considerable degree of robustness, even massive parts which can occasionally arise can be processed. This was impossible with the rotary shear.

Limited space environment demands adjustments to the system

The input material is fed into the ripper's hopper by means of an excavator with a polygrab meaning the RM1350/2-2000 can thus be conveniently remotely con-

trolled from the grab's cab. After shredding, the material falls onto a vibrating conveyor chute directly below the plant.

In addition to the ripper, a discharge belt with an ascending element and an overhead magnet are installed to separate the Fe fraction.

This is followed by a sorting station with protective roofing. The entire shredding solution now has external dimensions of 9 x 7 x 4.4 m.

For more information please visit:
www.erdwich.com

How Covid19- triggered a Latin American e-commerce boom

- Covid-19 drove significant growth in e-commerce across Latin America
- As one of the fastest-growing markets, retail e-commerce expanded by 37% in 2020
- A number of local players, led by Mercado Libre, dominate the regional market
- The increase in activity has attracted the attention of international competitors



Mirroring global trends, the coronavirus pandemic led to a rapid increase in online payment activity in Latin America over the course of 2020, turning the region into one of the fastest-growing e-commerce markets in the world.

Prior to the outbreak of the virus, e-commerce penetration was comparatively low across Latin America, with uptake hindered by the region's substantial unbanked population, complicated logistics connections and general lack of trust in online methods.

However, with many stores forced to suspend physical operations, Covid19- has helped drive significant growth in this area.

It has been estimated that 13m people across Latin America made an online transaction for the first-time last year, while retail e-commerce grew by %36.7 to around 85\$bn, according to data company Statista. On a national basis, particularly significant growth was seen in Argentina (%79), Brazil (%35) and Mexico (%27).

While still well below comparative figures in Asia-Pacific (2.4\$trn), North America (750\$bn) and Western Europe (500\$bn), Latin America nevertheless made significant progress throughout 2020.

"Quarantine and social distancing measures greatly accelerated the trust and adoption of digital platforms, helping Latin America catch up with more digitally mature markets like the US or China," Carlos Garcia Ottati, the founder and CEO of Mexican online vehicle platform Kavak, told OBG.

Homegrown players

While multinational e-commerce and digital payments companies have experienced rapid growth throughout the pandemic, in Latin America a number of homegrown options have capitalised on the shift in demand.

Chief among those is online marketplace Mercado Libre, which allows individuals and businesses to buy, sell, advertise and pay for goods on its online platform.

First established in Argentina in 1999, the company now operates in 18 different countries across the region. Dubbed the "Amazon of Latin America", it is the largest e-commerce company in the region.

Mercado Libre has been one of the big winners of the pandemic, with its value more than doubling over the past year.

"At the beginning of the pandemic sales were driven by Covid-19-related items like protective gear and hygiene products, whereas from May onwards, most other categories also experienced sustained growth in sales," David Geisen, country lead of Mercado Libre Mexico, told OBG.

"In the second quarter, not only did we register 3m new customers on our platform, but purchasing frequency increased sharply, with customers transacting in a quarter what they formerly did in a year."

Over the first nine months of 2020, the number of unique active users increased by %84.3 year-on-year, from 61.1m to 112.5m, and gross merchandise value rose by %41.8, while the total payment volume grew by %71.5 to 33.8\$bn.

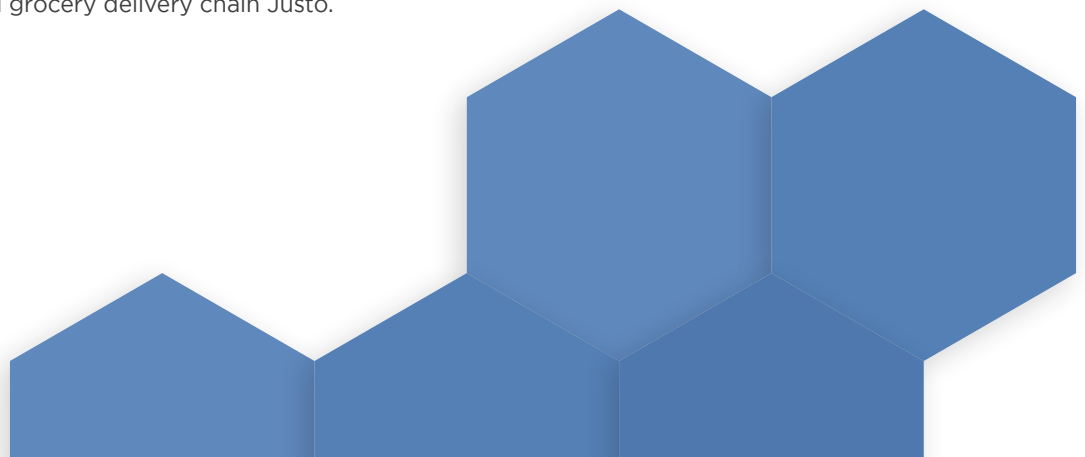
This saw the company increase its share in the Latin American e-commerce market to %28, according to Morgan Stanley estimates, up from %19 in 2015.

Another key player is Colombian super app Rappi, which is active in nine countries across the region.

Established in 2015, the company offers a variety of services, allowing consumers to order groceries, restaurant meals, medication and fashion, among other things. It also allows users to transfer money and has its own delivery service.

Rappi is valued at around 3\$bn, and – in a sign of its potential – it has been backed by Japan's Softbank, in the company's first ever investment in Latin America.

Other significant operators in the region's e-commerce space include Caribbean-focused payments platform WiPay, Mexican online marketplace Linio and the Mexico City-based grocery delivery chain Jüsto.





Expansion of services

A number of e-commerce firms in the region have expanded into services beyond purchase and delivery.

In 2019 Rappi announced a partnership with Visa to offer prepaid cards linked to its digital wallet in Brazil, Colombia and Mexico, while in June last year the company created a financial services joint venture with Mexican bank Banorte.

Mercado Libre has also expanded beyond its core online marketplace business in recent years, with the company now consisting of a logistics division, a credit service, a financial technology platform and an advertising agency.

In fact, in November last year the company's credit arm was granted a permit to operate as a financial institution in Brazil, a decision the company says will allow it to expand its credit offerings and financial services in the region's largest market.

Elsewhere, investments have gone into developing Mercado Libre's logistics capabilities following the surge in demand in 2020.

"We have significantly expanded our warehousing and distribution footprint in Mexico, increasing our storage capacity from 30 sq km two years ago to 200 sq km in 2020," Geisen told OBG.

Expansion of services and markets has been seen across the board, with Mexican company Kavak becoming the country's first tech unicorn in September after reaching a valuation of \$1.15bn in its funding round. The company also expanded into Argentina through a merger with used-car platform Checkars.

International competition

While the e-commerce market is currently dominated by regional operators, recent growth, along with substantial potential, has already attracted a number of international competitors.

Among them is US giant Amazon, which has been active in the region since 2015. Although it has so far been kept in check by local players, the company has nevertheless doubled its market share in Latin America over the past five years, to around %4.

In an effort to increase the company's footprint, last year Amazon announced plans to open its largest distribution centre in Brazil and launched Amazon Cash in Mexico, a payment option that allows customers to make purchases with cash at participating convenience stores.

Elsewhere, Shopee, the largest e-commerce platform in South-east Asia, which is owned by Singaporean company Sea, also recently increased its presence in the region.

After initially establishing operations in Brazil in 2019, in February Shopee announced the launch of an app in Mexico, with plans to offer online sales in the near future.

In a bid to win over market share, the app states that Shopee will offer free shipping throughout Mexico. It comes as shares in parent company Sea jumped by %400 last year, and market capitalisation reached around 130\$bn.

Publisher Oxford Business Group on March 2021,4

INDUSTRIAL
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Amer Group: We drive the e-future



The adventure started back in 1974, when Mr. Francesco Battistella began manufacturing DC electric motors in a small rented warehouse at Valdagno (VI), Italy.

The business vision, the attention to details and flexibility, have made us grow fast over these years.

Today we are a team formed by **9 companies** and **1 brand**, specialised in the production of integrated solutions for electric battery powered applications: **AC and DC motors, gearmotors, traction systems, electronic control systems, linear motion systems, alternators, PMG and voltage regulators.**

Being a Leader in the global market means to be present

where the market is, with a Group ready to solve all customer needs at 360 degrees. For this reason, we can rely on a flawless distribution, a fast technical support and after-sales service for all our customers, thanks to our distribution subsidiaries located in the **USA**, India and PRC.

Together, we give movement to your applications!

The success of our customers is our priority and it is the motor for our continuous investments in new technologies, product and process innovation, and human capital. This is how we face the fast and dynamic changes that the global market is establishing.

Every project is a new page that we write together with our Partners. Thanks to the **co-design**, and the continu-



ous exchange of knowledge and skills, we **customize** all the variables to the most efficient design: from power and specific application needs and duty-cycles, packaging to logistics, up to the final test application, even on a product already integrated. Everything is carefully defined to maximize the performance of our Partners' products.

All in one hand

The expertise and our know-how allow us to offer integrated solutions where mechanics, electronics and IT ideas interact perfectly with each other.

We bring in the skills of the R&D teams of the Group, in order to develop customized traction systems, control systems, gearmotors and actuators for applications such as: AGV, AGC, conveyors, cobots, pumps, HVLS, generators, lighting towers, telescopic lifters for medical and

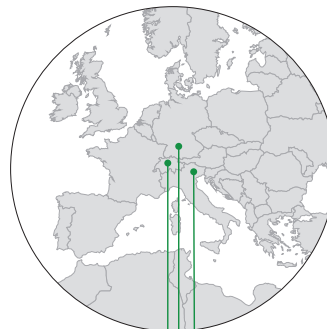
ergonomic workstations.

Working with us means having an unique contact of solutions that are designed to be integrated with each other, with significantly shortened lead-times. In addition, there is a direct communication between the components, meaning hardware and software.

GET IN TOUCH with us for further details of our products!
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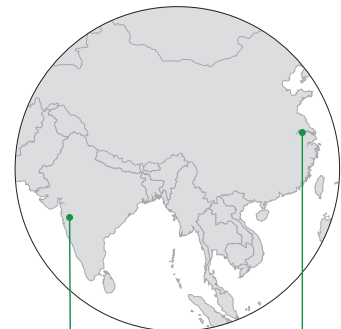
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China distribution

OUR GLOBAL PRESENCE

Inflatable Packers

A Very Versatile Technology



A standard inflatable packer element partly inflated for demonstration purposes

IPI Packers have designed and manufactured inflatable packers and associated tools since 1999 in Perth, Australia. Now the world's largest specialist in this niche technology, our distinctly different reinforcement technology frequently delivers better performance than more classic formats.

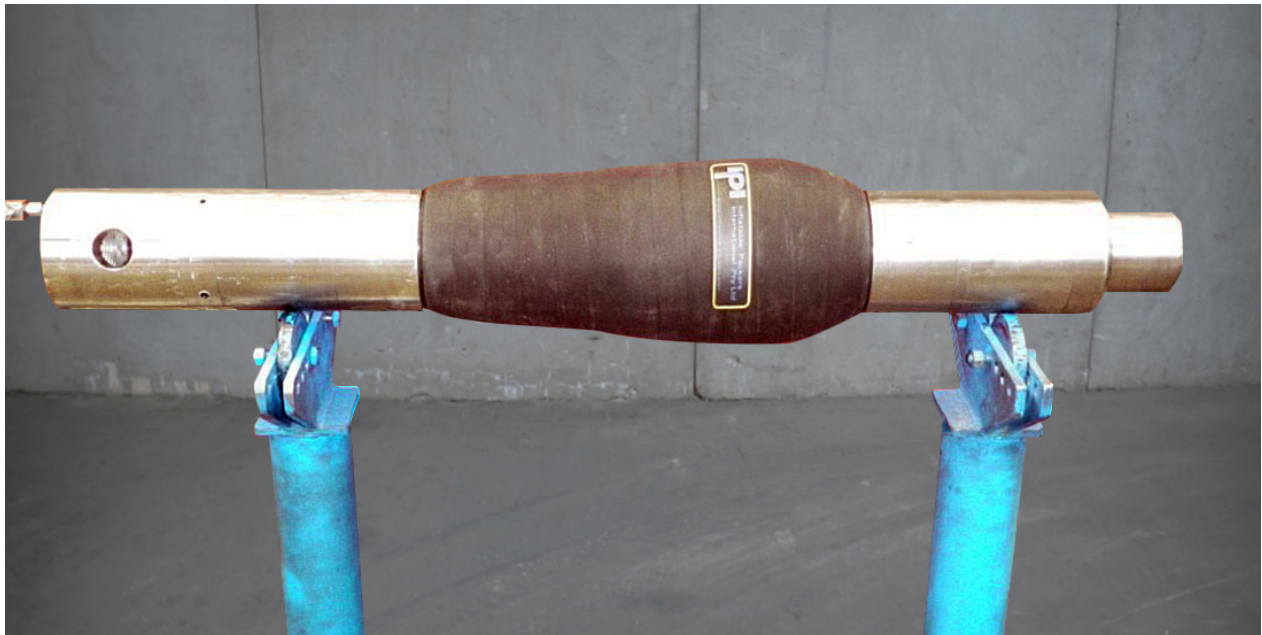
Inflatable packers typically look like a short length of high-pressure hydraulic hose, but can expand up to three times in diameter when pressurized with fluid. They are primarily for creating temporary seals, therefore common applications are usually for "zonal isolation" such as the plugging and abandonment of oil & gas wells, mine site permeability testing, grout injection for construction (dams, mines and tunnels), hydraulic fracturing and aquifer testing for water wells.

Alongside a proven line of standard products, IPI Packers excel at OEM components and custom-made products to suit customers' exact needs. Rapid, low-cost design

and manufacture is greatly helped by a well-equipped laboratory for elastomer research and testing, a "digital understanding" of the technology as well as manufacturing methods that enable a wide range of geometries and performance specifications. These typically provide unique solutions to complex problems and need little in the way of new tooling.

Our team have made packers ranging from 17mm up to 1800mm in diameter with some pressure ratings over 1400 bar for temperatures approaching 200C (not concurrent). Some unique applications of our technology include:

- High-pressure packers used for hydro-forming stainless steel pipe to re-line and repair pipelines and wells.
- Our DuraGRIP™ range of anchoring packers being used as lifting packers, such as for casing recovery in off-shore oil & gas wells.
- Inward-inflating sealing elements that can be used for



A special "tear drop" shaped packer element as used in a flow control system



The key component within this mineral mining blow out preventer is an inward inflating packer element

low pressure blow-out preventors or diverters.

- Packers integrated into flow control valves for air conditioning systems and "tear drop" shaped for aquifer storage and recovery.

Our Perth manufacturing center has an ISO9001 accredited QMS, with a new plant operational in Bulgaria this year. We mainly export, with offices in Singapore, Bulgaria, USA, and Chile, to clients that include the worlds largest resource companies, their service companies and several prestigious public sector research institutes.

IPI Packers vision is to be first choice when it comes to inflatable packers, as we hold quality, responsiveness and effective communication as core values.

Please visit:
www.ipipackers.com

CSM Tube, leading stainless steel pipe manufacturers

CSM holds a leading position among the world's stainless tube manufacturers for almost 40 years. Since 1983, we have set new standards in the tube manufacturing sector, helping to grow the tubing industry worldwide, while supporting key actors in the global and local economy.

We continuously innovate to improve not only our products and services, but how to best implement them to help our customers succeed. We are becoming ever more reliable and building confidence in our services in accordance with the principles of the innovative concepts.

Talented people, digital infrastructure, smart software are therefore the recipe of a company capable of reacting rapidly to any situation in this globalised world. Through the use of cutting-edge platforms, we continuously improve and control the production flows. This has enabled us to remain a leading player, year after year.

CSM Tube creates products to precise specifications, meeting the strictest requirements of clients regarding quality of materials, composition, and mechanical qualities. Thanks to our diversified portfolio and high-quality standards, we deliver the right properties for different applications, along with specific diameters or wall thicknesses.

Our products are commonly used in the automotive, food and beverage, energy and tube manipulation. And we remain one of the leading tube manufacturers for heat exchangers and heating elements.

CSM Group technologies are available worldwide. CSM is an industrial group with more than 150 employees and a consolidated turnover that exceeded 85 million dollars. CSM TUBE, leader in stainless steel pipes with small diameter and thickness, has offices in Italy, Brazil and North America and CSM Machinery and OAKLEY, companies of the group, are leading manufacturers in automation machinery in the European and American market. With production plants in Italy, Brazil and USA and sales offices around the world we achieve a strong presence in every markets.

For more information please visit:

www.csmtube.com

www.csmmachinery.com

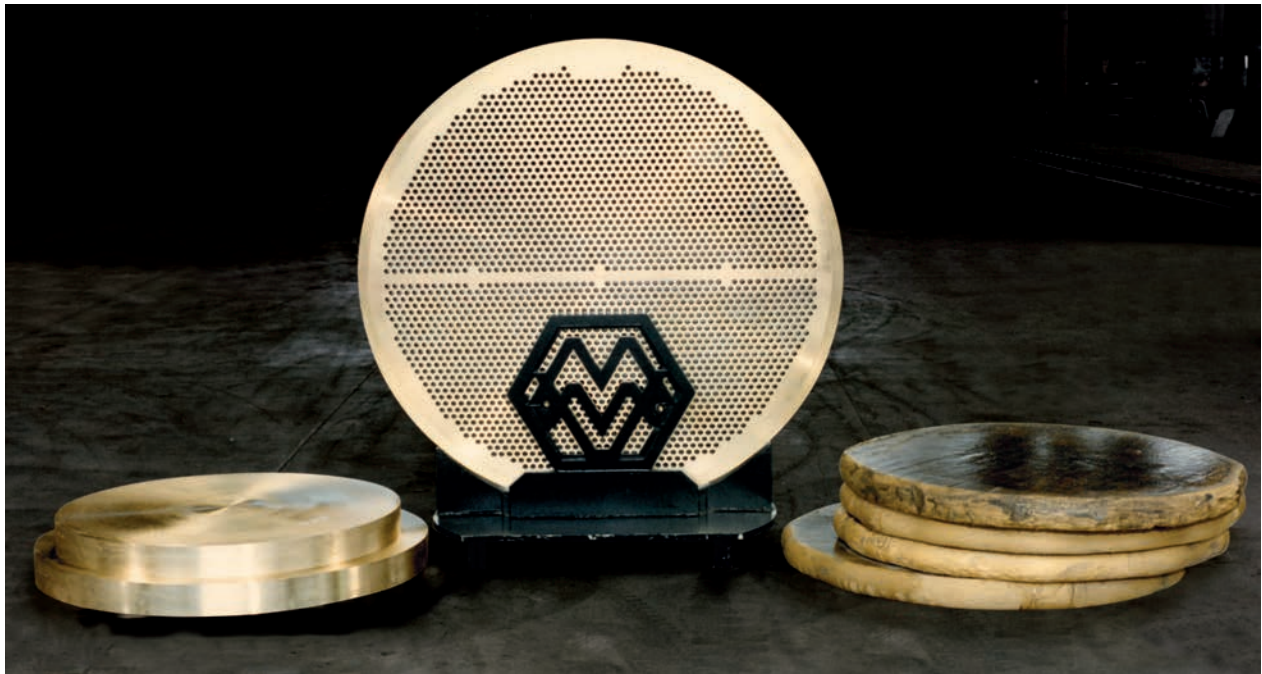




CSM TUBE



Tube Plates, Baffles, Flanges, Tie Rods, Distributors, Floating Heads, Return End Covers



Metalminotti is an integrated manufacturer of Unconventional Copper alloys, offering a wide range of rough and finish-machined products for shell and tube exchangers, condensers and, in general, for all applications requiring the chemical inertia of Brasses and Alu-Bronzes, such as:

TUBE PLATES - BAFFLES – FLANGES - TIE RODS
SAND CASTINGS (floating heads, distributors, any asymmetric shape)

Metalminotti's alloys have high resistant to corrosion properties and high thermal conductivity. Customer could select among different grades and supply conditions, hence including **ALUMINIUM BRONZES, NAVAL BRASSES, OT60, MUNTZ, CUNI 10, CUNI 30** meeting the ASTM standards:

B171 - C46400, C61400, C6300, C70600, C71500
B148 – 95800, 95400
B150 & B151

Our PRODUCTION PROCESS consists of: casting the alloy according to proprietary compositions and casting technology, conditioning, hot plastic deformation to produce

discs, sheets, rings and bars, annealing (if necessary), pre-machining and, if requested, final machining by CNC equipment as per customer's specifications.

The reduction had during forging, due to pressure, permits to achieve high qualities, refining the crystalline structure of the alloy and avoiding any porosity. Thanks to this process, fibres have a coaxial orientation in relation to the boring direction, allowing superior machining.

INVENTORY AND CNC WATERJET CUTTING MACHINE: to face most urgent requirements, Metalminotti keep has a large inventory of sheets (from 4 mm thickness) which are made available to customers. Thanks to a new CNC waterjet machine, Metalminotti could also carry out specific cuttings to get finished items saving material and extra machining.

INTERNAL TESTINGS AND INSPECTIONS: Metalminotti carries out mechanical and non-destructive tests (dye penetrant and UT tests) in its own laboratories, completely equipped, accredited and certified by external official bodies such as ISPESL, LLOYD'S, MMI, A.B.S., BU-REAU VERITAS, DET NORSKE VERITAS, RINA.



METALMINOTTI

UNCONVENTIONAL COPPER ALLOYS SINCE 1924

QUALITY:

METALMINOTTI is in compliance with the standard ISO 9001 since 1994, being among the first Italian companies certified in the field of Copper and Copper alloys manufacturing. In addition, it is PED qualified, according to 2014/68/EU Directive and the applicable technical specifications.

The integrated production, which takes place at the Varredo and San Vittore Olona plants, allows the control of the entire production chain and consequently to offer at the same time product quality, customization and the most complete product range in terms of states, supply, shapes, sizes.

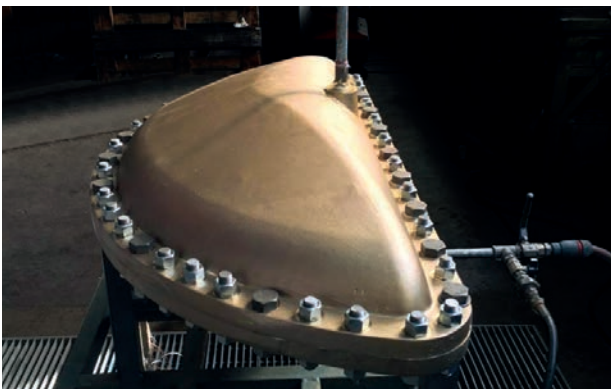
ABOUT_ Metalminotti is an integrated manufacturer of the most varied range of copper alloys (more than 45 different grades), offered as sand-castings, forgings, rolled rings, rolled plates, extruded and cold-drawn rods, finish-machined products.

Metalminotti's roots date back to 1924 when it started the production of Copper Nickel and MZ® Aluminium Bronze, addressing its products mainly to the Italian market. In a short time, Metalminotti strongly expanded its operations, enlarging the covered area of its plant and making huge investments in technologies, thus acquiring an international leading position in the manufacturing of Unconventional Copper alloys. Its export sales represent now more than 80% of its turnover.

Nowadays, Metalminotti is pioneering the market, being one of the few industrial companies in the world able to boast of such a long history of manufacturing know-how and expertise.

Customized products and processes are developed to face the most challenging requirements of its international clientele.

Please visit our websites: www.metalminotti.it and www.arnomet.it to find out more about our company.



The standard that didn't exist



“The standard that didn't exist”. With this claim, Bett Sistemi summarizes its mission which, since its origins, has marked its decades of corporate history. The passion for “standardizing” in fact began in 1980 with the company called MarBett, specialized in the production of standard components for bottling plants and, since 1994, continues under the Bett Sistemi brand, whose core business is the production of **standard components for flexible automation** in general.

Born in the heart of the Packaging Valley, Bett Sistemi has been passionately supporting its customers for 25 years,

realizing their projects through an excellent process engineering, which integrates the Bett original components standard with the latest technologies (with over 1.5 million euros of investments in new machinery and equipment in line with Industry 4.0), to create static structures, protections and safety guards for automatic machines and dynamic structures for handling goods.

From a constant commitment to research and development aimed at achieving *“the Standard we all needed”*, a range of over **12,000 original components** have been



created, which can be integrated into all company processes and can also be used today in realizing projects compliant with the standards of **Industry 4.0**.

THE GOALS ACHIEVED EACH YEAR

- + 500 New Original Components included in the catalog
- + 1,600 Static Structures
- + 700 Dynamic Structures
- + 16,000 Hours of Process Engineering in support of the projects/products of our customers

THE NEW BETT SISTEMI "FORMAT CHANGEOVER" LINE

was born from the years of experience and capabilities of the expert engineers at Bett Sistemi. We paid attention to changing market demands and developed them into a set of new standardized components. Industry experts refer to us as the *"Specialists of Format Changeover"*, a title reserved for the only company in the world that brought to market a **standard format changeover system**.

Designed for a **quick format change**, this system features unparalleled **compactness, speed**, and repositioning **precision**. This allows us to reduce machine downtime by **up to 80%** and exponentially increase **productivity**. We did not stop there, though.

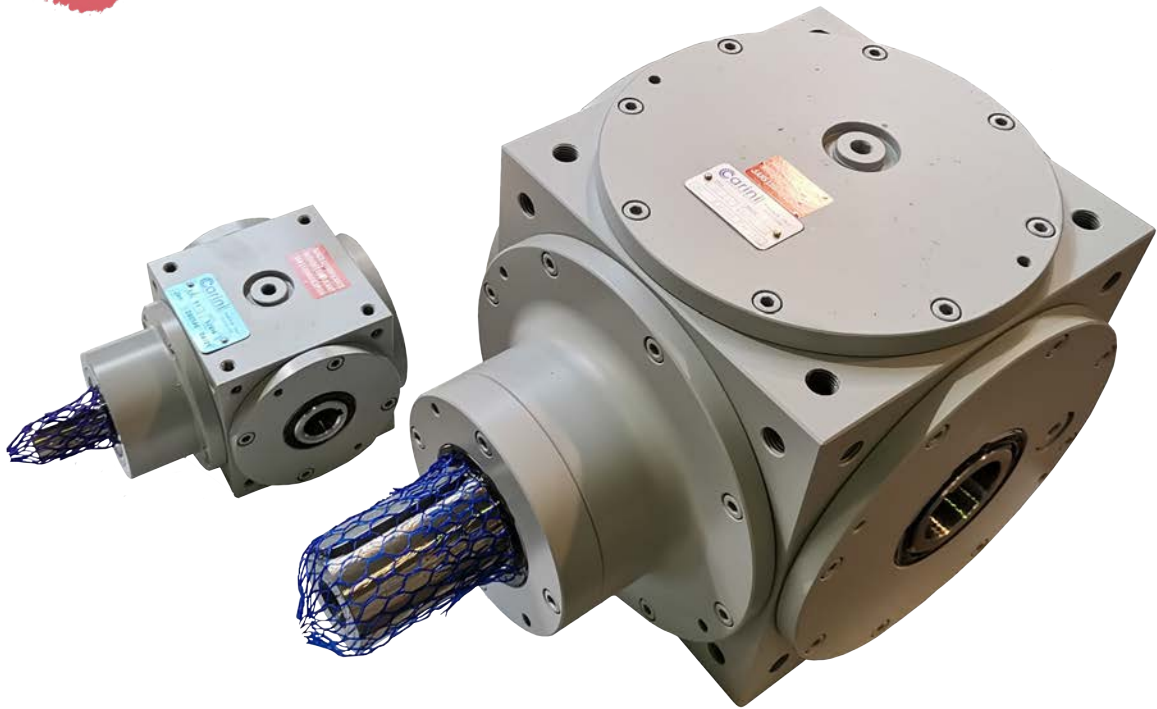
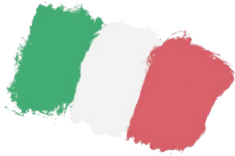
In order to further increase efficiency, the system can be fully motorized and controlled remotely. The exceptional **Italian design and engineering** incorporated in our products is sure to bring years of worry-free operation to your facility.

For more information please visit:
www.bettsistemi.com



CARINI INDUSTRIA

...we know gears!



Carini Industria has been producing gearboxes and special components for power transmission, sold and appreciated all over the world, since 1953.

Also previously known as just “Carini”, is one of most experienced gear-makers in Italy.

The founder, Mr. Diego Carini, has dedicated his all life to improving the company’s expertise in making high performance power transmission products employed in projects concerning development of some of the most performing machine tools in history.

Thanks to this expertise, we have developed our own project focused on the topic of angular gearboxes, always

based on its helical bevel gears, lapped or grinded, if allowed or requested by our customers’ particular needs. The challenge we are facing nowadays is to make special angular gearboxes fitted over the technical specs of our customers, starting from our original casting size and shape.

This is the core of our daily mission, but we are also specialized in realizing bronze crown wheels and worm screws double pitched, flat gears with straight or helical teeth, always having high quality standards as our main goal, reaching up to AGMA 13/12 or ISO 3/4.

About quality, Carini is true to its words: our quality de-



partment is in fact provided with top-notch tools and instruments to certify the actual quality of our parts, with single flank tester (for bevel gears, crown and worm wheels and flat gears), and 3D instruments to verify every single quality aspect in our products.

We mainly work on applications whose central topics are high quality and reliability, such as industrial machinery, notably machine tools or rotary tables. We also take part in projects of different nature, working on applications in various fields such as amusement-parks, medical, naval or automotive.

We provide highly appreciated solutions; our standard products can be customized, or even co-designed to ful-

fill the customer's needs. We're providers in the steel mill supply chain, other gearboxes' supply chain (that are manufactured with our special gears), in tractors supply chain, wind power or food chain (with standard or special stainless steel products).

Last but not least our lifting applications are to mention, such as civil, port or steel winches. Quality, reliability and resistance: these are the keywords that characterize Carini Industria.

For more information please visit:
www.cariniindustria.it



Italian engineering for aerospace

The thread rolling machine with two dies and one moving slide head model: **RP 18-E- CNC Comfort**

has been developed to perform rolling machining using two rolling heads. The machine is suitable to realize profiles listed below: ISO threads, trapezoidal threads, ACME thread, rings, ball screws, knurling and others.

This rolling machine is equipped with one electric slide, controlled by a brushless motor and two rolling spindles driven by **Brushless motors** with high torques. The two rolling spindles are synchronized between each other to perform in fast and simple way the dies matching. The slides movements and feed rate are programmable and controlled by machines **CNC**.

This rolling machine is equipped with a work-piece support and is protected by safety barriers.

The rolling machine "E" type is the evolution from the hydraulic machines. The model is fitted with **CNC** electrical axis by brushless motors, back lash reduction gear and high precision satellite screw. It allows the reduction of electrical consumption, a very high precision of the slide movement.

It is the best solution for rolling high accuracy parts, and it is in fact particularly suggested for aerospace applications.

For more information:
info@ortitalia.com
www.ortitalia.com





US National Association of Manufacturers' CEO welcomed President Joe Biden's infrastructure framework

On March 31 in Pittsburgh President Joe Biden has launched his "American Jobs Plan" announcing a \$2.25 trillion climate change-centric infrastructure plan meant to repair the U.S's roads and bridges and guarantee access to broadband internet and safe drinking water across USA.

The President and CEO Jay Timmons of U.S. National Association of Manufacturers (NAM) has released the following statement on Joe Biden's infrastructure framework.

"The President's proposal for historic levels of infrastructure investment reflects many of the investment priorities in the NAM's 'Building to Win' plan, and we look forward to reviewing the details. President Biden's clear focus on strengthening manufacturing and the workforce of the future shows that he is truly committed to building the next post-pandemic world—one that is stronger and more resilient than in pre-pandemic times.

Mr. Jay Timmons commented: "manufacturers have played a leading role in the fight against COVID-19, and we will continue to play a leading role in our economic recovery. When manufacturing is strong, America is strong".

The NAM President and CEO has raised its concern about tax raising on manufacturer to finance the "American Jobs Plan". He reported: "raising taxes on manufacturers would fundamentally undermine our ability to lead this recovery. Our industry fought for decades to achieve a tax system that includes competitive rates and modern international tax provisions. As a result of the 2017 reforms, manufacturers kept our promises: we raised wages and benefits, we hired American workers, and we invested in our communities. Raising taxes on manufacturers here at home would jeopardize all of that and make it more difficult for them to compete in the global economy—putting investment, jobs and livelihoods at risk. We believe strongly in bold infrastructure investment, and we know it can be achieved through a combination of revenue sources like those we identified in the NAM's 'Building to Win,' which includes user fees and bond financing for capital projects. We also know that making the men and women who make things in America pay for the infrastructure projects that will benefit all Americans just doesn't make sense and would harm their future. Let's keep moving forward and not turn back the clock to the archaic tax policies that gave other countries an advantage over America.

Mr. Timmons concluded his statement with the following: "to be sure, President Biden's proposal on infrastructure investment is strong, necessary and welcome. Achieving our shared goals will be the result of debate, discussion and collaboration with the administration and both parties in Congress. We can achieve the President's investment objectives while holding firm against financing proposals that would severely harm the ability of manufacturers to invest and hire workers here in the U.S. We look forward to engaging with all stakeholders to achieve an outcome that benefits all economic sectors and all Americans."

**INDUSTRIAL
TECHNOLOGY**
editorial office



ITALIAN ENGINEERING FOR AEROSPACE



RP18CNC
Electric thread roller



innovation
never stops

ORT
SINCE 1964
— ITALIA —[®]

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Gear metering pumps, Gear transfer pumps, Piston metering pumps, Diaphragm metering pumps



Pompe ad ingranaggi in titanio o in hastelloy C serie N

Pompe Cucchi is a Company of design and production of gear transfer pumps, gear metering pumps, piston and diaphragm metering pumps and has been present since 1948 in metering and fluid transfer fields.

Pompe Cucchi works in accordance with Quality System ISO 9001 (2015). The pumps are conformed to the Machinery Directory 2006/42/EC, 2014/30/UE, 2014/35/UE, 2004/108/EC and UNI EN ISO 12100, 13732-1, 809. On request we can supply pumps conformed to the directory 2014/34/UE (ATEX), API 676, NACE MR 0175. All our pumps are certified TRCU010 and TRCU012.

In addition to its production, Pompe Cucchi is Italian distributor of the Jabsco industrial line pumps, GRACO pneumatic diaphragm pumps and Grun-Pumpen drum pumps. Engineering, experience, expertise, passion and

dedication, this is the formula for Pompe Cucchi works every day to offer the best product and service.

See the production range in www.pompecucchi.it

Back ground

Pompe Cucchi is present in the pumps field since 1948. Founded as a manufacturer of standard gear pumps for viscous and lubricants liquid and today, thanks to the realization of innovative projects, and the continue research of new materials and surface treatment, offers products that allow to pump and dosing non-lubricating fluids with extremely low viscosity with high pressures. Our products are marketed by a network of national agents and a number of dealer around the world. The



project is managed by a team of engineers using last generation CAD stations.

Production

Pompe Cucchi has installed a new control numerically controlled machining centre with 18 pallets that can work 24 hours/day also not witnessed (without operator) equipped with supervising software for the management, control and integration of MCM's production systems. This machine has a robotized tool magazine (of 400 tools).

Special execution

The ongoing development of our pumps project and new materials research allowed us to produce pumps in TITANIUM and in HASTELLOY C. Executions can be differentiated with the installation of single mechanical seals, dou-

ble in tandem, double back to back or magnetic coupling also ATEX certified. We have also developed the insertion of bushings and wear plates made of tungsten carbide and chromium oxide-covered shafts in some size of dosing pumps series N used for metering of slightly abrasive products. On food sector, we have also the option to fit all components FDA certified.

Surface heat treatments

The new thermochemical treatments have given to gears and shafts, of some pumps range, surface hardness up to 4000 Vickers allowing new applications until a few years ago thought impossible.

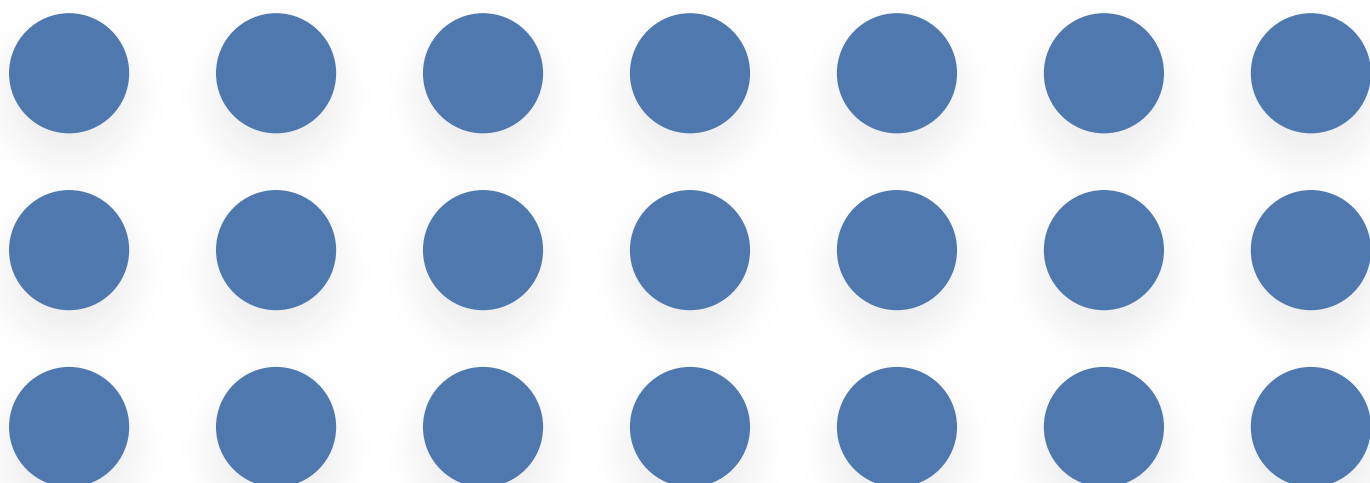
For more information:

www.pompecucchi.it

sales@pompecucchi.it



INDUSTRIAL TECHNOLOGY



**SPECIAL
USA**

**APRIL
2022**

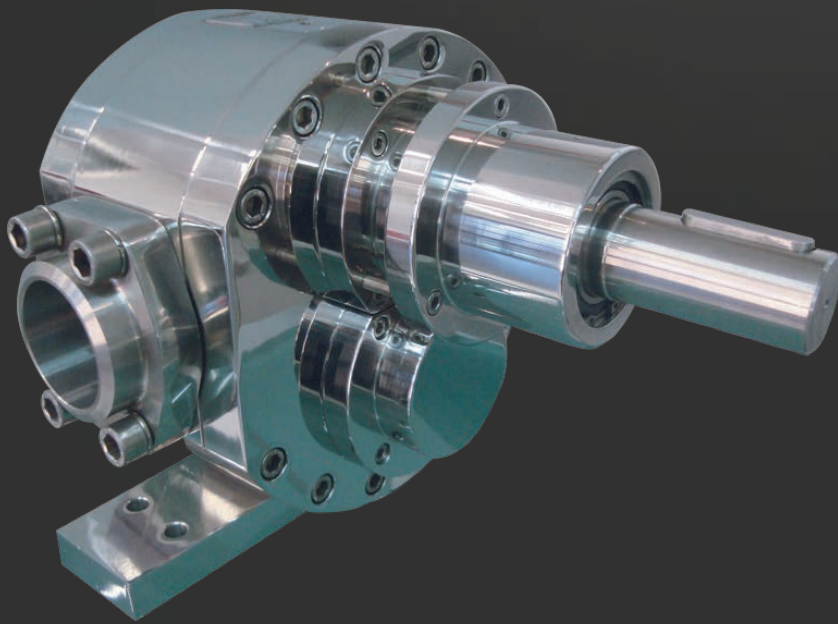
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Visit us: www.industrialtechmag.com



POMPE CUCCHI

HIGH ACCURACY GEAR METERING PUMPS IN TITANIUM, HASTELLOY-C, AISI 316L, ALSO MAGNETIC COUPLED.



ATEX 

NACE

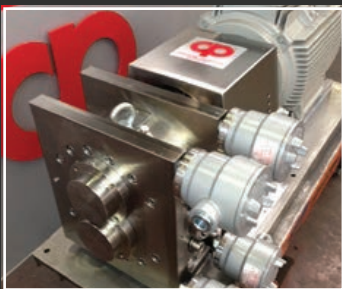
API 676

ISO 9001:2015

TRCU012

MACHINERY WITH HIGH TECHNOLOGY FOR GREAT FLEXIBILITY AND PRODUCTIVITY.

LAST GENERATION OF AUTODESK INVENTOR SOFTWARE, A 3D MODELLING TO DESIGN AND PROTOTYPING SPECIAL PUMPS.



Gear metering pump with electric heating chamber – Chemical ATEX Plant



Gear metering pumps FDA - Soft chocolate Plant



Gear metering pumps – Viscous additives – Petrochemical Plant



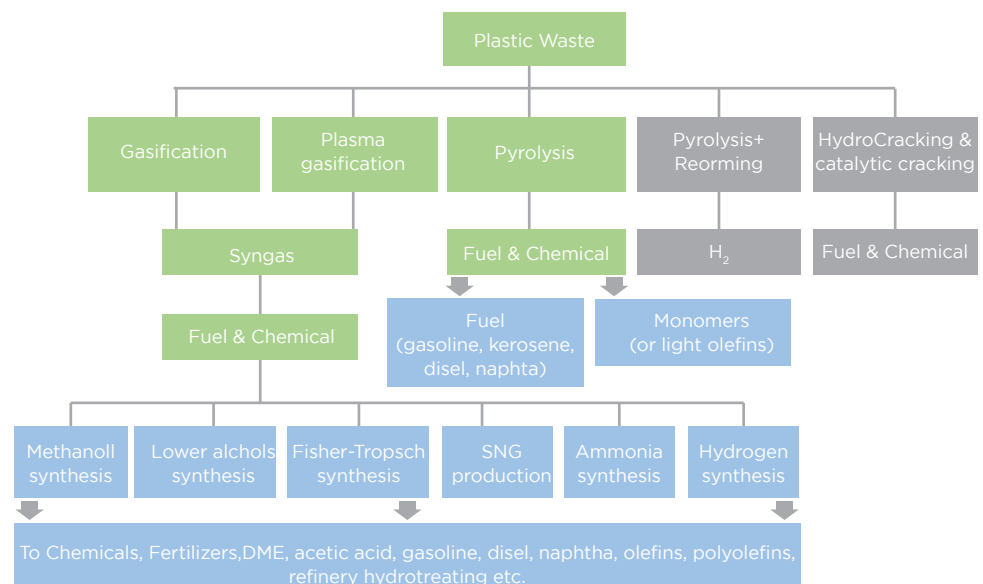
gear pumps - high capacity - Ship Industry

Chemical Recycling of Solid Plastic Wastes to Hydrogen, Fuels and Chemicals.

Chemical recycling of solid plastic waste (SPW) is a paramount opportunity to reduce marine and land pollution and to enable the incorporation of the circular economy principle in today's society and in the chemical process industry. In addition to more conscious behaviors and wiser product design ("design for recycling"), a key challenge is the identification of the leading recycling technologies, minimizing the global warming potential in an industrially relevant context. Chemical recycling technologies based on pyrolysis and gasification (Figure 1) are leading the way because of their robustness and good economics, but an improved understanding of the chemistry and more innovative reactor designs are required to realize a potential reduction of greenhouse gas emissions of more than 100 million tonnes CO₂-eq., primarily by more efficient use of valuable natural resources. In particular, gasification to H₂ and CO can also strongly contribute to the energy transition to hydrogen utilization.



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



The feed flexibility of thermal processes supports the potential of pyrolysis and gasification, however, the strong variability in time and space of blending partners such as multiple and co-polymers, additives, and contaminants (such as inorganic materials) calls for accurate assessment through fundamental experiments and models. Such complex and variable mixtures are strongly sensitive to the process design and conditions: temperature, residence time, heating rates – severity, mixing level, heat and mass transfer strongly affect the thermal degradation of SPW and its selectivity to valuable products. A prerequisite in improving design and performance is the ability to model conversion profiles and product distributions based on accurate rate coefficients for the dominating reaction families established using first-principle derived transport and thermodynamic properties. These models should also help with the “design for recycling” strategy to increase recyclability, for example by identifying additives that make chemical recycling difficult. Fundamental experiments of increased quality (accuracy, integrity, validity, replicability, completeness) together with improved deterministic kinetic models, systematically developed according to the reaction classes and rate rules approach, provide insights to identify optimal process conditions. This will allow shedding some light upon the important pathways involved in the thermal degradation of the feedstock and the formation/disappearance of desired or unwanted products. In parallel, the intrinsic kinetics of the dominating elementary reaction steps should be determined with higher accuracy, moving beyond single step kinetics retrieved from thermogravimetric analysis experiments. Together with more accurate kinetic parameters, better models to account for heat and mass transfer limitations also need to be further developed, since plastic degradation involves at least three phases (solid, liquid, gas), whose interactions should be accounted for in a more rigorous way. Novel experimental approaches (e.g. detailed feedstock and product characterization using comprehensive chromatographic techniques and photoionization mass spectrometry) and available computational tools (e.g. kinetic Monte Carlo, liquid phase, and heterogeneous theoretical kinetics) are needed to tackle these problems and improve our fundamental understanding of chemical recycling of SPW. A recent paper from Ghent University (Belgium) and Politecnico di Milano (Italy) discusses in details all of the existing challenges, from a priori model parameter determination, to kinetic model development and reduction and to experimental techniques, where industrial and academic efforts should be focused so as to rapidly allow a full scale implementation of chemical recycling technologies. Check it out “The chemistry of chemical recycling of solid plastic waste via pyrolysis and gasification: State-of-the-art, challenges, and future directions” Progress in Energy and combustion science, 84, 100901, by Dogu, O., Pelucchi, M., Van de Vijver, R., Van Steenberge, P. H., D’hooge, D. R., Cuoci, A., Mehl, M., Frassoldati, A., Faravelli, T., and Van Geem, K. M.



INDUSTRIAL
TECHNOLOGY
editorial office

Omo Grassi because companies always choose us



The OMO company was founded in 1961 and specializes in the construction of ROTARY TABLES

In the first years of its foundation, MANUAL TABLES were produced to which, over time, the MOTORIZED, PNEUMATIC and finally with NUMERICAL CONTROL versions have been added.

The production is large and includes:

- HORIZONTAL ROTARY TABLES, MANUAL,
- HORIZONTALT and VERTICAL, MANUAL, ROTARY TABLES
- TILTING ROTARY TABLES
- VISUALIZED ROTARY TABLES, horizontal, horizontal and vertical, tilting
- N.C. ROTARY TABLES mod. SPARK and SPINNER

Of particular interest are the SPARK and SPINNER models. They are used to automatically divide the round angle (360 °) into equal and / or differentiated parts (divisions not equal to each other), without any manual intervention by the operator using our control unit.

Alternatively, the tables can be connected directly to an additional axis or to a free axis of a machine tool without the need for our NC control unit. The boards can work in the following ways:

- **STAND ALONE** - With the Spark NC table positioned by our programmable control unit powered from the main factory power supply bolted to a machine table or operated as verification equipment away from the machine

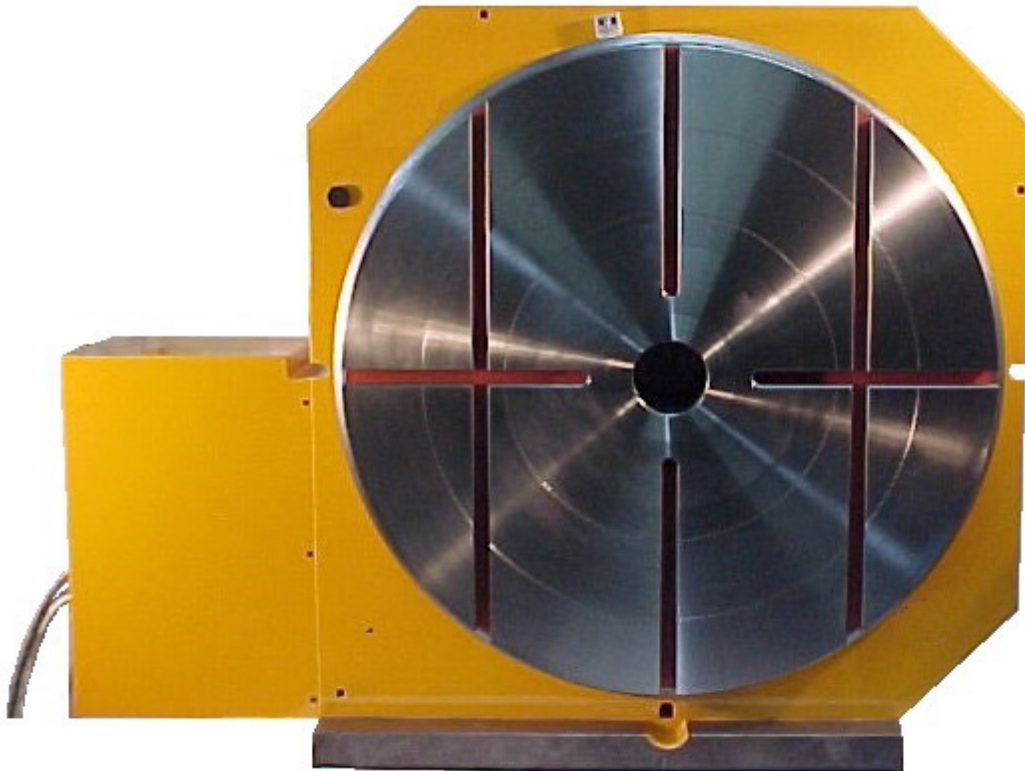


table. The Spark NC table is operated by manual push button (START) by an operator.

This form allows for automatic division, constant or non-constant contouring or continuous rotation.

•**AUTOMATIC** - It is possible to reproduce all the above operations automatically, removing the need of an operator, by starting the table by external microswitch or starting signal (M).

Spark tables can be connected directly to any NC by means of a special connector, thus obtaining complete integration with the machine itself.

•**FOURTH AXIS** - It is also possible to connect the Spark

NC table directly to any suitable NC machine with a spare or fourth axis drive.

In this format the Spark NC table will complete all the tasks described above with the addition of spiral milling under the command of the machine tool.

All the tables are tested with a modern laser instrument (RENISHAW), the production is accompanied by detailed instructions, drawings and certificates of guarantee and testing.

It is possible to view the entire production by consulting the website: <https://www.omograssi.it>

GE Announces 1.48 GW Agreement with Invenergy for North Central Wind Energy Facilities

- Project includes Traverse, Maverick and Sundance wind farms
- GE will deliver 492 x 2.X127-s and 39 x 2.X116-s with varying nameplates and hub heights

Schenectady, March 31, 2021: GE Renewable Energy announced today that it has been selected to provide onshore wind turbines for the 1485MW North Central Wind Energy Facilities in Oklahoma. Through this agreement, GE will deliver 492 x 2.X-127s and 39 x 2.X-116 turbines with varying nameplates and hub heights.

The North Central Wind Energy Facilities is a group of three wind farms in north central Oklahoma being developed by Invenergy, a leading privately held global developer and operator of sustainable energy solutions. The three wind farms are the 999-megawatt Traverse Wind Energy Center, the 287-megawatt Maverick Wind Energy Center and the 199-megawatt Sundance Wind Energy Center. Maverick and Sundance will be completed in 2021 and Traverse in 2022; all three projects will be owned by American Electric Power (AEP) upon completion.

Tim White, GE Renewable Energy's CEO, Onshore Americas, said, "GE Renewable Energy is delighted to be a part of this exciting endeavor, which is the largest combined onshore wind project in GE's history. We have a long partnership with Invenergy and AEP and look forward to working closely with them to help bring a significant amount of affordable, sustainable energy to the region. As the US and the world have adopted increasing amounts of renewable energy, Invenergy and GE are helping to accelerate this change by being the partners of choice for utilities and other leading companies that want to be part of the ongoing and critical transition to affordable, sustainable renewable energy."

"It is critical that Invenergy work with trusted partners as we develop and build the North Central Wind Energy Facilities; including Traverse, the largest wind farm in the country, and especially during the COVID-19 pandemic," said Jim Shield, EVP and Chief Commercial Officer at Invenergy. "Invenergy is proud to deepen our long-standing partnership with GE Renewable Energy to deliver the benefits these projects will bring to AEP and the nation."

North Central Wind is the second 1GW+ onshore project in the western hemisphere that GE will build out continuously this year, reinforcing both the demand for clean, renewable wind energy and GE's strong position in the market.

GE Renewable Energy was recognized by the American Clean Power Association (ACPA) as the top manufacturer of wind turbines in the US in 2020, for the third year in a row. Of the total onshore wind installed nationwide, ACPA reported that GE technology was deployed in 53% of new capacity additions, as well as in 31% of new projects under construction or in advanced development that have selected an OEM.

GE Energy Financial Services ("GE EFS") invested in the Traverse project during the construction phase and provided creative structuring to enable financing of this build transfer opportunity, demonstrating GE's ability to solve problems for our customers.



• TECHNOLOGY OF THE ANGULAR DIVISION

OMO GRASSI S.R.L.

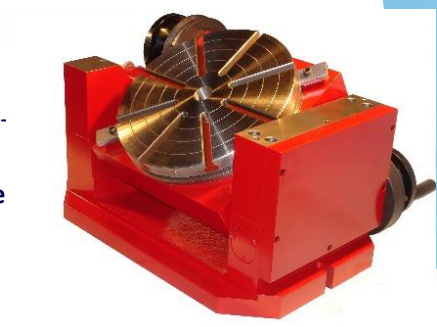
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Phone n.+39 321/998874-960282

website: www.omograssi.it

E-mail: info@omograssi.it

- Manual Rotary
2 Axis-
- TGI Mode



- Manual Rotary Table
- TG/TGS Model

- CNC Rotary Table
- SPARK Model



The spray lubrication by Ambro-Sol



Lubricants are particularly helpful to reduce the wear and tear of many mechanisms, from car engines to everyday zips: they create a thin layer that separates two surfaces and avoids direct contact.

Ambro-Sol lubricants are the largest range on the market that can meet the needs of many different industries such as automotive, industrial, ground moving/heavy equipment, agricultural, nautical, food and sporting goods.

From greases to unblockers, the Italian Ambro-Sol realizes **chemical products and aerosols** suitable also for all domestic applications for a distribution in **over 50 countries in the world**.

FORMULATIONS FOR EVERY NEED

Among the numerous formulations, **PTFE Lubricant** creates a lubricating transparent and high temperature resistant film (250°C/482°F). Particularly suited for the lu-

brication of parts subjected to high pressure, it prevents rubber parts from freezing and corrosion by salt water and short-circuits and malfunctions caused by humidity in electrical conductors. PTFE Lubricant eliminates squeaking, water repellent, silicone-free and also facilitates the insertion of cables and cords inside sheathes. Commonly used for the maintenance of tools, gaskets and seals, door hinges and locks.

Based on pure silicone oil, **Spray Silicone** has anti-stick release agents. It lubricates and gives a good water repellency on treated materials preventing the accumulation of electrostatic charges.

The product works as a polishing and protective spray on plastic parts and seals from cracking, increasing tightness and durability.

Cutting Oil is an heavy-duty protective tool lubricant. This



new product, with a paraffin mineral base enriched with special EP anti-weld additives, born for specific professional applications in hard metal cutting operations. Cutting Oil is ideal for use in difficult threading process with particularly hard, alloy steel, and suited in the hydraulic sector.

XT10: 10 FUNCTIONS IN 1

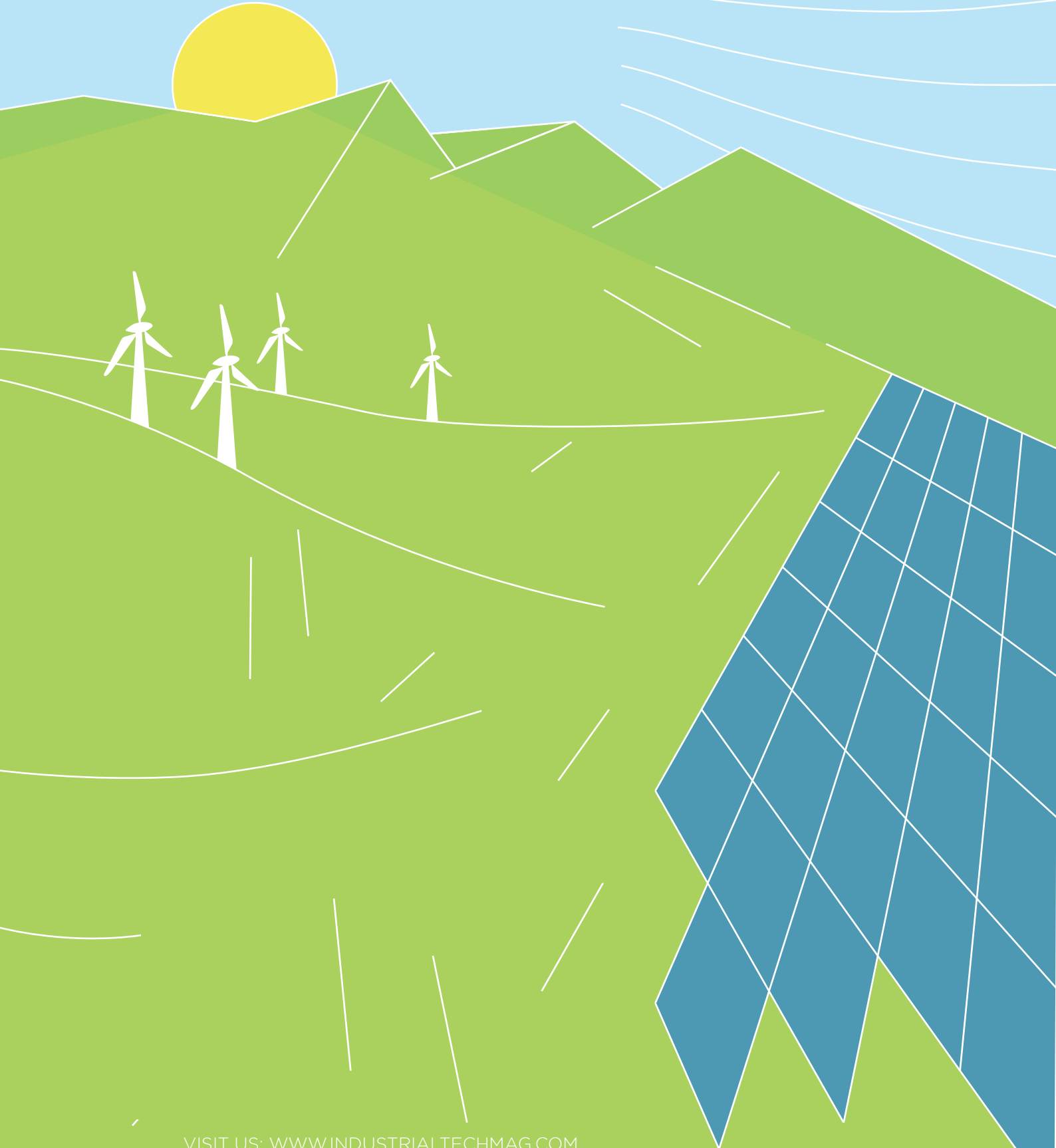
XT10 is a powerful 10 functions lubricant equipped with a 360° valve: unlocking, protective, lubricating, penetrating, degreasing, high temperature resistant, anti-corrosion, waterproofing, anti-scuff with a great solvent power. Created with active ingredients of the highest quality, XT10 is perfect for the workshop, at home, in the garden, in the nautical industry, industrial or anywhere there is a mechanism that requires maintenance.

www.ambro-sol.com



INDUSTRIAL TECHNOLOGY

RESPECT THE NATURE
USE IT WISELY



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4 BRANCHES | +1200 FORMULATIONS | 50 COUNTRIES EXPORT



YOUR FACTORY OF AEROSOL

A WORLD OF APPLICATIONS

Spray lubricants are able to reduce friction and wear, which is why they are essential in the moving parts of any mechanism, whether it is motors or hinges. In fact, our products are suitable not only for industry but also for all domestic applications.



www.ambro-sol.com



Cosberg Group : your industrial automation solution provider



Cars, appliances, switches, sunglasses, furniture, watches, staplers: each object is composed of small items to be assembled. For almost forty years, the Cosberg Group has been designing and manufacturing tailor-made solutions for the automation of the assembly processes.

The Group, which includes the Italian companies Cosberg, Cosvic, Automac and MoxMec, has eight realities including branches and subsidiaries located in different parts of the world. Over the years the Group has become a reference both in Italy and abroad, particularly for the industrial sectors such as: Automotive, Electro-Mechanical, Pneumatic and Furniture fittings. Actually it also operates in other industrial segments such as electrical, electronic, medical, cosmetic and fashion accessories.

Recognized for its ability to offer solutions that guarantee high levels of productivity and competitiveness, it creates tailor-made systems based on customer needs such as in-line machines with free pallets, rotary tables, robotic systems, feeding groups, slides and screw driving units.

From single components of which an object is composed, the companies of Cosberg Group study and realize a specific solution, machine or system, able to automatically assemble the pieces and obtain the finished product at the end of the process and, if necessary, tested. The process may include different technologies such as: automated feeding equipment, handling, drilling, tapping, screw-driving, riveting, welding, mechanical working processes, laser marking, etc. In addition, the phases of testing and verification of the pieces can be implemented.



Moreover, thanks to the Group's ability to integrate the state-of-the-art technologies, all the steps and phases are recorded to ensure to our customers the traceability of the assembled products and their total quality with the application of advanced vision and control systems, as well as monitoring software that enables the real-time supervision of the machines, even remotely.

The experience gained in different sectors and in the time, the continuous research (more than 10% of the business turnover is reinvested in R&D, resulted in the filing of almost 50 patents worldwide over the years) allow the Cosberg Group to develop and offer high-performing and "turnkey solutions" complemented by a series of plus and services. Among these we mention the "Ready To Run": a set of benefits that the Group guarantees for

each delivered machine. It includes: objective acceptance test carried out with digital systems, installation of the machines in just two days, ramp-up in no more than 4 hours, production changes in max 30 minutes, easy and fast maintainability, total reliability and circular economy because our machines are designed focusing on the possibility to be able to readjust and configure them for future needs.

All these features are characterizing and making Cosberg's solutions unique with the specific goal of increasing the production efficiency and capacity for the benefit of our customers.

For more information:

www.cosberg.com

sales-ci@cosberg.com

ExxonMobil tests advanced recycling of plastic waste at Baytown facilities

- Developing capability to convert plastic waste into valuable products at scale
- Proprietary process leverages existing integrated facilities
- Plans to market ISCC+ certified circular polymers later this year

IRVING, February 25, 2021: ExxonMobil has completed the initial phase of a plant trial of a proprietary advanced recycling process for converting plastic waste into raw materials for production of high-value polymers. The trial, at the company's existing facilities in Baytown, Texas, marks another step in ExxonMobil's efforts to help reduce plastic waste in the environment and maximize resource recovery.

ExxonMobil intends to use results from the Baytown trial to scale-up advanced recycling capabilities at other global facilities, targeting a circular solution for converting difficult-to-recycle plastic waste into feedstock for virgin-quality plastic.

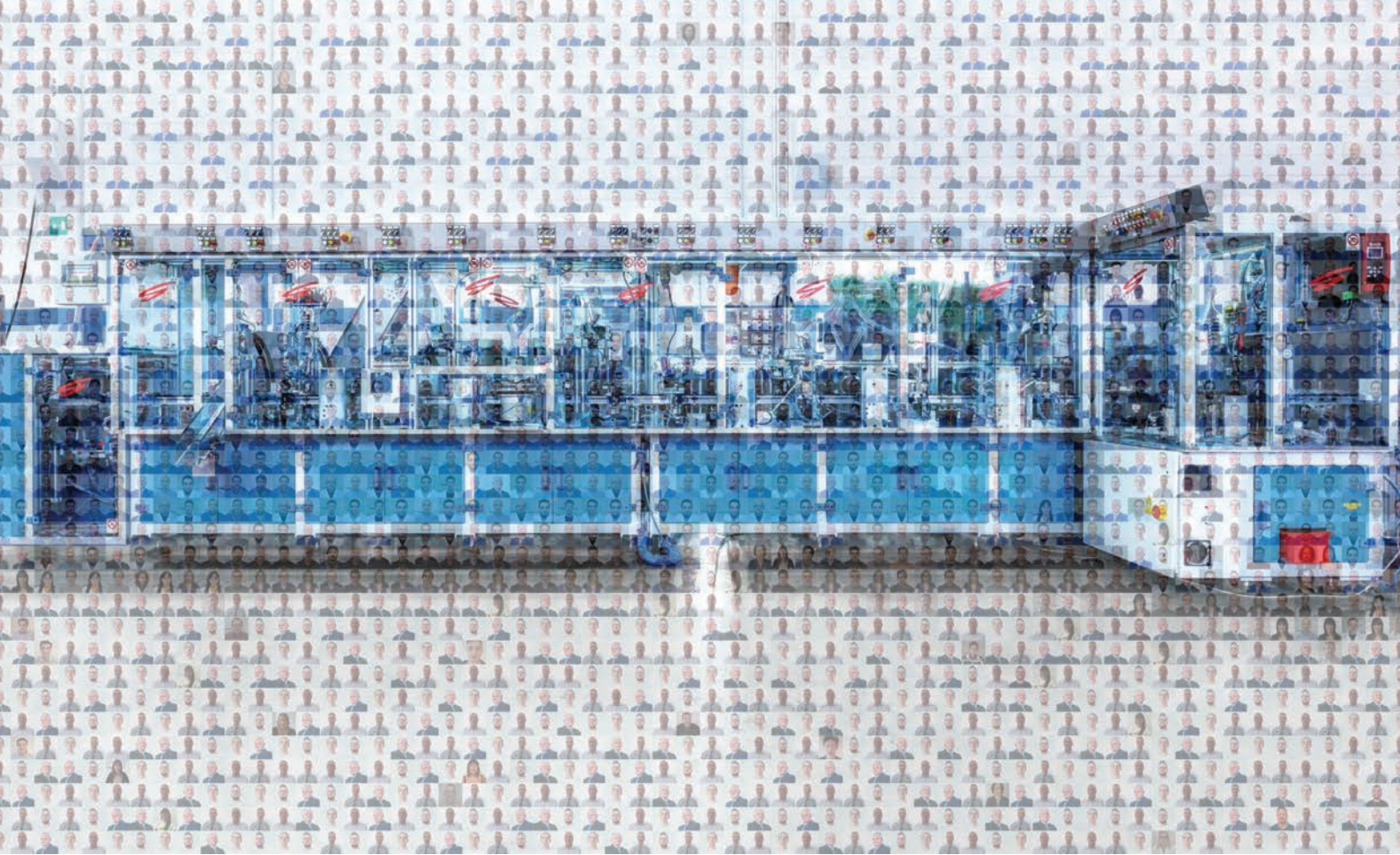
"ExxonMobil is taking action to help address the issue of plastic waste," said Karen McKee, president of ExxonMobil Chemical Company. "This advanced recycling initiative brings together the strength of ExxonMobil's integrated petrochemical facilities and our deep technology expertise in chemical processing to capture value from plastic waste and meet our customers' growing demand for high-performance, certified circular polymers."

ExxonMobil has already obtained certifications through the International Sustainability and Carbon Certification Plus (ISCC+) process. ISCC+ is widely recognized by industry as an effective system to certify products that result from advanced recycling of plastic waste. Pending a successful completion of the next phase of the Baytown plant trial, the company plans to market commercial volumes of certified circular plastics later this year.

ExxonMobil has also formed a joint venture with Agilyx Corporation, Cyclyx International LLC, focused on developing innovative solutions for aggregating and pre-processing large volumes of plastic waste that can be converted into feedstocks for valuable products. Cyclyx will help supply ExxonMobil's advanced recycling projects, and will aim to do the same for other customers.

The company supports making the most of resources and minimizing waste, which are the underlying principles of the circular economy concept. Advanced recycling, along with innovation and new processes, will play an important role in reducing plastic waste.

ExxonMobil is founding member of the Alliance to End Plastic Waste, which is focused on accelerating investment in safe, scalable and economically viable solutions to help address the challenge of plastic waste in the environment.



Global Knowledge.

People behind Innovation.



We believe in **Talent** and **Know-How** which, combined with teamwork, always push us further, towards new applications and technologies. We develop new cutting-edge techniques in automatic assembly machines, offering **customized solutions to sectors and markets around the world**.

Cosberg is a reference reality in mechatronics, robotics and automation of assembly processes. Its real heritage is the **Intellectual Value generated by the People**, which drives the continuous innovative action of both products and processes.



Variable wireless networking in hazardous areas

Waldenburg – With comprehensive networking expertise at their side, R. STAHL enables the process industry to digitalise hazardous areas.

In order to provide conventional wireless devices for use in hazardous areas, the explosion protection specialist offers tested and certified solutions for a range of wireless technologies that can be integrated into existing infrastructures with little effort.

When designing Wi-Fi and other wireless systems that can be managed uniformly and centrally, including in hazardous areas, all potential ignition hazards posed by wireless equipment must be circumvented using special protective measures.

For this reason, R. STAHL equips conventional wireless devices for use in Zone 1/21 by installing them in flame-proof enclosures so that they are explosion-protected. To realize safe, uncomplicated cabling, the enclosures feature a separate Ex e connection chamber.

The tested units, which have been certified for wireless use around the world, also feature intrinsically safe bushings for connecting any desired industrially capable antenna.

The HFisolators offered by R. STAHL from their 9730 series also guarantee optimum safety; as well as Wi-Fi, they support a wide range of additional wireless standards such as LTE, Bluetooth, LoRaWAN, WirelessHART and ISA100.11a.

As a cost-effective alternative for Zone 2, the 9851 series features a new enclosure system with Ex nR type of protection and a separate connection chamber.

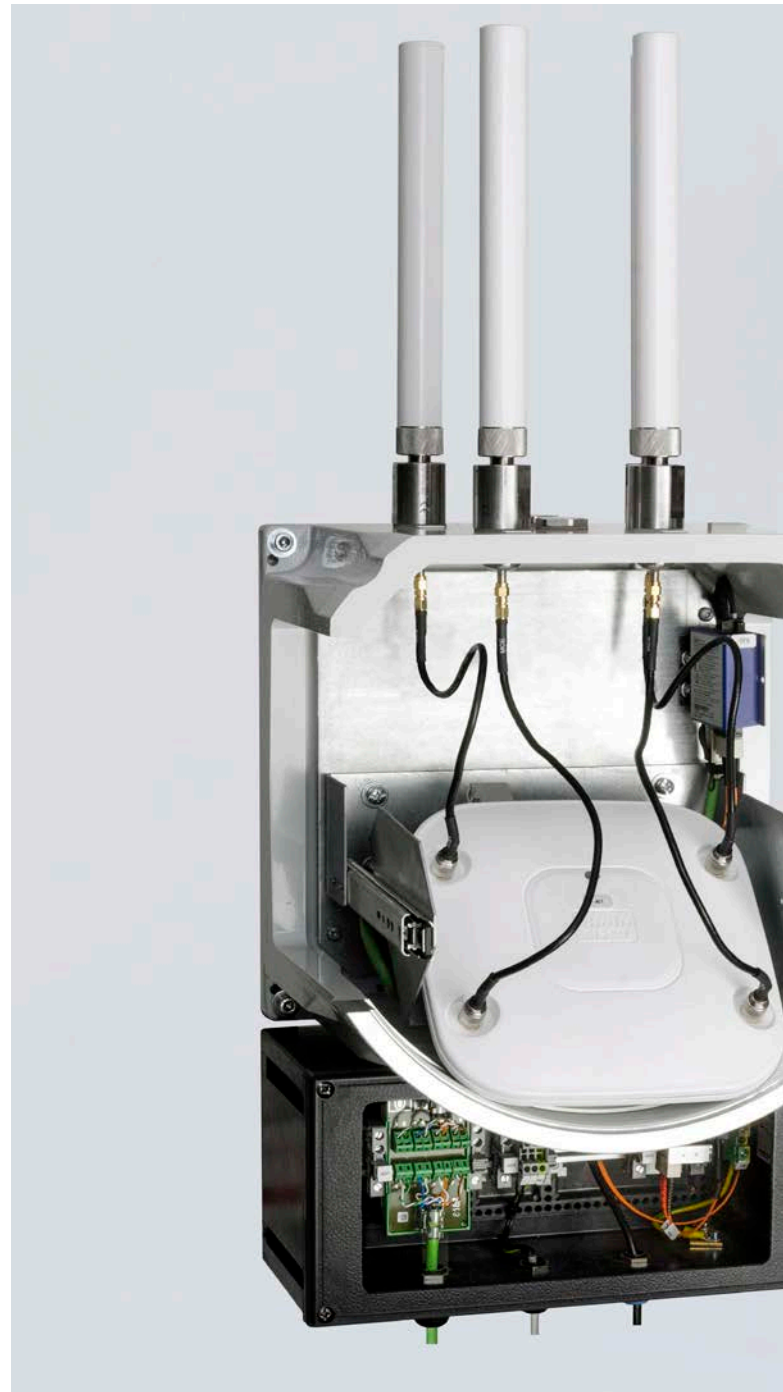
This novel combination has enabled R. STAHL to reduce both the work required for assembly and the recurring work required for testing.

In comparison with Ex d solutions, these enclosures are up to 70% lighter. In addition, they allow the installation of wireless modules that only have internal antennae, like many Wi-Fi or RFID readers.

For more information:

www.r-stahl.com

info.it@r-stahl.com



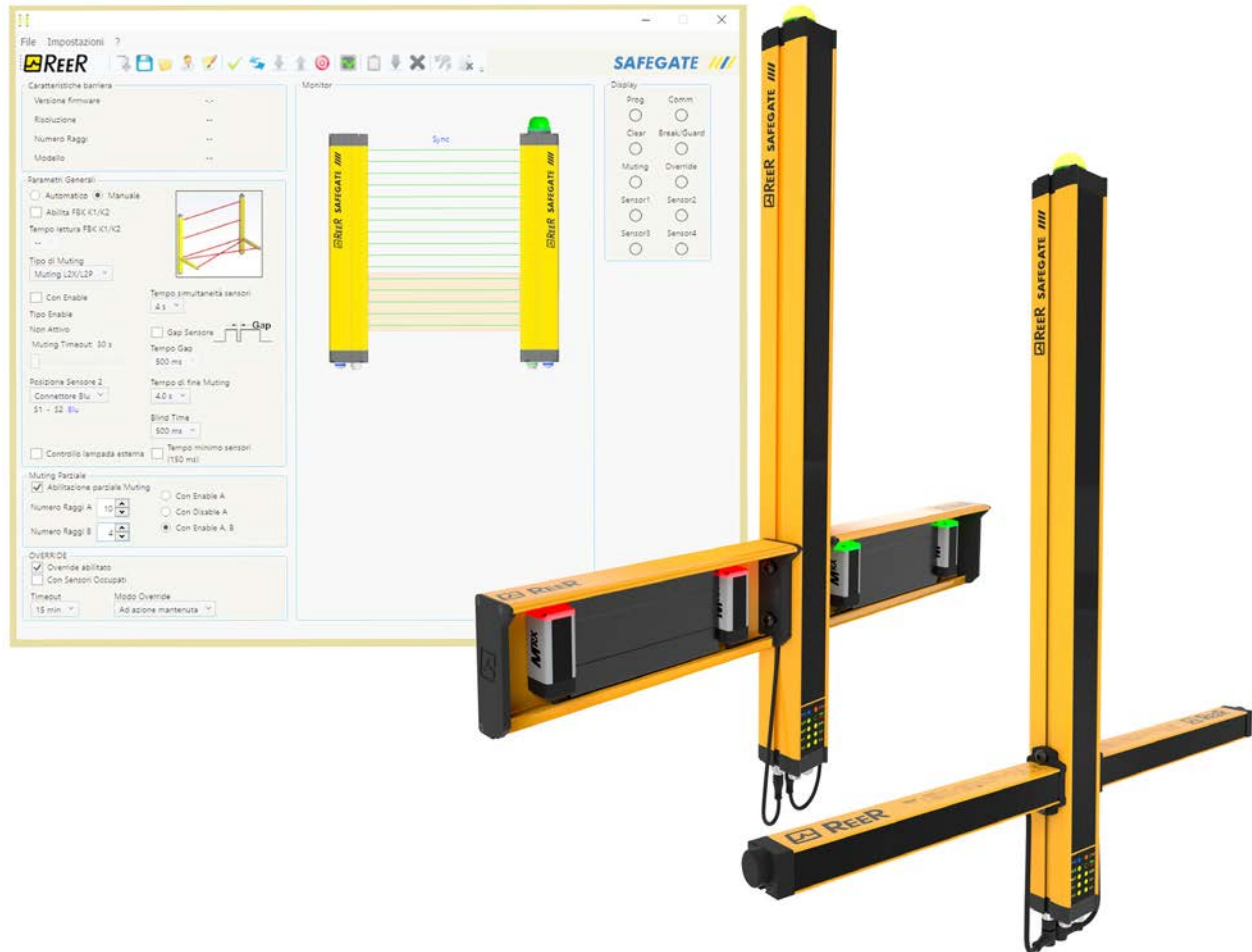
wireless for zone 1/21



wireless for zone 2/22

Safety of palletizing systems

Detection of irregular objects



One of the problems that can be encountered for the protection of palletizing systems is the handling of irregular objects.

For example: protect palletising systems for sacks or in any case of material not easily stacked, with the presence of seams, labels and protrusions that may randomly change the geometric shape of the pallet and thereby cause false signals from the sensors.

To achieve high flexibility of the safety system of the plant, Reer has developed SAFEGATE a Type 4 Muting Integrated Access Control Barrier software configurable. Software configurable models (SMPO) allow configuration of Muting logics and additional functional parameters (i.e. Partial Muting) via Safegate configuration Software (SCS). Programmable models allow further con-

figuration parameters, ideal to address particular issues in more complicated application scenarios.

This solution allows you to easily adapt the safety system on the plant and guarantees compliance with the regulatory requirements on Muting sensor geometry and all other safety-related parameters, as per EN 62046 and other current standards.

One-way openings with pallet exit

The sensors are on the same side of the vertical light curtain and are placed in front of the guarded opening.

The Muting function is activated following concurrent interruption of the 2 sensors within a programmable sensor time. This time can be set through parameter: **Sensor**



Your future's safe!



time (from 2 sec. to 5 sec.).

Muting function remains active as long as both sensors remain occupied. When the first of the 2 sensors is cleared, the material has a programmable time to abandon the guarded area delimited by the light curtain.

This time can be set through the parameter: **End of Muting time (from 2,5 sec. to 6 sec.).**

The Muting condition will be disabled as soon as the protected area is cleared. If the light curtain is still occupied, the OSSD outputs are disabled, interrupting functioning of the machine.

Using the parameter: **Blind Time (from 250 msec. to 1 sec.)** it is possible lengthen the time within which the light curtain, even though resulting occupied (detection of labels, seams, etc.), do not go into alarm and stops the machine.

The maximum duration of the Muting condition (time-

out) can be set from 10 seconds to infinity, using the parameter: **Timeout.**

Two-way openings with pallet entrance/exit

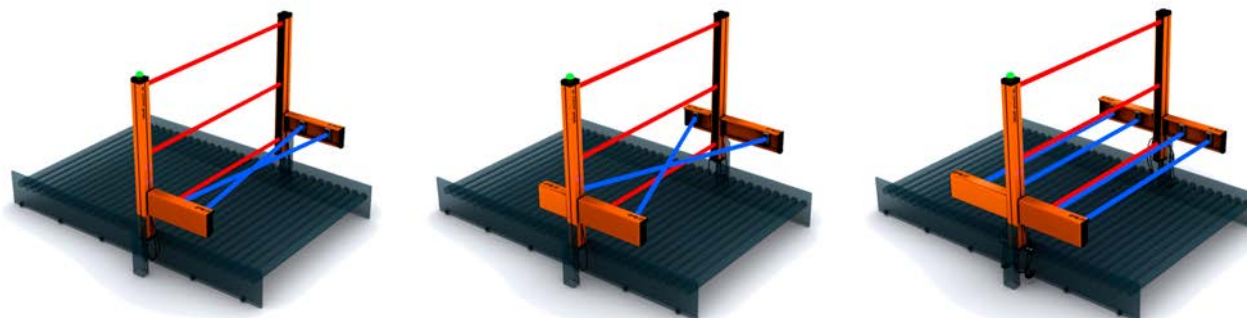
The Muting sensors are the first on one side and the second on the other in relation to the vertical light curtain.

The Muting function is activated following concurrent interruption of the 2 sensors within a programmable sensor time. This time can be set through the parameter: **Sensor time (from 2 sec. to 5 sec.).**

The Muting function remains active as long as both sensors remain occupied.

When the first of the two sensors is cleared, the Muting function is disabled.

Also for this system, the maximum duration of the Muting condition (timeout) can be set from 10 seconds to infinity, using the parameter: **Timeout.**



Standard and customized Chillers and Heat Pumps with over 30 years of experience



It has already been 30 years since **Hitema® International** took its first steps in the refrigeration industry and in the HVAC world.

But who is **Hitema®**? and why should you know this Company?

Hitema® International is a specialist manufacturer of customized solutions for process cooling and industrial comfort applications.

There are three keywords/concept able to describe this Italian based company, and able to describe its products, Chillers and Heat Pumps installed all over the world.

The first keyword able to describe **Hitema®** is **CUSTOMIZATION**.

Yes, because this Company is able to offer to its customers a complete range of possibilities of customization, starting from the mainframe of its machines, to the col-

or, the refrigerant, as well as all the special requirements upon customers/projects demands.

Hitema® is a complete industrial reality, with a new renewed carpentry and laser machine department, made up of people and machines with very different skills and knowledge, but always interconnected, able to quickly change the production and to increase the customization of semi-finished products used onboard the **Hitema®** machines.

The second keyword able to describe **Hitema®** is **TRUST**.

Hitema® is really a trusted Partner for your projects. Starting its business as a small familiar reality more than 30 years ago, this Company has maintained a working approach based on trust and solid relationship with its Partners and on the reliability and high quality of its products. Its new Spare Parts and After Sales department offer a continuous support to its customers representing a real



Bovolenta, Padua facilities - Italy

point of reference.

The high quality of its products, due to a strictly quality control/test before the shipment, allows **Hitema**[®] to minimize manufacturing defects, and its dedicated After Sales Team is at the complete disposal of the customer to support them on each activities: start-up / installation up to the maintenance of already installed machines.

The third concept able to describe **Hitema**[®] is **CONTINUOUS IMPROVEMENT**.

This is really the key concept of **Hitema**[®] work philosophy. Continuous improvement allows this Company to always have a future-oriented approach, and to always give a better service to its customers.

It is with this approach to the market demand that **Hitema**[®] has expanded its Chiller portfolio with new Series not only using eco-friendly refrigerants like HFO **R1234ze**, HFC with low GWP like **R513A**, **R32**, **R454B**, **R449A** and

the natural fluid PROPANE (**R290**), but also developing the new TURBOCOR Series.

The wide range of applications that **Hitema**[®] have developed satisfy highly customized sectors, such as Food Processing, Medical & Pharmaceutical, Machine Tools, Plastic Processing, Wineries, Automotive Industry and Air Conditioning.

Environmental sustainability and high energy efficiency, are the main goals achieved by the technical department during the development of **Hitema**[®] products, in compliance with new regulations and with ethics towards the environment and the next generations.

Find out more about Hitema by visiting their website <https://www.hitema.com/company/export>

Or contact their Sales Department for more information about Company and Products – customer.care@hitema.it

Linear Manipulator: the intelligent solution for handling offset loads



Picture D

The wide INDEVA manipulator range includes also **the best solution for handling loads that cannot be reached from above**, e.g.: picking and releasing products from/to shelves.

You can be confident to get the state of the art and most efficient solution for handling **heavy loads in a safe and ergonomic way** within your production, warehouse and assembly site if you rely on INDEVA.

The INDEVA **manipulators range**, in fact, **is the widest** in its field, as it comprises both pneumatic and electronic manipulators, as well as an extensive choice of standard and custom grippers. By choosing an INDEVA you benefit from the **widest experience in the design and manufacture of material handling and industrial automation solutions**.

The pictures in this page show some of the solutions

supplied to Companies in different industry fields;

Picture A shows the Linear Manipulator supplied to a Company that produces springs; in order to equip the machine tool, the operator must upload and download grinding wheels weighing up to 100 kg, according to the size of spring to be manufactured.

They needed to eliminate any risk hazard involved in the whole operation and make it easier, more ergonomic and safer for the operator to carry out the whole work cycle. Linear Manipulator belongs the INDEVA Liftronic® Series, characterized by the electronic motion control; thanks to its intelligent technology it allows the operator to carry out the whole operation with almost no effort with smooth and precise movements, in an intuitive way as if the manipulator were an extension of its own arm. The manipulator arm remains still wherever the operator leaves it, thus avoiding risk hazard given by unexpected moves of the arm.

The positioning of the wheel in a restricted area can be carried out easily because the manipulator does not overtravel nor bounce due to inertia force. Now all the procedures have been streamlined and speeded up, and not only ergonomics and safety have been improved but also productivity.

Picture B shows the Linear manipulator for handling tire rims, which are placed on shelves in an area with a very low ceiling; the plant manager reported:

"We managed to fit the manipulator in a very small area. It works without problems 24/7 and I was surprised how smoothly it works. The most important thing – operator is working almost as fast as he did with his hands before. The customized vertical stroke helped to give the right solution."

Picture C shows a Linear Manipulator for handling sanitary ware in the warehouse.

Picture D shows a Linear manipulator handling film reels in a tire production plant.

The Linear manipulator in this case is used in different parts of the plant and it is moved around by means of a pallet truck.



Picture A



Picture B



Picture C

Anomaly Detection For Industry 4.0

As it is renowned, the global industries are evolving through their Fourth Revolution: Industry 4.0. The umbrella term refers to the collection of cutting-edge technologies and their impacts on the industrial processes. The factories are becoming more and more automated facilities, where smart industrial robots operate under the guidance and control of algorithms optimized for the sake of secure, steady, faultless and efficient production. The integration of physical and information systems is called Internet of Things, the connection of objects, sensors, actuators, with streaming of data and online processing. The possibilities of such technology are yet to be explored, and an aspect that might be overlooked by the general public (at least) is that of anomaly detection through sensors or other data recordings from machinery, or from direct and undirect inspection of the production line. In this framework of extreme coordination in space, time, and between complex goal-oriented agents and schedules, errors and unexpected phenomena have a disruptive effect that should be prevented.

Anomaly detection is a branch of data science, where models are developed in order to recognize unexpected, undesired, or new behaviors and features of the systems under inspection, mainly based on knowledge and characterizations of normal data. Defect detection is a sub-field, or a specific task, in anomaly detection. While an anomaly can only be defined implicitly as a type of deviation from the norm, a defect is a specified, classifiable kind of anomaly. One of the key differences between artisanal production and industrial manufacturing is that the latter implements an intense standardization of processes and products. In this context, anomalies are undesirable and translate to problems such as faulty machinery, or faulty products. After the methods of management and organization of industrial systems introduced by the likes of Frederick Winslow Taylor, Henry Ford, William Edwards Deming, Kaoru Ishikawa, many Fourth Revolution novelties will heavily rely in the optimization, analysis and control of the smart factory through data science technologies.

The timely intervention in substituting faulty machinery is essential to the maintenance of a proper production stream. To reduce costs from extreme events, periodic maintenance and monitoring of industrial machines and robots is common, but more progress could be done towards a cost-efficient fault prevention when instruments more prone to failure are targetable and recognizable as such by properties of their activity, or by data they happen to generate continuously and without human constant supervision, which requires expertise, patience and yet is not safe from error. This new framework of target prevention is called predictive



Louis Fabrice Tshimanga
Former bioengineer, data
scientist in fieri, ex museum
guide, with a passion for
research, cybernetics, and
science popularization

maintenance. Many instruments, as a by-product of their movements and functions, generate vibrations, sounds, or other physical and information signals that encode hints about their status and health. Collecting large amounts of data, that often are already available to some extent, allows for modelling what “normal” and desired activity present itself and should be like. It is then possible to detect eventual phenomena that stand out of the background of normality and that might be sources or effects of machine damage, problematic issues that could affect the production, but that could go unnoticed or be absent during the periodic but limited assessments and safety controls. There are already platform and services suited for storage and analysis of data through automated machine learning, and of course an internal data science team could develop systems adapted to resources and goals of specific industries and plants.

Anomalies present themselves also in the manufactured products and could cause a range of problems from recalling lots already on the market, to refunding clients and paying reparations, with added reputational costs, waste of material resources, time and energy. Moreover, anomalous products might be of concern for the health and safety of end-users. Generally, quality controls rely on sampling and recording information about variation of products. This variation characterizes the production processes but does not, per se, prevent nor programmatically detect and eliminate anomalies from manufacturing. Operators for continuous and complete quality checks undergo more stressful and attention-absorbing routines than other technicians, while their error proneness is difficult to characterize. Thus, sensor and information processing aid might heavily reduce human labour while keeping results up to specified standards. For example, computer vision, machine learning, and AI are now able to recognize, localize and classify a wide range of objects and features under diverse conditions and could share inspection duties with human operators, complementing their respective strengths, namely for automated systems the absence of fatigue and the computing power.

Anomaly detection is also essential for banking, insurance firms, as well as server administrators to monitor and timely react to fraud, crime, and hacking. Abnormal purchasing behavior, money transactions or log patterns may signal non-random variations caused by external agents introduced in the system. This is of industrial interest, especially with the relevance of cybersecurity for the many information facets a smart factory generates, stores and relies upon, with attacks that could cause direct money loss or the perturbation of machinery and manufacturing products.

Whether solutions are offered by external providers or developed internally, anomaly detection is a powerful tool to maintain the negative sides of unexpectedness under control. Some models and pipelines translate well across industries and tasks, patents and research could unravel good investments in different fields, and at the same time discoveries from academic research, for medical applications and so forth could be adapted to industry relevant problems. The world system needs us to produce more and better for a lesser general cost, and anomaly detection is one of our tools for smarter, greener, safer, and faster factories.



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Start Power: Linear Power Supplies Made in Italy



START POWER srl is an Italian company specialized in the design and production of electrical and electronic equipment for industrial applications founded in 2009 by a group of professionals with over 40 years of experience in the sectors of industrial machinery, energy conversion and power control.

With the aim of entering the research field, Start Power has recently invested in the development of new product lines for laboratories, research institutes, and R&D facilities.

In this article we would like to introduce our Linear Power Supplies.

DA Linear Power Supplies series are characterized by low output noise and slew rate. DA Power Supplies series can

be used as power amplifiers, in fact it is possible to superimpose a sinusoidal voltage of 8/10 Vpp up to a frequency of 50 kHz on set voltage.

Another application for this family of Power Supplies is the simulation of the curve of a photovoltaic panel by programming the voltage and current.

Highlights:

- Power available up to 40kW
- Current available: up to $\pm 1,000A$
- Voltage available: up to 1,000Vdc
- Slew Rate: 1V/ μs



DP Linear Power Supplies series are built in single or double output version. Two of the main features are low output ripple and slew rate.

Thanks to its performance, the DP series Power Supplies can be used in laboratory both as a power source and as an amplifier.

In “dual version”, with the Master / Slave command you get two outputs isolated from each other with the possibility of varying the ratio between the two sections. In fact, a special trimmer allows you to adjust the output voltage of the Slave section between 50% and 100% of Master voltage.

Highlights:

- Power up to 400W
- Voltage up to 240Vdc
- Current up to 20A
- Slew Rate: 1V/μs

For more information:
www.start-power.com
info@start-power.com

Corrugated Carton Converting Machines

Innovating Tradition



A **lightweight** and fully **recyclable package** that offers great protection is made possible by the **BOXMASTER** carton converter and **XC32.1** stitcher.

Orders for packaging come in all shapes and sizes, which makes versatility essential. Along with that, **BIZZOZERO's** converting lines give you outright performance to reach where others can't. Think of a world where heavy, slow production, expensive woodchip cases are replaced with more **eco-friendly, cheaper, faster production TRI-WALL** cardboard boxes that are **just as sturdy** and even **absorb** mechanical shocks.

THE LINE

Each of **BIZZOZERO's** machines is great value by itself, but the total is greater than the sum of the parts. Whether you already have your own line and want to make a nice addition or you need a completely new line, **BIZZOZERO** has got you covered.

The production line is **tailored** to your needs: we can

provide all that's needed to go from a stack of cardboard sheets to a stack of folded boxes that are only waiting to be filled. Layouts for this production line are tailored according to your available space and logistics and you can get creative with which "building blocks" you want to use and where to lay them relative to each others. In its most popular configuration, the raw material is automatically fed **along the grain** into the **JUMBO** flexographic printer, then entering the **BOXMASTER**, which performs all the slits, cuts, creases, slots and an additional monochromatic print to have a fully finished sheet. For **two-piece** boxes, the sheet then passes on to an operator who feeds them **against the grain** into the semiautomatic **XC32.1** stitcher that ejects them onto an elevator and ultimately on a stacker.

THE DOUBLE HEAD STITCHER

Everybody knows we make the best stitchers.

Few know that we've just updated them.

The new **XC32.1** stitcher for heavy carton is still capable

BIZZOZERO MICA - s.r.l.

macchine per imballaggio cartotecnica e affini

of stitching and gluing the thickest **TRI WALL** sheets, but now does so more **reliably, faster**, with better **user interface** and **computer connectivity**, using less **energy** and requiring less **maintenance**. All thanks to its **SEVIO remote control** and its electronically coordinated **brushless motors**. The advantages are evident: the outgoing machine offered top notch stitching quality and was driven by a single motor that distributed its power through a set of clutches and mechanical drives, but it didn't last forever. The clutch system has mechanical losses that sap energy, wasting it into heat and wear; after time, it wears out just like any clutch in a typical passenger car. The results are an imprecise stitch, an increased energy consumption and the production of particulate matter from the clutch material being worn. We did away with this system altogether. Shifting from a mechanical drive to more automated, electronically controlled **brushless motor** units, has also increased reliability: where you then needed a mechanic to inspect the drivetrain's condition, now the machine's health status can be remotely inspected. A machine that is forever young, whose memory and interconnectivity won't fail you.

A taping feature is coming soon for this model.

Combine this with the undisputed versatility of the **BOX-MASTER** to make over a hundred FEFCO codes with a great range of sizes going all the way up to the **biggest boxes** available.

The size of the sheets you can work with these two machines go from a minimum of 360x620mm to a maximum of 2810x10000mm

SET UP TIMES

They're shorter than ever. A versatile machine is useless if its setup takes ages. Programs for stitching, printing and cutting are easily programmable via **touch screen interface** and can be **memorised** to access them when needed. Positioning of the guides, feeding and stacking operations are **completely automated**. Cutting tools are **pneumatically locked** and take seconds to be relocated. Stitching heads move on **motorized carts** and the stem depth is **fully adjustable** without changing any component.

INDUSTRY 4.0

An important lesson that the industry has learned is that wherever you can avoid humans from doing repetitive, alienating tasks, **you should have a computer to do the tasks instead**. Don't waste time, let the machines themselves communicate with your management software. Bizzozero brings you straight into the fourth industrial revolution by allowing you to do just that. You'll be able to register every manufacturing parameter and have your production programs always ready at hand. You can count on the reliability of these machines and if that wasn't enough, remote diagnostics ensure every error is promptly corrected. And if that wasn't enough still, spares and expert assistance will never leave you stranded, wherever you are in the world.

**QUALITY WARRANTED BY 82 YEARS OF EXPERIENCE
MADE IN ITALY**



*4cm thick stack of cardboard successfully stitched.
Note that this is beyond maximum operating depth*



*Two samples of 16mm thick TRI-WALL cardboard stitched
by the XC32.1*

Pandemic management in the oil and gas industry

April 7, 2021: IPIECA and IOGP have published new guidance on Pandemic management in the oil and gas industry. This document is a culmination of the good practices, information and strategies developed by IPIECA and IOGP members to respond to the unprecedented challenges of the COVID-19 pandemic.

Throughout a pandemic, the role of the global energy sector is to maintain energy security for society, while ensuring the health and safety of personnel as well as contributing to societal responses in areas of operations. By deploying effective risk mitigating measures to reduce the international and local transmission of infectious disease, the industry's workforce can be protected, and companies can actively contribute to societal priorities.

The document provides guidance for business decision makers and medical personnel to plan effective responses to pandemic-scale infectious diseases. To aid organizations' ability to operate and effectively contribute to societal responses, specific oil and gas-related risks and strategies are considered in the context of global, national and local responses to pandemic outbreaks.

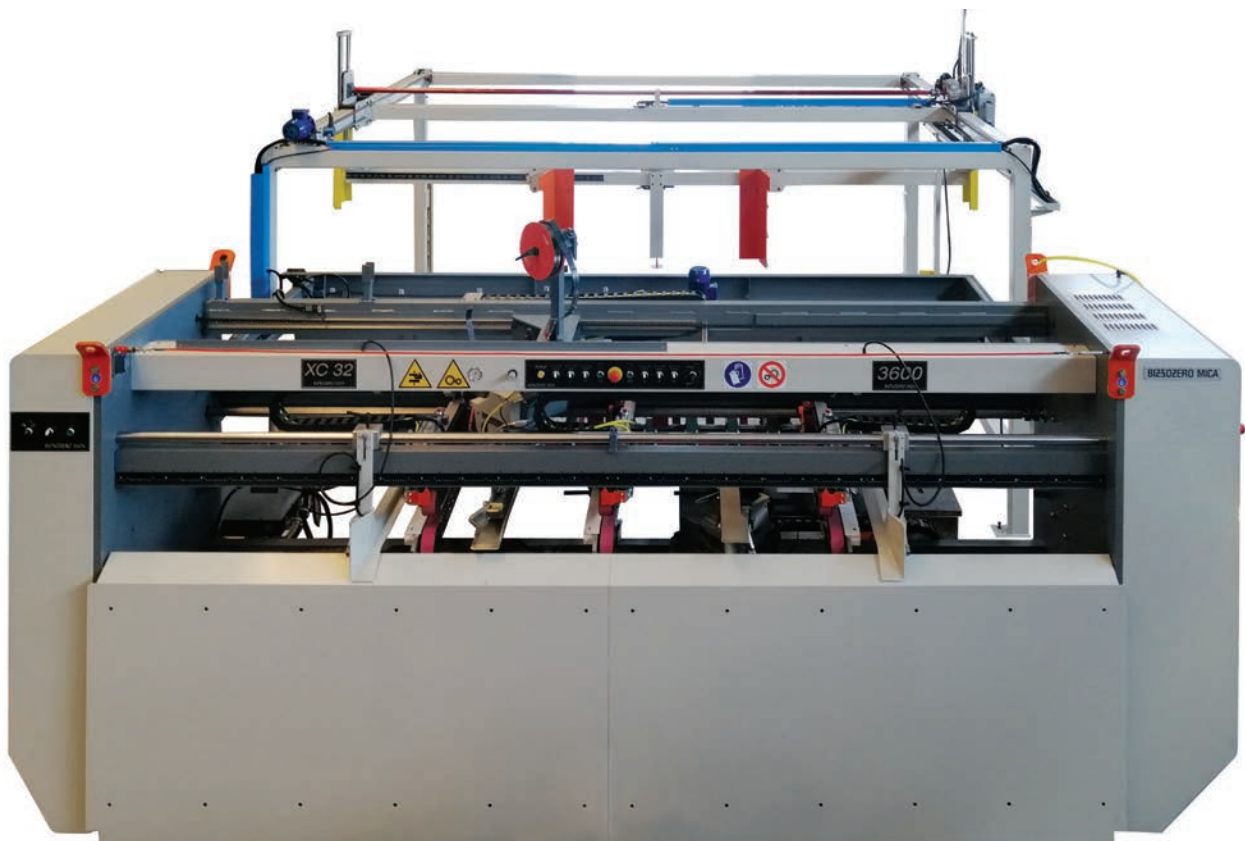
The document also identifies external organizations that can support management and operational personnel in the event of a pandemic.

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BIZZZERO MICA - S.R.L.
CORRUGATED CARTON CONVERTING MACHINES AND STITCHERS

BIZZZERO

INNOVATING TRADITION



BIZZZERO XC32.1

a stitcher to be a step ahead
brushless motors: minimal maintenance, maximum results

QUALITY MACHINERY SINCE 1939

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Tel +39 039 670369 - Fax +39 039 6753806
info@bizzzeromica.it - www.bizzzeromica.it

CTS goes to Montenegro to perform an exceptional feat



Montenegrin electricity stations are experiencing a phase of major upgrading of their power plants. The driving force behind these investments is undoubtedly the Italy-Montenegro interconnection infrastructure, inaugurated by Terna in 2019 and enabling the two countries to exchange electricity in a bidirectional manner.

In this context, CTS was engaged, on behalf of COMARK, a company based in Croatia, in the transport and positioning of two transformers of 198 tons each, installed respectively in the Podgorica and Lastva grbaljska substations.

The project, which has been under study since the beginning of 2020, has suffered significant delays due to the COVID-19 pandemic, and have been completed at the beginning of 2021.

The transformers, manufactured in China, arrived in Montenegro by sea, landing at the Port of Bar. From there, the first transformer was loaded and transferred by road to the Podgorica power plant.

For this transport, SPMT self-propelled modules and a special equipment, designed and manufactured by CTS, were used in order to keep the overall height within the



dimensions allowed on the roads used, but above all within dimensions that would allow the passage through some tunnels.

The transport of the second transformer required more complex planning, as a sea barge had to be used. The exceptional convoy with the transformer on board was embarked at the Port of Bar and, after a coastal route of approximately 46 miles, it crossed the Boka Kotorska Bay and continued its journey to Opatovo. From here the convoy disembarked and continued overland to the Lastva grbaljska Station, where the transformer was placed on its final base ready to operate.

CTS has committed its specific expertise to the completion of this project, highlighting the skills of its technical department, which has developed all the engineering necessary for the implementation of the equipment and

the overall feasibility study.

All the equipment needed to carry out the various stages of the project from lifting, transport and final installation was transferred from the CTS headquarters in Ravenna to the Montenegrin Port.

The exceptional convoy, with a total weight of 350 tonnes, consisted of two 11-axle SPMT modules with a total length of 45 metres.

The whole project took 40 days to be completed and involved four specialised CTS operators.

"The problems encountered during the various phases were considerable, but the difficulties were always successfully resolved thanks to the high level of professionalism of our staff, who always show great determination, even more so in difficult situations," says Daniele Sansavini, CTS President



ConocoPhillips Completes Acquisition of Concho Resources

January 15, 2021 HOUSTON – ConocoPhillips today announced that it has completed its acquisition of Concho Resources (“Concho”) following approval by shareholders of both companies.

“We appreciate the strong support for this transaction from the shareholders of both companies, which we view as further affirmation of the significant benefits it will deliver,” said Ryan Lance, ConocoPhillips chairman and chief executive officer. “This acquisition results in the combination of two premier companies that can lead the structural change for our vital industry that’s critical to investors. We expect the company to deliver differential performance on three key mandates: providing affordable energy to the world, generating superior returns on and of capital and demonstrating ESG leadership.”

Lance added, “I also welcome Tim Leach to ConocoPhillips’ board of directors and executive leadership team. Tim and his organization built a best-in-class Permian company and we both look forward to creating significant value from this transaction. Thanks to the considerable efforts of our transition teams over these past few months, we’re off to a fast start toward seamlessly integrating our two companies and building momentum as a sector leader.”

ConocoPhillips and Concho will each file the vote results for their respective special shareholder meetings on a Form 8-K with the U.S. Securities and Exchange Commission.

In accordance with the terms of the merger agreement, each share of Concho common stock was converted into the right to receive 1.46 shares of ConocoPhillips common stock at the effective time of the merger.

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HVAC industrial solutions by Hitema International: 30 years driven by innovation



Hitema International, an important international player specialized in HVAC solutions that in 2021 celebrates its first thirty years of activity.

1. Could you explain when/who Hitema was created?

Hitema® has been created over 30 years ago from my father, Mr. Burba, a person with great knowledge and experience of the HVAC and Refrigeration products and market.

A person committed to work with method and with a mental attitude capable of “create”, build and always innovate.

This year we celebrate an important milestone for Hitema®: the **30th years anniversary** and we are so grateful for the current market response to our products and our Brand.

2. 2020 Turnover, employees, countries (or continents) involved in production and sales.

We are glad to say that Hitema® is still growing – both in facilities and in people (despite the current pandemic situation).

We have just completed the construction of the last manufacturing plant, the 6th for us, with a total of **more than 19.000 sqm of indoor space**.

We are now hiring new staff - we strongly believe in the importance of investing in young people, young minds capable of creating and thinking “out of the box”

We are grateful for the result achieved in 2020, which are the result of a great collaboration of our Team and our Partners.

It is very important for us to point out that during the year 2020 Hitema® has invested over 20% of the turnover to improve its products and services.

We sell our products on all continents, all over the world. We have recently expanded into Australia and New Zealand as well, and we are very proud of this important new achievement.

3. Describe Hitema. Why you should choose Hitema?

In my opinion there are three keywords/concept able to describe Hitema.

The first keyword able to describe Hitema is without any doubt the word **CUSTOMIZATION**.

We are able to offer to our customers a complete range of possibilities of customization, starting from the main-frame of the machines, to the color, the refrigerant, as well as all the special requirements upon customers/projects demands.

We are a complete industrial reality, with a new renewed carpentry and laser machine department, made up of people and machines with very different skills and knowledge, but always interconnected, able to quickly change the production and to increase the customization of semi-finished products using onboard the Hitema® machines.



The second keyword able to describe Hitema® is TRUST. Hitema® is really a trusted Partner for its customers. We have started our business as a small familiar reality more than 30 years ago, we have maintained a working approach based on trust and solid relationship with our Partners and on the reliability and high quality of our products.

Our new Spare Parts and After Sales department offer a continuous support to the customers representing a real point of reference.

This department manages the after-sales & spare parts service for all the units: every single request received by the Hitema Team is recorded in a "Diary". It is associated with all the data of the machine but also the specific codes of the spare parts requested.

The function of the "Service Recovery" is that to record and catalog all the reports of problems and malfunctions received from our customers. The reports are managed through a procedure interconnected with the company management system: In this way our company has a real "thermometer" that constantly measures customer satisfaction.

The third concept able to describe Hitema® is CONTINUOUS IMPROVEMENT.

This is really the key concept of Hitema® work philosophy. Continuous improvement allows us to always have a future-oriented approach, and to always give a better service to our customers.

4. How important is innovation technology in your company?

Innovation is essential for us.

It is the key that allow us to play an important role in the market and that differentiates our Company from other market proposals.

As I told you before, during the year 2020, Hitema has invested over 20% of the turnover to improve its products and services for customers more and more.

5. How sustainable are the solutions you propose and how much attention you pay to the environmental sustainability of your industrial proposal?

This is another fundamental point for us: the sustainability and eco-friendly design of our products.

I'm a father before I'm a business man. I feel the responsibility of my behavior towards future generations.

I strongly believe that the vision of a sustainable development is the right choice, respecting future generations.

It is with this approach, and also considering the market demand and the new standards in force, that Hitema has expanded its Chiller portfolio with new Series, not only using eco-friendly refrigerants like HFO R1234ze, HFC with low GWP like R513A, R32, R454B, R449A and the natural fluid PROPANE (R290), but also developing the new TURBOCOR Series.

Environmental sustainability and high energy efficiency, are the main goals achieved by our technical department during the development of our products, in compliance with new regulations and with ethics towards the environment and the next generations.

6. In your opinion, what are the most interesting trends for the next two years?

Considering the pandemic, which has had during last year and is having now a strong impact globally, I believe there will be an ever stronger advance towards low environmental impact and eco-sustainable solutions.

We have all understood the importance of a sustainable development and we are ready to support our customers with this new challenge as well.

We are already able to provide these solutions, with dedicated customized production, for our projects.

In addition, we are now developing new standard Series of Chillers with configuration and refrigerant specifically designed for low environmental impact solutions.

7. What are the most important events of the year in which normally you need to participate? (fair, open-house, meeting, conference, other)

Like everyone else, due to the current pandemic, we have had to cancel the participation in the exhibitions last year. I am thinking for example of the Chillventa exhibition in Nuremberg - Germany.

However, we have continued to have an ongoing relationship - face to face - with our customers and partners thanks to the communication tools now available.

We organize weekly videomeetings with our Dealers - using this tools we maintain an active relationship, we introduce the news of our products, we provide support when needed and we train new staff on our products. It is very important for us to be constantly present to support our Partners. It is essential to achieve the goals together!

However, we can't wait to see our customers in person, we are already planning the events/fairs to attend next year.

A qualified Partner

Established in 1959, **NORTHON Trasmissioni srl** also known as TRANS-MOTO srl is currently an ITALIAN leader in the industry and is present on the national and international market with a wide range of products (also ATEX certified) identified by the **NORTHON** trademark: elastic couplings, gear couplings, disc couplings and gear spindle. In addition to standard versions, these are also produced in special versions to meet the customer's needs. The supply comprises couplings in a torque range between 10 and 15,700,000 Nm.

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Design Considerations for Harsh-Environment Connectivity



Diego Romeo, managing director, talks about the reliable technologies designed and built by Lemo to be used in harsh environments.

As humans continue to explore the depths of the oceans, the heights of the mountains, and the far reaches of galaxies, the technologies we use in these extreme conditions push computing and connectivity to its limits. However, for the computing systems and robotics used in these applications, failure is not an option. To succeed in these harsh environments and meet continually increasing requirements, engineers must use creative, collaborative strategies.

Harsh environments such as space require extremely reliable technologies. **This space suit incorporates push-pull LEMO K Series connectors in the gloves, which warm the fingers of astronauts conducting extravehicular activities.**

The connector industry is being called on to provide power and data products that can meet or exceed demanding and ever-changing requirements. Connectors need to meet electrical, optical, and mechanical requirements within lightweight and compact form factors. They must be able to perform in challenging environments where extreme temperatures, punishing vibrations, and chemicals may be present. Durable, high-reliability connec-

tors are critical in systems that connect sensors, valves, cameras, thermocouples, and other components to computer controls. If a connector does not meet the strict standards indicated for its specific usage, it can result in catastrophe.

Experienced connector engineers and designers know that the minimum requirements for success in any environment include the ability to meet electrical and mechanical specifications, such as the number of pairings, number of conductors, and/or specific materials. Human factors, such as ease of use, quick connect/disconnect, blind-mating, and remote access are often overlooked until the very end of the design process.

This article will address several critical factors as they pertain to a variety of harsh environment use cases, with the goal of encouraging designers to consider these at the start of the design process rather than as an afterthought. Connector manufacturers are a great resource and can help improve the product design throughout the process. For instance, application engineers can help you choose whether off-the-shelf, semi-custom, or fully customized solutions are required to meet your needs, and they can also refer you to alternative suppliers when necessary.

THE HARSHTEST ENVIRONMENTS

Assume that you need to specify a connector that will



last for 30 years and be hardened against radiation. These specifications are common for connectors used in space or nuclear power facilities. The most difficult design constraints will be the environmental (e.g., space and radiation), electrical, and mechanical requirements specific to that connector. These requirements can be met by using stainless steel components with EPDM jacketing to ensure high reliability and longevity. However, suppose that in this application, the connectors must be manipulated remotely by a robot controlled by humans via CCTV. These constraints can be solved by having two flat sides on the connector for the robotic grips, wide alignment



keyways for more forgiving handling, and a high contrast indicator line to show when the connector is fully mated.

LEMO's N Series remote-handling, self-latching connectors are suitable for use in nuclear environments.

For space applications, there are additional electromechanical and environmental requirements to consider, including the use of low-outgassing materials. In modern space applications, many types of equipment are designed to be reused, repaired, and upgraded. Reliability and longevity are key. This means consideration must be given not only to the number of mating cycles but many other factors, based on the specific application.

In space exploration, there may be more than one environment to consider and human factors that need to be met. For example, on the International Space Station, the environmental conditions inside the station are quite different than those encountered outside of the facility. During a spacewalk, astronauts wear what NASA calls a personal spacecraft. These suits and their portable life-support system (PLSS) must keep the wearer safe and cool while allowing for movement and communications. While the astronaut's body is kept cool, their hands must be kept warm, so the gloves are heated through special connectors in each finger while the cooling garment is connected to a tank in the PLSS that recirculates water. All the connectors must pair flawlessly and be extremely

reliable as well as durable, as the suits provide life support and are also reused.

UNMANNED VEHICLES

Unmanned vehicle applications run the gamut of harsh environments, spanning land, sea, air, and space. Applications in areas such as military, agriculture, surveillance, and topography often require platforms to be interchangeable in the field, so connectors are mated and unmated many times. In high-vibration applications, a stepped ratchet coupling mechanism performs better than a standard detent mechanism. In high-intensity RF environments, such as signal jamming equipment, con-



connector shells with triple-walled construction provide critical protection for low-level internal signals, while lightweight aluminum housings provide weight and space savings. The ability to use the same connector across all the equipment whenever possible reduces training, inventory, and lowers the price per unit for the buyer as well as the manufacturer.

LEMO's K Series features a housing with triple-wall metal construction to provide excellent shielding in extreme EMI environments.

As with space, unmanned vehicles will have connections both inside and outside of the vehicle. Therefore, it is important to consider both environments as well as any human or robotic factors that must be met for servicing the vehicles.

SUMMARY

These use cases emphasize the need to look at the entire scope of how and where connectors are used in the application or system, rather than just focusing on harsh-environment requirements. Taking a more holistic view results in better design in all environments, not just harsh ones. Connector manufacturers are an invaluable asset throughout the design process and can help ensure the success of these demanding applications.

You can find more information on www.lemo.com and you can also contact our staff in the local subsidiaries.

Is your Crisis Management Plan up-to-date and available to everyone?



Oil and gas facilities are among the most complex industrial operations in the world: spanning oil and gas refineries, offshore production platforms, pipeline networks, and chemical plants of all kinds. Wherever they operate, they play the role in maintaining the operational buzz of work-as-usual. But what happens when catastrophe strikes? Are they able to quickly recover the situation? What happens with employees? Are they able to assign tasks, mitigate the situation, distribute critical information to emergency personnel? How and where capture the right information at the right time? How define if the information stored could be the starting point of a crisis event?

Whenever the operations break down unexpectedly, crisis can arise. If the initial breakdown is not managed effectively, crises can spread over space and time to threaten not only the effective function but also the existence of the activity itself. In this sense, “crisis management” involves planning for, coping with, and recovering from the impacts of unexpected events.

A Crisis Management Plan (CMP) outlines how to respond to a similar critical situation that would negatively affect an organization’s profitability, reputation or ability to operate. These plans are used by business continuity,

emergency, crisis management teams to avoid or mitigate the damage and to provide direction on staffing, resources and communications. The most important thing for the right CMP is to be up-to-date, ready to be used and applied everywhere.

Emergency Response Director (ERD) by Omninecs Ltd, with its flexibility and interoperability, is inserted within the logic of the Crisis Management Program, representing the crisis Application Framework where it is possible to dynamically apply, rectify, see how hypothetical crisis situations evolve.

“Abnormal” events or situations may be different according to the industry and company and/ or the phenomenon to be observed. Beyond the approaches and best practices, each organization faces and manages crisis event in a different way based on its own objectives, principles and regulatory rules. In case of a natural disaster in a specific point of the globe, an Oil and Gas company will act differently from a Financial or Transport company. So the same event will be characterized by different approaches, severity levels and solutions.

ERD with its flexibility, is the pivot of the evaluation and solution processes by integrating information sources (internal and external) concerning the phenomenon to



be observed. Therefore, on the basis of information captured, rules (internal and / or external), scenarios and objectives, it is able to:

- identify potentially critical situations
- trace and coordinate the execution of intervention plans (emergency plans)
- support the organization in the process of continuous improvement of what is defined
- classify and / or reclassify events traceable to the right level of severity
- support the company and staff during the resumption and restoration of activities
- provide important and consistent support in the areas of Quality, Audit and Control

Then is your Crisis Management Plan up-to-date and available to everyone?

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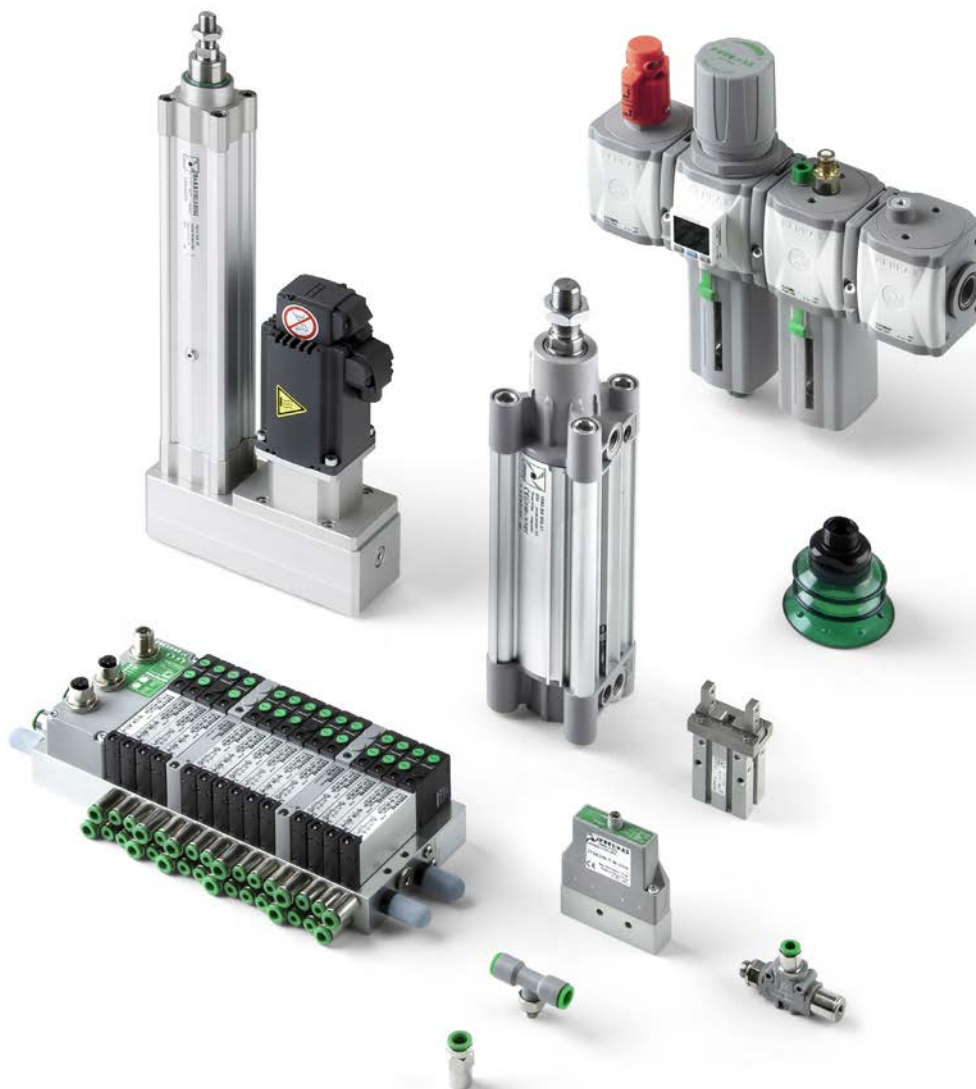
ABSTRACT

Oil and gas facilities are among the most complex industrial operations in the world: spanning oil and gas refineries, offshore production platforms, pipeline networks, and chemical plants of all kinds. Whenever the operations break down unexpectedly, crisis can arise. If the initial breakdown is not managed effectively, crises can spread over space and time to threaten not only the effective function but also the existence of the activity itself. Emergency Response Director (ERD) by **Omninecs Ltd**, with its flexibility and interoperability, is inserted within the logic of the Crisis Management Program, representing the crisis Application Framework where it is possible to dynamically apply, rectify, see how hypothetical crisis situations evolve.

ERD with its flexibility, is the pivot of the evaluation and solution processes by integrating information sources (internal and external) concerning the phenomenon to be observed. Therefore, on the basis of information captured, rules (internal and / or external), scenarios and objectives.



Pneumax: Solutions for Industrial and Process Automation



Founded in 1976, Pneumax S.p.A. is today one of the leading international manufacturers of components and systems for industrial and process automation. It is at the forefront of a Group comprised of 25 companies, with over 730 employees worldwide.

Through a network of subsidiaries and exclusive distributors, Pneumax is present in more than 50 countries around the world, supporting customers in all phases of the supply process, from pre-sales analysis to after-sales service.

Ongoing investment in research and development has allowed Pneumax to continually expand its range of

standard products and customized solutions. The use of the most advanced production technologies guarantees maximum flexibility and certified quality according to international standards in different sectors.

Pneumax expertise to provide different technologies to optimize customer applications is one of the main company's goal, acting as a real strategic partner in all the 3 business units dedicated to industrial automation, process automation and the automotive sector.

The Industrial Automation business unit manufactures a wide range of pneumatic components, including valves and solenoid valves, actuators, handlings, fittings, vac-



PNEUMAX



uum technology , air treatment units and electric actuation. Thanks to the lean and flexible organization, Pneumax internally manages the design, machining and assembly of standard and custom products including the mechanics and electronics.

The development of solutions in line with Industry 4.0 principles has lead to the integration of sensors and diagnostics in products to enable monitoring, control and maintenance using digital technology.

In order to develop a range of products to be used in the 'Process' applications, in sectors such as oil & gas, power generation or water treatment, Pneumax has developed

a business unit entirely dedicated to Process Automation, able to meet the specific needs of the sector by creating a complete range of products suitable for gas handling, petroleum or other chemicals and petrochemicals. The Pneumax range includes solenoid valves, volume boosters and air handling units made of stainless steel or aluminum, complemented by integrated customized manifold systems, designed to ensure maximum reliability even in difficult operating conditions in compliance with international standards ISO 9001: 2008, ISO 14001: 2004 and OHSAS 18001: 2007 for system and processes; ATEX, EAC, FM, NEPSI, CU_TR012 and SIL (Safety Integrity Level) for product design and performance

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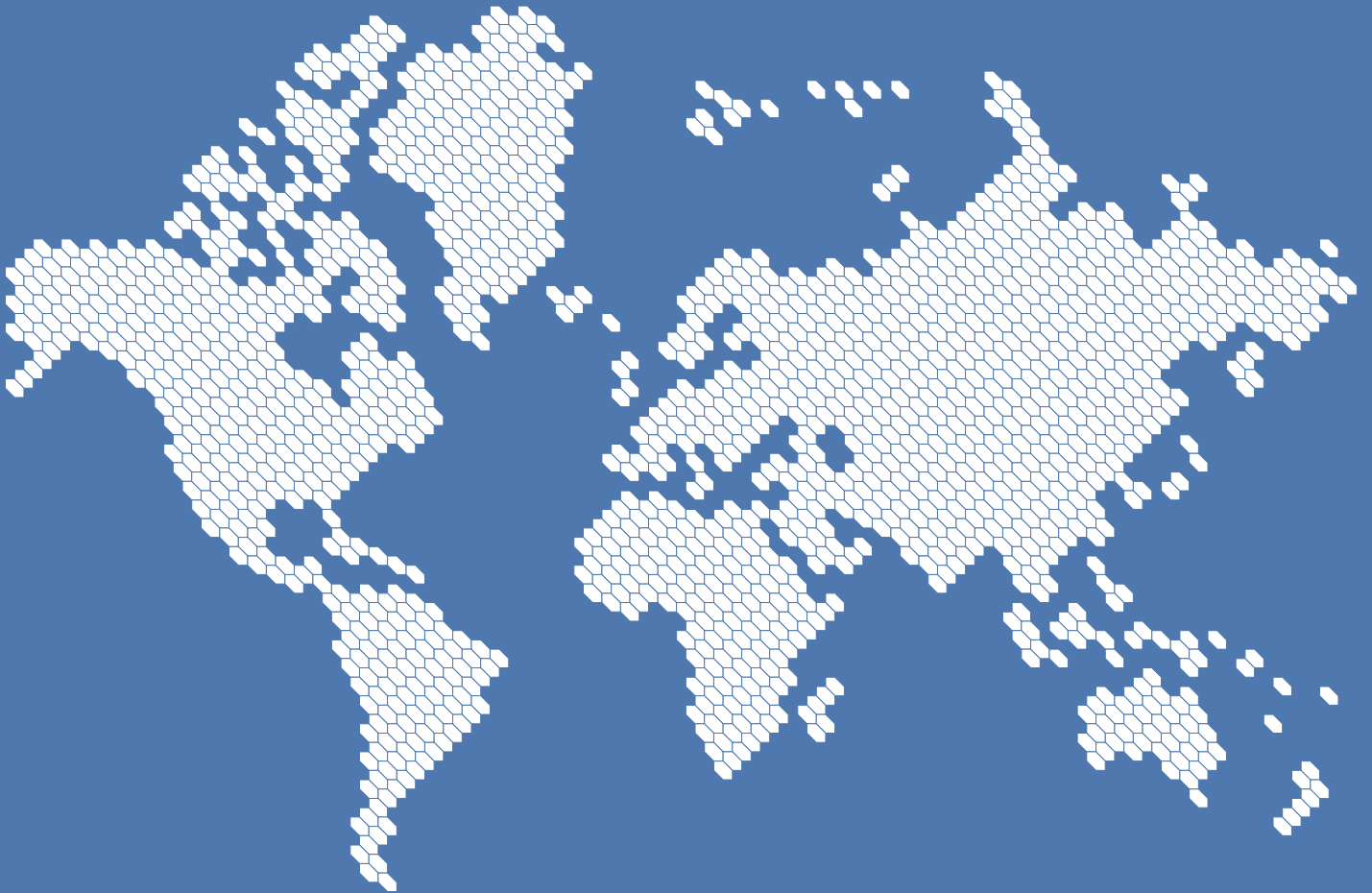
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