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Number 3, May -2021



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ENERGIE RINNOVABILI

green fuel
COMPANY

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La Spezia - Italy

sti
Steam Industry

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NAFTTECH

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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)
- Wast 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
- Wast 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



M A Y
edition
2 0 2 1

We put in all the **energy** you need



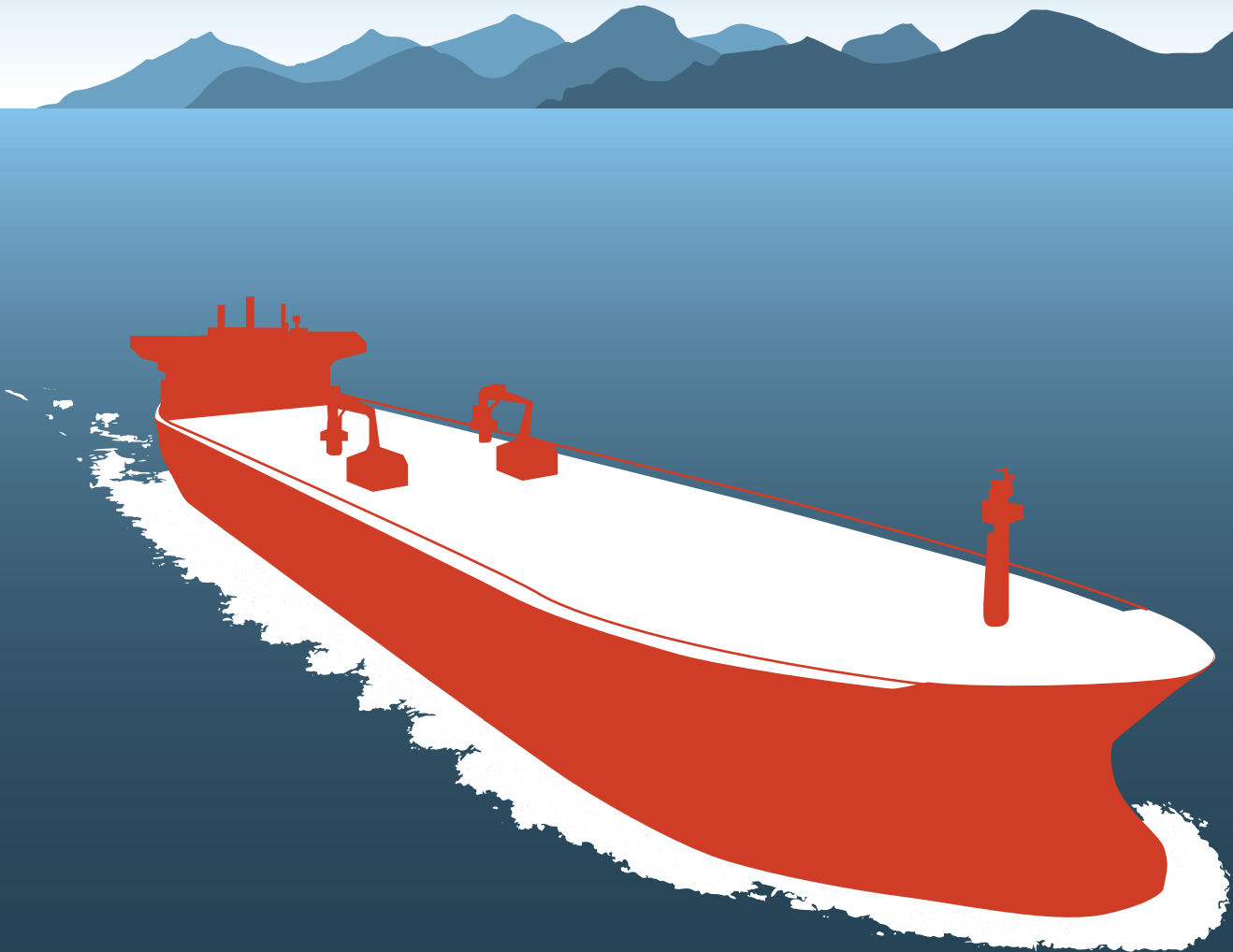
From 6 to 8 October 2021, at **BolognaFiere**, **Mirumir** and **In Fieri**, two leading companies in the design and organisation of large-scale conference and exhibition events, will be launching a unique programme of initiatives to explore the major issues in the field of **sustainable mobility**, **energy** and **technological innovation**.

The exhibition, which will feature the service station of the future within Fuels Mobility, and the conferences, will bring professionals and interested visitors closer to the key themes of the energy and ecological transition.

BolognaFiere6/8October2021



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R. STAHL



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Boosting industrial exports the key to Egypt's Covid-19 recovery

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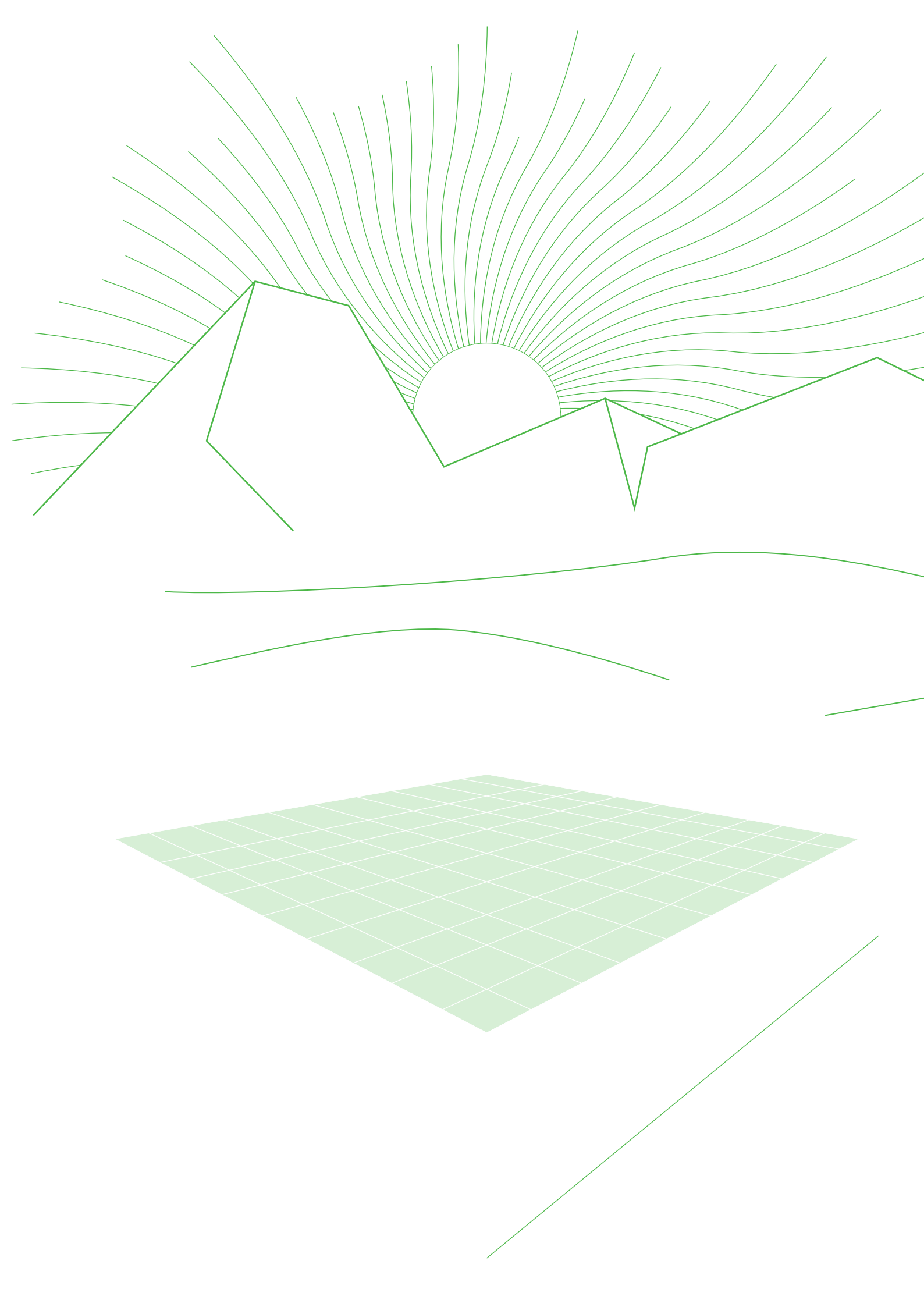
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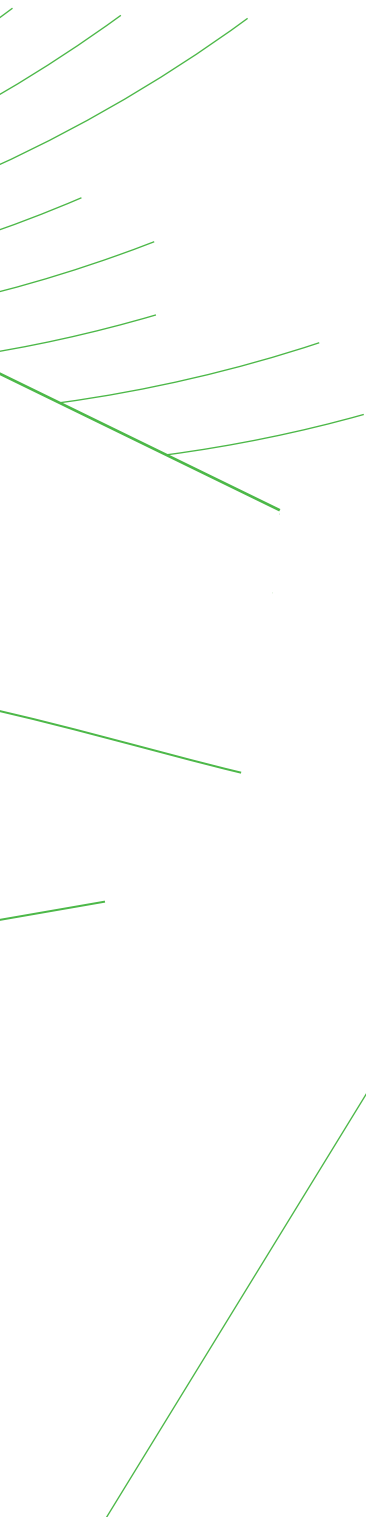
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ENERGY

Energy efficiency targets

By using energy more efficiently and thereby consuming less, Europeans can lower their energy bills, help protect the environment, mitigate climate change, improve their life quality and reduce the EU's reliance on external suppliers of oil and gas.

To achieve these benefits, we need to improve energy efficiency throughout the full energy chain, from production to final consumption

At the same time, the benefits of energy savings must outweigh the costs, for instance those that result from carrying out renovations. EU measures therefore focus on sectors where the potential for savings is the greatest, such as buildings, or where a harmonised approach across Member States is necessary, like energy labelling.

2020 targets

In 2007 the EU leaders set the three key targets of a 20% cut in greenhouse gas emissions (from 1990 levels), 20% of EU energy from renewables and 20% improvement in energy efficiency. The 20% energy efficiency target was enacted in legislation with the adoption of the Energy Efficiency Directive 2012/27/EU in 2012. In concrete terms, this means lowering the EU's final energy consumption to no more than 1,086 million tonnes of oil equivalent (Mtoe) and primary energy consumption to no more than 1,483 Mtoe. This is roughly equivalent to turning off 400 power stations.

To achieve this, EU countries were required to

- set their own indicative national energy efficiency targets
- publish 3-year national energy efficiency action plans (NEEAPs) and annual progress reports

Progress towards the 2020 target

Following a gradual decrease between 2007 and 2014, energy consumption increased between 2014 and 2017. The increase could partly be attributed to good economic performance since 2014 with low oil prices and colder winters. In 2018, this growing trend was moderated and primary energy consumption even declined compared to 2017. Data from Eurostat (January 2020) shows that the primary energy consumption was 5.8% above the 2020 targets in 2018, whereas the final energy consumption was 3.5% above those targets.

The energy consumption trend since 2014 was pointing towards not reaching the EU 2020 targets for both primary and final energy consumption. The COVID crisis significantly hampered the economy and decreased the energy consumption in 2020. However, unless the European economy will become more energy efficient, the subsequent recovery will lead to a rebound in energy consumption.

Task force on mobilising efforts to reach the 2020 targets

The Commission established a task force with Member States to discuss with stakeholders the reasons for the increase in energy consumption in 2014 and 2017 and potential measures to address the problem. The taskforce has held meetings in 2018 and 2019.

2030 targets

In December 2018, the amended Energy Efficiency Directive (EU) 2018/2002 entered into force, updating some specific provisions from the previous directive and introducing several new elements. Above all, it establishes a headline EU energy efficiency target for 2030 of at least 32.5% (compared to projections of the expected energy use in 2030), with a clause for a possible upwards revision by 2023. The 32.5% target for 2030 translates into final energy consumption of 956 Mtoe and/or primary energy consumption of 1,273 Mtoe in the EU-28 in 2030.

Under the regulation on the Governance of the energy union and climate action (EU)2018/1999, each Member State is required to establish a 10-year integrated national energy and climate plan (NECP) for 2021-2030, outlining how it intends to contribute to the 2030 targets for energy efficiency, for renewable energy and for greenhouse gas emissions.

Following the submission of draft NECPs in early 2019, the Commission published a detailed assessment of these draft plans in June 2019 with country-specific recommendations. This encouraged many Member States to raise their ambition levels in the final NECP, most of which were submitted in early 2020.

Published by European Commission on 23 October 2014, updated on 29 July 2020.



**INDUSTRIAL
TECHNOLOGY**
editorial office

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





Renewable Energies: why Camec?



Camec has been part of the industrial fabric of the Veneto region since 1993. Initially, the company was a supplier to leading manufacturers, then it soon began producing recycling machinery itself in its own workshop.

Camec has served the precision-machining and high-quality structural-steelwork market for over 25 years. The company directly oversees the entire production cycle and has a strong focus on product development. This continual drive for innovation has always been one of its core strengths, reflecting the importance it places on controlling the product at every stage – from the quote to design and through to production and final testing.

This ongoing innovative thrust has shaped the company's three divisions – recycling, handling and industrial – and its prestigious portfolio of international customers.

Besides design and construction, including turnkey systems and solutions, Camec also provides an all-inclusive customized service.

This ranges from feasibility studies, 3D simulation and residual-life assessment to revamping, after-sales service (including remotely), supplying spare parts, and routine and non-routine maintenance.

The Camec after-sales service is key to our commercial



mission, as it keeps us in contact with the end customer after the sale has been made. This way, we can take care of their needs and foster loyalty, by resolving any issues that may arise while also gathering precious feedback that helps us keep improving our products.

Camec's experience makes us the ideal partner for developing complete turnkey solutions. With the know-how we have developed over the years, backed by a continual research and development effort, Camec operates in almost all areas of the recycling and waste-processing business, handling a wide array of challenging requirements.

We have now also entered the market of renewable energies, just to support all the new incoming requests and the emerging markets.

More than just a supplier, we are a strategic partner for our customers to meet their needs and find solutions any day, any time.

Always.

For more information please visit:
www.camec.net

GEA Srl - Elettra Investimenti Group



GEA is a recognized leader in cogeneration, fully supporting its clients in the design, installation, and operations of combined heat & power plants. We deploy different technological applications from engines to gas turbines. We apply our excellent know-how to help our customers to save energy and reduce emissions to the environment, by developing both traditional natural gas and renewable/circular energy solutions, i.e., biogas, vegetable oil or exhaust gas.

We are a full quality certified operator (ISO 9001, 14001, 45001, 50001, OHSAS 18001, SOA OG9) a key requirement both for us and our clients, which are among the main national Italian utilities and power generators.

In 2018 we become part of Elettra Investimenti Group,

one of the main Italian players in the field of distributed generation and energy efficiency solutions. Elettra not only is able to design, build and operate your assets but can also finance their realizations through our so called "Formula ESCo". Together with Elettra we keep growing, confirming our story of success in creating value for our clients thorough bespoke solutions on their needs.

In 2020 our Group realized a turnover of around 60 M€ by managing an assets portfolio of 140 MW (of which about 30% directly owned).

GEA operates CHP assets for several companies in the pharmaceutical, food and cold chain sectors, in addition to shopping centers and district heating plants. We run O&M ordinary and extraordinary activities for over



**GESTIONE ENERGETICA
AMBIENTALE srl**

80 plants and 100 engines throughout all the national territory, thanks to our workshops located across Italy (Bologna, Viterbo, Latina, Biella and Rieti).

As for EPC (Turnkey) contracts, we provide solutions where all details are taken into full consideration to assure the maximum reliability and the minimum cost in the energy supply. Each technical solution is defined by our internal engineering teams, based in Rome and Latina, in order to assure their best future maintenance activity with the highest asset technical quality during their lifetime.

Our main assets class references:

- Construction of cogeneration and trigeneration plants with internal combustion engines and combined cycles
- Realization of peaking power units
- Revamping of existing plants
- Design and construction of anaerobic digestion plants

For more information please visit:

www.geatech.eu



Biomethane as a bridge to the future



Green Fuel Company SpA is part of a group that has been active in the sustainable energy supply chain for almost 50 years, particularly in the Natural Gas for Vehicles, committed to promoting the energy transition through innovative solutions whose goal is “sustainable mobility”.

Domenico Conte (Chairman of the Board) describes the strong points and processes on which the GFC has built a virtuous model for the circular economy: “the skill to put in net companies, professionals and equipment

throughout the supply chain, has allowed GFC to create a branched structure throughout the territory through fixed distribution points (currently the owner / manager of 15 car distributors) and mobile through 3 compressor stations and a fleet of over 40 CNG Tank Truck; which allows to work as retail and also to collaborate with pipeline transporters and distributors throughout the national territory, SNAM and Italgas first and foremost “

From this structure GFC was able to reach the target of



growth in the BioFuels market thanks to innovative projects in the production and distribution of BioMethane, working for the creation of a circular economy model, as told by CEO Luca Parmeggiani: “Today GFC can claim of having reached an important milestone resulting from the collaboration with SNAM: having carried out a virtuous example of true circular economy through the use in transport of the BioMethane produced by the treatment of urban organic waste made by Calabria Maceri plant and from the sewage sludge made by CAP in Bresso (MI). A virtuous model was built not only from an environmental point of view, but also from an economic point of view as BioMethane is now used to power S.U.N. buses in the Municipality of Novara. “

GFC's effort to invest its resources in the spread of Bio-

Methane is inspired by the opportunity to create a bridge with the energy vector of the future: hydrogen.

Giuseppe Fedele (Board of Directors and Vice-President of Federmetano) states: “BioMethane is already allowing us to reach ambitious decarbonization targets since it is the only energy source with negative greenhouse gas emissions (i.e. less than solar), but above all it allows us to introduce immediately hydrogen in the energy market which, through mixing with methane, will allow H2 producers to be able to sell it and users to be able to use it in normal natural gas vehicles already in circulation. “

For more information please visit:

www.greenfuelcompany.it



Proved experience in Operation & Maintenance of power plants



BIOMASS POWER PLANT | AIRASCA (TO) – 13,5 MWe

C&T SpA is a company based in Ancona, Italy, with over 30 years of experience in the field of renewable energy production.

Our team currently consists of over 70 people who have excellent experience in the energy sector, and who work with commitment and dedication to improve sustainability in the energy field.

One of our essential skills is the complete and successful management of the entire production chain in the process, in the sectors of biomass supply, and in the sale of electrical and thermal energy.

The main focus of C&T is the development of innovative technologies for the improvement of production with “home” resources.



BIOMASS POWER PLANT | AIRASCA (TO) – 13,5 MWe

Our services include:

- making new investments in the production of biofuels (biodiesel, ethanol)
- development of H₂ production plants - Hydrogen represents a great potential to become the ecological fuel of the future

- development of a new type of patent pending sludge dryer

Our works currently include 11 power plants with 35 Mwe of installed power.

The assets are now 100 M Euro: 90% biomass power plants - 5% hydroelectric - 5% PV

Produce and install at the service of efficiency



Experience, reliability, innovation: wherever energy is required, we are capable of producing and managing it with the right installation suitable for every need.

We were established close to Padua in 1974, but we operate in the whole world. We control the entire production chain and are able to make energy systems on a global scale, we use state of the art technology for privates, investors, public companies and businesses of every sector or dimension.

SMALL WIND TURBINES

Engaged in the wind industry since 2011, in just 18 months we gave birth to the FX Series, a line of wind turbines entirely developed and produced in our workshops. Since then, we have not stopped investing in productive competencies and technologies to broaden this selection



of wind turbines of the highest quality, revitalizing the market and becoming, in just a few years, a point of reference for the sector.

BIOMASS COGENERATORS

The gathered experience in designing and realizing electric plants and industrial automation systems, acquired since 1974, was of fundamental importance for the realization of CHiP50, our co-generator dedicated to small and medium size businesses which require thermal and electrical energy.

PHOTOVOLTAIC

Since 2003 we have installed photovoltaic systems of every type and size: small domestic and artisanal plants, solutions for industrial factories and large ground-mounted plants for the injection of produced energy to the grid.

**ESPE**
Energy Expertise

Our solutions are characterized by high performance and reliability over time, two essential factors in order to reduce energy costs and to optimize the investment.

INDUSTRIAL ELECTRIC PLANTS

Our entrepreneurial history begun with the installation of industrial electric plants, an activity that represents a fundamental and pivotal aspect of our growth to this day. Today, we are able to operate for businesses of all sizes and are proud of several success stories in almost every productive sector, such as food, textile, mechanical, plastic and paper industries, among others.

OFF-GRID SYSTEMS

We were among the first in Italy to believe in the potentiality of off-grid systems and since 2005 we have realized electric systems that work independently from a connec-

tion to power grids.

An optimal solution to bring energy to those places which are remote and hard to reach, such as high mountain locations or islands, off-grid plants prove to be very effective even in overcoming black-outs due to calamities and emergencies or to stabilize energy supplies to locations which are poorly served by the power grid.

For more information please visit:

www.espegroup.com

Professional mobile air purification, heating, air conditioning, ventilation & more...

Trotec - made in Germany

Trotec has been one of the leading equipment partners for trade and industry in air treatment solutions for more than 25 years. We offer drying systems and all kinds of devices for climate conditioning (heating, humidification, ventilation, air conditioning, air purification). Our product range offers you the right product solutions in all performance classes and for any application scenario. We also provide manifold measuring devices for building diagnostics, damage detection, quality assurance and industrial maintenance. Perfect equipment technology, comprehensive, long-time application expertise and field-tested 360° solutions.

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

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

Innovation is a major priority at Trotec

We are constantly developing new product innovations in all areas. We pay particular attention to special requirements in practice. Only being familiar with needs from practice allows you to find new solutions. We have decades of know-how in climatic optimisation of production processes. The expertise gained from a wide range of industrial installations in and outside the country allows us to offer you specialised and custom-fit product solutions.

360° service at the Italian branch in Affi

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

info-it@trotec.com • www.trotec.it



DEHUMIDIFICATION



HEATING



AIR CONDITIONING



AIR PURIFICATION



MEASURING



CANTEEN



OZONE DISINFECTION / ODOUR NEUTRALIZATION



OMC and Eni Enrico Mattei Foundation together for the decarbonisation of the energy system

A Memorandum of Understanding has been signed for a common action towards a sustainable energy future

Ravenna, April 21, 2021: The share of knowhow and experiences of OMC-Med Energy Conference with operators from different fields started today by the initialling of a Memorandum of Understanding with the Eni Enrico Mattei Foundation (FEEM).

It is the first act of one of the key points of the new vision of the event in order to continue the dialogue and find appropriate solutions for the transformation of the energy system in a low carbon view also beyond the term of the Conference.

The topic of the 2021 OMC-Med energy Conference edition 'Rethinking Energy together: alliances for a sustainable energy future' crosses, in fact, the mission of FEEM, that is to deepen the aspects of the sustainable development in the environmental, economic, social and cultural meaning.

FEEM with its planning and its network, will launch with OMC the Call for Ideas MED, one of the new appointments of the OMC 2021 edition, addressed to universities and research institutes to share ideas and technological solutions in the Mediterranean and in North Africa, to promote synergy between low carbon energy sources.

Moreover, the Foundation will bring its support to the rising Strategy Committee of OMC-Med Energy Conference, that is aimed to continue the debate between operators and stakeholders, in order to find the priorities of the energy debate and the shaping of the topics to support the future editions of the Conference.

"The agreement that we sign with the Eni Enrico Mattei Foundation it's the first of a series of alliances that will characterize the work of OMC Med Energy Conference and we see it as a key point to face the global challenge of the climate change" says Monica Spada, president of the event scheduled on 28-30 September in Ravenna. "FEEM becomes for us a strategic partner because it will bring its ability to analyse and its planning inside the Steering Committee that we will formalise in the next weeks. The partnership it's already in place for the organization of the Call for Ideas MED, a moment of crucial sharing of know how to create in the Mediterranean a new energy transition hub."

Alessandro Lanza, director of the Eni Enrico Mattei Foundation, says: "The increase of the energy efficiency and the decarbonisation of the energy offer, are key points for an important reduction of the climate-changing emissions. The role of the progress of the technical-scientific knowledge and the capability to create alliances in a global effort are indispensable themes to achieve the objective. For those reasons FEEM fully shares the new vision of OMC Conference and is pleased to bring its contribution to this important initiative."

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- air conditioning
- drying
- dehumidification
- air humidification
- odour neutralisation
- heating
- ventilation
- measuring devices

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 **TROTEC**
AT WORK.

Start Power: Double Regulation 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 double regulation power supply.

DO series power supplies are made with the double regulation technique. A linear stabilization circuit is added to a thyristor-controlled bridge, which allows to reduce the power absorbed by the network.

This type of control allows a volume reduction

compared to linear power supplies but it preserves the characteristics of low noise and speed of response.

Highlights

- Power available up to 40kW
- Current available: up to 3,000A
- Voltage available: up to 400Vdc
- Floating output
- Low ripple and very high stability
- Fast recovery time
- Slew Rate: 0.4V/μs
- They can operate as voltage or current source. Automatic switching from voltage mode to current mode signaled by LED
- Output voltage and current setting with 10-turns potentiometers
- Remote control through optoisolated signal
- Customized versions are possible



The power supplies of the **ATR serie** are built with the double regulation technique. The first regulation is obtained by the partialization of the grid circulation angle as automatic variac. The second regulation functions as a linear stabilizer with constant dissipated power.

signaled by LED

- Output voltage and current setting with 10-turns potentiometers
- Customized versions are possible

As a result, this solution allows to obtain both low power dissipation and, thanks to the linear regulation, excellent output characteristics.

Highlights

- Power up to 12,000W
 - Current up to 500A
 - Voltage up to 300Vdc
 - Floating output
 - Low ripple and very high stability
 - They can operate as voltage or current source.
- Automatic switching from voltage mode to current mode

For more information:

www.start-power.com

info@start-power.com

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let's be green together



Contact Us: Marketing@industrialtechmag.com
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START POWER

Power Electronics Technologies



20.000A, 48V

Power Electronics Technologies

High Precision Power Supplies 100% Made in Italy

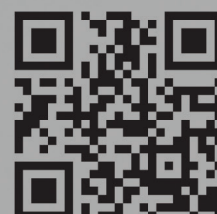
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Prospective Thinking about ambitious projects is not for everyone.

“Prospective Thinking” is the lever that will lead you to sustainable improvements and innovation in the Oil & Gas industry.

Each component of your plant is visualized, designed and built in harmony with all the elements that make up the project we work with you achieving High quality processes and long-term system reliability.

Only an organization such as RTI SpA, whose success has been built on extensive experience and skills, can be your ideal partner to achieve long-lasting and durable solutions.

RTI SpA has built up an enviable record over many years of generating consistent long-term value through thinking in prospective. We work with partners to ensure correct technical decisions are made and by working closely in partnership we achieve the best possible solution for you.

RTI SpA, for over 40 years your “ideal partner” in the World of Energy.



rti-tec.com

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.

Our couplings are used in the almost all industrial branches: iron and steel, energy, ecological, mining, packaging, food, offshore, petrochemical, aviation, air compressors, rubber manufacturing and all industrial systems in general. Our history includes multiple collaborations with



several world leaders in steel rolling, in aluminium extrusion, in rubber processing and in the manufacture of gearboxes. All components are designed and produced in our plants.

The production is constantly checked complying with the directives of the ISO 9001:2015 certification, ensuring the quality of the coupling.

The raw materials used are all certified quality. The cou-

plings are produced in our Villa Carcina plant near Brescia, where we have a large and modern fleet of CNC machinery for working all components, thus ensuring the precision of execution over time.

E. info@northon-trasmissioni.it

Petrofac to support next stage of Scotland's ambitious net zero infrastructure project

March 17, 2021: Scotland took a step closer to its net zero carbon goals today with the announcement of over £30m of UK Government funding for a suite of initiatives linked to the Acorn carbon capture and storage (CCS) project.

In June 2020 Petrofac was selected to provide ongoing Engineering and Project Management Office support for the Acorn project. Under Scotland's Net Zero infrastructure (SNZI) programme announced today, Petrofac will drive the offshore pipeline and subsea activities to develop the Acorn CCS project.

The SNZI programme is an industry match funded initiative which brings together academic and industrial partners to develop a major package of work designed to progress a national low carbon infrastructure. They include:

- *The detailed engineering required to move the Acorn CCS and Hydrogen projects to a final investment decision*
- *Developing a new CCS-equipped power station at Peterhead which would become an early customer for the Acorn infrastructure*
- *An assessment of the potential to re-use onshore pipelines to transport CO2 from the central belt of Scotland to the Acorn Project*
- *An engineering design programme for a carbon capture system on a gas-fired power station in Grangemouth*
- *Development of a "fabrication yard ready" design of a new class of ship which can service the needs of coastal CO2 emitters around the UK for delivery at Peterhead port*

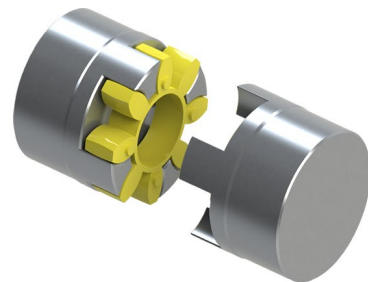
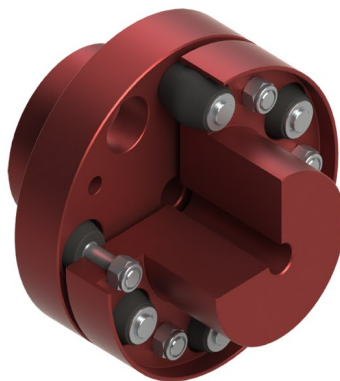
This important programme of new work and infrastructure reuse will provide a significant boost to the region's fast-growing low carbon credentials, paving the way for onshore and offshore developments totalling in excess of £3 billion. It will also map out the longer-term economic impacts, job preservation and creation opportunities as Scotland transitions away from oil and gas to low carbon fuels like hydrogen and CO2 removal technologies such as CCS.

Commenting, Petrofac's Chief Corporate Development Officer and Chief Operating Officer of its Engineering and Production Services business, John Pearson, said: "Scotland has a fantastic opportunity to repurpose existing infrastructure to enable industrial decarbonisation. Not only does this approach shorten delivery timescales and reduce project delivery risk, but it creates a long-term business model that will support investment and Scottish jobs. Petrofac is exceptionally proud to play its part in supporting Pale Blue Dot's landmark project alongside an impressive team of academic and industrial experts".

The SNZI programme compliments work that is already underway on Scotland's Net Zero Roadmap project. This funding will help enable the Acorn Project to be operational in the mid-2020s – a critical timeline to meet the UK's ambitious net zero targets.

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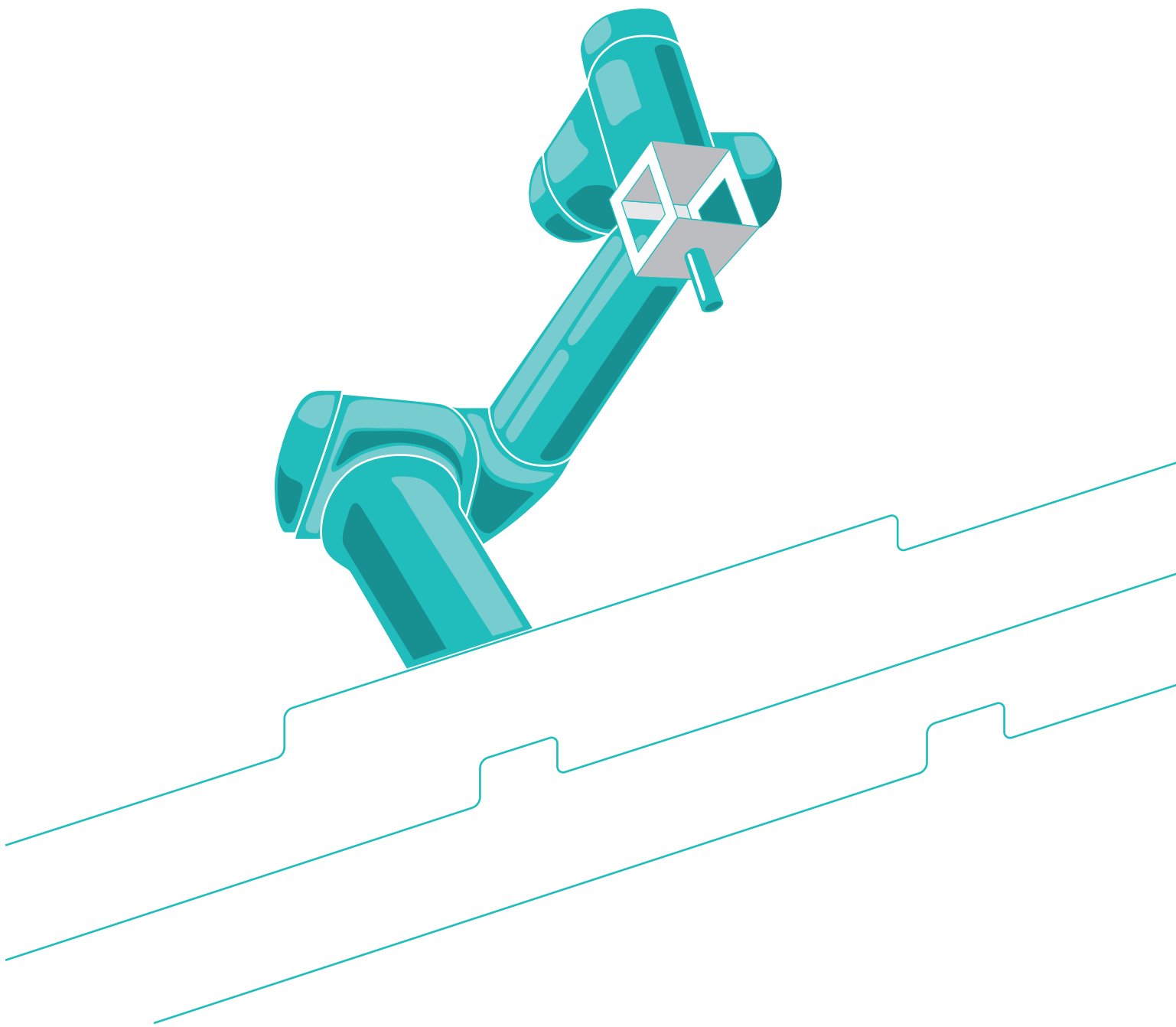
Since form 1959 Design and Manufacture of standard and special couplings in different types: gear coupling, elastic coupling, discs coupling and gear spindle. The production is constantly checked complying with the directives of the ISO 9001:2015 certification, ensuring the quality of the coupling.

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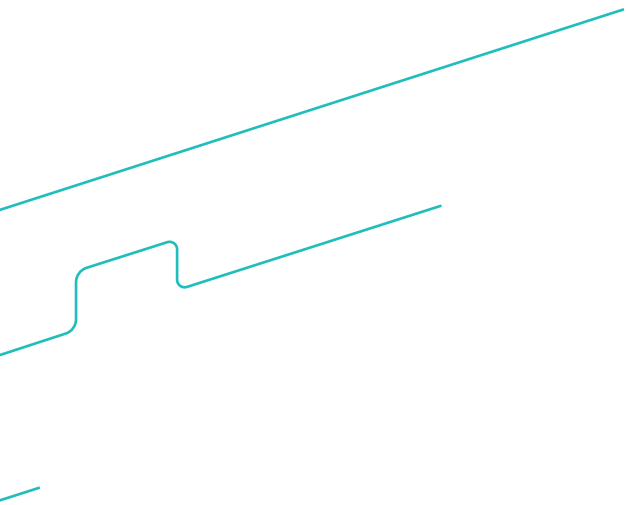


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AUTOMATION



5G and its applications to manufacturing.

Operational performance improvement and building a greater process resilience are always on top of the list of manufactures priority. Among the several ways to achieve that, the deployment of 5G connectivity and the related services and opportunities are the most promising.

5G is the 5th generation mobile network designed to connect virtually everyone and everything together including machines, object and devices. It is the new global wireless communications standard after 1G, 2G, 3G, and 4G networks. Each major wireless generation has been defined by ever-improving data capacity and a wider array of services that can be delivered over the cellular network. 1G in 1979 has enabled the voice calls, 2G in 1991 has enabled digital voice, text messaging and dial-up data speeds, 3G in 1998 has enabled email, pictures and web and 4G in 2009 has enabled streaming video.

5G wireless technology is meant to deliver:

- higher multi-Gbps peak data speeds: the peak rate is about 20 times higher than that of 4G networks;
- ultra-low latency: roundtrip data can be sent in less than 10 milliseconds;
- more reliability: up to 99.999% reliability, making them an excellent option for mission-critical applications;
- massive network capacity: data can be captured from hundreds of thousands of sensors per square mile;
- Improved efficiency: remote sensor devices applications connected via 5G low power can operate for nearly a decade on battery power;
- seamlessly hand off data to each other even when devices are traveling at hundreds of miles per hour, ensuring a robust connection for high-speed applications.
- increased availability, a more uniform user experience to more users and connects new industries.



Dr. Eng. Mor Nguirane
Chemical Engineer


The International Telecommunication Union - Radiocommunication Sector (ITU-R) has defined three main application areas for the enhanced capabilities of 5G:

- 1 - enhanced mobile broadband services (eMBB) which improves the cellular service thanks to fast access to data from devices such as smartphones, laptops or vehicles for applications such as streaming video. Initial 5G deployments have focused on this service.
- 2 - massive machine type communication (mMTC) which brings 5G support for low-power devices such as sensors and other intelligent devices that may need to last in the field or factory for years on a single battery charge. It builds on LTE standards support for such devices.
- 3 - ultra-reliable, low-latency communications (URLLC) is for devices that need very responsive data connections for instance the communication between two autonomous cars on a highway seeking to avoid a collision. URLLC is supported by 5G NR (New Radio).

Manufacturing is facing like ever before several challenges as growing global demand, aggressive competition and the global pandemic. Its flexibility must increase and adapt to sudden shifts in demand. 5G can improve manufacturing process by enabling machinery to be quickly reconfigured to optimize production. Further improving the richness of communication, 5G will keep safer and easier data collection from a dense population of sensors.

5G key applications' in the manufacturing are digital twins, the industrial internet of things, extended reality, autonomous vehicles and robotics and safety and security. 5G connectivity is required to deliver them at scale.





Digital Twins is a computerised version of a physical asset, this means that data from sensors in the real world can be implemented into the twin to develop simulations with thousands of outcomes. This technology allows manufacturers to run scenario simulations with their upcoming products to help understand potential usage, reliability and efficiency. A reactive use of digital twins is for example if there is a sudden shortage of a raw material, businesses can assess the potential impact this will have on their operations. With this knowledge, they can prepare for any eventuality that they can imagine. When digital twins are used proactively, managers can conduct “what-if” scenarios that can be analysed without disrupting production processes.

The Industrial Internet Of Things (IIoT) refers broadly to the billions of sensor-driven devices that will connect to the global network in the coming years. These device deployments focus on measuring the operation of and parameters around many production-related environments. The IIoT enables technical processes including their resources and business processes across different production levels and companies as well as information, communication, control and management systems to relate to each other. The IIoT is allowing manufacturing to benefit from energy savings and more energy-efficient operations, improved efficiency, reduced cost, and optimized utilization of resources.

Extended Reality (XR) refers to all real and virtual environments combined, where the interaction between human and machine occurs through interactions generated by computer technology and hardware. XR technologies consist of virtual reality, mixed reality and augmented reality. Extended Reality has value in sectors like construction and manufacturing, where participants can see detailed models of complex machinery. Manufacturers can present data and information about machinery in spatially relevant ways, which in turn can aid workers in maintenance, repair and training.

Autonomous Vehicles and Robotics: autonomous vehicles could deliver supplies to factories and deliver products from factories efficiently and safely. At their full potential, autonomous vehicles will communicate with each other and other connected, intelligent parts of the transportation grid. 5G can also be used to guide robots or forklifts through factories using many of the same core-enabling technologies such as advanced computer vision.

Safety and Security: 5G opens the door to multiple high-definition video streams to ensure the security of facilities or monitor for any signs of disruption or failure.

5G paves the way for self-configuring manufacturing lines, proactive equipment maintenance determined by analysing sensor data and autonomous vehicles that can begin or perhaps one day complete outbound logistics. 5G provides network characteristics well-suited for crucial manufacturing activities and it will impact every industry, making a really safer transportation, remote healthcare, precision agriculture, digitized logistics and more. 5G enables the factories of the future and makes easier the improvement of operational performance and process resilience.

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



Taumac Your Automation Solution



TAUMAC is a recently established company but with thirty years of experience in the fields of automation and laser applications.

The company was born, as Guido Gamba CEO of TAUMAC and technician with great experience in these technologies explains, to offer its customers machines and automations for markets such as goldsmith, fashion, eyewear, dental, medical, mechanical precision, automotive.

The focus of its activity is the Customer, to whom it dedicates itself with quality products: customized products with a "tailor made" approach, pre and post sales consultancy and technical assistance.

Experienced and trained technicians in the field of automation and with thirty years of experience in laser marking, cutting and laser micro-cutting and welding applications are ready to analyze your business problems, discussing and sharing the most suitable solutions with you.

TAUMAC can offer single and standard machines as well as customized machines according to the customer's needs. This means analyzing the production context and the objectives that the customer intends to achieve by proposing solutions that are perfectly integrated into the automated production process.

An important step in defining the order is the discussion of the required characteristics, for this reason the inter-

action with the Customer is stimulated, so that the same can participate in the customization process and that he knows exactly what the machine will produce and with what performance.

The guarantee of product care and fast and qualified after-sales assistance is its added value and our customer is an integral part of our future.

From design to production, installation, technical assistance for automatisms, systems, machinery, mechanical, electronic, mechanical-optical equipment and software, all stages are developed internally.

Considering the numerous types of lasers and materials used: metals, plastics, organic materials, the choice of the laser and the source used (IR fiber, Green, UV, CO2) becomes decisive in order to make an optimal choice.

The software is developed internally in both 2D and 3D environments and can be customized according to customer needs. The operator interface also allows the management of the processes during operation.

In Warehouse products, pallets can contain different objects, with loading / unloading even during operation. The work cycle is not manned when in automatic. It is possible to remotely monitor and consult a report of the work performed.

A high-performance PC is supplied with each supply. TAU-

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YOUR AUTOMATION SOLUTION



MAC automations can be made with “Pick & Place” systems, conveyor belts, rotary tables, vertical warehouses and with robot systems. All this to allow integration into the business processes of assembly, coding, marking, welding and cutting with the aid of a laser source. Vision systems for robot guidance, quality control, dimensional control and automatic centering of the piece, which can be installed on laser marking systems.

All the machines and systems proposed by TAUMAC are certified for investments in material assets for << Industry 4.0 >>.

For more information please visit:
www.taumac.com



Digital transformation - four steps to the smart factory

Zofingen, April 13, 2021: Anyone who wants to move from a previously conventionally managed business in the direction of digitization is faced with many unanswered questions. With a high level of consulting expertise, Muller Martini shows how the digital transformation can be achieved in four steps.

There is no out-of-the-box solution for a smart factory. Rather, it requires a workflow that is perfectly tailored to the individual operation in order to realize a digital transformation. Muller Martini not only has the products, business and workflow solutions for this process, but also supports customers with the experience gained from numerous projects already implemented. A four-step process is recommended, which first builds up an understanding of digitization, then clarifies the company's needs, structures the process knowledge and finally designs the workflow for the Smart Factory.

Step 1: Understand digitization

In the long term, digital transformation changes the foundation of every company in terms of its strategy, structure, culture and processes. Whether new or existing equipment is used as a starting point is of secondary importance. Rather, it is a matter of optimally exploiting the existing possibilities in the company. This applies to technical measures, processes and personnel. It is important to understand that digital transformation is very far-reaching and affects many areas of a company.

Step 2: Clarify company needs

Many companies are afraid that they will have to change everything to digitize their processes. This fear is unfounded. Rather, it is crucial to recognize one's own strengths and to be clear about how the company should develop. In taking this step, it is important to avoid idealistic approaches and only implement solutions that bring direct benefits.

Step 3: Structure process knowledge

Knowledge about the correct processes is often stored in the heads of employees. This knowledge must be structured and documented for successful digitization. This starts with a common vocabulary and a uniform understanding of terms. But it also concerns the common understanding of processes and their relevant variables. The timing and logistics of production in the existing production cells must also be defined. To reduce complexity, special attention must be paid to standard cases. Special cases should be excluded if possible.

Step 4: Shape digital transformation

The new target state is now defined on the basis of the principles developed. It is determined, for example, which individual information belongs in the electronic order pocket. The mapping of job structures and the printing of barcodes are also of central importance. For a successful digital transformation, it is necessary to consider and answer all the classic questions of a graphic production from the perspective of digital production.

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What makes UTPVision's visual inspection machines unique is the Artificial Intelligence software (AI) they are equipped with. You can train your UTPVision visual inspection machine to sort and classify according to your needs, just with image samples. Simple as that.

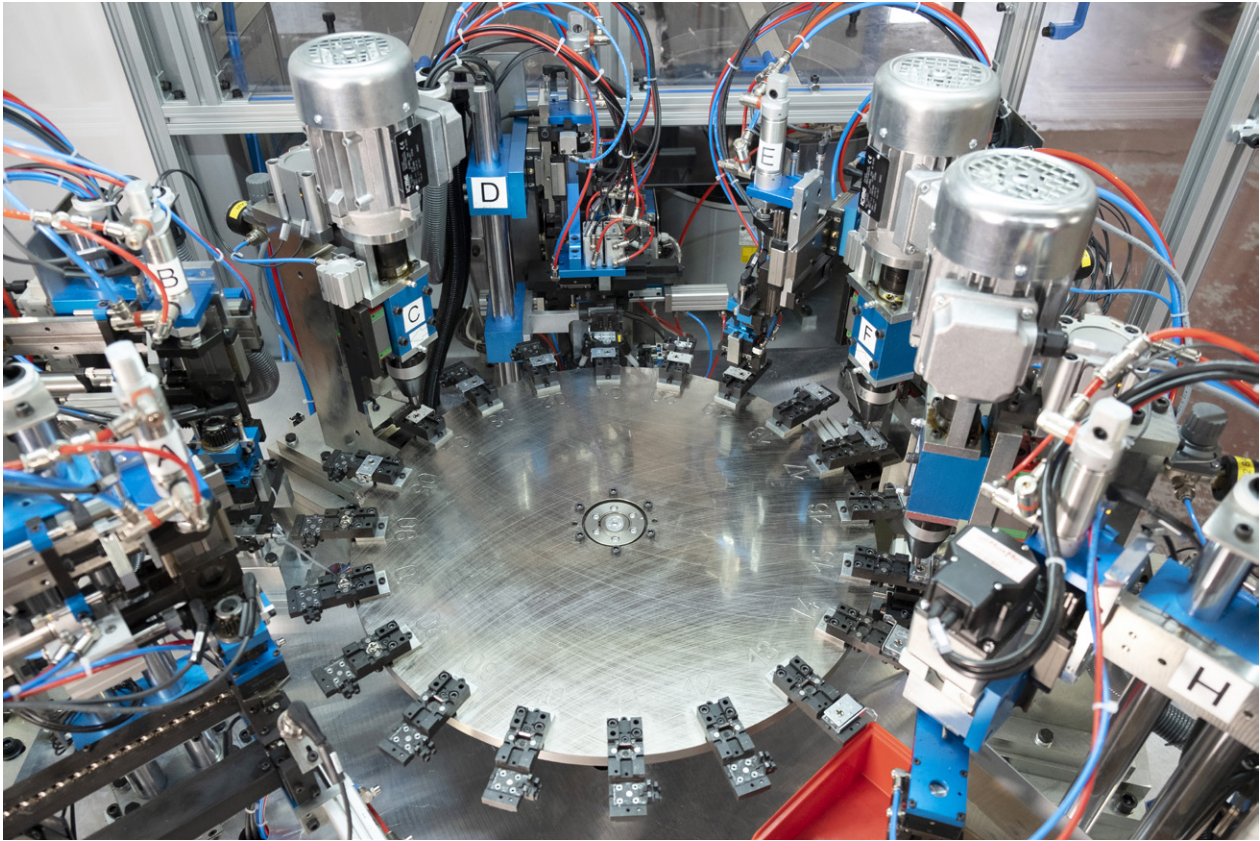
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Cosberg Innovaction



For almost 40 years, Cosberg has been designing and building special assembly systems, capable of responding to the production and quality needs of manufacturing companies from all over the world and belonging to various industries, including automotive electromechanical, hardware, accessories for furniture and household appliances, jewelry and watchmaking.

Cosberg designs and builds every mechanical, electrical and software part of the machine internally, and standardizes its modules to offer customers maximum flexibility and ease of management, which translate into a net increase in productivity.

Let's see together some of the "intelligent" modules that have been developed and standardized over the years.

For feeding of components, Cosberg has always designed

and built feeding groups that guarantee continuous flow, correct orientation of the pieces, testing of the presence and position of each component.

For **screw-driving**, Cosberg has developed **electrical units** consisting of a mechanical part, resistant and durable, actuated by an "off-the-shelf" brushless motor (which is also used for other modules) easily programmable through the machine's HMI. **A solution that simplifies maintenance, reducing considerably the time needed.**

The **new electric riveting systems** are also equipped with the same type of brushless motor, which allows the control and parameterization of the process by setting of speed and force.

In this way, the same unit can perform operations on different inserts and different levels and can also compensate for the different tolerances in the length of the



insert, **reducing significantly production change times.**

The handling and positioning of the pieces are entrusted to **slides and electric pick & place** modules (equipped with the same standard motor) which can pick from points on different levels and reduce the production change time to just inputting the product code.

The choice of adopting the same type of motor allows a simple configuration and agile handling of the spare parts.

These modules are flanked by the control and test units: vision systems programmed by Cosberg and other modules specifically developed for physical, dimensional, torque-angle, electrical controls and so on, as well as specific units for **in-process testing** and for the **traceability of every single part.**

In general, Cosberg machines are conceived as a platform that is designed and built according to the customer's needs. A modular and configurable system at all levels: hardware (mechanics), software, logistics, and maintenance.

It can easily be integrated with other machines and can be constantly monitored through the Cosberg4Machine software: a system capable of supplying remotely and in real time data related to production, alarms, efficiency, quality and availability, both of the individual working units and of the entire machine or the entire department.

For more information:
www.cosberg.com
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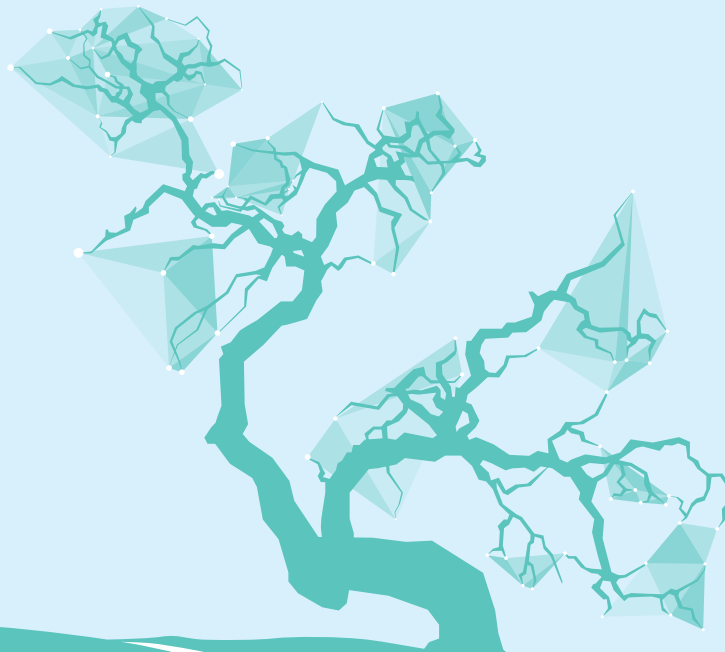
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We introduce you our cathodic protection test field



As part of its Smart Factory expansion, **AUTOMA** (Italy) set up a **Cathodic Protection test field** in an area adjacent to the new building.

The purpose is to simulate the possible cathodic protection conditions of buried metal pipelines and carry out measurements, either in the field and remotely, accordingly to **national, European and international standards**.

In addition to training, updating and certification courses as per **ISO 15257:2017**, this is also for the **Goliah Academy**: the continuous training program that **AUTOMA** offers to

its customers to help make the best possible results out of its solution.

A real playground for cathodic protection experts

The test field covers an **area of 600 sqm** and was designed to simulate the cathodic protection of a 6" diameter pipe of 50 m length buried at a depth of about 1 m.

Cathodic protection can be implemented both by an **impressed current system** with Fe-Si alloy earth electrodes and by a **magnesium alloy galvanic anode system**.

Six test posts are installed along the pipeline, where



fixed copper/copper sulphate reference electrodes are buried, each equipped with one or two coupons. These allow **measurements of potential without ohmic drop**, measurements of DC and AC current density and simulation of coating leaks. A zinc electrode is also present so that measurements obtained using different types of electrodes can be compared. Finally, the test field also enables **the simulation of interference conditions** from both direct and alternating current.

Each standard “conchiglia” test post is flanked by an “international” one:

- M28 test post (UK);
- Kettner Pole (North Europe);
- Big Fink (USA and Middle East);
- Solar Box produced by **AUTOMA**.

Any test post is equipped with an **AUTOMA cathodic**

protection remote monitoring unit that, together with the units installed in the rectifiers, for control and synchronized ON/OFF, provides a real interactive experience. It is also possible to **simulate all possible cathodic protection** and electrical interference conditions, as well as to vary the total length or part of the structure using variable resistors.

In terms of cathodic protection measures, this field test enables the simulation of what would regularly be carried out in the field to check corrosion protection conditions: electrical voltage and current measurements, most common measurement techniques and instant-off measurements on coupons to verify the potential without ohmic drops.

To know more about **AUTOMA's** cathodic protection test field, write to sales@byautoma.com



Siemens and Google Cloud to cooperate on AI-based solutions in manufacturing

- The new cooperation aims to enable the scaled deployment of AI-based solutions for industrial manufacturing.
- Google Cloud and Siemens simplify the deployment of artificial intelligence to the shopfloor, empowering employees and improving overall quality.

April 19, 2021: Google Cloud and Siemens, an innovation and technology leader in industrial automation and software, today announced a new cooperation to optimize factory processes and improve productivity on the shop floor. Siemens intends to integrate Google Cloud's leading data cloud and artificial intelligence/machine learning (AI/ML) technologies with its factory automation solutions to help manufacturers innovate for the future.

Data drives today's industrial processes, but many manufacturers continue to use legacy software and multiple systems to analyze plant information, which is resource-intensive and requires frequent manual updates to ensure accuracy. In addition, while AI projects have been deployed by many companies in "islands" across the plant floor, manufacturers have struggled to implement AI at scale across their global operations.

For more than 170 years, Siemens has built its business on pioneering technologies that have led the manufacturing industry forward. By combining Google Cloud's data cloud and AI/ML capabilities with Siemens' Digital Industries Factory Automation portfolio, manufacturers will be able to harmonize their factory data, run cloud-based AI/ML models on top of that data, and deploy algorithms at the network edge. This enables applications such as visual inspection of products or predicting the wear-and-tear of machines on the assembly line.

Deploying AI to the shop floor and integrating it into automation and the network is a complex task, requiring highly specialized expertise and innovative products such as Siemens Industrial Edge. The goal of the cooperation between Google Cloud and Siemens is to make the deployment of AI in connection with the Industrial Edge – and its management at scale – easier, empowering employees as they work on the plant floor, automating mundane tasks, and improving overall quality.

"The potential for artificial intelligence to radically transform the plant floor is far from being exhausted. Many manufacturers are still stuck in AI 'pilot projects' today – we want to change that," said Axel Lorenz, VP of Control at Factory Automation of Siemens Digital Industries. "Combining AI/ML technology from Google Cloud with Siemens' solutions for Industrial Edge and industrial operation will be a game changer for the manufacturing industry."

"Siemens is a leader in advancing industrial automation and software, and Google Cloud is a leader in data analytics and AI/ML. This cooperation will combine the best of both worlds and bring AI/ML to the manufacturing industry at scale. By simplifying the deployment of AI in industrial use cases, we're helping employees augment their critical work on the shop floor," said Dominik Wee, Managing Director Manufacturing and Industrial at Google Cloud.

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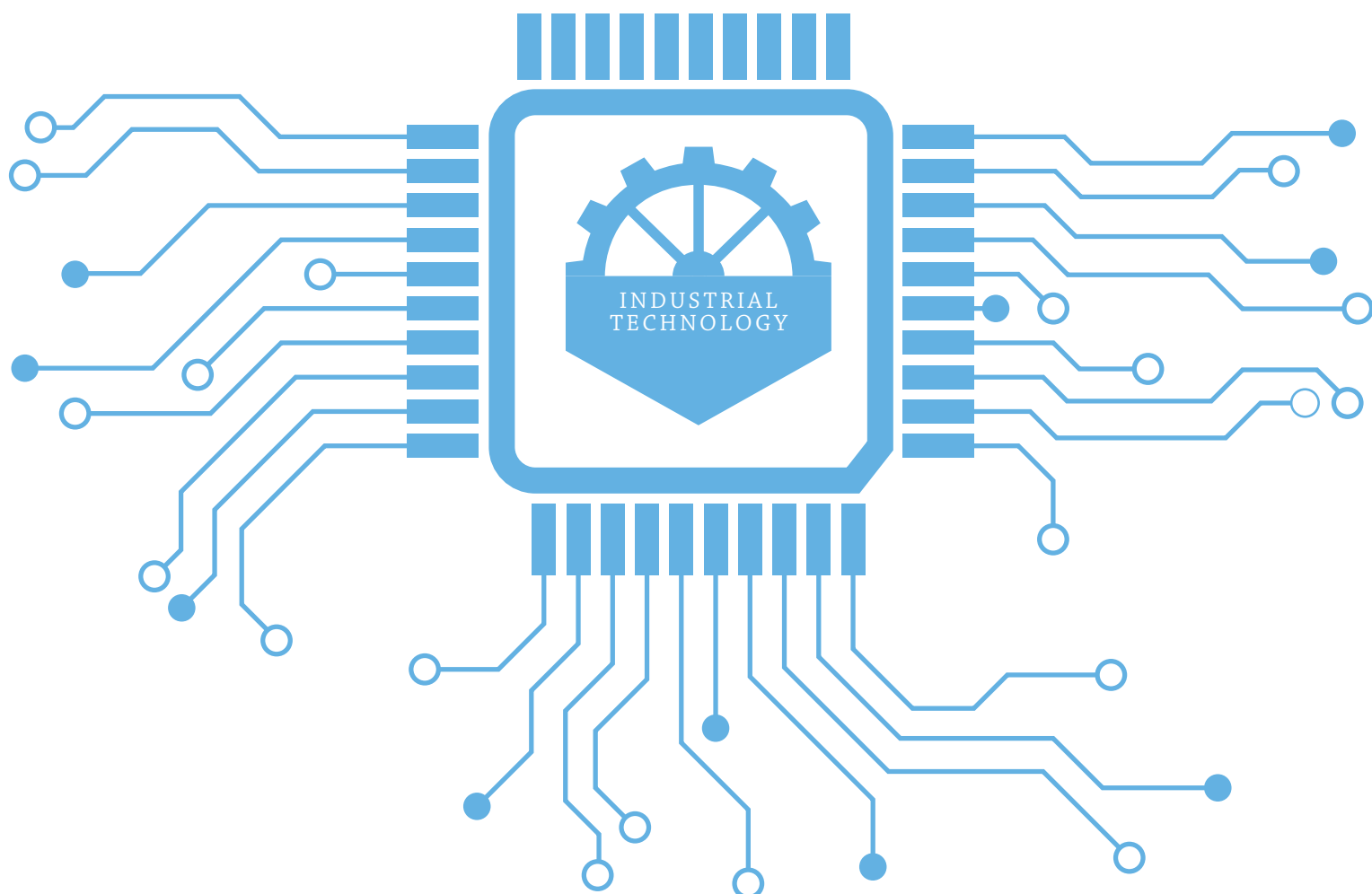


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HyperPLANT: a smart approach to Industry 4.0



Real Comm, active since year 2000 on development and infrastructure field, works side by side with companies helping them through organizational business process re-engineering (BPR), while respecting each company's vision and peculiar work style.

Our company designs and develops **HyperPLANT**, an highly configurable web **Suite for Industry 4.0 environments**, based on state of the art web technologies. Thanks to our Cloud Datacenter, ISO27001 certified, HyperPLANT is available on premise or as a service solution.

Made of interoperable modules, and per-sector verticalizations, HyperPLANT Suite enables to improve management capabilities in the following areas:

- **Visual finite-capacity production scheduling (CRP)**, allowing advanced resource planning of work centers, operators and tools, due dates, and workload monitoring. The planning engine is updated by integrated MES data collection, and provides scheduling parameters to aggregate and/or parallelize task, and to automate scheduling operations.

Real Comm

Easy for real

•**Manufacturing execution systems (MES):** designed for intuitive, mobile-friendly usage by operators, a MES system allows the management of scheduled tasks, and the recording of a variety of data, ranging from execution times and quantities, to inventory movements. Specific modules manage quality and measurement plans, as maintenance plans.

•**Inventory and material requirement planning (MRP),** an easy interface with defineable thresholds and on-call procedures for inventory check and resupply proposals. Additional options can enable traceability for lots or serial numbers, using highly customizable information fields and coding definition.

•**Product and process modelling,** including powerful classification tools for parts definition, and codes structured generation. Production planning can consider flexible work route definitions and localized route manage-

ment, and can be automatically powered from product design data.

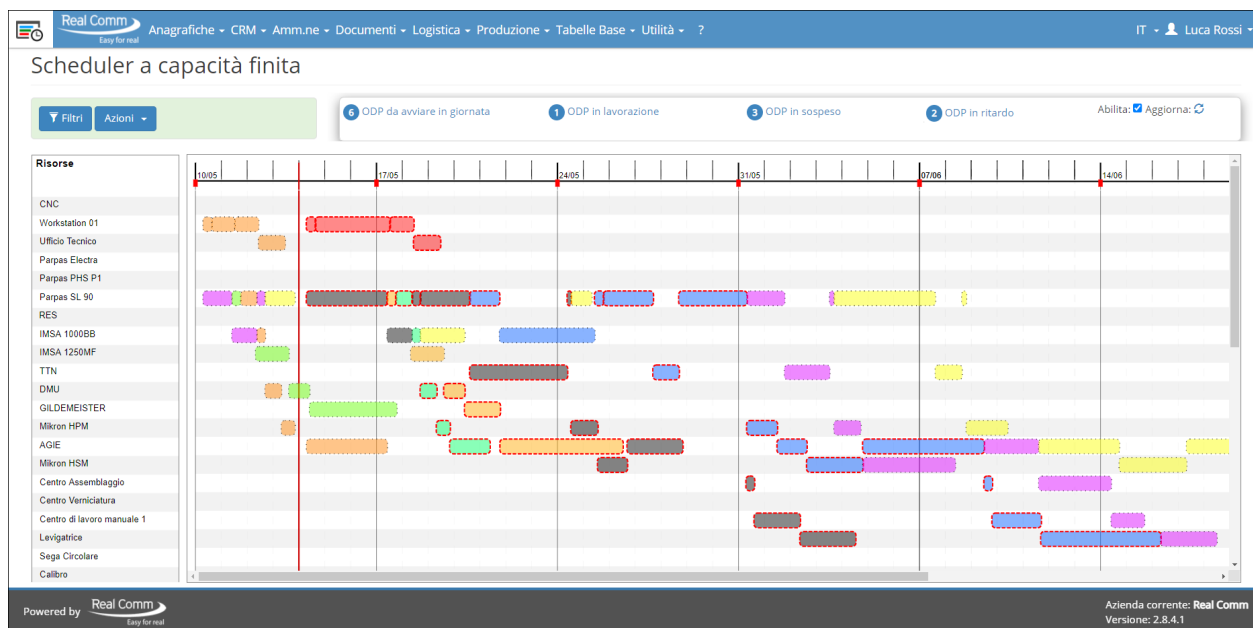
•**Machine data collection, part program management, and advanced machine interactions,** through designing and developing ad-hoc software and/or hardware modules.

•**ERP full integration:** full integration is available for any ERP exposing data and/or API.

HyperPLANT Suite offers coverage for a wide range of applications, through flexible design and configurability, enabling from classical manufacturing sectors (woods and metals, mould production, assembly) to specific application sectors (such as chemicals or field services).

For more information please visit:

<http://www.realcomm.it>



INDEVA® state-of-the-art materials handling technology

for more Ergonomics, Safety and Productivity



The INDEVA® lifting systems are the state-of-the-art technology for manual load handling systems and are an evolution of the industrial manipulators.

With forty years' experience in the design and manufacture of devices that comply with all the latest safety regulations and the most complete range of manipulators on the market, INDEVA® technology fully **complies with all the latest guidelines related to ergonomics and safety.**

To effectively improve operator wellbeing and achieve ergonomic and safe handling operations, it is necessary that the **manipulator not only eliminates the strain during load lifting (along vertical axis), but also the inertia during acceleration, braking or direction change.** The INDEVA®, known as intelligent devices for handling or intelligent assist devices, comply with the above ergonomics requirements.

Performance and productivity are increased as a result

of the constant production rate, increased reliability and smooth, precise handling, **eliminating the risks and stresses of manual handling.**

INDEVA® industrial manipulators represent an excellent choice for companies who want to improve employee health and safety, minimize the cost and distress of work-related injuries, whilst at the same time optimizing efficiency and production.

ACCURATE MOVES AND PRECISE LOAD POSITIONING

The INDEVA® technology allows for **accurate and precise movements**, a feature which is essential for all applications where the load has to be placed in a restricted area without jerks, in order to safeguard product integrity with no strain for the operator.

TOP SAFETY STANDARD

- In case of power failure, mechanical lock will prevent the fall of the gripping tool;

- In case an end effector not designed by INDEVA® is used and load is lost, the auto balancing function prevents the manipulator from shooting upwards;
- Diagnostic: wide diagnostic functions and alarms available from display.

VERY LIGHT TO MOVE

Both Column and Rail mounted INDEVAs are light to move, allowing very precise and quick load positioning (no over travelling, bouncing and need of lots of little corrective movements, that, added to cycle time, reduce productivity).

AUTOMATIC WEIGHT DETECTION AND BALANCING

INDEVA® technology allows to handle different loads without need of adjusting with selectors, in case different parts have to be handled.

BESPOKE LOAD GRIPPERS

Scaglia Indeva boasts the greatest expertise in designing

and manufacturing bespoke end effectors and is appreciated worldwide for being able to provide tailor made load grippers for a great variety of different loads and work cycles.

INDUSTRY 4.0

An INDEVA® can exchange data with the Customer IT System through the Company Network and allows visualisation of manipulator activity by means of interface software.

REMOTE TROUBLE SHOOTING

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

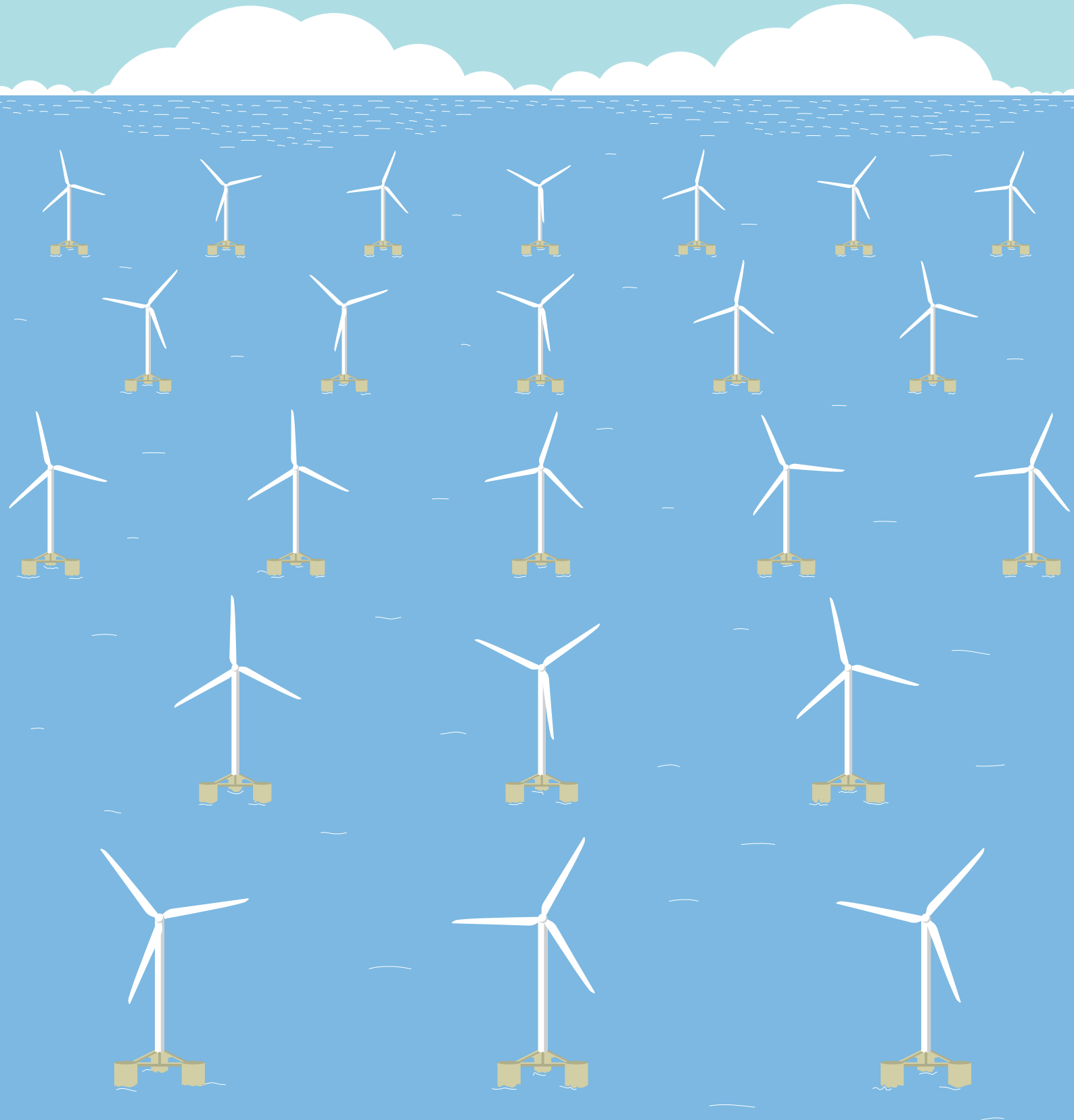
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Reduced carbon footprint due to low energy consumption.



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INTERCONNECTIVITY

INTUITIVE CONTROL

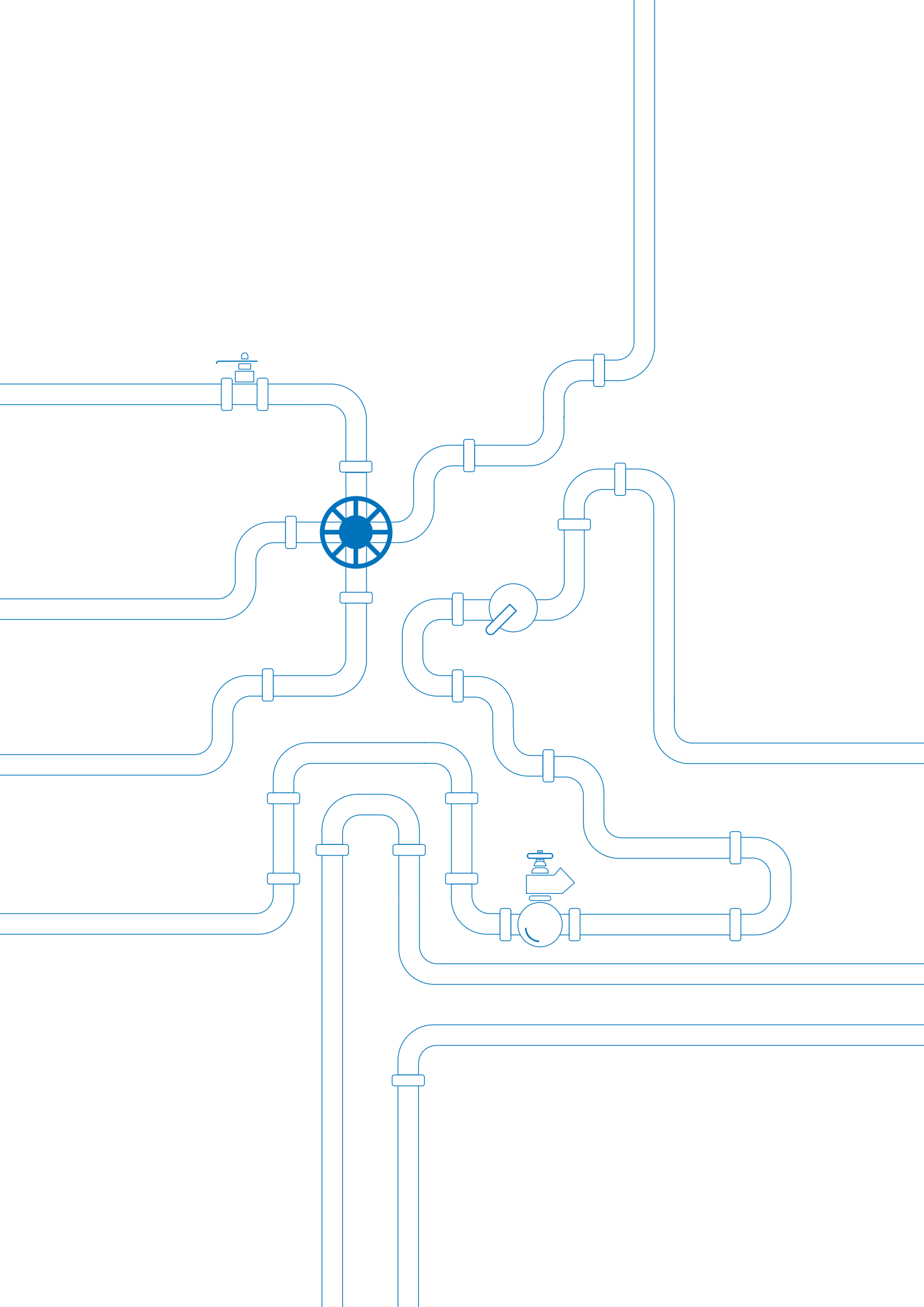
IMPROVED SAFETY

EASY MAINTENANCE

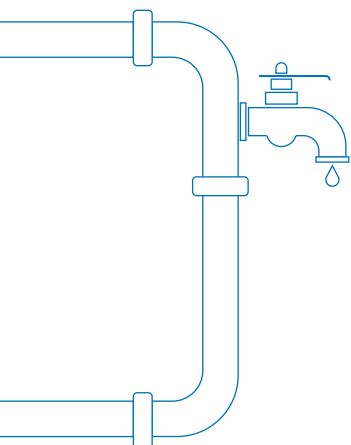
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VALVES AND PIPES



Distillation Column Internal: Valve Trays

Whenever we pass through or see a refinery at a distance, the tall towers are seen standing high at the horizon. These are called the fractionating columns which do the distillation processes. Fractional Distillation is one of the most important unit operations of a chemical process which happens in a refinery. The fractionating columns are used in industries such as petrochemical production, natural gas processing, brewing, liquified air separation etc. Mostly the feedstocks used are multicomponent or complex, the separation process happens normally with the difference of the boiling points. We can say distillation is one of the most energy intensive process, and most of the times these distillation columns are accompanied by stage reboilers and condensers. While considering every process the internals which are inside these columns plays the most vital role.

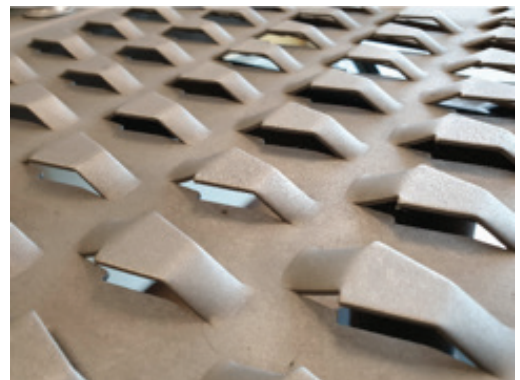
Internals play the fundamental role in the interaction between different fluids and consequently separation of complex fluids into simpler forms. The most important internals are valve trays, fluid distributors, structured and random packing and etc. The material of manufacturing could be in metals (e.g. steel, titanium, carbon, copper, ceramics, plastics etc.) depending on the service and resistance to the chemicals, temperatures etc. The internals are designed as per the need and requirement of the service. They could be varied between trays and packing suitable for the breaking of complex components to simpler ones. Many times, for multi-purpose functionality there is use of combination of both the internals trays & packing (e.g. - Vacuum column).



Rakesh Ranjan Jena
Area Sales Manager



Angelo Mottillo
Dott. Ing. Chimico



Packings-Random & Structured:

Random Packing is one of the 1st internals to be used in the columns for distillation. The improvements between the generations of random packing have the objective to increase the surface area of interaction for high pressure distillation and in the gas processing. There transformation from various generations of random packing through the Raschig rings (1st), Pall rings (2nd) and KG-IMTP or BARETTI BMRP (3rd). Whereas Structured packing is the latest invented during 1990s. The most important property of the structured packing is the surface area, maximum surface wettability, and the theoretical Stages/m. Used mostly for the low pressure (vacuum) service.

Trays

But As the names goes Trays are flat and circular in dimension to fit in the columns or very rarely rectangular in design. The early 60s saw the commercial use of Bubble cap trays in the refinery industry and in time trays started getting modernized with sieves and valves with multiple down comers etc. Now trays are forefront in getting used in all the refineries in around the world. The main difference between trays is design and with which fluid loadings getting used.





Bubble Cap Valve Trays:

Bubble caps are composed of a riser and a cap, and they are installed on deck trays. The connection between the riser and the tray is extruded directly from the deck, and riser could be fitted together with it. Then the cap is screwed over to the riser and installed. While it is fixed with a nut to keep it at its position during its whole life time operation. In the past, the bubble cap trays were the most used in the petrochemical and refining processes. These kind of trays with bubble caps used in particular cases, e.g. when there is a low liquid flow.

Sieve Trays:

With new developments, there was improvements in the type of trays to increase the efficiency and capacity of the columns. The late 60's witnessed the advent of perforated plates (or sieve trays). They are trays with holes diameters varying from 5mm-25mm. Here the velocity of the vapour helped by the perforation to keep the liquid on the tray surface. But the inadequacy in vapour-liquid rate led to invention of different kind of valves in time e.g. Floating vales and fixed valves varying in dimension. The sieves are not completely obsolete still getting used in different services.

Floating Vales Trays:

In order to improve on the limitation of the sieve trays, the floating valves came into existence. As per the name, they can move from the original state (close) to the exercise (open), due to the vapour pressure. In the market we can find the most different size (length) and shape (rectangular or round) of these valves, some with well note characteristics, and other ones that are propriety design. Why to use floating valves? Because they can work in a better way respect to the other ones in severe operation conditions, for example with an elevate turndown ratio, or when there will be the possibility of weeping using the fixed valves.

Fixed Valves Trays:

The latest in the valve family, are the fixed ones. They are something in between sieve trays and floating valves. In fact, they have more resistance with respect to the sieve trays related to weeping of the liquid. But directly cannot be compared with floating valves as both of them used for different services. We can find the most different size and shape of these valves (depending upon the service that they have to do), some with well note characteristics, and other ones that are propriety design. Other specialty of the fixed valves (especially the micro valves), are that we can have a low tray P-drop, with reduced flooding value.

Main differences between the various valves, as we understood, is the flexibility. It depends upon liquid and vapour flow, and the turndown percentage. For example, in process condition between 90% and 110%, we can use valves with a low flexibility; Counter wise, for more severe turndown conditions e.g. 40% and 110%, we can have the necessity to use a valve with a high flexibility.

Difference table:

Type of valves / Trays	Flexibility
Sieve Trays	Low
Fixed Valve Trays (e.g. Barette BV-O)	Middle - Low
Floating Valve Trays (e.g. Barette BDH)	Middle - High
Bubble Cap Trays	High

Safety & Quality of Controlfluid Shut Down Ball Valves



In all industrial activities, SAFETY is one of the prime points to keep under top consideration.

Automation performed by automated equipment and systems is increasingly applied to all industrial processes.

How can we be sure that Safety Systems will work when required?

Can we trust in Emergency Equipments during an unexpected event?

The Emergency Shutdown System (ESD) is designed to minimize the consequences of emergency situations, related to typically uncontrolled flooding, escape of hy-

drocarbons, or outbreak of fire in hydrocarbon carrying areas which may otherwise be hazardous.

An emergency shutdown system for a process control system includes CONTROLFLUID EMERGENCY SHUTDOWN VALVES AND ASSOCIATED ACTUATORS AND CONTROL ACCESSORIES.

An emergency shutdown valve is an actuated valve designed to stop the flow of a hazardous fluid upon detection of a dangerous event. This provides protection against possible harm to people, equipment or environment.



Shutdown valves are primarily associated with the petroleum industry although other industries may also require this type of protection system. ESD valves are mandatory by law on off-shore plants to prevent catastrophic events like the BP explosion in The Gulf of Mexico in 2010.

It is crucial that ESD is FAIL-SAFE and closes upon failure of any element of the input control system, air pressure, temperature controller etc.

CONTROLFLUID

has been specializing in actuated valve since 1987 when obtained the ISO 9001 Quality Management System among the first 100 Companies in Italy.

The main quality certifications achieved are:

- ISO 9001 since 1997
- Pressure Equipment Directive 2014/68/EU Annex III Module H
- ATEX 2014/34/EU
- API 602
- SIL Level II and Level III for Ball Valves
- Fugitive Emissions Test according to ISO 15848-1 and ISO 15848-2

For more information please visit:
www.controlfluid.com

Oric Italiana S.r.l. Superalloys

The company **Oric Italiana S.r.l.** was founded in the Nineties by **Mario Orlandoni** and **Jacques Monvernay**.

The demand for materials able to withstand increasingly extreme conditions of use has exponentially developed the use of Stellite; both founders already had a long track record working with Stellite and Superalloys sector, with particular attention to the related machining problems.

Oric Italiana S.r.l. not only guarantees the constant availability of **Stellite in bars, small bars, electrodes, wire and powders** in its warehouse, but is also able to produce custom-made pieces or coatings quickly to always meet the needs of its customers.

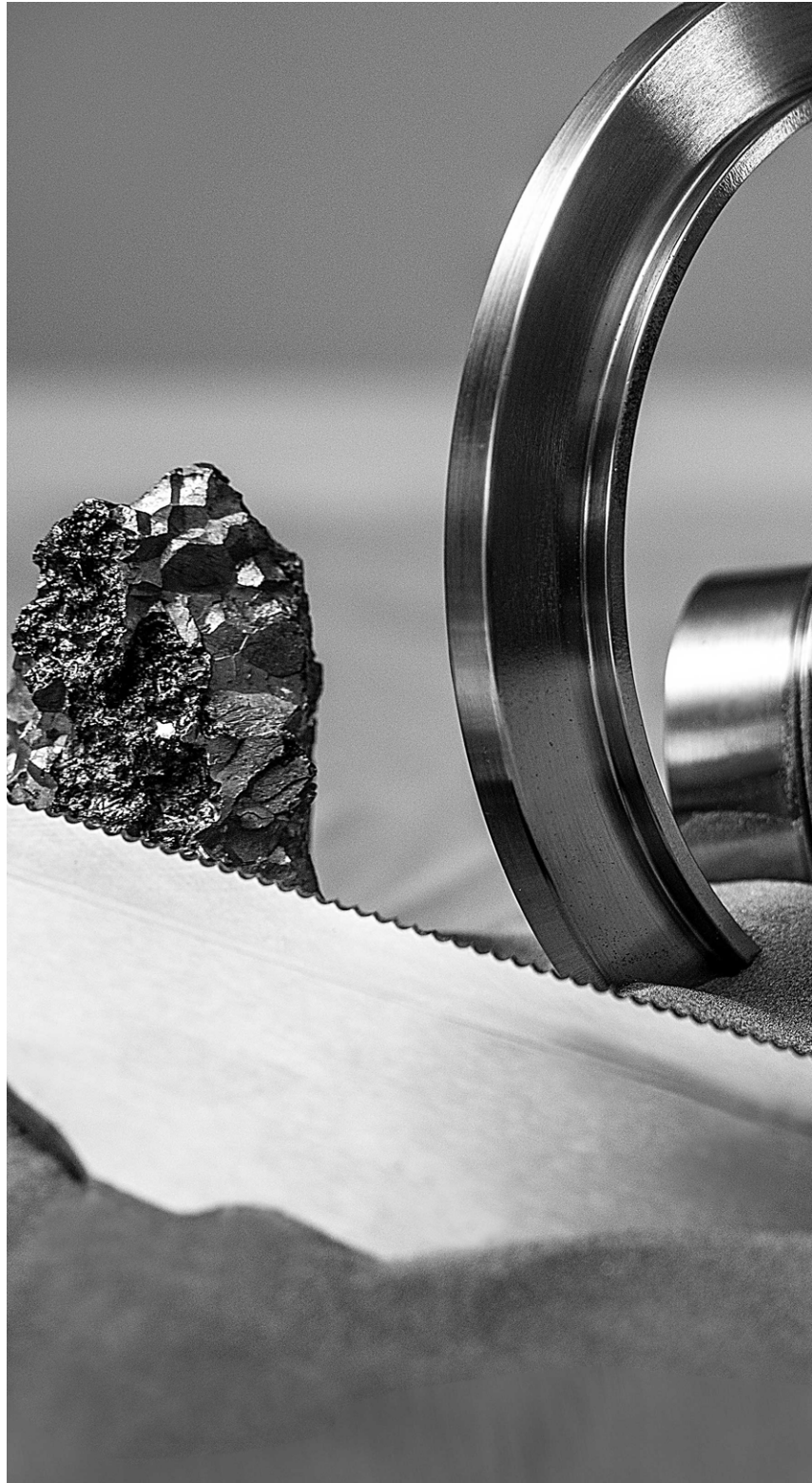
Over the years, for the production of Stellite, major investments have been made in innovative processes, including in terms of efficiency, and the entire fleet of machines has been extended.

Listed below are the strengths of **Oric Italiana S.r.l.**:

- Solid know how
- Eclectic versatility
- Ready timeliness
- Constant customer support

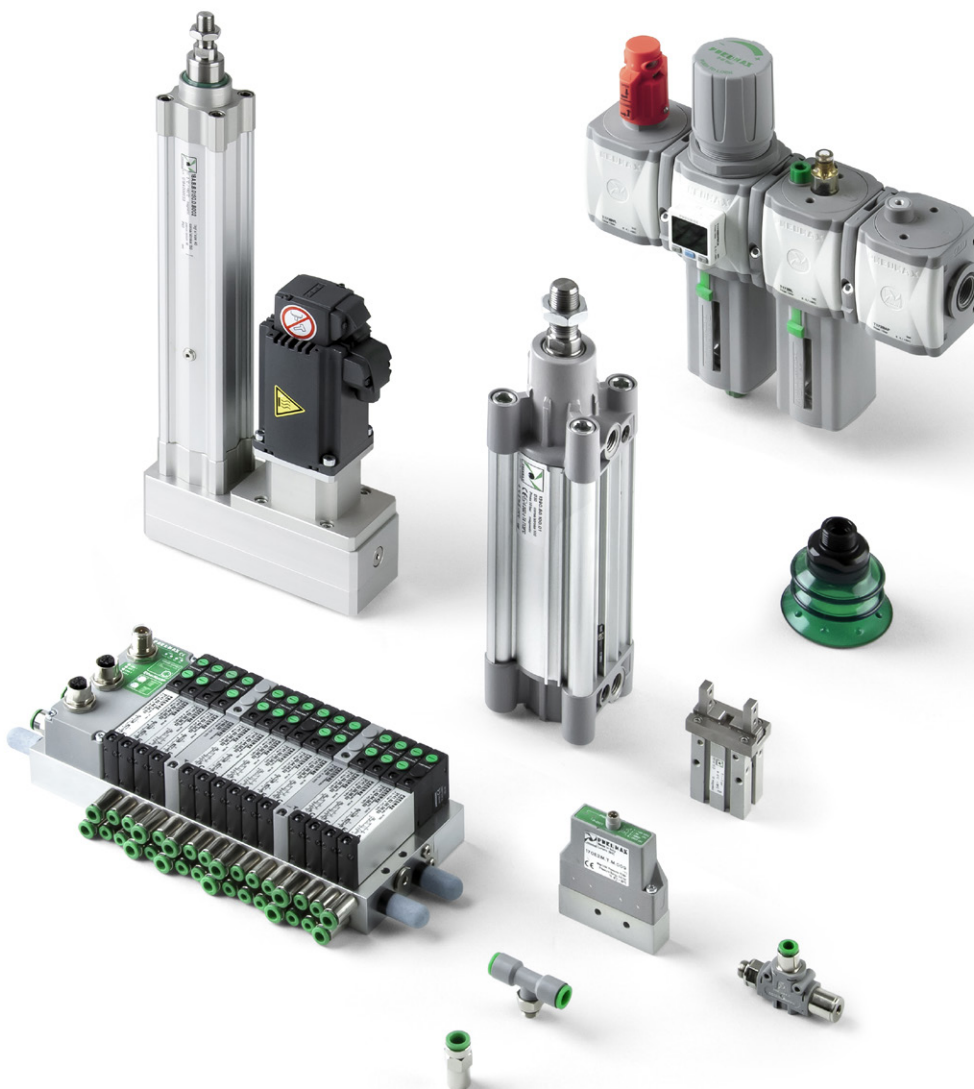
The company is able to provide the customer with a complete service that starts from the design of the component in Stellite, with the development of the three-dimensional model, up to its creation and the final checks.

For any further information or request please visit our website : www.oric.it





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

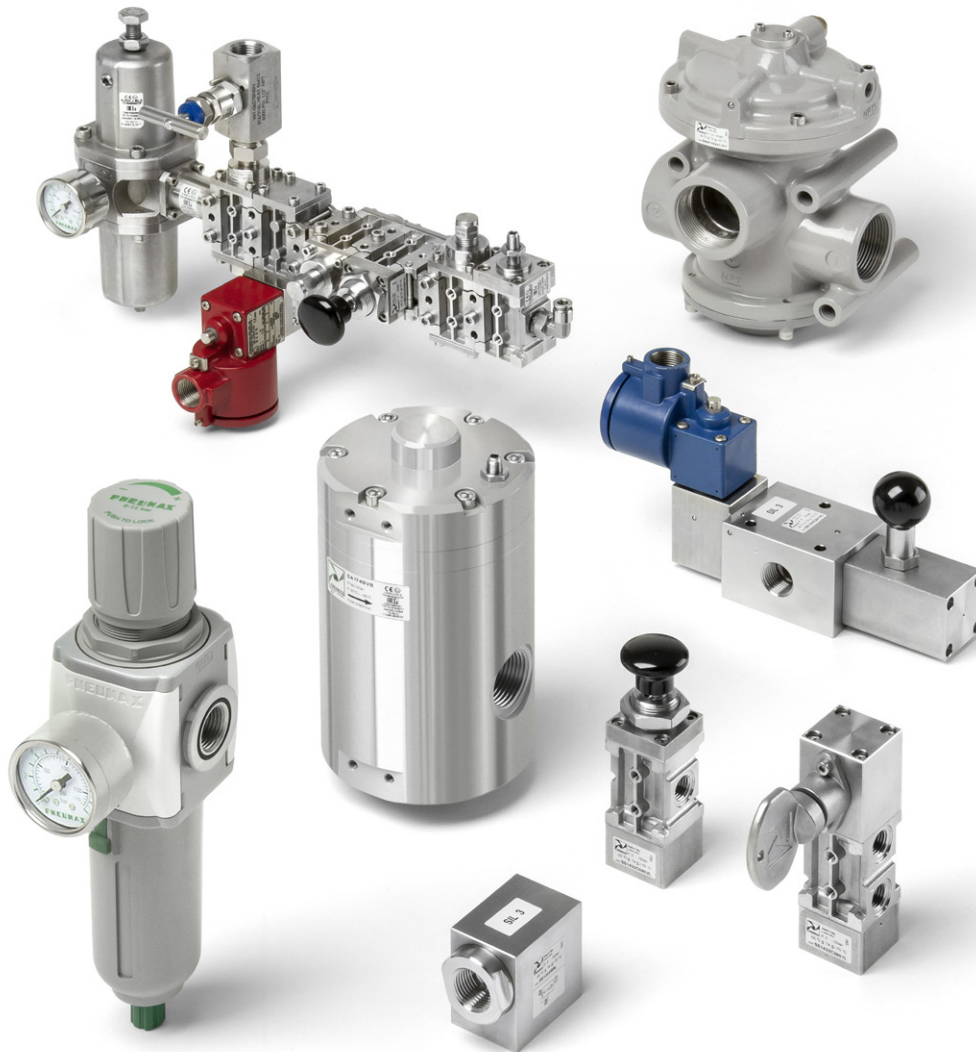
standard products and customized solutions. The use of the most advanced production technologies guarantees maximum flexibility and certified quality according to international standards in different sectors.

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, vacu-



PNEUMAX



um technology ,air service 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 service 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.

Parker redefines instrumentation valves and manifolds, launching new catalogue offering superior advantages in application

Barnstaple, April 8, 2021 – Parker Instrumentation Products Division Europe – part of Parker Hannifin, the global leader in motion and control technologies – has launched its latest catalogue and most up-to-date needle valves and manifold solutions range. Designed with engineers in mind and the ever more demanding needs of the applications, this catalogue details the full capabilities of Parker's manifold range, manufactured at its globally recognised, lean model plant in Barnstaple, Devon in the UK.

As a market-leading supplier of instrumentation connections, Parker's 76-page catalogue includes a focus on fully integrating tube connections directly into the manifolds, thereby eliminating troublesome NPT (typically) threads and offering superior advantage.

Spencer Nicholson, Manifold Solutions Product Manager at Parker Instrumentation Products Division said: "This latest product evolution and catalogue offering reinforces the Parker commitment to ongoing innovation in valve and manifold solutions for process measurement applications by integrating best available technologies and thereby presenting industry with improved solutions that meet ever-changing requirements".

**INDUSTRIAL
TECHNOLOGY**
editorial office

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Contact us: marketing@industrialtechmag.com



PNEUMAX



Smart Technologies and human competence

For over 40 years we have been working to add value to the applications of our customers.

Our objective is to **create value for customers** in a responsible and sustainable manner, implementing processes and activities in respect for the environment and people. For this reason, at Pneumax we create **complete solutions**, always pursuing **technological innovation** as an instrument to enhance the value of the competence of our collaborators and to foster the spread of knowledge, a crucial element for growth.



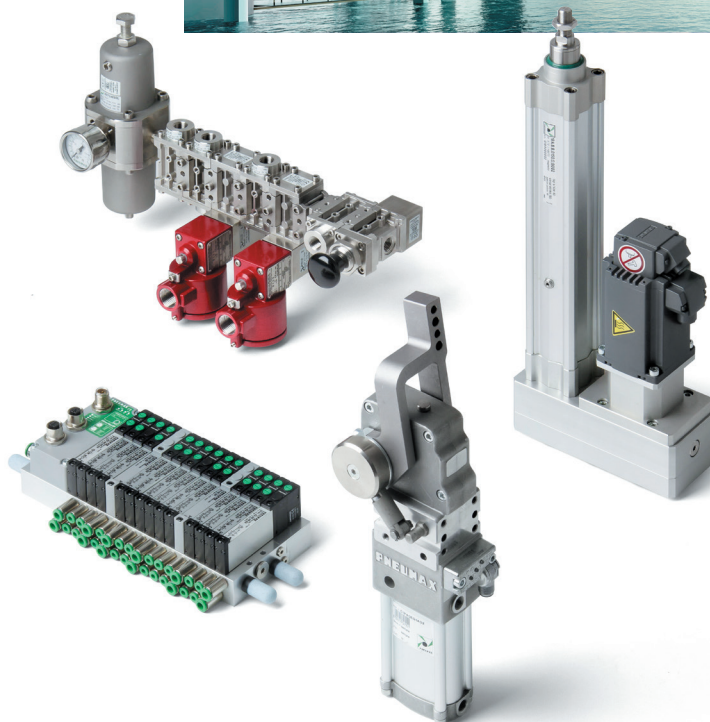
**INDUSTRIAL
AUTOMATION**



AUTOMOTIVE



**PROCESS
AUTOMATION**



 **Pneumatic Technology**

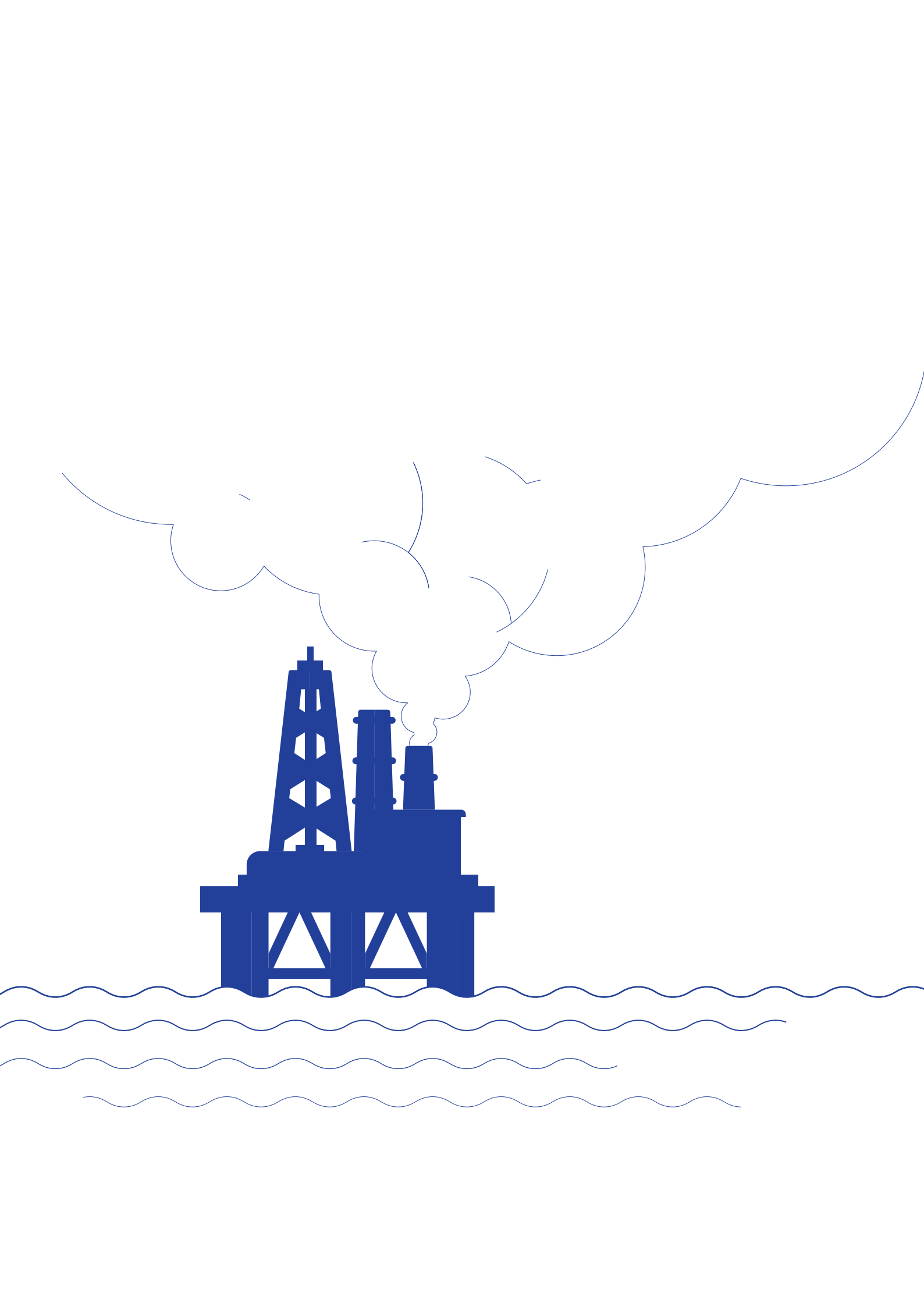
 **Electrical actuation**

 **Fluid control**



 **Italian Excellence**

pneumaxspa.com



OIL AND GAS



Carbon neutrality and the paths to achieve it.



Dr. Eng. Mor Nguirane
Chemical Engineer

According to the definition of the Intergovernmental Panel on Climate Change (IPCC), carbon neutrality, or net zero CO₂ emissions, refers only to carbon dioxide emissions and is a state of balance between the CO₂ emitted into the atmosphere and the CO₂ removed from the atmosphere. The intent is to "zero" and "neutralize" CO₂ emissions by obtaining a balance of CO₂ emissions less than or equal to zero. IPCC provide also the definition of net zero emissions and climate neutrality which are usually interchanged with carbon neutrality. According to IPCC, net zero emissions is the process to get to zero the GHG through the reductions in one's own emissions-related activities while removing additional GHGs from the atmosphere to make up any shortfalls, all in alignment with the targets of COP21 agreement. While climate neutrality is the reduction of all GHGs to the point of zero while eliminating all other negative environmental impacts that an organization may cause.

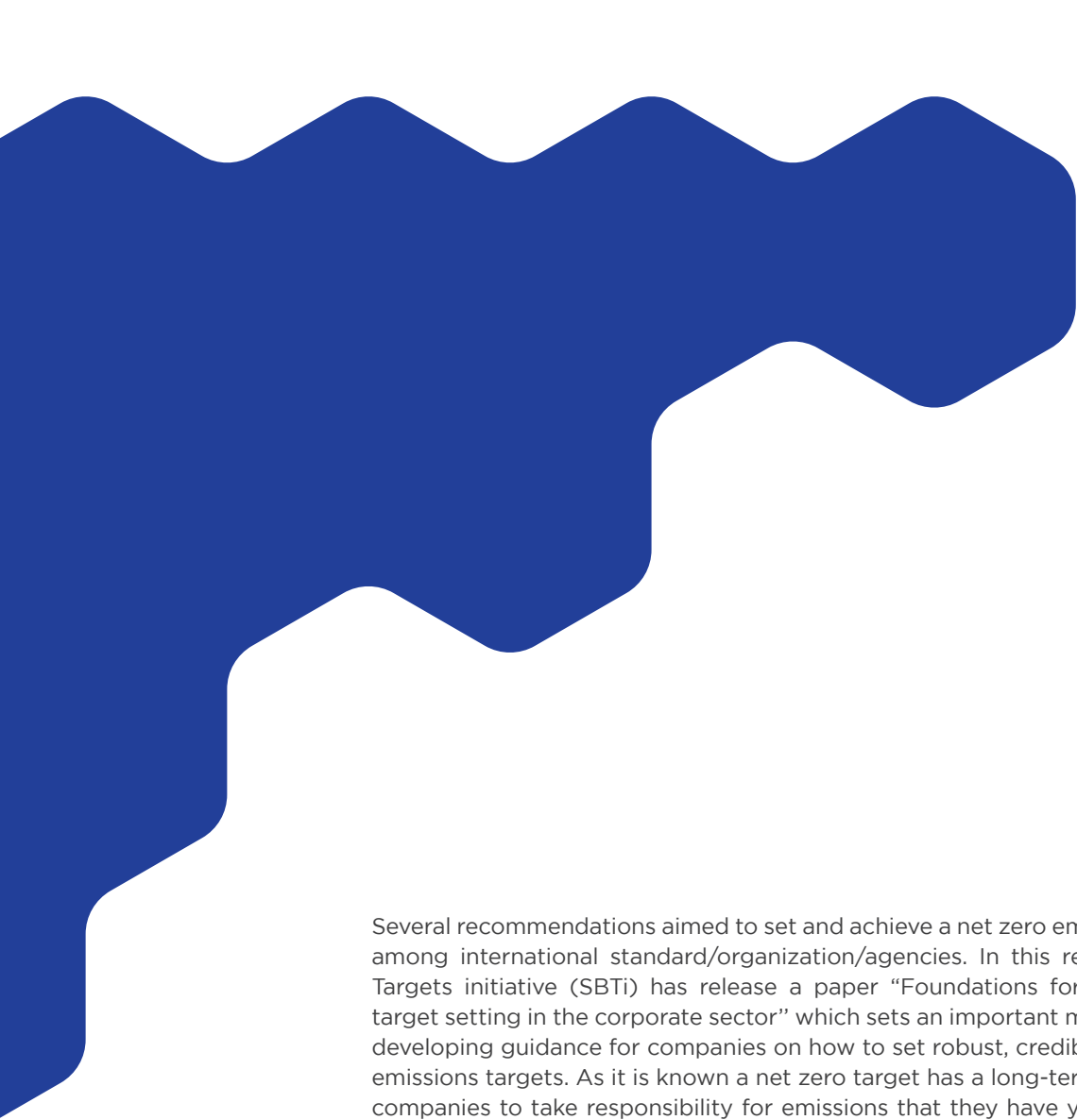
Companies and sustainability/climate expert often use the term "carbon neutrality" to include all greenhouse gas (GHG) emissions measured in terms of carbon dioxide equivalence when they refer to emissions reduction targets.

Beside this simple definition, in practice carbon neutrality is proven to be a confusing and divisive concept. But anyhow carbon neutrality is a valuable way to combat and contain the climate emergency and it can be applied by all kind of organization and society.



Many companies are integrating carbon neutrality into their business strategy since they understand the social, environmental and financial impact of the GHG emissions or because they just get pushed by customers to do so.

Going carbon neutral requires a strategy from the company. The first step is the assessment of the carbon footprint which represents the quantity of greenhouse gas emissions originating through the life cycle of a product or service. It can be calculated by making an annual business year's inventory of GHG emissions to track the specific carbon footprint of the company and thus be able to manage it. The strategy must include the emission source of the entire value chain and a realistic timeline and reduction target.



Several recommendations aimed to set and achieve a net zero emissions target can be found among international standard/organization/agencies. In this regard the Science Based Targets initiative (SBTi) has released a paper “Foundations for science-based net zero target setting in the corporate sector” which sets an important milestone in the process of developing guidance for companies on how to set robust, credible and verifiable net zero emissions targets. As it is known a net zero target has a long-term perspective and forces companies to take responsibility for emissions that they have yet to reduce or that they find impossible to eliminate.

Insetting and Offsetting are recurring terms when it comes to GHG emissions management aimed to Carbon Neutrality.

Insetting is all the estimated and certified investments in carbon emission limitation projects within the production units of the company that provide a beneficial influence on the environment, natural resources and community.

Carbon offsetting is a process of compensating for carbon emissions (using certified carbon credits approved by international standards (ISO, UN etc)) that an organization has generated by financing a project to reduce carbon emissions elsewhere through other means, such as carbon sequestration. This makes carbon offsets a wild market of competing schemes that use different systems to measure and value greenhouse gas-emitting and offsetting activities.

Offsetting has a rich history of dispute, criticism (selling of indulgences) and controversy. According to Greenpeace "relying on offsets won't stop climate breakdown and we must protect intact ecosystems, and restore degraded ones to strengthen their resilience against climate change, to protect their carbon stocks and to increase their capacity to take up the accumulated carbon from the atmosphere. We must do this to store the carbon dioxide that we have emitted into the atmosphere over time, not to offset ongoing emissions".

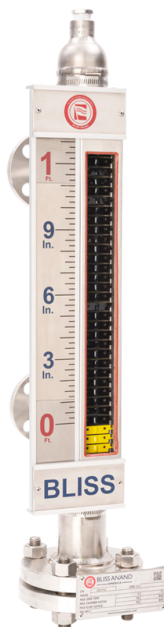
A carbon tax might be a valuable option to offsetting practice which is very used by airline companies. Incomes from carbon taxes should be focused on protecting the vulnerable from climate impacts and supporting a just transition to low carbon economies.

A potential way to reduce emissions and achieve carbon neutrality is to balance the emissions produced in one sector while limiting them in another. A process that can be implemented by investing in renewable energy, energy efficiency and using low-content fuels or other clean technologies.

LIRA SRL – Since 1989

Competent and Reliable Partner

for process instrumentation, valves and integrated systems



Lira srl has been present for over three decades in the Italian industrial market and in public and private research, both as a representative and distributor of leading manufacturers of process instrumentation and valves; and as a competent and well established reference for the maintenance and calibration of flow meters for laboratory application. Including the metrology verification according to the ISO-17025 standard.

Some of our represented companies such as Brooks Instrument, Bliss Anand, Brodie International and Farris Engineering (Curtiss-Wright Group) are stable presences in the international vendor lists and consequently almost always considered by the large EPC companies as an integral part of their projects.

Brooks Instrument

Variable Area Flowmeters with glass tube and metal tube suitable for the most demanding applications in difficult environments such as off-shore platforms. Brooks also has a complete range of electronic flow meters / controllers based on both Thermal effect and Coriolis effect, appreciated and in use in the vast majority of Italian laboratories and industries, included the Biotech and the Semiconductor ones.

Bliss Anand

Magnetic Level Gauges, Glass Level Gauges, Level Switches, Sight Glasses manufactured in its factories located in India, United Arab Emirates, Saudi Arabia, Europe and USA. BLISS has most of the certifications and



approvals globally required, including the one recently awarded by Saudi Aramco.

Brodie International

Positive Displacement Flow Meters for fuels (Birotor-Plus) are the global reference for the characteristics of high measurement accuracy ($\pm 0.075\%$ o.r.) and long-term calibration stability. The piston valves for flow delivery (BV88) are the only ones to guarantee a linear flow profile starting from low flow rates up to maximum capacity and vice versa.

Farris Engineering

"The last line of safety". Farris is one of the World Leaders in the manufacture of Pressure Safety Valves according to API / ASME directive, much appreciated by end users and engineering companies for its quality and constructional robustness, a guarantee of long-term performance.

MALEMA / GVS Group

They produce a mechanical valve designed to prevent

the release of dangerous fluids, liquid or gaseous, into the environment due to a possible breakage of the distribution pipes of the same. In Italy it becomes almost mandatory to use it to revamp plants according to the "Seveso III" legislation.

Lira srl is also present in the Energy market, with Heat Meters for residential and industrial applications (Micronics). This last instrumentation, also in MID compliance, is very useful to support the Energy Managers of the various industrial realities in their activity of analyzing the thermal dispersion of the plants and heat management, being designed mostly for mounting outside the pipes.

For more information:

www.lirasrl.it

info@lirasrl.it



EUROGUARCO S.p.A.

Process Plants Division



Established in 1958 in La Spezia - Italy, Euroguarco has since gradually grown, with ties and interests with best-of-class partners and customers worldwide, in the oil & gas, energy, petrochemical, process, civil and marine industry.

We are pleased to introduce our Company as a multi-industry manufacturer and turn-key systems provider with focus on our Process Plants Division that completes the other four main business areas: Industrial Valves, Gaskets, Sealing and Insulating materials, Interiors (air ducts for train, tram, metro).

As a response to the foreign market that often required a sole interface, Euroguarco decided to integrate the original production range with diverse merger and acquisition operations across the country, building up the Process

Plants Division. It has established with the scope to provide a global solution for small/medium size EPC projects, offering Basic and Detailed Engineering, Procurement and Construction Services for the following industries:

- Oil & Gas
- Petrochemical
- Chemical
- Power Plants
- Water Treatment
- Renewable Energy
- Other Industrial sectors

Euroguarco normally supply the process plants as modular skid: a process system contained within a frame that allows an easy transportation and installation at site. Typical supplies:

- Oil and Gas Separation & Treatment



EUROGUARCO



- Fuel Gas Packages
- Electrostatic Dehydrators (Desalters)
- Gas Dehydration/Sweetening and Regeneration Packages
- Oily Water Packages
- Hot Oil Systems
- Fired Heaters
- Chemical Injection Packages
- Pig Traps Packages
- Manifolds Packages
- Lube Oil Packages
- Slug Catchers (Vessel/Finger type)
- Metering Systems (Custody and Non-Custody)
- Pressure Vessels and Heat Exchangers

Main facilities and equipment in Euroguarco workshops can cover the most demanded production requirements.

Euroguarco can satisfy all testing requirements of applicable construction codes or additional Client's requirements as well, whether in-house with SNT-TC-1A/ISO 9712 qualified personnel or from external qualified laboratories.

Euroguarco can cover moreover most of the certifications required for pressure vessel, valves, piping, equipment and process plants manufacturing processes.

Recently, Euroguarco received a special recognition by Cribis - dun & bradstreet, stating the rating of maximum commercial reliability. In Italy only 3% of companies have received this certification.

For inquiries and further information:
export@euroguarco.com

Details make the difference

Our history started in the 1970s as Friulana Flange, manufacturer and trader of flanges, connections for piping, component accessories and mechanical details according to customers' drawings and current rules.

We are equipped for the production of tube plates, quick opening closures, reinforcing components nozzles and several components used in the heat exchangers and pressures vessels.

In this way, we have always been able to provide products for a wide range of applications, including pre-tensioning systems in bridges and viaducts constructions.

Over the years, we have positioned ourselves as a reference point in the precision mechanical engineering industry. This has been possible thanks to a high-quality production system that can be applied in many fields, such as petrochemical, thermohydraulic, mechanical, naval, building, power generation, pharmaceutical and food industry.

Our customers can rely on the expertise of our well-trained staff, a wide range of products, our increasing focus on R&D and on guaranteed delivery times.

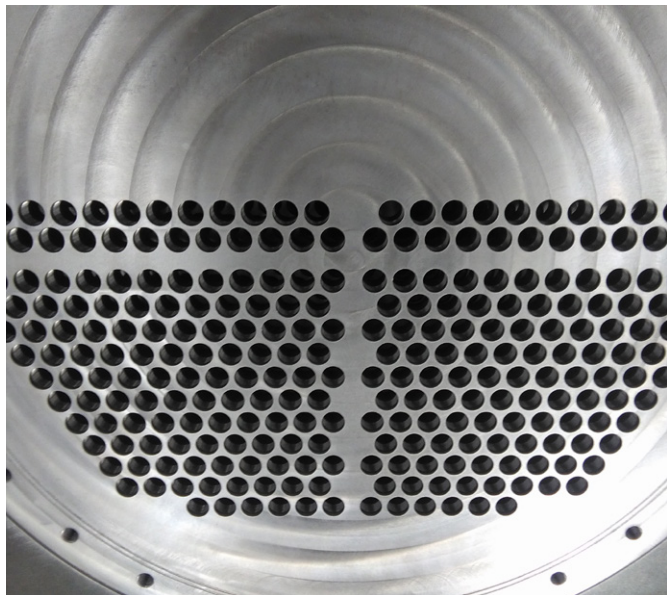
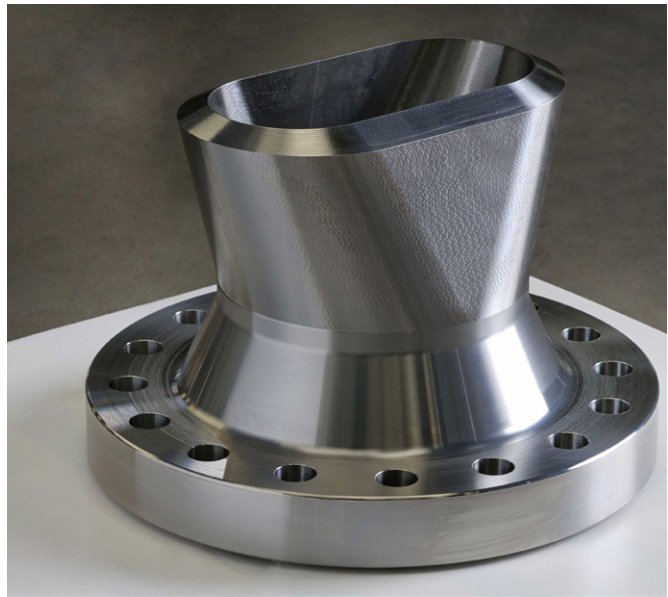
Our wish to further improve our presence in the market led us to set up a new company with Geoclina Srl. Geoflange was established in 2015 as a new brand that inherits the know-how of two innovative and forward-thinking companies.

For more information please visit:
www.geoflange.com





GEOFLANGE
All-round precision



Pedrotec Srl deals from over 40 years in pneumatic fenders market



Pneumatic Fenders in Offshore service

Pedrotec Srl deals from over 40 years in pneumatic fenders market, from sales to rent ,as well as ,on site installation, assistance and repair.

Anything related to the aftersale services for pneumatic fenders is our daily business.

We started using aircraft tires instead of standard truck tires over 20 years ago to increase the chain net resistance fender body protection and life as well as stand-off, and we keep being pioneers for innovative solutions for a better pneumatic fenders operational performance.

In the last 10 years a special attention has been given to the offshore fenders operations and their weak points.

TWISTER Anti-rotating towing ring

A pneumatic fender rotates a little at every wave, a fiber

rope usually has not enough torque to keep the fender in position, and after several complete revolutions the mooring rope starts self destroying or fouling in case of a double mooring line or when both lifting and mooring lines are connected to the fender.

Our Twister has been designed to keep the mooring and/ or lifting ropes permanently in the same position.

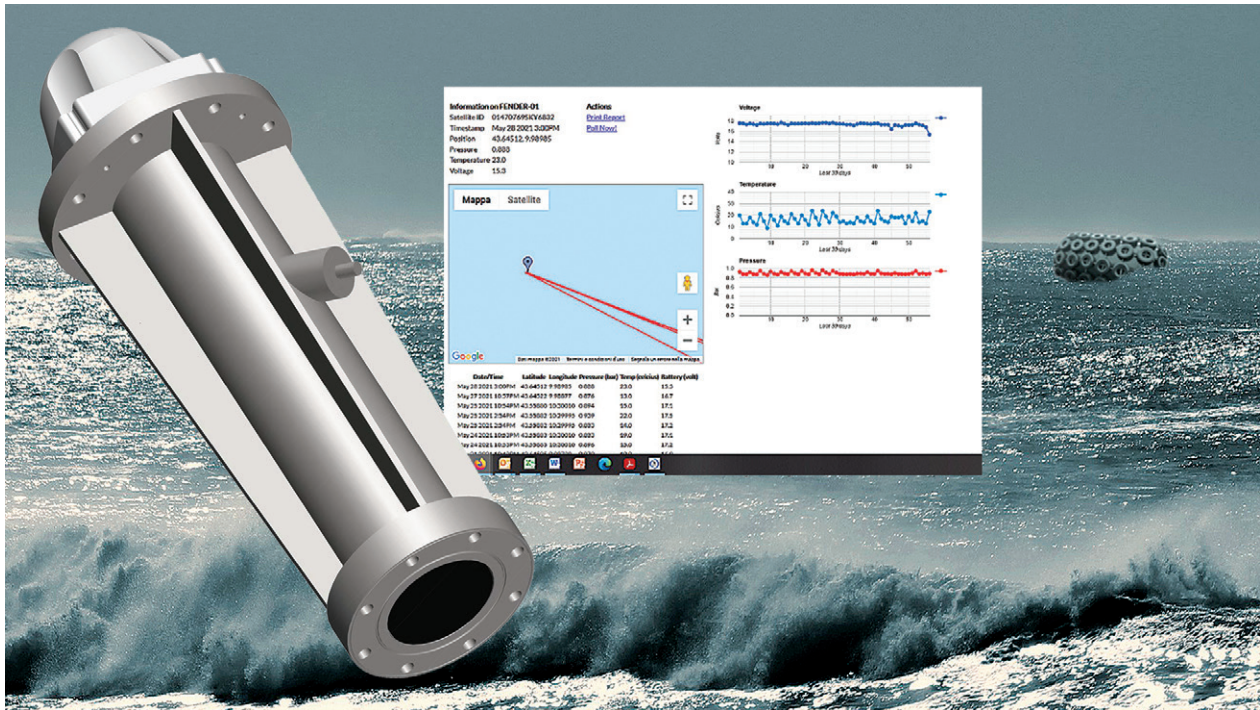
RMU (Remote Monitoring Unit)

A pneumatic fender would need maintenance and care just like a car or a truck tire, and even more being one of the most critical elements in a ship to ship and most of offshore operations.

Technology is today helping drivers telling the pressure condition of tires by mean of pressure sensors instead of a manual periodical checking, and of course manual



PEDROTEC
Engineering & Supply Company
La Spezia - Italy



pressure check of a pneumatic fender offshore is much more difficult and expensive than what on a car tire is. Our RMU (Remote Monitoring Unit) regularly gives pneumatic fender pressure condition and position by mean of a GPS unit with an integrated pressure sensor. Access to datas is possible wherever you have an internet connection receiving regularly pressure and geo position of the unit.

Position of the fender is needed if the fender is lost due to mooring lines failure.

The unit is customized to fit in any fender brand for new installation or retrofit.

MAINTENANCE AND REPAIR

Like all other equipment in service in these severe conditions pneumatic fender as well need regular maintenance

and sometimes repairs to avoid accidents and failures when in service.

We can provide on site inspections, rubber body and chain protection repairs as well as safety valves testing, maintenance and certification for all major manufacturers.

For more information please visit:
www.pedrotec.com

FC Oleoidralica actuators are the solution to many rotary drive problems, for example valves, rotary arms, robots etc.

Rotary actuators replace many rotary drives currently made with cylinder and crank.

The most important advantages are compactness and reliability and protection from atmospheric agents and corrosive liquids. Absence of the danger of injury typical of solutions with cylinder and crank.

The rotation angle starts from 90 ° up to 270 °. Our actuators are designed to withstand maximum pressures of 350 BAR (5000 psi) without having irreversible damage.

The maximum recommended service pressure is 250 BAR (3600 psi). Above 500 BAR (7250 psi) the screws of the closing cover could fail, but thanks to their strength they can still be repaired by simply replacing the gaskets and screws.

Since it is impossible to foresee every single application we can produce actuators with flanging and shaft as requested by the customer.

The figure illustrates some custom actuator types.

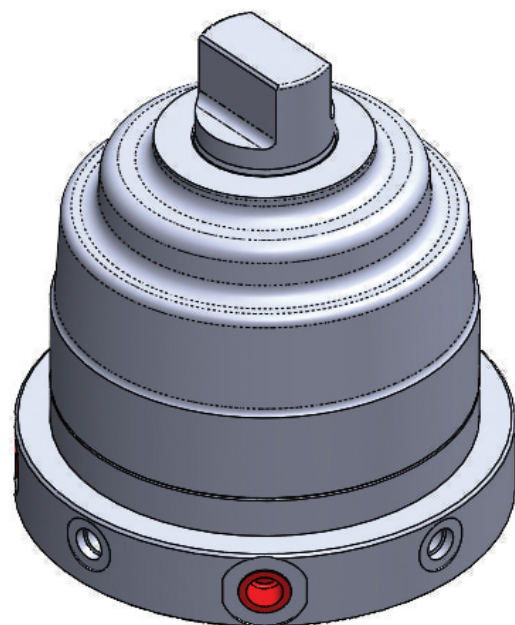
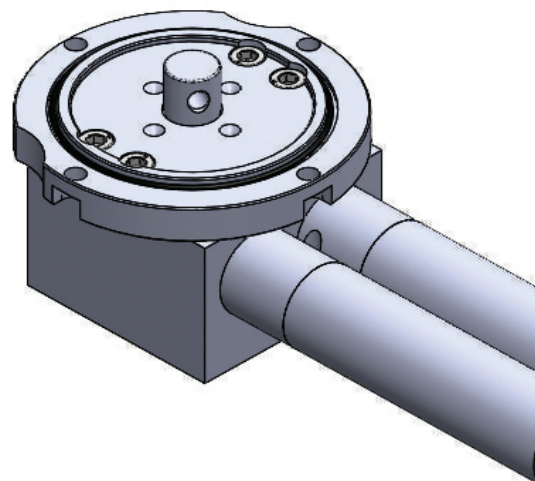
Our range of actuators FC Oleoidraulica (www.fc-oleo.com) is divided into groups defined by the torque output

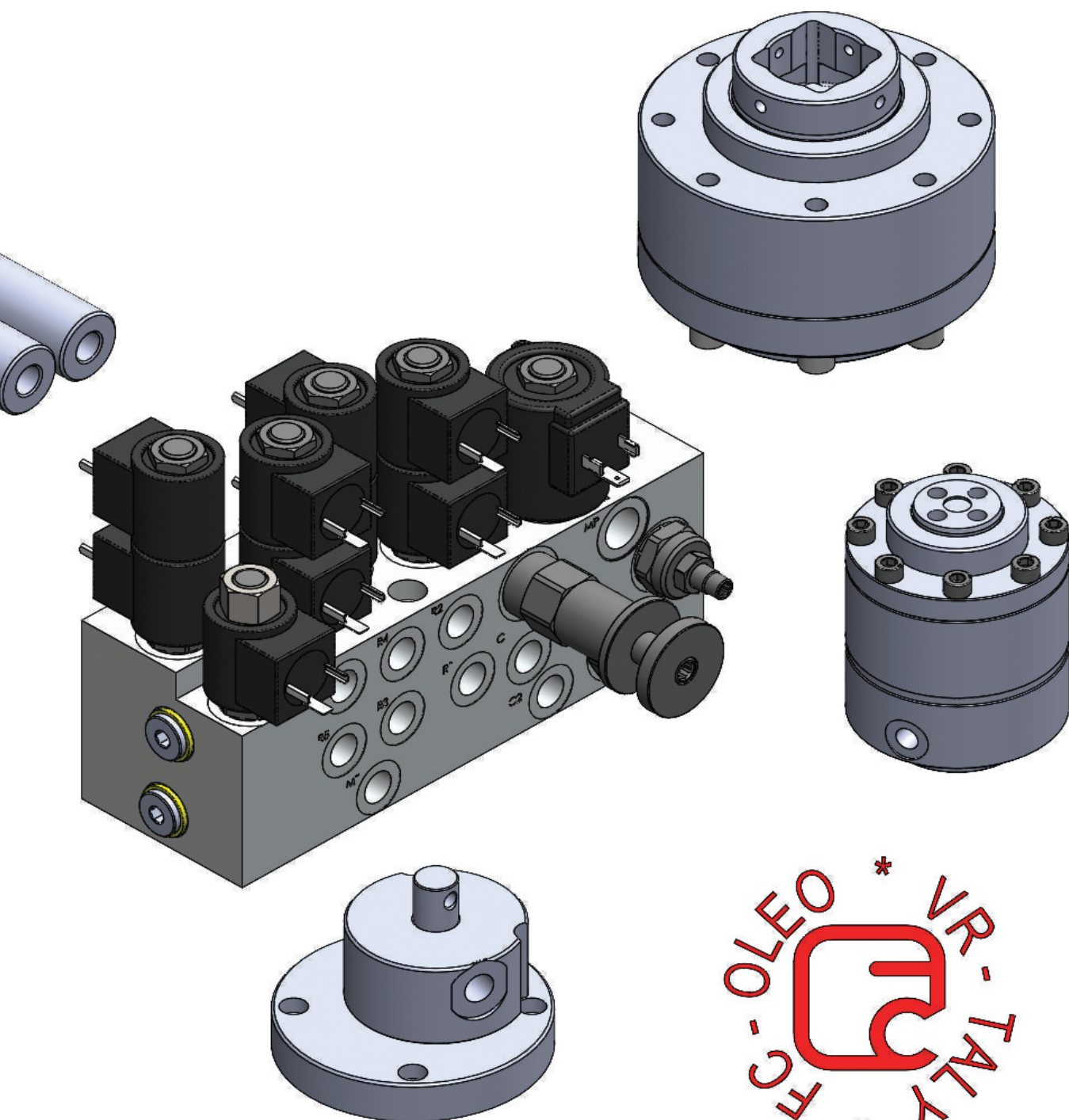
at 100 BAR (1450 psi) and 250BAR (3600 psi) as follows:

Range	one vane	two vanes	one vane	two vanes
Group of actuators	daN m at 100 Bar	daN m at 100 Bar	daN m at 250 Bar	daN m at 250 Bar
A	1,4	2,9	3,6	7,1
B	2,9	5,7	7,1	14,3
C	4,3	8,6	10,7	21,4
D	8,6	17,6	21,4	42,9
E	17,6	35,1	43,9	87,9
F	44,9	89,7	112,1	224,3
G	77,0	154,0	192,5	385,0
H	140,0	280,0	350,0	700,0

For more information please visit:

www.fc-oleo.com





Industry Supplier for electrical machinery, any type and power



SQUIRREL CAGE MOTOR TYPE CM 630 L8
1150 kW – 5500 V – 50 Hz – 750 rpm – 8P – V1 – IP55
FOR WATER PUMP



SLIP-RING MOTOR TYPE AV 630 LK4
1420 kW – 11000 V – 50 Hz – 1500 rpm – 4P – V1 – IP23
FOR WATER PUMP

Our company has been operating for over 40 years in every sector of the modern industry such as cement, steel, food, paper, chemical and petrochemical industries, for supply electric machines and services.

Comelmar was born in 1959 as a repair workshop for electric motors and then developed the project, construction and supply of new electric machines made on the customer specifications.

The service is provided by a workshop equipped to operate on any type of electric machine. A team of experienced technicians is able to intervene at any time for maintenance and diagnosis at the customer.

Quality policy is constantly controlled and directed by the Certification Institute that issued us already in 2003 the certificate of conformity to the ISO 9001:2000.

PRODUCTION

Our business involves the construction of new machines, whether they are electric motors or generators with :

- Customer-specific interchangeability or with existing motors.

- Comelmar "tailor made" project.

-Custom executions and suitable for particular drives
 Our motors are designed to operate in several industrial sectors:

- Cement / paperwork / refinement / steel / food industry, etc.

They are used to operate with :

- Fans / compressors / pumps / cement mills / mixers, etc.

The production range includes:

- Low Voltage Motors 400/500 / 690V

- Slip-ring motors for heavy duty and for lifting

- Medium voltage motors up to 10MW power and voltage up to 11kV

- DC motors with completely laminated polygonal stator
 Our generators, suitable for all types of turbines, Francis / Pelton / Kaplan, are designed in accordance with customer specifications and with the manufacturer of hydraulic turbines.

We are able therefore to realize:

- Brushless synchronous generators with rated power from 150 kVA to 6000 kVA, voltage 400 V to 11,000 V, synchronous speeds from 1500 to 150 rpm, from 4 to 40 poles.



Asynchronous generators with squirrel cage rotor with rated power from 100 kW to 6,000 kW, voltage 400 V to 11,000 V, synchronous speeds from 1500 to 150 rpm, from 4 to 40 poles.

ACCESSORIES

TRANSFORMERS

-Oil transformers with a power output of 500 kVA to a power of 25 MVA and a maximum supply voltage of 132 kV.

-Epoxy Resin Transformers M.V. and L.V. from the power of 160 kVA to the power of 10 MVA and a maximum supply voltage of 36 kV.

RHEOSTATS

Rheostats are designed for the starting of three-phase motors with wound rotor and slip-ring.

-Oil rheostat. Suitable for power up to 20,000kW and rotor voltages 5,000V

-Liquid rheostat. Suitable for power up to 14,000 kW and 3,500V rotor voltage.

INVERTERS

We can offer the frequency converters as per our customer request, meeting his reasonable expectations for the variation of rotational speed for cage motors.

SWITCHBOARDS

We can supply on request electric supply or control

panels whether for internal and external plant in order to handle and supply the related equipment.

SERVICE and DIAGNOSTICS

We have an equipped workshop that is able to work effectively on any type of DC or a.c. motor low or medium voltage, repairing it and restore its original operating conditions.

We perform on-site diagnosis by applying the partial discharge analysis system.

This innovative system is applicable to electric machines as well to the transport lines of electricity.

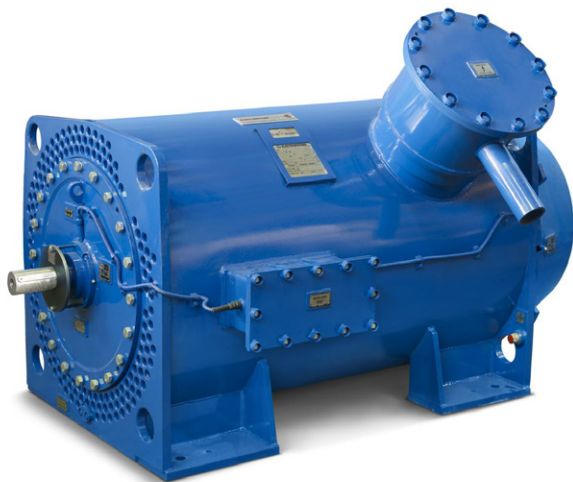
The sensors applied to the machine under observation during its normal operation are connected to the instrument that acquires, processes and classifies the detected partial discharge current pulses and by elaborating a numerical analysis software establishes the actual operating condition.

EMERGENCY AND READY DELIVERY

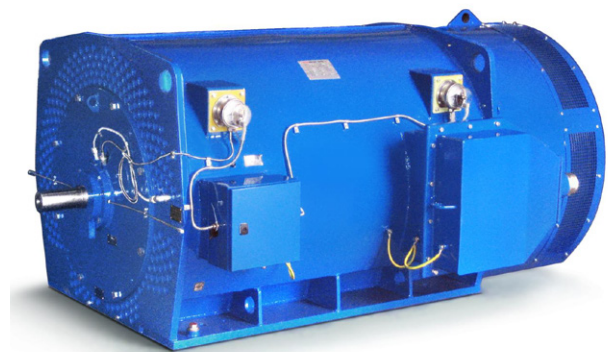
In our warehouse we have any type of new or reconditioned electric machine, provided with a global guarantee formula, which we can rapidly deliver to our customers to solve any type of emergency that occurs in the production plants.

noe@comelmar.it

www.comelmar.it



FLAME-PROOF SQUIRREL CAGE MOTOR TYPE CMX 530-2
360 kW – 3000 V – 50 Hz – 3000 rpm - 2P – B3 – IP55 –
EEXD IIB T3 FOR FLUEL OIL PUMO



SQUIRREL CAGE MOTOR TYPE AVRT 500-2
700 kW – 6000 V – 50 Hz – 3000 rpm - 2P – B3 – IP55

New Hyperlite: sublimation of the Stop / System® concept



In 1991 Ravetti presented its innovative equipment to carry out interception without interrupting the provision of the service.

Over thirty years of trials, challenges, and experiences were not in vain but instrumental to present the most advanced and performing Ravetti Stop/System® concept: Hyperlite!

The name immediately recalls the most surprising characteristic of the new equipment, its lightness, as a result

of very accurate studies that followed the guidelines of the components' integration and a choice of the most sophisticated materials.

One might be naturally led to think that what is lighter is also less robust: this is not the case for the Stop/System®.

Hyperlite can be used to transport through pipelines many different fluids (natural gas, hot water, products chemicals, and petroleum, just to name a few) and exerts

RAVETTI®

a pressure of up to 25bar with a temperature range between -20 ° C and + 130 ° C.

To sum up: lightness, sturdiness but also ease of use. Many intentional decisions make the STOP / SYSTEM® HYPERLITE equipment a “User-friendly” product. To name a few assets of this equipment: the barycentric eyebolts that allow a quick positioning of the flat valve on the fitting, the pressure equalizer characterized by a wide cross-section, the hydraulics fully adjustable and monito-

rable, and finally the assistance system employed during the conduct cleaning phase (filed patent application).

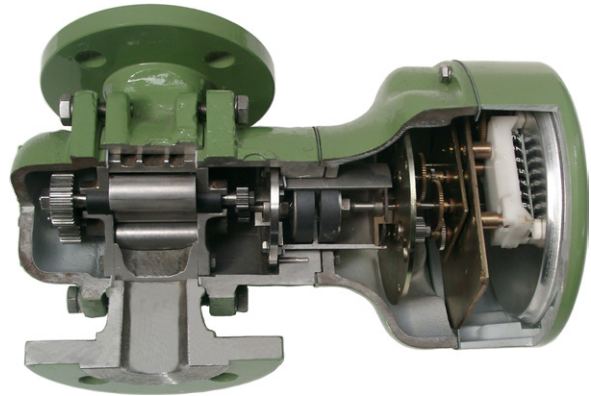
Ravetti STOP / SYSTEM® HYPERLITE is immediately available with diameters 10 “/ 12”, and will be soon with diameters of 14 “/ 16” and 18 “/ 20” with new and surprising innovations.

For more information please visit:
www.ravetti.com

PD Flowmeters since 1970

Trust in Us

Our Quality Counts



Petrol Instruments is a manufacturer of PD flow meters since 1970 and it is a world leader in this field. Our Company is 100% Italian and also the raw materials are purchased from Italian suppliers to grant an higher quality of our products.

We have the most extended production range available worldwide, **from 1" to 16"**, with max flow rate up to **2000 m³/h** and, with our unique vertical integration of design production-testing and our production flexibility, we **represents the only worldwide manufacturer able to meet the exact customer needs.**

Thanks to our **proven technology** and **consolidated experience** in liquid metering systems, **we commit to supply what is the best solution for your application.**

With more than 50 years of experience, **the high accuracy and reliability of our products** coupled with our **unique manufacturing flexibility** allowed us to become **the trusted supplier for high precision instruments**, a Company and products you can always rely on.



PETROL Instruments S.r.l.

Our **mission** is to design the most reliable and accurate solution:

- for **any liquid**
- for **any industrial application**
- for **any customer need**

Petrol instruments **technology** is based on **two floating type rotors** synchronized by means of timing gears out of the measuring chamber that provide “no metal to metal contact” between the parts composing the “base volume” which is therefore not subject to wear.

This ensures:

- superior performances** in terms of repeatability, accuracy and stability with time
- longer life and very low maintenance with minimum operating costs**
- no lost of synchronization in case of few solid particles in the liquid**
- very low pressure drop**
- better performances on very viscous liquids**

The constant attention paid to quality, accuracy and

adaptation to market requirements have led **Petrol Instruments PD flowmeters** to be approved for fiscal applications in many foreign countries, to be part of the major vendor list all over the world and to be suitable in any different industrial fields up to the heaviest operating conditions such as:

- high viscosity up to 50.000 cP**
- high pressure up 150 bar**
- high temperature up 250 °C**
- aggressive liquids measured with stainless steel and plastic versions when needed**

We are proud to say that PETROL INSTRUMENTS is one of the few manufacturers in the world of double case PD flow meters totally **manufactured in stainless steel, duplex or bronze.**

Contact us for any application we might help with!

Web: www.petrol-instruments.com

E-mail: info@petrol-instruments.com



Twice as strong and protected against interferences

Ex e all-purpose enclosure, wall thickness 3 mm, EMC contact springs

Waldenburg - As of now, the all-purpose enclosure series 8150 of R. STAHL in type of protection Ex e is available in another special version. Besides a standard wall thickness of 1.5 mm or 2 mm, the enclosures will in future also be available with a wall thickness of 3 mm. The terminal boxes made of stainless steel 1.4404 (AISI 316L) are particularly suitable for harsh environments. With IK degree of protection IK09 and IP degree of protection IP67, the enclosure is ideally equipped for every application. Thanks to the high-quality, durable sealing materials, they reliably protect the installed technology for a long time even in extreme ambient conditions. Then there is the new optional equipment: a circumferential EMC contact spring on the inner side of the cover or the flange. It reduces interferences from outside - in view of the increasing use of digital components like sensors, actuators or control technology in the process facilities.

The enclosure series 8150 was designed particularly user-friendly to allow safe and easy handling in the daily routine. Among other things, an extensive range of enclosure accessories is available for this series. Besides external flange plates, which are easy to install, a snap-in door opener or the modular design of the internal structure, the enclosures are also available with screw cover or hinged cover with cam lock. The enclosures are suitable for use in Zone 1/21 and Zone 2/22 and are applicable almost everywhere in the world, due to their numerous regional, country-specific and sector-specific certifications. Besides ATEX and IECEx as well as NEC, they are also certified pursuant to cULus, TR CU, CQST, ULB, GL, DNV, KGS, PESO, NEPSI and ITRI. From compact terminal boxes, 116x116x91 mm, up to large cabinets, 1.000x800x300 mm, numerous different sizes are available.

Company background:

For more than 90 years, R. STAHL has been trendsetting in the field safety technology for hazardous areas. The company, headquartered in Waldenburg, Germany, is one of the leading international suppliers of explosion-protected components and systems for automation, control and distribution, installation, operating and monitoring, lighting, as well as signalling and alarms. The core of R. STAHL's range of services is the provision of customer-specific explosion-protected system solutions. In order to meet specific application requirements and customer needs, R. STAHL provides individual packages consisting of a custom-fit combination of products and comprehensive services such as advisory services, project planning and engineering, as well as customer training. International certifications, approvals and patents underscore the company's expertise and enable world-wide application of R. STAHL products.

For more information:

www.r-stahl.com

Sales.IT@r-stahl.com





The R. STAHL all-purpose enclosure series 8150 made of stainless steel is now available with a wall thickness of 3 mm and optionally with a particularly high EMC protection

Clean Tech Company, CarbonCure Wins NRG COSIA Carbon XPRIZE

CarbonCure selected as most scalable breakthrough technology to convert CO2 emissions into useable products.

Halifax, April 21, 2021: CarbonCure Technologies, a Canadian company that develops clean tech solutions for the concrete industry, has been named one of two winners in the USD \$20 million NRG COSIA Carbon XPRIZE. Each winner takes home a USD \$7.5 million grand prize.

The NRG COSIA Carbon XPRIZE is a global competition that took place in three rounds over 54 months. It challenged participants to develop breakthrough technologies to convert carbon dioxide (CO₂) emissions into usable products — with the ultimate goal of tackling climate change. CarbonCure became one of 38 shortlisted contenders for the Carbon XPRIZE in 2015 and in 2020 completed its final technology demonstration in Alberta, Canada.

“Climate change can seem like an insurmountable challenge. Team CarbonCure and our fellow Carbon XPRIZE contenders have demonstrated that the challenge is surmountable and that we have the solutions available today to create meaningful change,” said Jennifer Wagner, CarbonCure President and leader of Team CarbonCure. “The prize money will be used to accelerate our path to our mission of reducing 500 million tonnes of carbon emissions annually by 2030. We’re also committing to build an XPRIZE legacy by investing a portion of the prize funds into social equity initiatives.”

CarbonCure’s XPRIZE project aimed to decarbonize the carbon-intensive process of concrete production. The almost five-year competition showcased the portfolio of CarbonCure’s technologies, in addition to completing the world’s first integrated CO₂ capture project from cement kiln emissions with beneficial reuse in concrete production. The final round introduced CarbonCure’s newest commercial technology focused on carbonating reclaimed water — the wastewater generated at concrete plants — to enable the production of concrete with a reduced water, cement, and carbon intensity.

“Buildings are the source of 40 percent of the world’s annual greenhouse gas emissions. The world’s building stock is expected to double by 2060 so it’s vital that solutions like CarbonCure’s scale quickly,” said Marcius Extavour Executive Director of the Carbon XPRIZE and VP of Climate and Energy for the XPRIZE Foundation. “CarbonCure’s solution for the concrete industry exemplifies XPRIZE’s ideal innovation — it is effective, commercially viable, and scalable — and it can make a real difference to climate change today.”

The use of CO₂ in concrete is expected to become a USD \$400 billion market opportunity so solutions like CarbonCure’s are both very timely to respond to climate targets and represent an attractive economic opportunity for heavy industry. CarbonCure was established in Nova Scotia, Canada, in 2012 and its innovative concrete solution is now used in more than 300 concrete plants around the world. To date, producers have supplied nearly 10 million cubic yards of CarbonCure concrete to a wide range of project types. The company is on a mission to reduce embodied carbon in the built environment by 500 million tonnes annually by 2030.

“Governments are setting net-zero emissions targets, yet embarking on once-in-a-generation infrastructure renewal projects to restart the economy. Canadian companies like CarbonCure are helping the global construction industry with the critical challenge of managing embodied CO₂ in building and infrastructure projects, by turning concrete into a climate solution,” said Catherine McKenna, Minister of Infrastructure and Communities in the Government of Canada. “Winning the Carbon XPRIZE demonstrates CarbonCure’s world-leading position as a negative emission and low-carbon concrete solution.”

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AS INDIVIDUAL AS YOUR REQUIREMENTS



THE STRONGEST LINK.

STAHL

THE 8150 SERIES OF LOCAL CONTROL STATIONS

You have exact requirements, we have the exact solution. With its modular system, it adapts itself perfect for all applications and requirements - worldwide, of course. Certified for all climate zones.

Discover more at r-stahl.com/localcontrolstations

R. STAHL SRL SOCIO UNICO, T +39 02 553 080 24





NEWS



Boosting industrial exports the key to Egypt's Covid19- recovery

- Egypt is at the heart of many global supply chains
- The industrial sector has the potential to drive Covid-19 recovery
- Various initiatives will increase private sector investment
- Major infrastructure projects are set to expand exports



With the effects of Covid-19 still being felt in Egypt, industrial exports are shaping up to be a key driver of the country's economic recovery.

Highlighting the importance of outward shipments, on March 20 Nevin Gamea, the minister of trade and industry, told media that Egypt planned to increase its exports to \$100bn over the long term, up from pre-pandemic levels of around \$30bn, by shifting its focus towards more EU, African and Arab markets.

The strategy that will drive this growth involves boosting national industries and increasing exports from small enterprises. In addition, export logistics will be enhanced, for example through the automation of import and export procedures.

The programme also involves developing Upper Egypt and various border areas, as well as supporting projects in the Suez Canal Economic Zone.

President Abdel Fattah El Sisi has also recently underlined the need to increase industrial investment and export levels.

The president called for domestic industrialisation and the localisation of technology to be bolstered, for the gap between exports and imports to be closed, and for the use of foreign currency for imports to be reduced.

In addition, he ordered a comprehensive review and inventory of land that had been allocated to industrial activities but not developed within the mandated timeframe.

Flagship projects lead the way

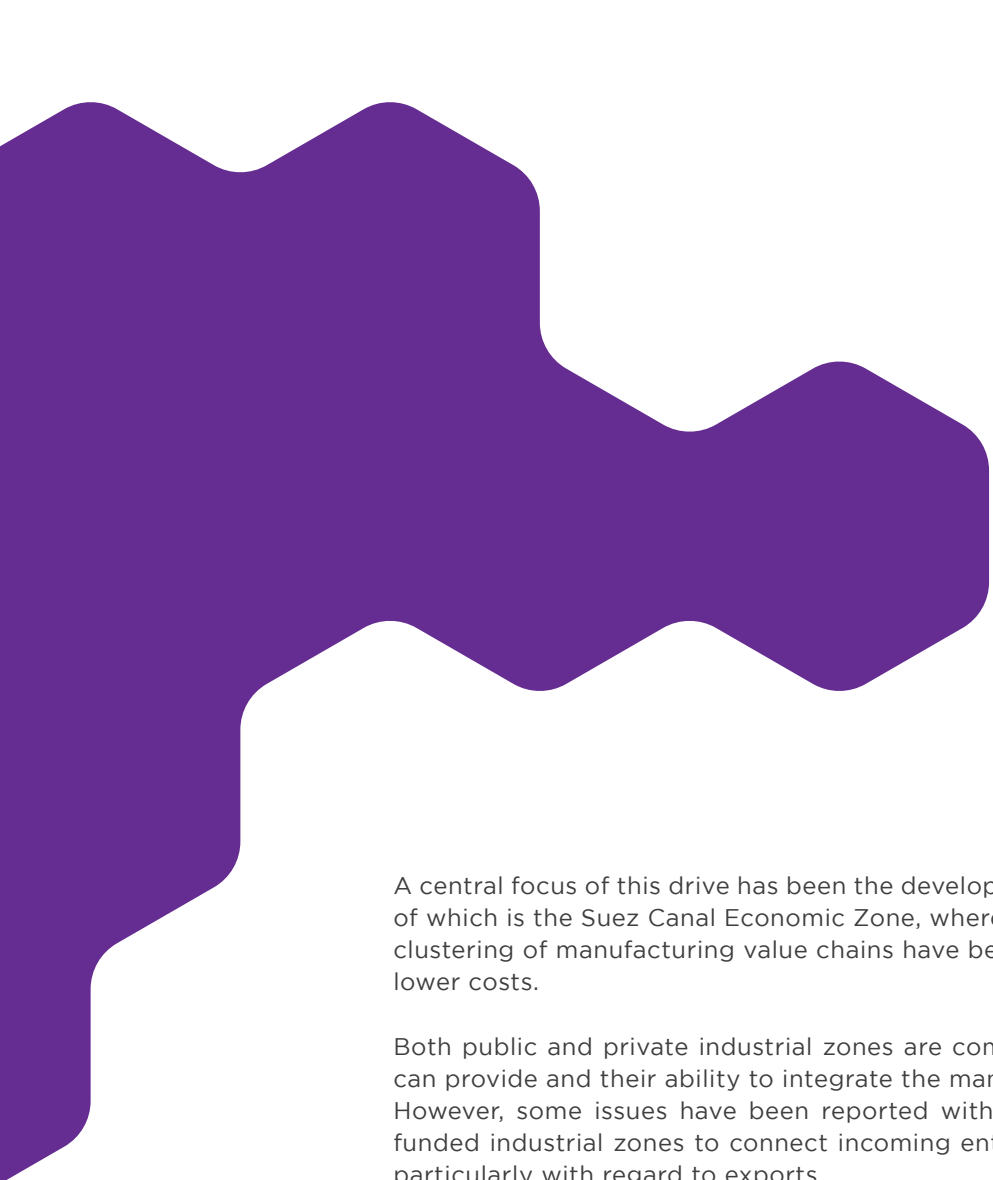
Economic reforms have been under way in Egypt since November 2016, when the country received a \$12bn loan from the IMF and the currency was floated.

The fund identified private sector-led growth as a key priority, and reforms have largely been aimed at improving the business environment to attract private investment.

“Measures should be taken, when possible, to reduce business costs and ease access to financing because the private sector needs to be the engine of Egypt’s economic growth,” President El Sisi told OBG last year.

A significant move came at the end of 2019, when the government and the Central Bank of Egypt (CBE) launched a \$6.4bn initiative to boost domestic manufacturing by giving medium-sized factories access to subsidised loans at a declining 10% interest rate.





A central focus of this drive has been the development of industrial zones, the largest of which is the Suez Canal Economic Zone, where the integration of logistics and the clustering of manufacturing value chains have been shown to improve efficiency and lower costs.

Both public and private industrial zones are competing over the infrastructure they can provide and their ability to integrate the manufacturing and export processes. However, some issues have been reported with regard to the capacity of publicly funded industrial zones to connect incoming enterprises to infrastructure networks, particularly with regard to exports.

A deal signed earlier this year between the General Authority for Land and Dry Ports and the European Bank for Reconstruction and Development is indicative of efforts to overcome logistical shortcomings.

The deal is worth €1m, which will go towards advisory services on the construction of a dry port and logistical centre in the 10th of Ramadan City, a city outside Cairo with a substantial industrial zone.

This is part of a comprehensive plan to establish a network of dry ports and logistical centres across the country.

In February it was announced that five consortia were interested in a tender to build the 10th of Ramadan City dry port, among them the Elsewedy Electric-DB Schenker consortium, another led by Dubai's DP World and a third led by the China International Marine Containers Group. The tender is expected to be formally issued in the middle of this year.

On a related note, in January it was announced that Egypt had signed a €19bn deal with Siemens Mobility and local companies to build a 1000-km high-speed rail network.

Work was set to begin forthwith on the 460-km first section, which will connect El Alamein on the Mediterranean to Ain Sokhna on the Red Sea, while also passing through the as yet unnamed New Administrative Capital, which is currently under construction.

Meanwhile, a new electric train is set to come online at the end of this year, connecting 10th of Ramadan City to the New Administrative Capital and Cairo.

Such efforts should go a long way to spurring private sector investment in industry and driving a concomitant rise in income from exports.

“Looking ahead, Egypt is in a favourable position to promote growth in industries where it has comparative advantages and can add value,” Mohamed Al Kammah, CEO of Elsewedy Industrial Development, told OBG.

“In order to best leverage growth in these industries, key stakeholders should invest in industrial infrastructure in the near term to ensure long-term capacity along the value chain.”

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**INDUSTRIAL
TECHNOLOGY**
editorial office

Join the cleaning revolution



Several studies show the effectiveness of heat in eliminating viruses and bacteria. From this assumption starts the research of STI-Steam Industry and the offer of products that meet the most varied cleaning and sanitizing needs. The ongoing pandemic forces us to rethink our way of life. Cleaning and sanitizing are of utmost importance in dealing with the emergency. With this in mind, the professional products of STI offers the right solution. The company was founded in 2009 from the twenty-year experience of the Passuello family in the steam cleaning sector.

STI has treasured past experiences, inheriting the commitment and dedication that has always characterized its work, at the same time has made continuous innovations, daughters of our times, and improvements. In

a historical moment characterized by an invisible virus, STI acts as a safe and reliable partner to eliminate and contain the problem. Our professional products have a temperature in the boiler ranging from 160°C to 185°C according to the power of the machine, there is a natural thermal drop at the point of release of the steam but the temperature is well above the recommended 91°C. The total and complete sanitization of every environment and surface by using steam at regular intervals therefore helps not to spread viruses.

The advantages of the steam are different. Steam is eco-friendly, it is a natural element that allows you to thoroughly clean different surfaces without the use of detergent. Thanks to the high temperatures reached it sanitizes the environment, eliminating mites, bacteria,



molds and germs. In addition, it involves less effort for the user because it completely dissolves even the most difficult dirt without having to scrub hard. Furthermore, the steam flow manages to reach points that would be impossible to clean with standard equipment. All this translates into savings in time and money because cleaning is faster and no detergents are used.

STI strongly believes in made in Italy, so much so that their products are entirely designed and manufactured in the Fara Vicentino plant.

STI currently produce and serve two macro areas: one

for domestic use, the other meets the most varied cleaning and sanitizing needs of the professional world. It's a complete range, as it is made up of both steam-only products and steam&vacuum products. The areas of use are varied: from the food industry, to combat the risks of food contamination during the production, distribution and packaging phases, in full compliance with the HACCP regulations, to catering, from hotels to cleaning in public transport, from industry mechanics to health care (hospitals, medical, dental and veterinary clinics).

For more information please visit:
www.stindustry.it



Your Certification Company for Russia and EAEU countries



Rustek offers companies all over the world, exporting technical goods to Russia and other EAEU countries (Belarus, Kazakhstan, Armenia, Kyrgyzstan), a comprehensive range of certification services to ensure their compliance with the applicable standards.

For over twenty years we have specialized in the certification of products and equipment for process industries in the oil & gas, chemical, petrochemical and energy sectors.

If your product is of a technical nature and operates in a high pressure/ high temperature environment or is exposed to potentially dangerous fluids, certification is

mandatory for the EAEU countries.

In many cases you will need a Certificate or a Declaration of Conformity to Customs Union Technical Regulations (CU/EAEU TR), stating that your product conforms to the unified standards of the Eurasian Economic Union and can be imported into the EAEU countries.

Certification procedures in EAEU countries can be bureaucratic and complex.

By using Rustek, our customers obtain targeted, competent and economically competitive advice through a single source.

Our mission is to provide an “all inclusive” service.

RUSTEK SA



We work with reputable Russian certification bodies and specialized laboratories in different fields, to provide a wide range of certification services.

With our fluent English speaking Project Managers, our customers are assisted in every step of the process, including inspection and production tests.

We offer:

- Consultancy in all matters of certification for the EAEU countries
- Declarations and certificates of conformity CU/EAEU TR
- Permit to Use for Kazakhstan

- Assistance with preparation of Technical Passports and other manufacturer's documents
- Letters of Exemption
- Translations English/Russian and English/Kazakh

If you have a contract for delivery to these countries or you are bidding/negotiating such contracts, we are ready to assist you in every step from our branches in Switzerland, UK and Russia.

Please visit our website **www.rustek.net** for more information.

What's the risk of blindly trusting your supplier when buying an ATEX fan?



Diego Perfettibile Co Owner of PBN industrial fans built to last

You may have heard of **POTENTIALLY EXPLOSIVE ATMOSPHERES** and the ATEX directive.

Let's start by defining what an explosive atmosphere is. An explosive atmosphere is a mixture of air (i.e. oxygen) and flammable substances (like gases, vapors or dusts) which under certain environmental conditions, due to an initial ignition, generate very rapid and violent combustion.

A potentially explosive atmosphere exists when there is a mixture of oxygen (air) and a flammable substance. The ignition source is missing. This is where your job as a mechanical designer comes in.

When dealing with potentially explosive atmospheres, you want to avoid the formation of an ignition source **at all costs**.

For more than 15 years I've been managing the technical

department of **PBN**, an Italian company whose mission since 1976 has been to manufacture special industrial fans that can operate for decades.

Based on my many years of experience, I can safely say that things can get extremely complicated in these situations. In fact, it's not enough to comply with the standards and directives for what you design and produce, but you must also be able to understand what the different suppliers are providing.

I want to give you two simple tips to help you understand if the fans you're buying are really ATEX compliant.

The first mistake people make is thinking that ignition sources can only be electrical in nature. Even high-speed rubbing between two metals (as cavemen were well aware) can cause sparks (please refer to EN1127-1:2019 to learn more about all possible ignition sources).

Therefore, it is not sufficient to mount an Ex-motor on the fan to automatically make the whole system ATEX-compliant.

At the same time, you have to check what the supplier declares **as compliant** with **the 2014/34/EU directive**. Often you'll find in the certificates that only the fan (and not the motor) complies with the ATEX directive (in fan jargon: "fan arrangement 1").

The whole system consisting of the mounted fan and motor is therefore **not covered** by the certificate or declaration of conformity.

Do you know what this means for you? It means that you get a half conformity with the directive.

Speaking of which: do you know who will have to declare both fans and motors compliant for use in your company? You.

In fact it will be **YOUR** responsibility to assess the risks and declare the fan and motor compliant.



ATEX Zone 21 industrial fan by PBN

Please do not overlook this fact and believe that it's the supplier's responsibility to do this.

E.g., if you install an ATEX-compliant fan with the wrong ATEX marking in the company, you will be held responsible if you wrongly certify the whole system as ATEX compliant.

Therefore, you have to be **extremely careful** about what you buy and install in your company. Better safe than sorry.

I can't help you with all the machinery, but I can certainly help you avoid going to court because of an incorrectly marked ATEX fan.

For more information please visit:
www.pbn.it

The best choice for the honing's future!

DAMEC SRL produces dynamic honing machines that have, as their main feature, their removal speed that are able to optimize every production phase without decreasing the quality of the workpieces.

Honing is a manufacturing process which gives to workpieces excellent precision and roughness characteristics. Case, it could be made than the eventually aesthetic treatment.

Our application's range is expanding in many fields; from general mechanics to manufacturing of hydraulic hoses and distributors, injectors, gears, hydraulic pumps, bushings, carbide, ceramic, glass and much more etc.....In the end it can be affirmed that in any field where are required incredibly low roughness, finish or surface treatment of cylinders, oleodynamics and after finishing processes.

Our honing machines, as their operating programme are unique and efficient, they could be personalized in relations to the specific request of the costumer. Thanks to our highly and specialized technical staff, that is able to solve all kinds of problems and is always aimed at continuous research and technological evolution, our

work is rewarded by the satisfaction and loyalty of our customers.

As well as our honing machines, Damec's goods are delivered ready to be used: no set up or adjustment are needed.

Whether it's a honing machine, automatic or manual, Damec's products are suitable for almost honing machines of other brands; regardless of the length or hole's diameter or that it's a blind or through hole.

Our honing machines offer an ultraprecise manufacturing procedure chosen by high production workshops and manufacturers to create parts that work at the highest levels of speed and efficiency. No mechanical process can provide such precise levels of roundness, straightness and surface accuracy.

Why choose DAMEC SRL

Price and times are reduced thanks to:

- Simple and quick piece reception equipment: it is not necessary to center the piece, as is the case with the



DCB-530

DVSS

DCE-60



grinding of internal diameters

- High chip removal with reduced cycle time: thanks to the action of more abrasive cutting edges
- Increased cutting power and reduced cycle time
- Constant linearity over the entire cutting length, especially in the presence of long holes: it is possible to assist in grinding to a curvature of the cylindrical shape (rainbow effect)

- lower investment costs compared to other machining processes with similar precision requirements
- maximum surface quality: without altering the surface structure thanks to a high process repeatability

For more information please visit:
www.damec.eu



DHM



MH



DDH

Italian technology for on-site production of technical gases for industry: customized solutions, quality and customer support



For over twenty years ErreDue has been designing, manufacturing and marketing highly innovative and performing solutions for the on-site production, and for the mixing and purification of gases for industrial uses.

Gases produced by ErreDue finds their application in an increasingly wide range of production processes: each solution that ErreDue provides to the industry aims to make the Customer **self-sufficient** in their **gas supply cycle**, **increasing the level of satisfaction and protecting the company from the critical issues of the use of cylinder** and / or liquid gas.

ErreDue solutions are made looking forward, mixing large doses of innovation, creativity, quality and service. Turnkey solutions, customized according to specific requests which, with the support of an excellent after-sales service, aim at full customer satisfaction. Each product is certified and tested in order to guarantee maximum reliability over time, and is supported by a highly specialized and competent technical service capable of intervening

promptly and resolutely to satisfy any customer requirements.

ErreDue offers a wide range of technical gas generators, mixers and purifiers designed to improve customer production: ErreDue can count on highly specialized technical staff and on a production infrastructure divided into 4 different sites dedicated exclusively to the production process, while one site is completely dedicated to the **Research & Development field**.

Among the on-site systems built, we can mention the very **pure Saturn nitrogen** generators, which produce a continuous flow of nitrogen without oxygen and residual moisture (purity up to 99.9999%), through the filtration of a flow of compressed air and the subsequent depuration and purification of the nitrogen produced.

Venus nitrogen generators, on the other hand, produce a continuous flow of pure nitrogen thanks to the PSA technology which consists in the filtration of simple compressed air. In this case, the purity of the output nitrogen

can be easily set directly on the generator PLC.

The ErreDue product line dedicated to the industry is characterized by:

- **Very high purity of the gases produced:** thanks to the technologies used, the purity levels of the gases produced are very high, to enable the user to operate in the best possible way
- **Greater safety:** ErreDue solutions increase the safety level of the production cycle and protect the customer from the critical issues of using bottled gas
- **Continuity of work:** the ErreDue equipment aims to make the client company self-sufficient in its gas supply cycle
- **Savings:** In short time only by saving the gas purchased, the customer is able to depreciate the purchased generator or system.

Especially, ErreDue has always invested important resources in the development of the line of generators dedicated to the production of hydrogen: the company focused its efforts on technologies for the production of hydrogen from renewable sources, giving special attention to the vast application potential.

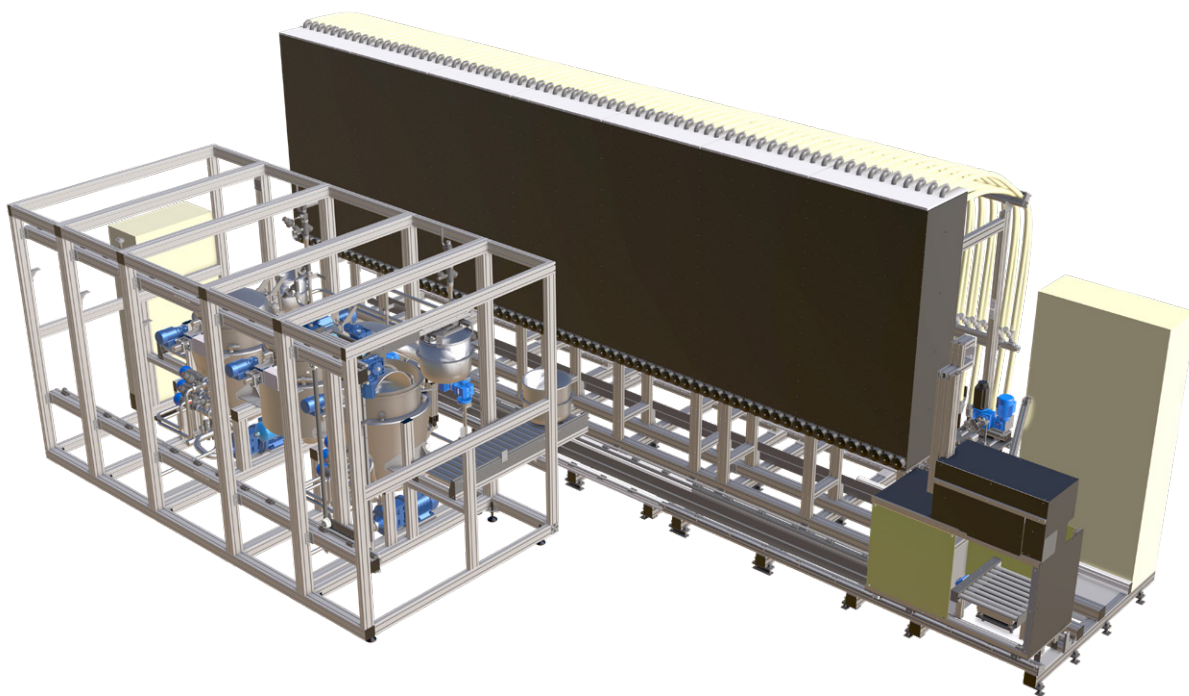
In the field of hydrogen generators, it is important to underline that ErreDue develops and produces nano-structured catalysts, collaborating for many years with universities and national research centers. This has allowed ErreDue to obtain significant results, managing to produce a new type of catalyst with lower costs.

For more information please visit:
www.erreduegas.it/en/



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World leader in the production of automatic dosing and pipetting systems



Established in 1987, **Color Service** is an Italian company, leader in the development and production of automatic dispensing systems.

The company was the first one in the world to introduce during ITMA 1987 the first automatic dosing system for powder dyestuff for **textile industry**, changing considerably the approach of the textile world towards **automation**.

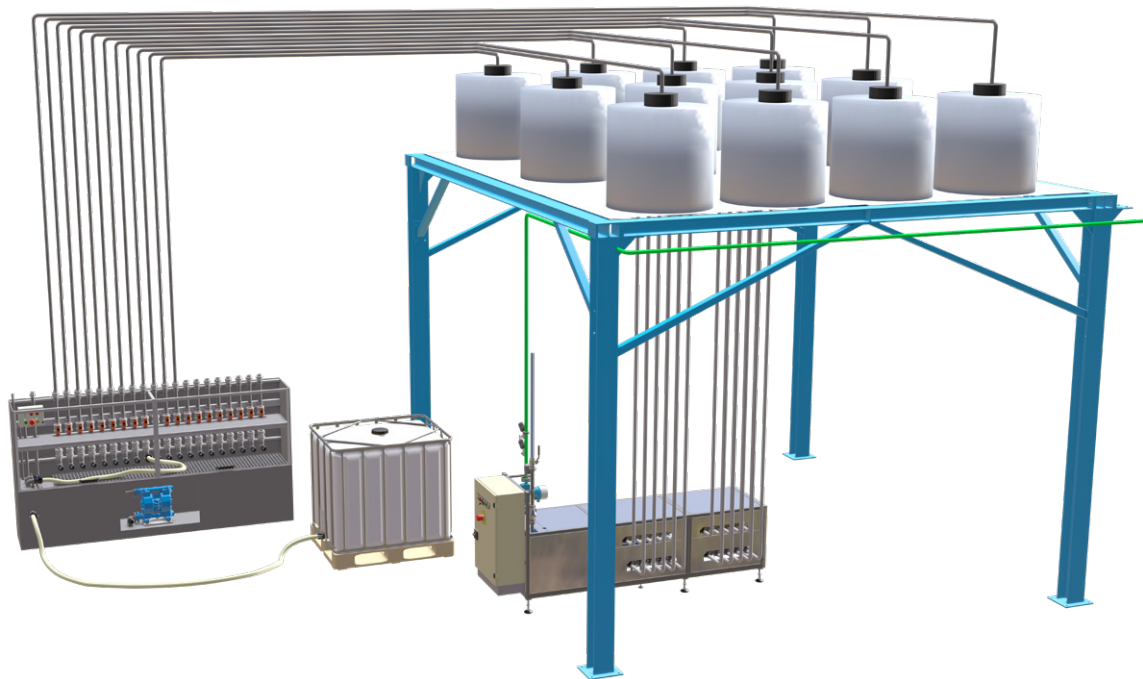
Thanks to its capillary presence in the **worldwide network** and years of experience and know-how, Color Service introduced its unique technology into other markets segments such as **rubber, tire, cosmetics, plastics**, becoming the world leader in the production of automatic dispensing system and solving many of the issues present in the manual weighing of any powder products.

Over the years the range of Color Service **automatic dosing systems** became larger, up to the production of dosing systems for liquid auxiliaries, powder dyes (in produc-

tion and laboratory) for dyeing and printing houses and tanneries. Color Service is also specialized in the automatic management of continuous dyeing cycles, in foulards and finishing.

All Color Service production is entirely **made in Italy** on three premises (total production area 15.000 sqm, with 160 people working), a unique feature that is synonymous with cutting-edge systems and high technology. All processes are automatically monitored and data are recorded in the software developed to be user friendly and intuitive. Moreover, the technology is all **eco-friendly** enabling to reduce the energy/ water consumption, the environment pollution and material wasting to get a more responsible production process that is attentive to consumption of these resources.

Color Service relies on their R&D Department, focusing on the constant upgrade of existing products as well as on the creation of new ones and guaranteeing **reliable**,



long-lasting technical results with high-standard machinery. Color Service designs and manufactures according to the actual needs of their Clients, converting their

requirements into cutting-edge solutions, creating and producing innovation, high technology and valued services.



Aramco signs \$12.4 billion infrastructure investment deal with EIG-led consortium

- *One of the world's largest energy infrastructure deals*
- *Newly formed entity, Aramco Oil Pipelines Company, to lease usage rights of Aramco's stabilized crude oil pipeline network over 25-year period*
- *Transaction reflects ongoing progress in Aramco's portfolio optimization program, which aims to unlock value and maximize shareholder returns*
- *Significant injection of foreign capital reinforces Aramco's leading position in the international energy arena and Saudi Arabia's appeal to prominent institutional investors globally*

DHAHRAN, April 09, 2021: Aramco has signed a deal with a consortium led by EIG Global Energy Partners ("EIG"), one of the world's leading energy infrastructure investors, to optimize its assets through a lease-and-lease-back agreement involving its stabilized crude oil pipeline network.

Upon closing, Aramco will receive upfront proceeds of around \$12.4 billion, further strengthening its balance sheet through one of the largest energy infrastructures deals globally. The transaction represents a continuation of Aramco's strategy to unlock the potential of its asset base and maximize value for its shareholders. It also reinforces Aramco's role as a catalyst for attracting significant foreign investment into the Kingdom.

As part of the transaction, a newly formed Aramco subsidiary, Aramco Oil Pipelines Company, will lease usage rights in Aramco's stabilized crude oil pipelines network for a 25-year period. In return, Aramco Oil Pipelines Company will receive a tariff payable by Aramco for the stabilized crude oil that flows through the network, backed by minimum volume commitments. Aramco will hold a 51% majority stake in the new company and the EIG-led consortium will hold a 49% stake. Aramco will continue to retain full ownership and operational control of its stabilized crude oil pipeline network. The transaction will not impose any restrictions on Aramco's actual crude oil production volumes that are subject to production decisions issued by the Kingdom.

The long-term investment by EIG and other institutional investors underscores the compelling investment opportunity represented by Aramco's globally significant pipeline assets, the Company's long-term outlook and the attractiveness of the Kingdom of Saudi Arabia as a desirable investment destination for international investors. The transaction is expected to close as soon as practicable, subject to customary closing conditions, including any required merger control and related approvals.

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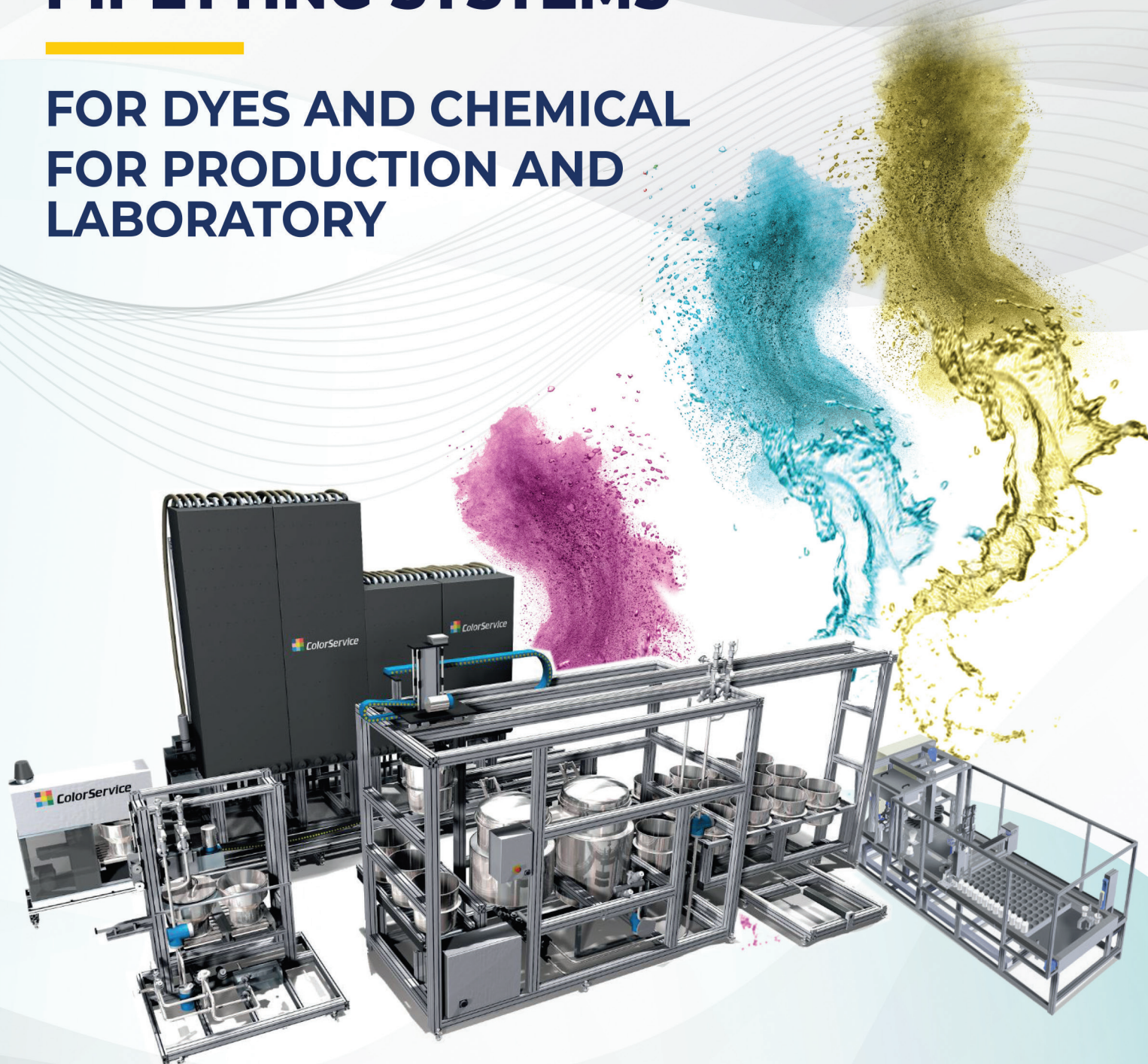


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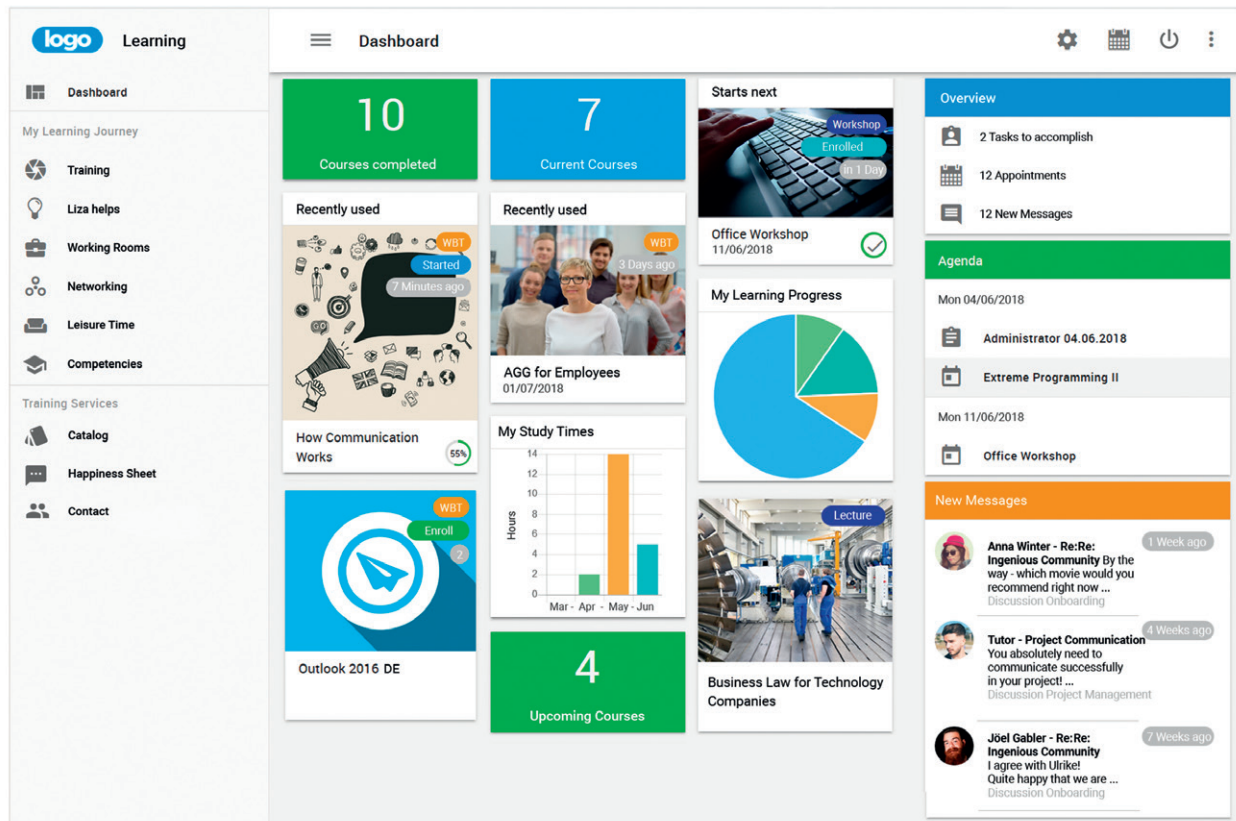
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AUTOMATIC DOSING AND PIPETTING SYSTEMS

FOR DYES AND CHEMICAL FOR PRODUCTION AND LABORATORY



AI meets Training: Give Learnbots a Try and Make Learning more Fun!



Since its foundation in 1999, time4you GmbH has implemented effective solutions for e-learning, personnel development and training based upon their own IBT SERVER software.

One of the areas in which time4you is a pioneering company is in how it utilizes Artificial Intelligence (AI) as a digital assistant for learners.

Meet Explorer Bot Pit

A recent example is Explorer Bot "Pit in the Warehouse" which was developed with Jix, time4you's AI-powered chatbot software for Conversational Learning. The chatbot targets trainees, students, and employees from materials management, logistics and warehousing. "Pit in the warehouse" combines conversational learning with an interactive fiction approach to create an explorative escape room challenge and a new type of serious game.

The game starts with chatbot Pit being stuck in an unfamiliar town, asking the user for help to find the way back

to the present. During the conversation the user has to prove his or her knowledge about fundamental materials management processes and methods.

Playful and self-directed learning

Pit and the user have several rooms to explore. In each room, there are items to pick up, people to talk to, information to retrieve, and sometimes a quiz or challenge to pass, in order to reach the next level of the game and gain access (or get back) to other rooms.

In "Pit in the Warehouse" learners see how a large, international trading company operates, by the example of a coffee importer in Hamburg at the onset of the 20th century. The historic setting not only makes for compelling storytelling, but also conveys historical background knowledge. Most importantly, learners expand and prove their knowledge of warehouse operations.

Users learn central processes of materials management in a playful and self-directed way during their conversa-



tions with learnbot Pit. They solve several typical tasks and thus demonstrate what they have learned. At the same time, they experience the processes in context, illustrating their interdependencies and importance in real world environments.

“Pit in the Warehouse” can be easily adapted to specific requirements of a customer, e.g. by adapting contents, tasks and quizzes or by changing the story’s time, envi-

ronment and persona. The language is also customizable as well as the look & feel. The application can be used as a cloud service, optionally also on-premises, by browser or iFrame.

In addition, “Pit in the Warehouse” can be integrated into any SCORM LMS as a SCORM package.

Web Address: www.time4you.de / www.jix.ai



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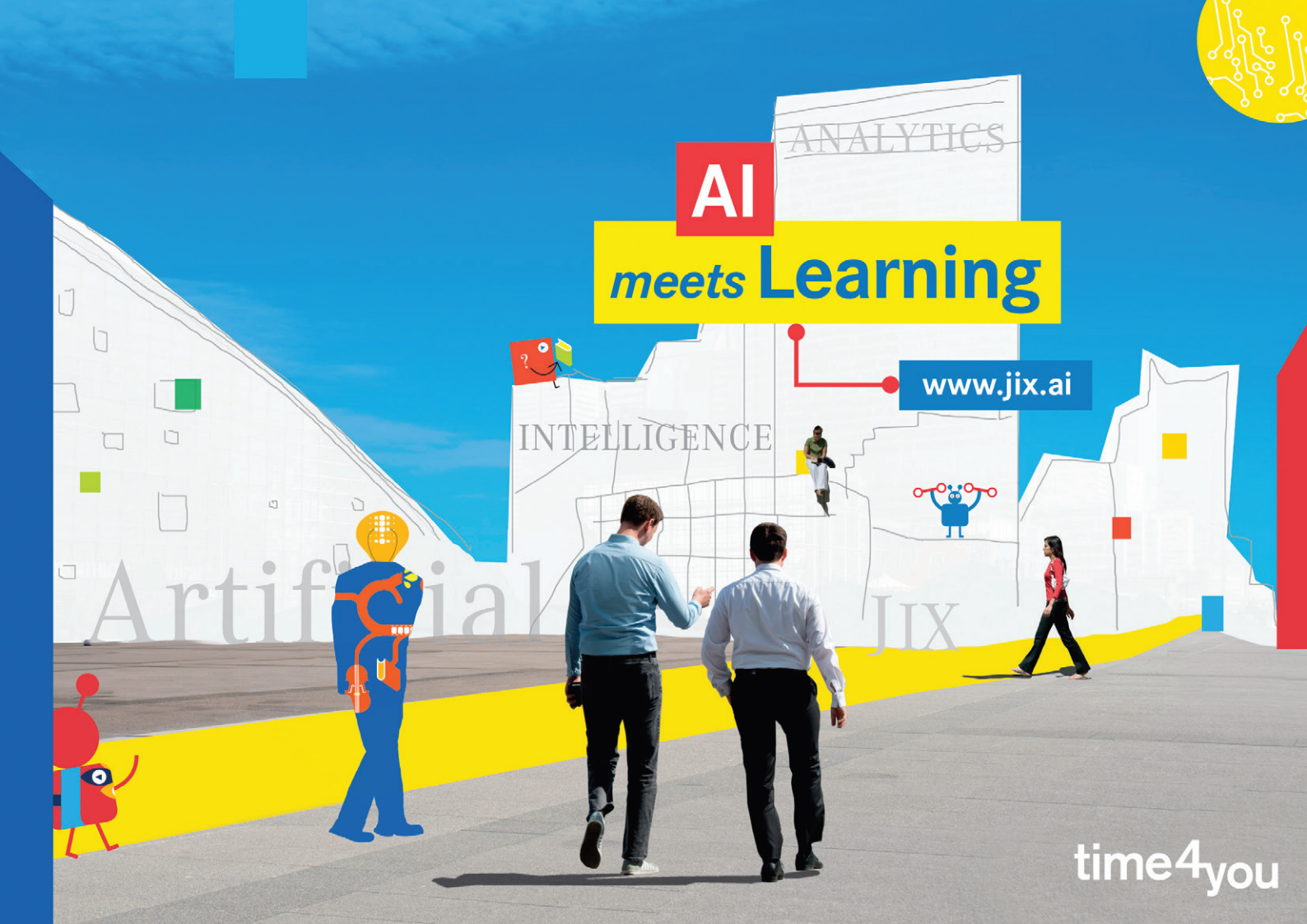
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Spray lubrication from industry to home



The solution for long-lasting lubrication, which limits the friction and the heating of moving parts, is hidden in a *made in Italy* spray. The Ambro-Sol line of greases promotes excellent resistance to mechanical work, water and humidity, counteracting rust and oxidation even in aggressive environments and adapting to both industry and domestic applications.

The factory's success is closely linked to its **qualitative and technological development**, the **best quality-price ratio**, **prompt delivery**, **professional and efficient customer assistance**.

Among the numerous proposals on ambro-sol.com, **Lithium Multipurpose Grease** is a compound of high quality saponified greases with a wide range of uses and a good chemical stability. It is water-repellent and has adhesive properties. It protects against water and it is perfectly stable and resistant to salty and dirty atmospheres, acid and basic solution and atmospheric corrosion. Ideal for lubricating, bearing, bushes, hubs, kingpins and general use on motor vehicles, farming and industrial machinery.

Copper Grease is made of super fine foliated copper

particles and special corrosion inhibitors. It has protective and lubricating properties at high temperatures (up to 1000 °C/1832°F). Both high anti-corrosion and adhesive capacity make it ideal for all of the situations where heat or salty environment can create irreversible blocks on slip: ring, pins, motor, exhausts, electrical, contacts, threaded connections, injection valves.

Are you looking for an excellent lubricating, insulating and protective action on many different materials? Silicon Grease protects surfaces from the corrosion caused by vapors and smoke and can be used as water repellent on many types of fabric and leather. It will maintain long-term elasticity of rubber parts. This product can also be applied as a polisher and a protector on metal surfaces, preventing rust and keeping surfaces clean and glossy for long periods.

Even in the toughest conditions such as high temperatures (400°C/752°F), Graphite Grease has exceptional adhesion properties, it is water resistance, anti-corrosive, and anti-wearing. It is suitable for ground moving/heavy equipment, agricultural, construction, and heavy indus-



trial to lubricate joints, pins, bushings, guides, sliding surfaces and bearings.

FOR THE NAUTICAL AND FOOD INDUSTRY

For the nautical industry Ambro-Sol produces **Nautical Lithium Grease**. With its long-term stability and resistance to oxidation thanks to lithium and titanium oxides, the spray performs also in the presence of saline and aggressive atmospheres. It's perfectly suitable for both high (220°C/428°F) and low temperatures (-40°C/-40°F).

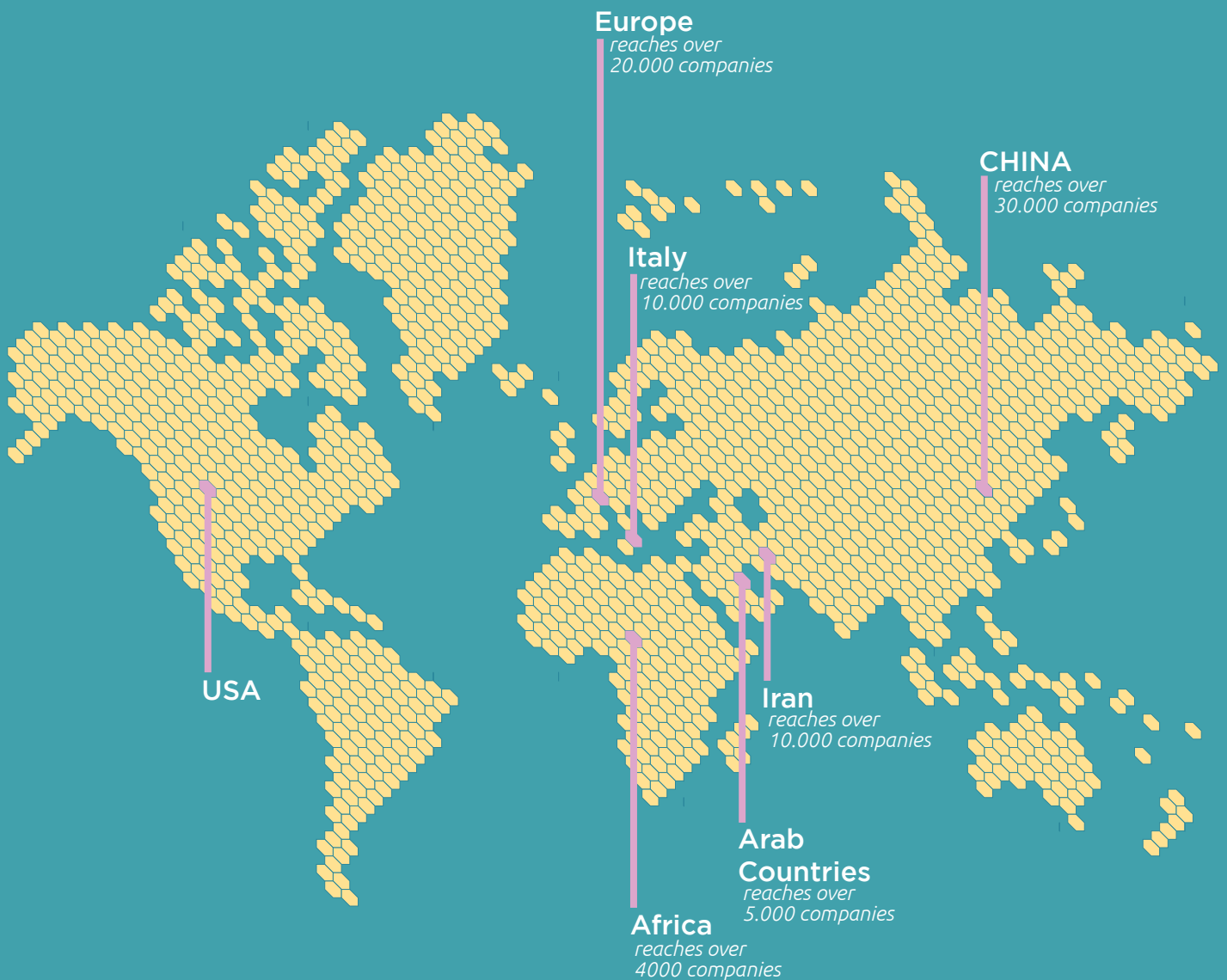
Grease for Food Industry Equipments is a colorless purified grease suitable even for accidental food contact, for the ordinary and extraordinary maintenance of machines and tools which may come into contact with food. It protects chrome parts and seals from vapors and cleaning agents used for cleaning.

For more information please visit:
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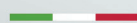
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Is your Crisis Management Plan up-to-date and available to everyone?



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?

OMNINECS Europe Ltd is a British company with a permanent establishment in Italy, whose mission is to leverage IT and IoT technologies as enabling factors to promote the growth of its customers and the transformation of their business.

OMNINECS, with its expertise and people aim to make your digital transformation journey easier.

www.omninecs.com

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.



Fugro awarded significant site characterisation contract for german offshore wind development

Fugro has been awarded a multi-year site investigation contract by Germany's Federal Maritime and Hydrographic Agency (Das Bundesamt für Seeschifffahrt und Hydrographie (BSH)).

Leidschendam, May 17, 2021 - The programme will be completed in three parts divided over the coming 3 years and comprises geotechnical investigations for offshore wind farm development areas in the German sector of the North Sea. Fugro's site characterisation services will consist of geotechnical data acquisition from multiple geotechnical drilling and seabed testing vessels, followed by laboratory testing and reporting by its German and UK laboratories. This multi-year contract has a significant value.

Fugro is currently mobilising for the first phase with a target start date of the end of May, beginning with seabed cone penetration testing (CPT) using its Seacalf® Mk V DeepDrive system.

This will be followed by the drilling of the boreholes with downhole CPT testing, sampling and geophysical logging from dedicated geotechnical vessels. The laboratory testing results will be used by future wind farm developers to prepare their bids.

Erik-Jan Bijvank, Group Director Europe and Africa, said: "This contract, which showcases our innovative services for the development of offshore wind farms, highlights the role that Fugro plays in the energy transition. Our track record in providing reliable geotechnical data to various governments in advance of developers' bidding rounds has certainly helped in winning this project. We are excited to contribute to the further development of the renewables industry in Germany."

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

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

Delta Cover's well-trained, capable personnel is at your full disposal for contact and meetings needed to understand the problem and provide the best solution. The high product quality level, a wide model range and 30 years experience has enabled us to operate successfully in contact with the market's most important water treatment firms and satisfy a growing, increasingly de-

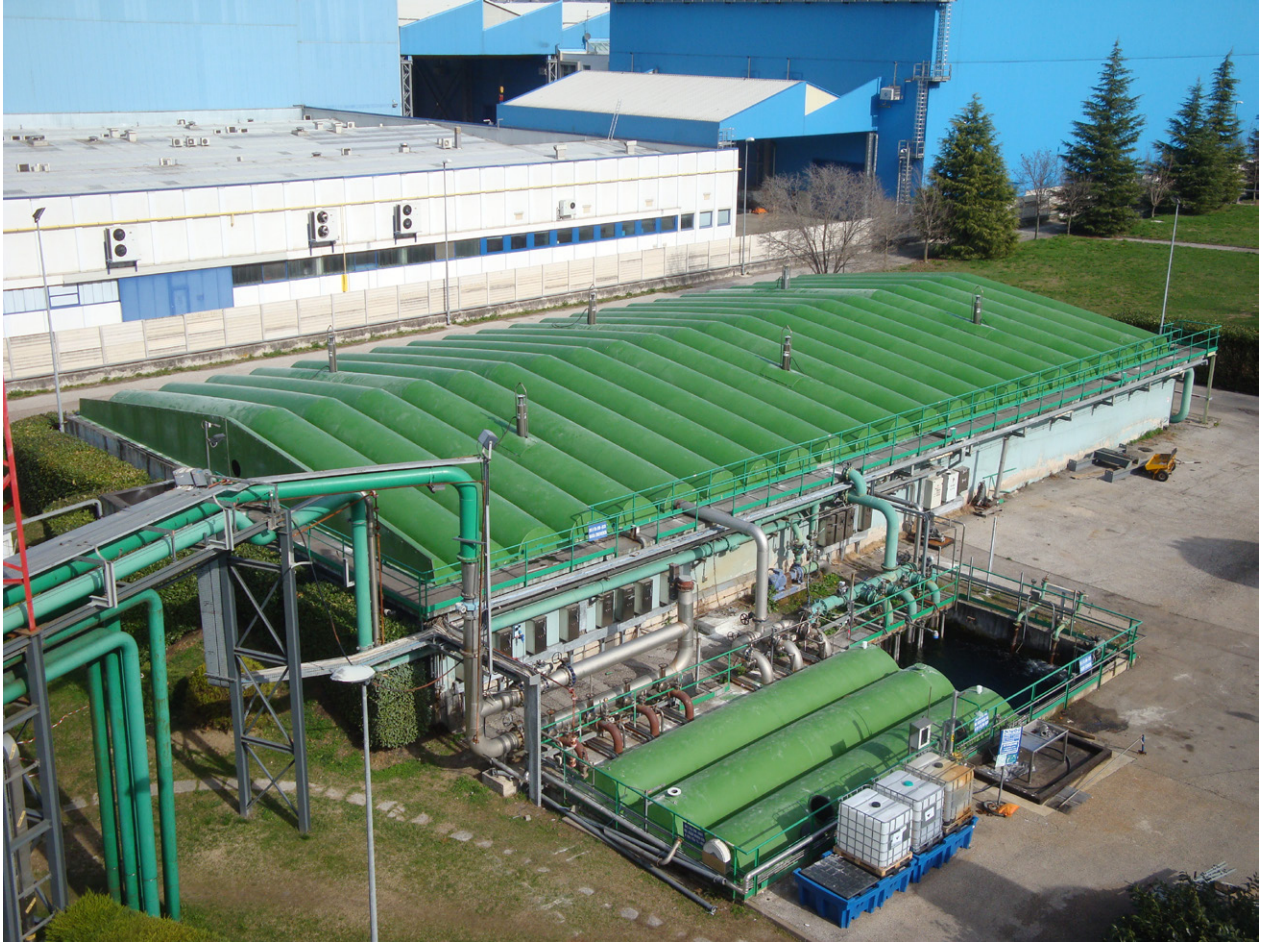
manding clientele.

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

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

More specifically, we can design and make any type of cover such as: domes for circular basins, covers for co-chleas, covers for circular basins with fixed and rotating bridge, covers for rectangular basins also of big dimensions.

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Jotatemp 1000 State of the art protection in all stages of your asset's life cycle



Jotun set a new standard in coatings for hydrocarbon processing facilities with Jotatemp 1000, a coating solution that can be applied to surfaces with temperatures reaching 1000°C.

This increased tolerance for an industry where a shift to higher temperature operations is helping optimize processing and productivity.

Jotun has established itself as a global leader in innovative protective coating solutions, with a specialism in high temperature products safeguarding against corrosion under insulation (CUI) in the most demanding industrial

environments.

Jotatemp 1000 marks the zenith of its developments, offering an unrivalled tolerance range with ambient curing qualities, and market-leading durability and protection for carbon steel and exotic materials.

The development of Jotatemp 1000 is in direct response to the demands of the market. The on-shore industry is moving towards higher temperature processing, while still requiring low temperature tolerance for gas processing, and needs a coating with performance credentials to match its ambitions.



Jotatemp 1000 is simple to apply, durable, offers industry leading corrosion, heat and cold protection, and allows for maintenance without shutting down facilities. Its unique properties mean it can be applied directly to surfaces that fall anywhere within its tolerance range.

Put simply, it's a game-changer within this niche segment – one that has been enabled by our industry understanding, technical expertise and a close collaboration with the best raw material suppliers.

Jotatemp 1000 is the first product to have passed all

standard industry test methods for the verification of CUI protection. Its ambient curing qualities allow for easy handling during construction phases and enhanced ambient corrosion protection.

With Jotatemp 1000 we offer the industry's most comprehensive portfolio of high temperature resistant coatings, showing the ability to innovate through the most modern technologies that are currently available.

For more information please visit
www.jotun.com

Caterpillar acquires Weir Oil & Gas, launches SPM Oil & Gas

Deerfield, February 2, 2021: Caterpillar Inc. has completed its acquisition of the Oil & Gas Division ("Weir Oil & Gas") of the Weir Group PLC, a Scotland-based global engineering business. Headquartered near Fort Worth, Texas, SPM Oil & Gas will continue to produce a full line of pumps, flow iron, consumable parts, wellhead and pressure control products that are offered via an extensive global network of service centers.

"Combining Weir Oil & Gas' pressure pumping and pressure control portfolio with Cat engines and transmissions will provide additional value for our customers," said Joe Creed, Caterpillar Group President. "This acquisition is consistent with our strategy of providing our customers expanded offerings and services which will now be one of the broadest in the well service industry."

The transaction includes more than 40 global service centers and approximately 2,000 employees.

"The creation of SPM Oil & Gas ensures the hard work accomplished by Weir Oil & Gas remains at the forefront of innovation and customer service," said Jon Stanton, Weir Group CEO. "The new organization's products and services along with its global reach provide an excellent customer experience and opportunity for growth."

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jotun.com



The return of 'Barca Nostra' to Augusta

After taken care in 2019 of the disembarkation of the wreck at the Port of Venice for its exhibition at the Venice Biennale of Art, in April 2021 CTS S.p.A. took care of the embarkation and subsequent disembarkation operations with the positioning of the ship "Barca Nostra" at the Port of Augusta, in Sicily, where it will remain as a symbolic monument of the migration drama.

The wreck, which sank in 2015 in the Strait of Sicily in what is the largest shipwreck in the Mediterranean Sea, was recovered from the sea in 2016; it risked to be scrapped before the complex processes to return it to Sicily, reaching a successful end as the main protagonist of the Augusta's Garden of Memory.

CTS, on behalf of SSM - Malta, handled the embarkation operations at the Port of Venice and the subsequent disembarkation at the Port of Augusta, employing 8 SPMT axles which remained on board the barge during the journey along the Adriatic Sea, in addition to the commitment of highly qualified personnel who followed the operations in both ports.

For more information please visit:
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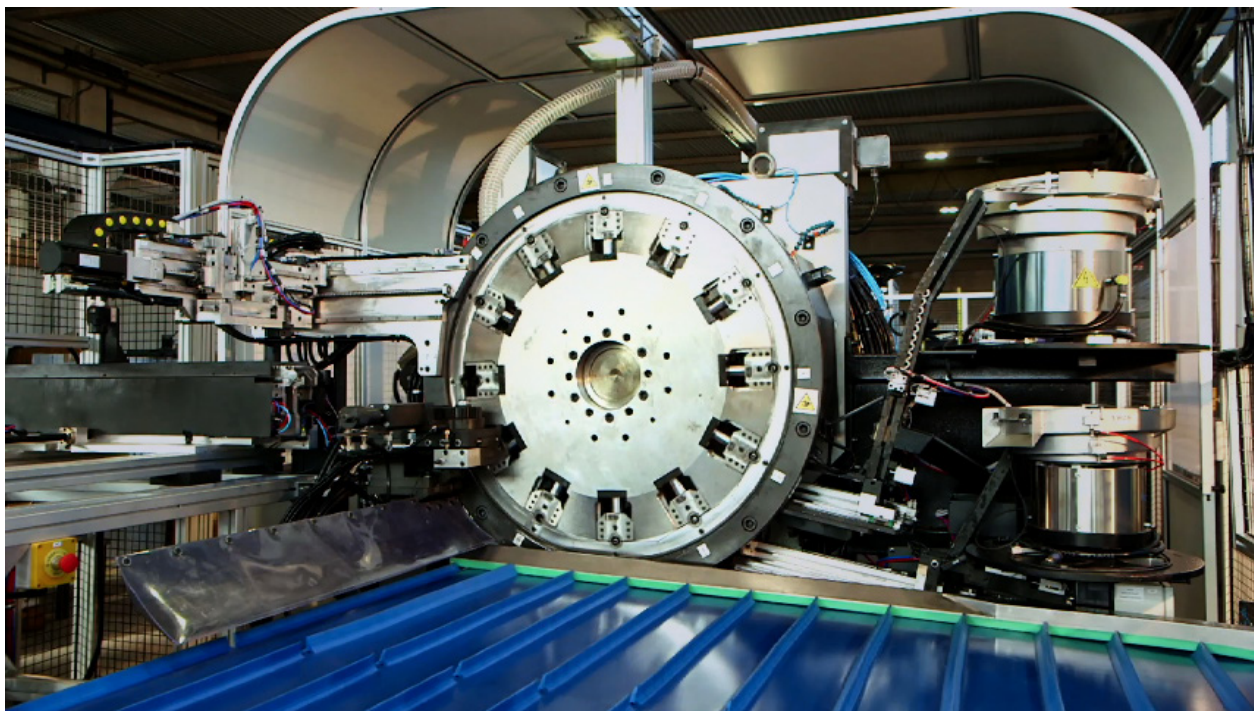
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Our assistance services ensure the profitability of the production plants supplied to our customers, ensuring fast reply remote connection of on site assistance if needed. Our mission is to provide the tube processing industry with system, processes, technologies and automations to generate quality at the lowest production cost.

Our state of the heart machineries are guaranteed by continuous technical studies and by the high level of automation.

Customisation of equipment is essential: to produce the deformations desired by our clients.

Grazioli Group's goal is to improve our production process constantly.

To do so we design advanced-tech facilities and we produce machines that guarantee the requested performance.

The "Deformer 8P" is our best-selling piece. It is designed to provide our clients great flexibility during the production cycles. "Deformer 8P" production changes by using a fast connection on the tools used.

This machinery can perform several different operations, e.g. deformation, cut, rolling and threading, without chips removal.

We have been producing for over 50 years innovative machineries and equipment used in the deformations of steel tubes and of non-ferrous material. Grazioli Cesare Srl produces also custom-built machines responding to the different markets needs.

We provide high-tech equipment with top quality service.

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For more information:

<https://grazioligroup.com/en/>

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Highly specialized in pumps and accessories



Our company has been established in 1994 and has been working world wide (currently in 118 countries) for more than 25 years.

We promote the sale of italian products in the world market through a very well organized commercial office that offers customers multilingual assistance.
We are ISO 9001 certified.

We take part in the most important trade shows among which the Expocomfort Mostra Convegno Milano, Eima in Bologna, Addis Abeba in Ethiopia.

Our products are used in: Hydraulics, Agriculture, Thermo-sanitary, Air, Purification plants and food industry. We are highly specialized in **pumps** (Submersible, surface vacuum and special AISI 304 and 316 pumps) and

all accessories for pumps (such as pressure switches, pressure gauges, control boxes, flexibles hoses, capacitors, probes), **water filters, float switches, pressure regulators** (Presscontrol, Mascontrol, Controlpres, Control-pump) **valves, blowers and pumping units.**

PRESSURE SWITCHES

We are the world leader distributor of Schneider Electric's original pressure switches, both Square D and Telemecanique.

We can supply: original Square D FSG2, FYG 22 and FYG 32 pressure switches (always available in stock for prompt deliveries) and Telemecanique pressure switches (particularly all XMP and XMX range).

PUMPS

We can supply a wide range of pumps.

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Schneider Electric



Surface electric water pumps for domestic, civilian and industrial use (They are recommended for pumping clean water without abrasive particles and liquids that are chemically non aggressive to the materials from which the pump is made).

Submersible pumps are found in many applications. Single stage pumps are used for drainage, sewage pumping, general industrial pumping and slurry pumping. Multistage submersible pumps are typically lowered down aborehole and most typically used for residential, commercial, municipal and industrial water extraction (abstraction), water wells.

Other uses for submersible pumps include sewage treatment plants, water well and deep well drilling, irrigation systems, mine dewatering.

We are in contact with the great part of the most import-

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In addition we have a warehouse that can cover most of the products shown in our catalogue and website guaranteeing the fastest service and delivery time. And again with us you can meet, thanks to our wide range, a flexibility of purchase which allow you to order many products of different factories and brands using a single supplier; that means: a single order, a single transport, a single payment etc.

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STEGO CONNECT: the IIOT PLATFORM for very enterprise



STEGO CONNECT is the first IIoT platform on the market that has adopted IO-Link as its networking standard and is specifically tailored to the needs of every business: SMEs or large enterprises.

Rather than having to abandon any networking structures already in place in their factory hall, warehouse or elsewhere in industrial operations, they can make them the basis for their STEGOCONNECT IIoT applications as well.

The best word to describe STEGOCONNECT is “Easy!”:

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nect physical devices with the virtual world. Digitalisation and IIoT works in an instant, and it works with any IO-Link device – from any manufacturer. Simply plug in and your devices are connected. Welcome to the Industrial Internet of Things!

- Monitoring made easy: STEGO CONNECT enables you to collect valuable data and monitor the functionality of connected devices, any time and any place. In this way is easy to avoid any failures and subsequent problems.

- Easy and effortless control over everything: STEGO CONNECT allows designated staff to respond to events



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or alerts, regardless of their location. Connected devices can be controlled centrally. The need for on-site presence becomes a thing of the past for parametrisation, configuration, control and, not least, system and application automation. Freely-configurable dashboards, alerts and workflows give you, as a user of STEGO CONNECT, full control.

With STEGO CONNECT, IIoT applications are now a real and feasible option for SMEs as well. Since the devices at the edge are networked via IO-Link and connected to the central cloud via edge box, existing network infrastructures in the industrial environment can usually be retained. At the same time, STEGO CONNECT allows sensor-actuator networking via workflows, without complex programming. Indeed, even coding novices can design such workflows using drag & drop functionality. All in all, STEGO CONNECT offers countless options for building IIoT systems, as in principle all IO-Link components can be connected in any number of different configurations to form systems that are adapted to the respective individual use case. The modern cloud-edge infrastructure established via the edge boxes saves costs, reduces latencies and ensures that processes still run even if there is no connection to the remote cloud data centre.

STEGO CONNECT MAKES INDUSTRY 4.0 EASY!

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Your fastener source

"INOXDADI S.R.L." founded in 1973 is one of the most important European producers and distributors of nuts, screws, hex bolts, studs, washers, threaded rods and fasteners in Stainless Steel, Brass, Titanium, Aluminium and Exotic Alloys certified ISO 9001:2015. Our company located in the north of Italy at about 50 Km from Milan covers a total area of 20.000mq. For over 40 years "INOXDADI S.R.L." is dealing with a wide range of fasteners in various sizes and grades, including AISI 304, 304L, 316, 316L, 316Ti, 321, 309, 310, 314, 904L, DUPLEX, SUPERDUPLEX, W. 1.4529, W. 1.4980, 2.4952, HASTELLOY, INCONEL, TITANIUM, ASTM GRADES, MONEL 400, ALUMINIUM, BRASS, COPPER, etc. Our huge stock of countless items in stainless and special alloys, includes metric & imperial (UNC, UNF) sizes as well as left and/or fine pitches thread that are therefore immediately available for shipment. The manufacture versatility of "INOXDADI S.R.L." allows the production of standard and non-standard fasteners in accordance to international standards or customer drawing.

Special and technically advanced materials like Duplex, Superduplex, refractory Stainless Steels, Alloys with a high Nickel content (Inconel, Incoloy, Hastelloy, Nimonic, Monel,), Titanium, ASTM GRADES are currently manufactured and distributed worldwide. The applications range is wide and stretch from petrochemical to marine industry, from aerospace industry to nuclear reactors, from chemical processing to pollution control, from industrial furnaces to gas turbine components, from hydro-carbon processing equipment to heat exchangers, from waste treatment to desalination equipment, and so on all around the world.

The raw materials are of European origin and the full traceability from the mill to finished product can be certified. Declaration of origin as well as certificates 2.2, 3.1, PPAP, VDA are available on demand.

Our Quality Dept is equipped with x-ray and gas spectrometer in order to attest the good quality of material in terms of chemical composition, while severe mechanical tests are arranged for every batch of products to ensure conformity to mechanical requirements.

Our automatic video sorting & inspection machine can guarantee a deep and attentive distinction of bad parts so to guarantee PPM quality level in accordance to customer demand.

Significant and continuous investments are constantly made with purchase of new nut formers machines, new bolt formers, new tapping and threading machines and new technologies for the industry 4.0. Frequent training courses have allowed and encouraged all workers to achieve important and continuous aims.

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LEMO Marks its 75th Anniversary in 2021

The journey of a global leader
in connector & cable solutions.



Founded in Switzerland in 1946 in Morges along the Geneva lake shore, LEMO® took its name from the company's founder, the current CEO's grandfather, engineer Léon Mouttet. Originally a manufacturer of contacts in noble and rare metals, the company took a major step forward in 1957 with the invention of the Push-Pull self-latching connector. Today, the company offers a rich portfolio of interconnection solutions: cables, connectors and cable assembly services. LEMO's high quality Push-Pull connectors are found in a variety of challenging applications including medical, industrial control, test and measurement, audio-video and telecommunications. The third-generation family-owned company, with a staff of 1800 employees, is represented worldwide through 20 sales offices and multiple production sites in Europe, USA and Asia.

To this good news is added the victory of a very important prize.

LEMO Receives 2020 Technology and Engineering Emmy® Award

LEMO, a global leader in the design and manufacture of precision custom interconnect solutions is has been awarded a 2020 Technology and Engineering Emmy® Award for Standardization and Commercialization of Television – Broadcast, **Hybrid Electrical and Fiber-Optic Camera Cable and Connectors.**

"We are very honoured and proud to be awarded this Technology & Engineering Emmy® Award", says Billy Barbey, LEMO's R&D Manager. "It recognises the work of all LEMO engineers who have driven this technology over



the years, and which has a lasting impact on the industry.”

In the 80s, the signal transmission over fiber optic was introduced to the television industry and LEMO was deeply involved in the creation of the SMPTE Standard for fiber optic connectors. Today, fibers are used in all aspects of production and distribution of video and audio signals and the **LEMO 3K.93C series** (SMPTE connector) is recognized as the connector of choice for broadcast and AV systems. LEMO works with select authorized cable assembly houses to ensure that our SMPTE products meet the highest standards for quality, reliability, and durability in the most challenging environments.

LEMO shares this 2020 Technology and Engineering

Emmy® Award with the following partners: SMPTE, The Association of Radio Industries and Businesses (ARIB), European Broadcasting Union (EBU), Belden, NEMAL and all LEMO certified cable assembly houses.

The National Academy of Television Arts & Sciences (NATAS) plans to hold the 72nd Annual Technology & Engineering Emmy® Awards ceremony in partnership with the National Association of Broadcasters (NAB) during the fall NAB Show on October 10, 2021. The Emmy® Award is one of the four major American entertainment awards along with the Oscar (film), Grammy (music) and Tony (theater).

For more information please visit:

www.lemo.com/it

New Knife Gate Valve Reduces Total Cost of Ownership in Severe Slurry Services

Emerson's Clarkson™ KS1 Knife Gate Valve is a true bi-directional, full bore, ASME Class 150 valve designed for the rigors of heavy slurry service. Its advanced, patented sealing system delivers zero-leakage isolation for longer, enabling increased run time and throughput.

RENO, April 13, 2021 – Emerson today announced the new Clarkson KS1 Knife Gate Valve designed to help mine, oil sands and pulp & paper operators achieve increased availability of their most challenging slurry processes.

The new knife gate valve features a patented gate edge seal design that creates a continuous seal around the gate, together with a precision-molded elastomer seat. This heavy-duty seat increases the contact area and resilient sealing ability of the valve compared to standard O-ring designs, resulting in superior isolation performance over an extended lifecycle.

The valve design has been optimized to thrive in heavy slurry conditions with a full round port that eliminates protrusions into the flow, which minimizes turbulence across the valve and reduces wear on valve components and downstream equipment. Reversible, rotatable wear rings also come standard on both sides of the valve to protect the seat and extend maintenance intervals.

Maintenance teams were also top of mind during the design of the KS1. The valve is repairable with standard tools and readily available spare parts. Adjustments can be made to the packing system externally that dynamically self-adjust pressure to the gate edge seal system. The KS1 is also designed to standard MSS SP-135 face-to-face dimensions for simple changeout and upgrade of underperforming installed valves.

The Clarkson KS1 comes built tough for the rigors of severe slurry service in sizes 2" through 30" with a variety of available flange patterns, an ASME Class 150 pressure rating of 290 psi at ambient temperature and a temperature rating up to 300°F. Alternate materials are also available to combat extraordinary abrasive and corrosive process conditions and a variety of automation options can be configured to suit.

"The Clarkson KS1 is a compelling innovation for operators of heavy slurry processes, such as tailings lines," explains Mike Gordon, director of Emerson's knife gate valve business. "This valve is purpose-built for extended zero leakage isolation in these tough environments, so these processes run uninterrupted for longer to improve throughput and minimize valve maintenance costs."

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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 overall color palette consists of dark blue, light blue, and yellow.

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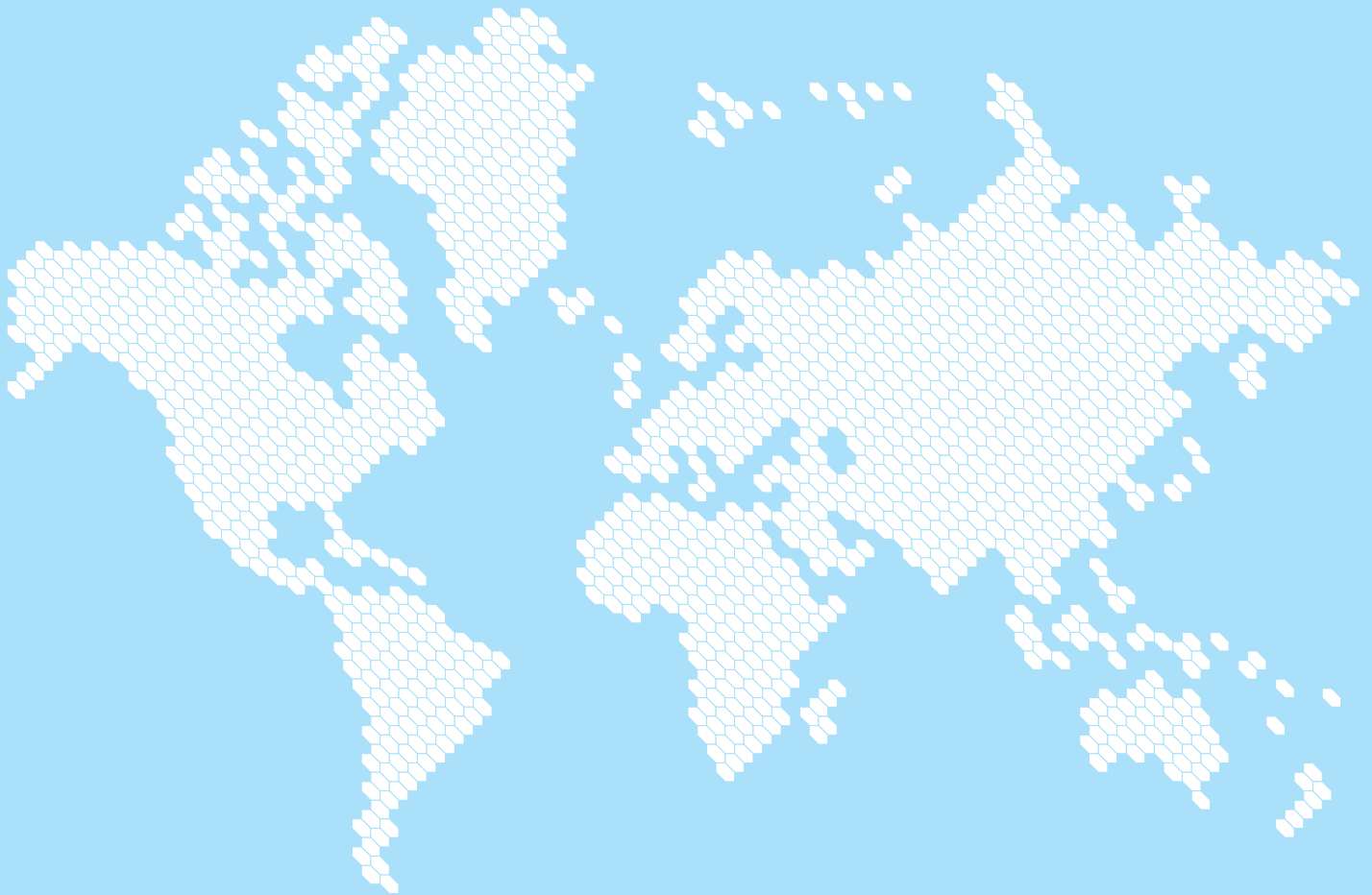


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