Nr. 20 Issue 03 | December 2016

MESSER
Gases for Life

Gases for Life

The industrial gases magazine

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Gases for welding and cutting of bus and coach bodywork

Stefan Messer and Dr. Hans-Gerd Wienands, CFO Messer Group

Dear Readers,

You need to have a clear strategy in order to achieve sustained business success. We follow this basic principle all the time at Messer – and not without success: in the first nine months of the 2016 financial year, our expectations at Messer have already been met in full.

The trend in our European business is one of stable sales, our activities in China are once again showing moderate growth, and our business activities in Vietnam are expanding significantly. Compared with the same period last year, the Messer Group has thus managed to achieve a slight increase in sales.

The supply of cylinder gases to our customers is helping to stabilise and strengthen this upward trend. We will continue to intensify our involvement in this very important segment for Messer, and communicate what we are doing.

We have therefore developed a campaign that tells our customers about the benefits and advantages they get with cylinder gases from Messer. Because this much is certain: as well as containing a practical product, a Messer gas cylinder also represents a great deal of service. You can find out more about this in our cover story.

Here's wishing you an enjoyable read, a happy Christmas season and all the best for the New Year.

Best wishes,

Stefan Messer
CEO and owner of Messer

Collecting "Gases for Life"
For long-term storage of our magazine, request the free "Gases for Life" slipcase: angela.bockstegers@messergroup.com

The Cover Photo shows Ulrich Thorwarth, Vice President Industrial Gases at Messer Group

"Gases for Life" is printed three times a year in German, English, Hungarian, Slovakian and Czech. Go to www.messergroup.com for comprehensive information about "Gases for Life".

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Gases for welding and cutting of bus and coach bodywork

Hungary | On 10 June 2016, a bus factory with a production capacity of 500 buses a year was officially opened at mechanical engineering firm Kühne's site in Mosonmagyaróvár, just in time for the company's 160th anniversary. Hungary's Economics Minister Dr. Mihály Varga also attended the event in the town near the Austrian border. The buses are sold under the brand name Credo. Kühne builds the frame and bodywork, while final assembly of the buses is carried out by partner company Kravtex in the neighbouring town of Győr. Kühne gets liquid argon and the cutting gas Oxycut from Messer in Hungary.

Mónika Zimányi-Csere, Messer Hungarogáz

Gases for copper cathodes

Messer has commissioned a new air separation unit in the southern Chinese city of Hengyang.

Deng Fa, Fang Zengyu and Liu Yong of Messer in China at Minmetals in Hunan

China | Minmetals, a copper cathode manufacturer in Hunan, has signed a 15-year contract with Messer for the supply of gaseous oxygen and nitrogen. The new facility has a capacity of 22,000 normal cubic metres of oxygen and 44,000 normal cubic metres of nitrogen per hour. Hengyang is Messer's second facility in Hunan province. In Xiangtan, Messer has been operating several air separation units since 1998 with a total oxygen capacity of 130,000 normal cubic metres. Minmetals has a new production centre in Hengyang with an annual capacity of around 100,000 tonnes of copper cathodes. Messer has been supplying the gases to the cathode manufacturer by pipeline since 2016. The investment in Hengyang will strengthen Messer's leading position in Hunan province.

Jasmine Yan, Messer China

Vulcanisation of tyres with nitrogen

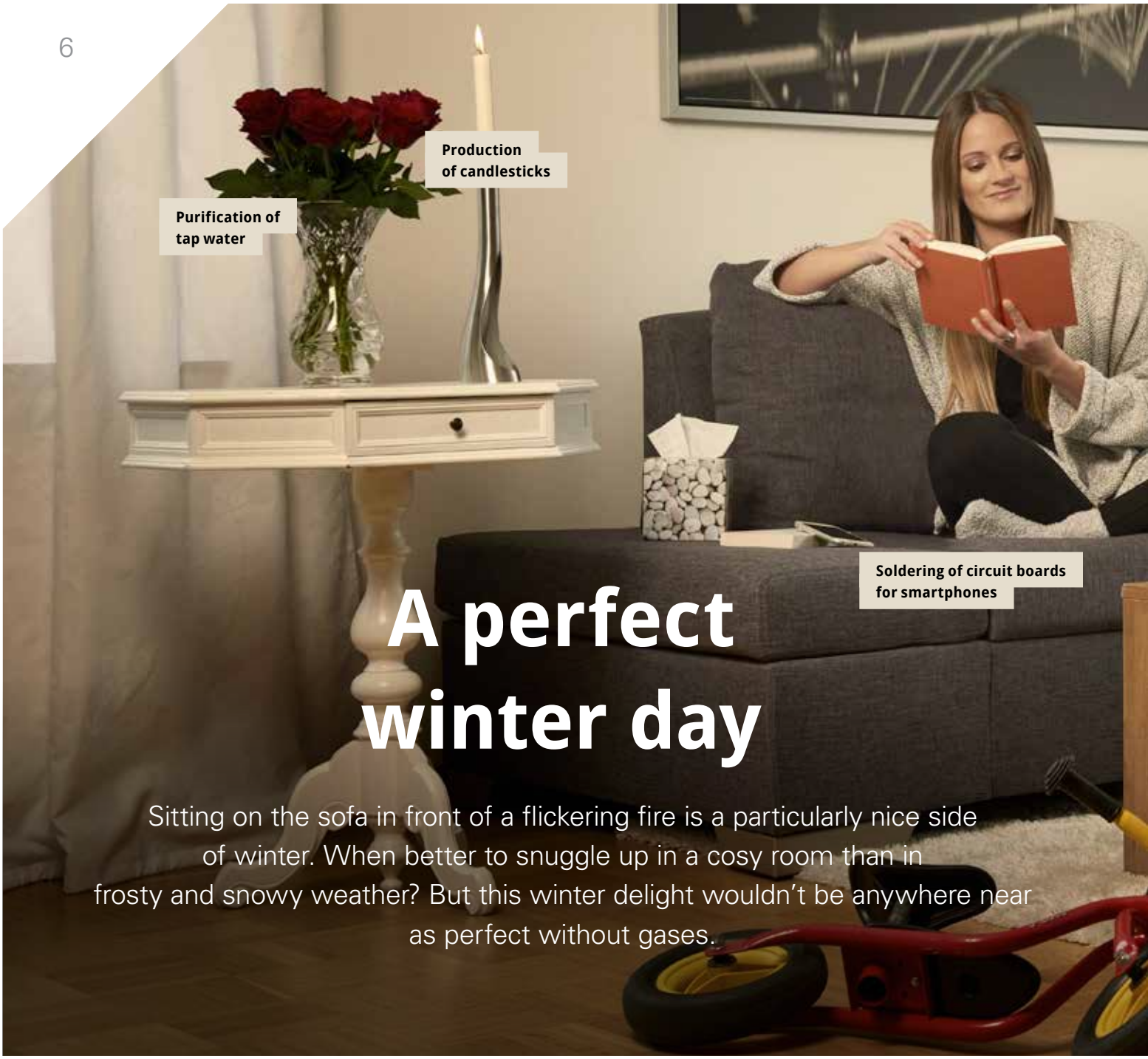
Serbia | A tyre manufacturer in the Serbian town of Kruševac uses nitrogen from Messer in its production process. The gas is used to regulate the pressure and temperature during vulcanisation. It also, for the most part, displaces the oxygen in the press, prolonging the bladder's service life. The bladder, which resembles a balloon, presses the green tyre into the mould. Nitrogen also eliminates the risk of the hot rubber catching fire. The production test runs began in February 2015, for which Messer supplied equipment as well as nitrogen in MegaPack bundles. For series production, which has now begun, Messer supplies the gas in liquid form.

Bojana Blagojević, Messer Tehnogas

Certificate for Messer in Switzerland

Switzerland | In 2016, for the sixth year in succession, credit rating agency Bisnode D&B Schweiz AG awarded Messer in Switzerland a Rating Certificate with Risk Indicator 1, which represents a minimal default risk. Only two per cent of all Swiss companies meet the conditions for this top category. The certificate distinguishes Messer in Switzerland as a trustworthy, reliable, economically healthy and stable business partner. Bisnode D&B is a partner in the network run by Dun & Bradstreet, the world's largest service provider for business-to-business economic information.

René Hug, Messer Schweiz



A perfect winter day

Sitting on the sofa in front of a flickering fire is a particularly nice side of winter. When better to snuggle up in a cosy room than in frosty and snowy weather? But this winter delight wouldn't be anywhere near as perfect without gases.

This is how Angela Bockstegers, editor-in-chief of Gases for Life, imagines a cosy winter evening – and promptly put her idea into practice.

Precious metal

The fact that it is cold outside makes the pleasant warmth of the living room and the cheerful blaze of the fire doubly cosy. The tabletop fireplace owes its smooth surfaces not least to the nitrogen used in heat treating the steel sheets. Cutting and welding the individual parts involved the use of specific gas mixtures, as did making the candlestick and the aluminium balance bike on which the little ones do their laps. When sheet brass is welded together to make a trumpet, the precious material is protected by argon. When working on the even more precious silver – or even gold and platinum – of finger jewellery, goldsmiths prefer to use pure hydrogen as fuel gas.

Light and heat

The space between the multiple panes of high-quality insulated glazing is filled with argon or krypton so that the heat stays in the house as long as possible. Whilst halogen lamps are filled with noble gas mixtures, the manufacture of LED lights involves the use of ultra-high purity gases such as ammonia and nitrous oxide as well as silane mixtures. High temperatures are needed to produce ceramic cups and crystal vases. The kilns use less fuel gas thanks to the supply of pure oxygen, which in turn significantly reduces carbon dioxide emissions.

Taste and beauty

The steaming hot mug of cocoa is particularly tasty thanks, in part, to the fact that the powder was packaged in a protective gas atmosphere that pre-

serves its flavours. In wine tanks, this job is done by inert argon: it forms a blanket over the liquid, keeping oxygen away and preserving the wine's subtle notes. Mixing and stirring cookie dough generates heat, which would encourage the growth of microorganisms. To prevent this, the dough is cooled with dry ice. The Christmas biscuits have such an intense taste of cinnamon because, when cold grinding the cinnamon bark, cryogenic nitrogen ensures that its essential oils are preserved. In greenhouses, the targeted addition of CO_2 boosts growth, making the roses even more beautiful.

Eco-upholstery and smart soldering

Foam upholstery, like the kind used in a sofa, used to be foamed with CFCs, which destroy the ozone layer. Today, the process is environmentally neutral thanks to the use of carbon dioxide. In candle production, the wax cooling process is speeded up significantly with cryogenic nitrogen. The same gas is used to displace oxygen when soldering a smartphone's circuit board, ensuring oxide-free and therefore reliable connections. Oxygen, on the other hand, is used for environmentally friendly bleaching of paper, which is used to make books and tissues, as well as for purification of tap water, which can be found in a vase used to hold roses.

Editorial Team

— NEWS —

Argon
for window panes

Messer installed liquid argon tanks for window manufacturer Kalatherm in August.

Hungary | The company's plant in Komló manufactures double and triple glazed windows mainly for the Hungarian market. The space between the panes is filled with argon because the noble gas is a much better insulator than air thanks to its low thermal conductivity. In this way, it contributes towards heat energy savings.

Mónika Zimányi-Csere, Messer Hungarogáz

Krisztina Forisek, Sales Assistant at Messer in Hungary

Award for optimisation

In June 2016, Messer received an award from the Catalan Association of Engineers for a project to optimise gas production with the aid of a complex mathematical model.

David Fernández (left), who developed the model, is pictured here with José Montoro at the air separation unit in El Morell.

Spain | A new model calculates optimal process conditions for gas production, taking into account various parameters such as fluctuating electricity prices and inconstant demand, particularly on the part of liquefied gas customers. This facilitates a lowering of production costs. Messer received the award on behalf of the Tarragona Chemical Industry Cluster. The model was developed in cooperation with the Rovira i Virgili University in Tarragona, with Messer employee David Fernández in charge of the project. He was supported by the Technical Director and other Production staff.

Marion Riedel, Messer Ibérica

ASCO: New subsidiary

America | In July, ASCO set up the US subsidiary ASCO CARBON DIOXIDE INC. in Jacksonville, Florida. The company's Managing Director is Dan Gruber, an ASCO employee of many years' standing who hails from the 'Sunshine State'. The formation of ASCO Inc. is intended to strengthen ASCO's market position in the areas of dry ice blasting and dry ice production in North America. A dealer network is being developed to provide localised support to customers.

Simone Hirt, ASCO CARBON DIOXIDE

Juan Bedoya

Juan Bedoya has been in charge of Messer in Peru since 1998. He lives in the centre of Lima, 15 kilometres from the Messer facility in Callao. The capital is also home to most of his family, including four grandchildren.

1. A working day is perfect ...
if it's in the summer, when the inhabitants of Lima are at their beach houses, the streets are empty and the traffic on my way to work is flowing freely.

2. What I absolutely need for my job is ...
the opportunity for social skills to be developed and refined. I want motivated employees with strong values and high standards.

3. A novel/film which I can recommend without hesitation is ...
"I, Robot" by Isaac Asimov. As a science fiction fan, I also like the Terminator films with Arnold Schwarzenegger.

4. I can get irritated by ...
people who take no initiative in their area of responsibility.

5. I can get excited about ...
new projects, especially if I can contribute to their success with my experience in the gases business; and also about challenging tasks – that includes playing golf.

6. My wish for the future ...
is for Messer in Peru to continue to grow and expand its leading position in the gases market. I want our customers and stakeholders to see us as their best business partner.

Service
to the max

The steel sides of a humble gas cylinder conceal a great deal more service than one would suspect. The variety of gases is mirrored in the diversity of customer demand for associated services – from information about the cylinder gases to delivery to the construction site or the doctor's practice through to tailor-made safety training.

Continued on page 12

Julien Fornoni and Julien Delalez of Messer in France

Messer is a company that has widespread operations and sells its gases in over 30 countries. In all of these countries, it has filling plants where cylinders are filled with gases and subsequently sold to consumers either directly or via partners. The demand for cylinder gases is particularly high for welding and cutting in workshops and on building sites, but they are also used in the baking trade as well as in pubs and restaurants, doctor's practices and laboratories. Specialty gases can even be manufactured in accordance with individual customer specifications. The quantity delivered ranges from the pressure can to the cylinder bundle.

500 different products: a huge range

The product range encompasses some 500 different gases – but this also includes gases of different purities. For example, medical oxygen for human use has to meet very special requirements and is tested for specific impurities, unlike industrial oxygen. In all combinations with all available cylinder sizes and different pressures, a total of 8,000 materials can be bought from Messer – a huge range. Of course, not every cylinder size is available in every country, the situation with cylinders being similar to that with different sockets in Europe: the technical specifications are not the same everywhere, and Messer adapts to its customers as well as to the local conditions. Given this variety, it goes without saying that the sale of gases in cylinders has to go hand in hand with good service in each country. Messer intends to make this service even more transparent now.

Services across the board

Messer has a modular system of services in different areas. These are consultancy and process optimisation, transport, safety, engineering, e-services, training and information as well as measures to enhance customer satisfaction. Each entity provides detailed information about the services it offers its customers. The initial service involves the accept-

Messer's product range encompasses some 500 different gases in different purities.

One of three Messer Pocket Guides currently available

ance of an order: whether by phone, by e-mail or – using the method preferred in the past – by fax. But it can also be done entirely electronically: anyone who uses classic apps such as the "spirit level" or "torch" on their smartphone knows how straightforward and practical apps can be. Messer's E-Order App allows customers to make paperless and environmentally friendly orders for cylinder gases to be delivered to their usual delivery address. Repeat orders are also possible: this simply involves scanning the barcode on the cylinder. The "Customer Container Tracking System", or CCTS, is another Internet application for cylinder management. It allows real-time monitoring of stocks, consumption levels etc. at different locations in the company – workshops, building sites or hospital wards. Messer can also check cylinder stocks by means of remote monitoring – in this case, Messer simply makes further deliveries when required. Gas cylinders can always be collected at the point of sale, but of course there is also the option of delivery to the customer and connection, if required. In some countries, Messer even offers round-the-clock delivery by courier, for instance to hospitals. The "highly individualised delivery service" also allows time-critical deliveries or on-site delivery direct to the welder.

Safety concept

Safety is the number one priority when handling gases. Aimed specifically at users of cylinder gases, Messer has recently published a series of Safety Pocket Guides which provide information on, for example, the safe transportation or correct handling of gas cylinders as well as about identification and labelling. Any hazard identification is only as good as its degree of comprehensibility. In some countries, Messer offers the "Be Safe Concept" with training, audits and demonstrations. Messer experts can also carry out an on-site safety check at the customer's premises or train whole groups of staff.

Continued on page 15

Messer's "Be Safe Concept" also includes training in the safe handling of gases.

Logistical quantum leap

Interview with Kurt Michelini, Managing Director of Frastanz Brewery: "Messer delivers what we need on time."

What do you need CO_2 for?
In the brewery, we use carbon dioxide from the tank principally as a propellant to convey the brew or beer from one tank to the next. We also require it as a cylinder gas for beverage dispensing systems and supply it in this form to our customers in the catering trade and for festival catering.

Why did you recently switch to Messer as your gases supplier?
We need ten-kilo cylinders with a protective frame for smooth logistics and easy handling. Our previous supplier was unable to supply these cylinders in sufficient numbers, so we regularly ended up with a muddle of different cylinder types. Messer delivers what we need on time, although originally these cylinders were not part of the range at all.

How have you found the barcode system?
Our logistics has made a quantum leap. In the past, it was barely possible to get an accurate overview of the situation regarding cylinder deliveries. Today, we know the precise location of each cylinder thanks to Messer's tracking system. Our staff received the appropriate scanners along with good training. They understood the system right away and are very happy with it.

Consultancy for increased efficiency
To increase added value, reduce costs and minimise the environmental impact, the Messer experts conduct "High-Efficiency Process Consultancy" sessions at production plants that use gases in cylinders. The "Private Optimiser Service" goes even further: this on-site analysis for selection of the right product, type of supply and supply technology is a targeted specialist consultancy session aimed at problem-solving. Of course it is also possible to train staff directly, for instance in the sphere of medical or specialty gases, but the consultancy service has particularly proved itself for the selection and application of the right gases for welding and cutting. After that, regular newsletters bring the users up to date with regard to the latest technology.

Service and price are equally important
A representative study carried out in Germany last year on behalf of a major energy supplier showed that as many as 51 per cent of customers were interested in a company's sustainability credentials. 60 per cent emphasised the importance of a company having a good reputation. However, the consumers rated service as the most important aspect, with 80 per cent of the respondents indicating that it is an important consideration. This makes it on par with price, which got 81 per cent. Messer therefore began expanding its service for customers three years ago. The first step in this process was a customer survey on targeted internal improvements in performance. This provided information on what is most important to our customers. And, indeed, service came out on top. An intensive service campaign will now focus specifically on the existing tools as well as the new ones.

Diana Buss, Messer Group

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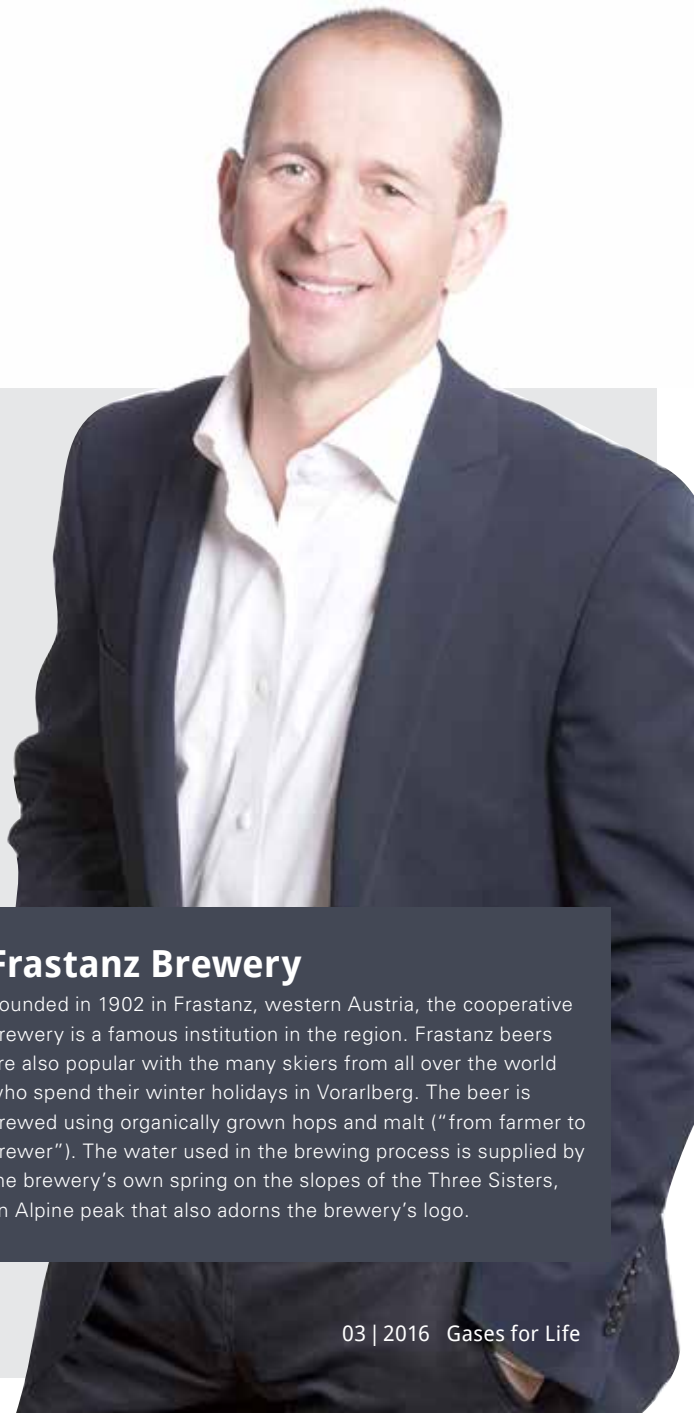
© Frastanz

What do you use the new 2.5-kilo cylinders for?
We use them to provide a service primarily to private customers with low CO_2 consumption, who often keep the vessels for a very long time. We have also introduced a deposit system with the small cylinders. This means we can simply "forget" about the cylinder after delivery. Sooner or later the customer will return it, and we avoid the administrative burden.

Was switching to Messer a good decision?
Yes. Perhaps we should have done it sooner.



Frastanz Brewery

Founded in 1902 in Frastanz, western Austria, the cooperative brewery is a famous institution in the region. Frastanz beers are also popular with the many skiers from all over the world who spend their winter holidays in Vorarlberg. The beer is brewed using organically grown hops and malt ("from farmer to brewer"). The water used in the brewing process is supplied by the brewery's own spring on the slopes of the Three Sisters, an Alpine peak that also adorns the brewery's logo.

Effective
against micropollutants

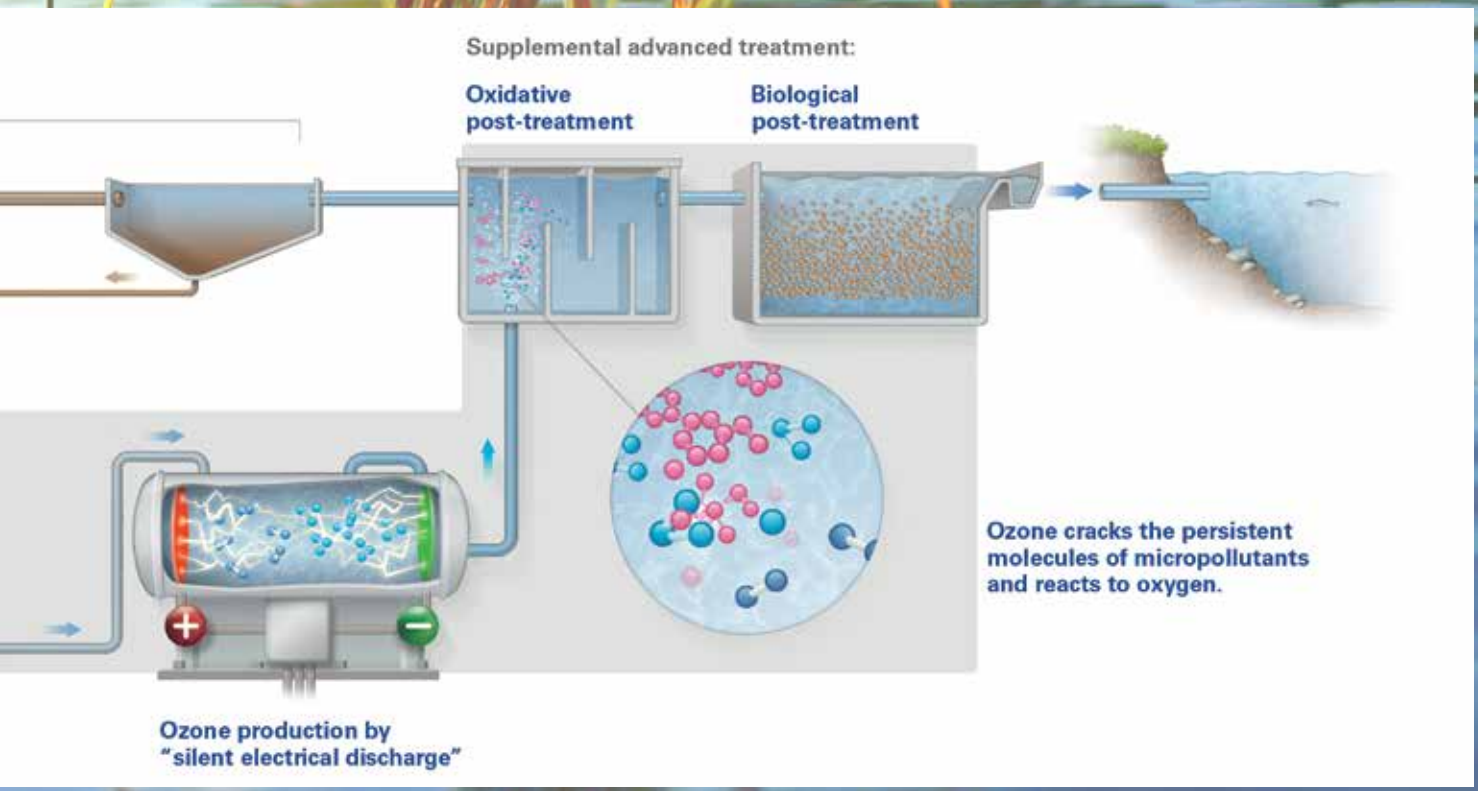
A considerable proportion of medicinal products taken by humans ends up in the sewage system after excretion. These substances and other micropollutants are often not broken down sufficiently in sewage treatment plants. They can significantly impair reproduction in many aquatic organisms and thereby endanger entire ecosystems in spite of the small quantities involved. Selected treatment facilities therefore already operate an additional purification stage to eliminate these substances. This can be achieved in a particularly efficient way with ozone.

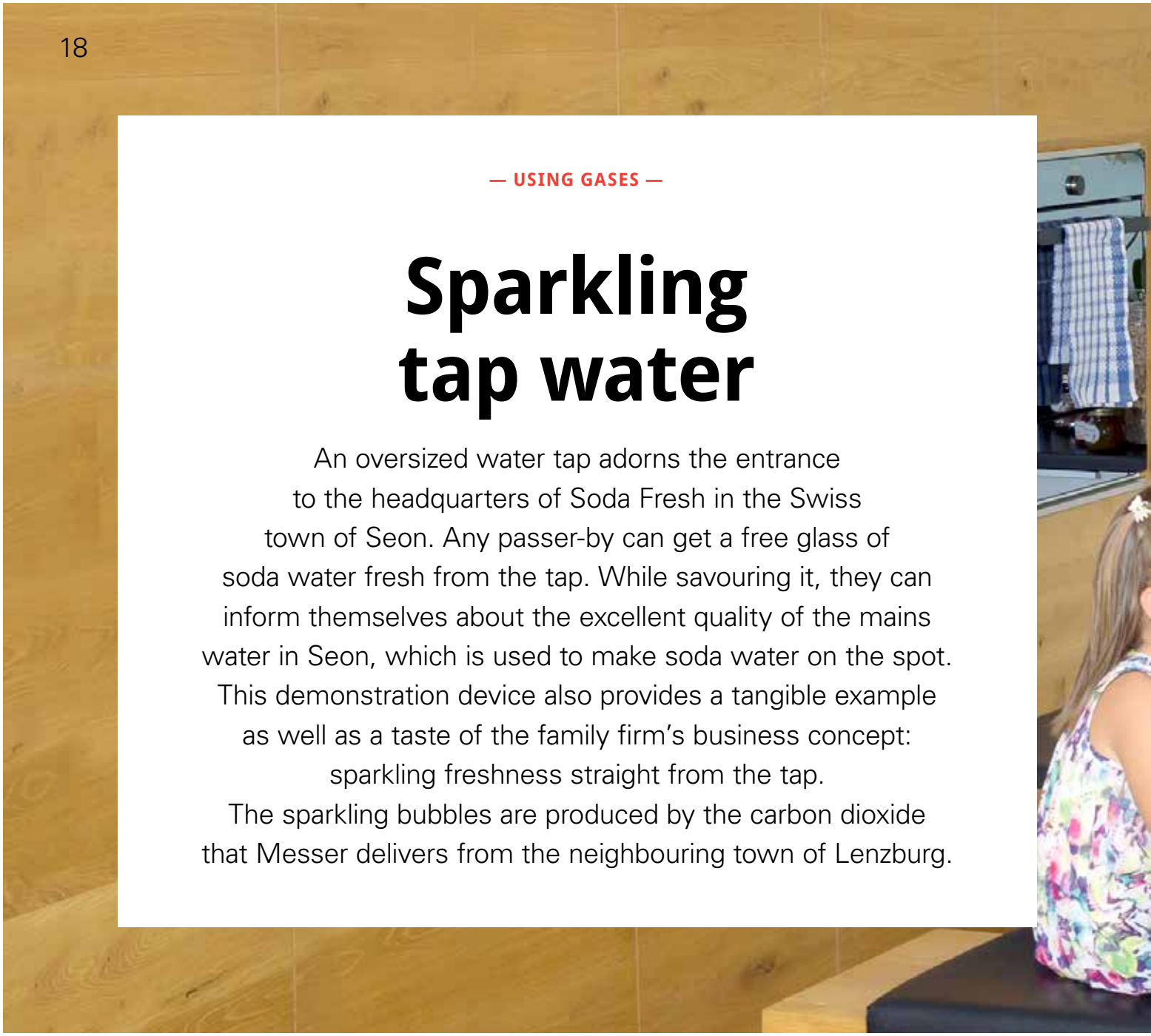
In the 1990s, ozone started to be used on a larger scale for wastewater treatment, including at landfill sites. Depending on the contents of the heap, the leachate contains organic substances that are not biodegraded and represent a serious environmental hazard. Biological treatment of the leachate was therefore often combined with an ozone stage.

Environmentally friendly ozone can break down a wide range of organic substances very quickly, making them biodegradable. Besides the problematic contaminants in leachate, such substances also include the micropollutants that are now being targeted such as medicinal products, pesticide residues and other critical chemicals. Conventional wastewater treatment plants generally have three purification stages, but they do not remove these harmful substances sufficiently. New directives from the EU and many countries therefore demand effective additional measures. Switzerland has already decided to introduce the supplemental advanced treatment for large wastewater treatment plants. Other countries are also likely to adopt it as standard in future. In the majority of cases, ozonation is the method of choice for this fourth stage. It is both effective and efficient, and often cheaper than the alternatives available. Predominantly biodegradable reaction products are left after contact with ozone. They are easy to remove from the wastewater during secondary biological purification.

Editorial Team

Photo: pixabay.com





— USING GASES —

Sparkling tap water

An oversized water tap adorns the entrance to the headquarters of Soda Fresh in the Swiss town of Seon. Any passer-by can get a free glass of soda water fresh from the tap. While savouring it, they can inform themselves about the excellent quality of the mains water in Seon, which is used to make soda water on the spot. This demonstration device also provides a tangible example as well as a taste of the family firm's business concept: sparkling freshness straight from the tap.
The sparkling bubbles are produced by the carbon dioxide that Messer delivers from the neighbouring town of Lenzburg.

Soda siphons were part of the standard equipment in most European households until the 1960s. Then the Cola wave hit, and bottled or canned soft drinks replaced the container with the characteristic screw-on top. However, home-made soda water has been making a comeback since the turn of the millennium. Urs and Margrit Jäger were ahead of their time when they secured the Swiss distribution rights for a British manufacturer's soda-making device in 1993. Unlike with the siphon, which requires a new CO_2 cartridge for each filling, this device incorporated a small CO_2 cylinder, enabling a supply of sparkling beverages for quite a while. "We went hungry for the first two years," the founder and managing director recalls, "but then our sales started to soar."

Soda devices in all sizes

After parting company with the British partner in 1999, Urs Jäger decided to develop a device of his own. This was soon followed by a long line of other products, from a one-litre table-top model to a soda dispenser the size of a small cabinet, which is used, for example, in businesses or hospitals. Home-made soda is inexpensive, there is no need to lug bottles or crates, and in terms of the environmental impact during transport, tap water is unbeatable. This gradually got around, not only in Switzerland. As the market grew, it became increasingly attractive for larger suppliers too. The Jägers therefore increasingly focused their activities on fittings that allow the soda water to be obtained directly from the tap.

Indispensable CO_2

Soda Fresh now does most of its business with such water taps, the majority of which are sold via kitchen

Photo: Fabio Confessore at Kochburg Lenzburg

Ketty Clemente, the wife of Donato Clemente, Project Manager in the Technical Sales Department at Messer in Switzerland, with her children Giada and Loris.

builders. The CO_2 cylinders, from which the effervescent gas is released into the water, are an indispensable part of the process. Depending on their size, the Soda Fresh cylinders contain between 285 grams and 10 kilograms of CO_2; the latter will suffice for about 1,600 litres of soda water. The empty cylinders are usually exchanged for full ones at one of 600 outlets in Switzerland. These are mostly chemist's shops, pharmacies, hardware stores or shops selling household goods.
The cylinders are filled at Soda Fresh in Seon. In their yard, there is a 10-tonne storage tank with the Messer logo, which contains pure food-grade carbon dioxide. The gas is delivered to Seon with a minimal carbon footprint since the headquarters of Messer in Switzerland are literally "round the corner" in the neighbouring town of Lenzburg, from where the tanker travels the two short kilometres to top up the tank. There is a pipeline running from the tank to the self-constructed filling machine. The gas quantity is determined with the integrated scales. After the filling operation, each full cylinder is vacuum-packed, ensuring high hygienic standards and that the filled contents are secure: if there is a leak, the escaping gas will inflate the plastic bag, in which case the cylinder is removed.

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Quality cycle: new cylinder

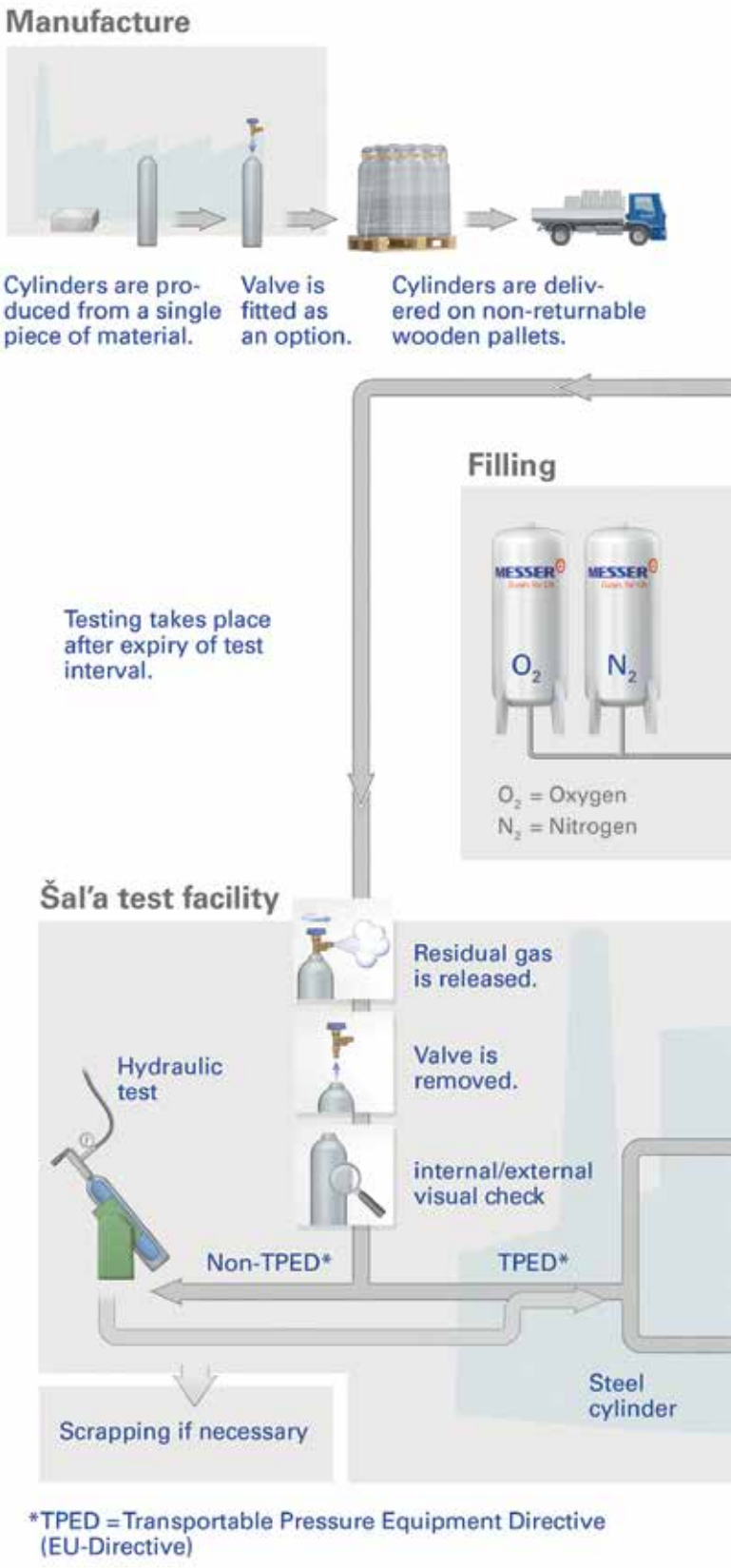
Slovakia | The principle of recycling has always been applicable to cylinders. Once their contents have been used up, they are refilled and delivered again. Since they are manufactured from high-grade steel of appropriate thickness, they can remain in this cycle for many years. Naturally, they undergo regular checks during this process. Messer recently expanded and modernised its cylinder testing facility in Šaľa, Slovakia. Similar to a car, each cylinder has an inspector's stamp confirming that it is in good technical condition. The intervals between checks are longer than they are in the case of a motor vehicle though. Depending on the cylinder type, its contents and where it is being used, these robust vessels can remain in continuous use for up to 15 years. At the end of this period, the cylinder has to undergo a comprehensive overhaul.

"First we remove the valves, then the cylinders are thoroughly cleaned," Dezider Fótyi, head of the Slovakian testing facility, explains. "In our new cleaning line, they are blasted with tiny metal pieces, which completely remove rust and paint. This is much more efficient than the process used in the past." The subsequent respray has been partially automated, with an additional drying facility further shortening the throughput time. "Thanks to the expansion, we can now process up to 100,000 cylinders a year from Slovakia, Poland, the Czech Republic and Hungary."

Two technologies for periodic cylinder testing are now available in Šaľa – the classic hydraulic test and the ultrasonic test. The hydraulic test involves the cylinder body being filled completely with water and having its strength/resistance tested by applying a test pressure. The ultrasonic test is a dry test. The proper condition of the test specimen is checked by means of electronic evaluation of reflected ultrasonic waves. This allows reliable detection of faults such as cracks, unacceptable corrosion or non-compliance with the necessary minimum wall thickness.

Once the cylinders have passed the test, they are fitted with a new valve and get a new inspection stamp as well as a barcode. The latter allows all the relevant data to be retrieved from Messer's central computer in Groß-Umstadt. Dezider Fótyi emphasises: "This gives us very detailed documentation relating to cylinder quality, plus it also makes assignment to the owner as well as logistics simple and transparent."

Editorial Team



testing facility

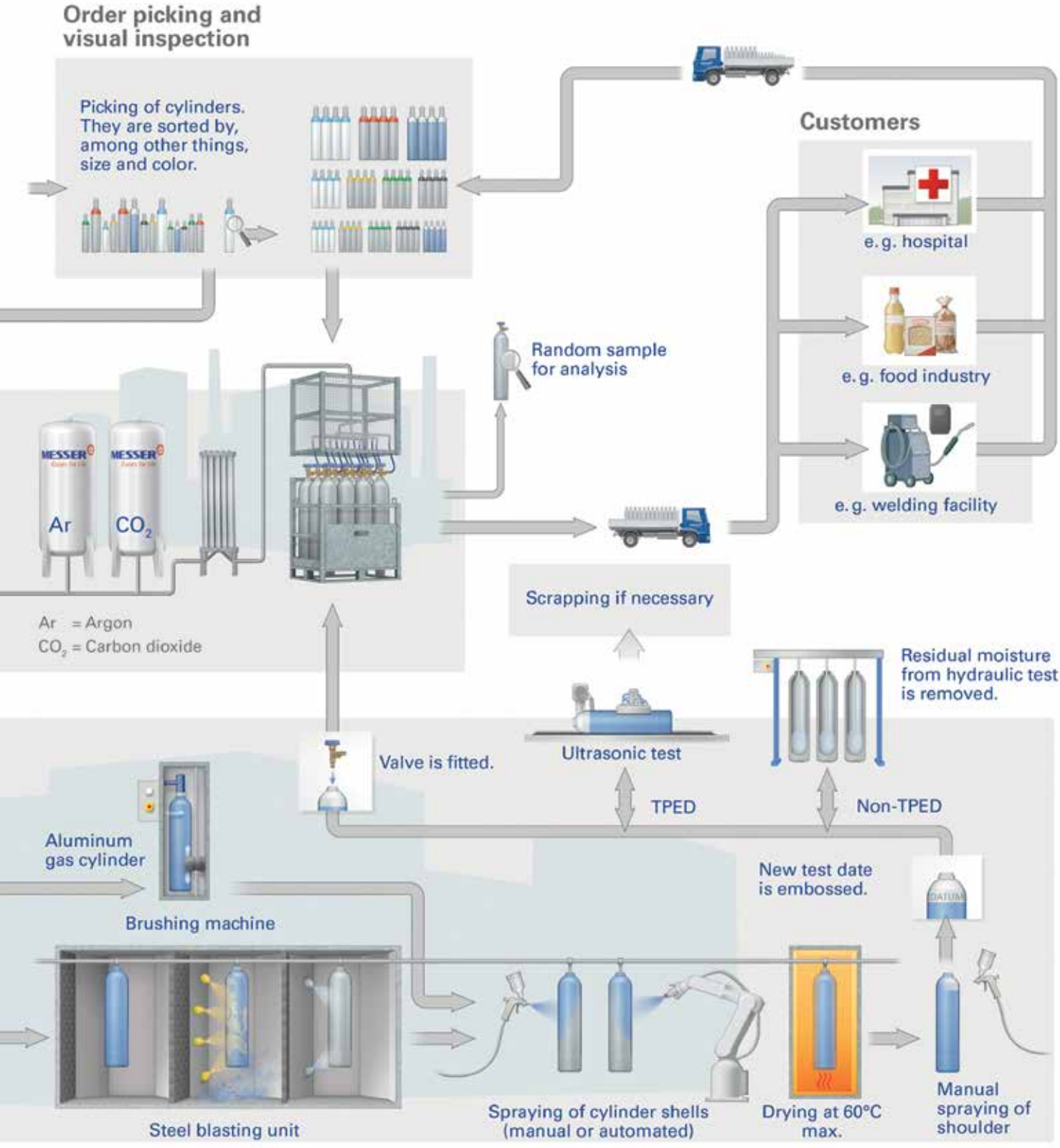


Photo: ALSTOM

"Safety is the number one priority."

Krzysztof Cetnarowski, Chief Welding Engineer, ALSTOM

What does your company produce?
Alstom is a global supplier of rail vehicles and rail transport infrastructure. Our factory in Chorzów manufactures a wide range of products, from components for other Alstom units to finished products. This includes metro trains as well as trams.

What are your most important projects?
At the moment we are working on the manufacture of metro cars for the Saudi capital Riyadh, on components for regional trains as well as on bodywork for customers in Europe and beyond.

What materials and gases do you use?
In construction, we process carbon steels – including hot-rolled steel – as well as alloyed steels and aluminium alloys in large quantities. For cutting, welding and heating, we use liquid gases from the tank – oxygen, Nitrocut (Nitrogen 5.0), argon, CO_2 – as well as gases and gas mixtures from cylinders and bundles. We generally use a mixture of argon and carbon dioxide to weld the carbon steels, and Inoxline C2 as well as ternary mixtures such as Inoxline He15 C2 for the alloyed steels. Finally, for the aluminium alloys, we use Aluline He70, which facilitates a particularly high-energy arc.

Krzysztof Cetnarowski, Chief Welding Engineer, ALSTOM Konstal S.A., Poland

What grade of gas do you need?
We mainly require purity grade 4.6 as well as 5.0 for laser cutting.

What are your main quality criteria for welding?
Given that people will be travelling in our products, safety is the number one priority. We therefore adhere strictly to the rules and regulations, at the same time drawing on our many years of experience with rail vehicles. The required weld quality is defined in the PN EN 15085 standard, which sets out all the provisions regarding loads and safety. In addition, the welds also have to meet aesthetic criteria in line with our internally defined specifications.

What do you expect from your gas supplier?
The gas supplier is not just any supplier. They should support us with their expertise and at the same time respond quickly and flexibly to our expectations and problems. That is why we are working with Messer.

Aleksandra Kuczka, Messer Polska

Win a delicious prize!

Simply answer our question about this issue of "Gases for Life" and win a food hamper with specialities that are perfect for the winter:

What does the abbreviation CCTS stand for?

Please send the answer by e-mail with the subject line "Gases for Life competition" to:
angela.bockstegers@messergroup.com
The deadline is 27 January 2017.
Please include your name and address.

The competition is not open to employees of the companies of the Messer Group and their families. In the event of multiple correct answers, a draw will determine the winner. The result of the draw is final and not subject to appeal.

Congratulations!
The winner of the last competition is **Knut Czepuck** from Ratingen, Germany. The correct answer was „Barbecue".

The "Gases for Life" editorial team

From left to right:
Marion Riedel, Zsolt Pekker, Kriszta Lovas, Marlen Schäfer, Christina Lengwenings, Dr. Joachim Münzel, Diana Buss, Dr. Christoph Erdmann, Annette Lippe, Peter Laux, Angela Bockstegers and Katrin Hohneck (not pictured: Benjamin Auweiler, Dr. Bernd Hildebrandt, Michael Holy, Dr. Dirk Kampffmeyer, Reiner Knittel, Roberto Talluto)

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Royal spa

The Sárvár spa owes its existence to a disappointment. In the 1960s, this small town in western Hungary was the focus of a search for oil which ended up discovering water instead – twice! Water with a temperature of 43 degrees Celsius was found at a depth of 1,200 metres, with more water, measuring a hot 83 degrees, being subsequently discovered at 2,000 metres. The exquisite spa that was built in Sárvár in 2002 is the only Hungarian member of the "Royal Spas of Europe". The pH value of the bathing water is kept in the neutral range between 7 and 7.5 using carbon dioxide from Messer, an eco- and skin-friendly method.

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Photo: Sárvári Gyógyfürdő Kft. Kft.

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