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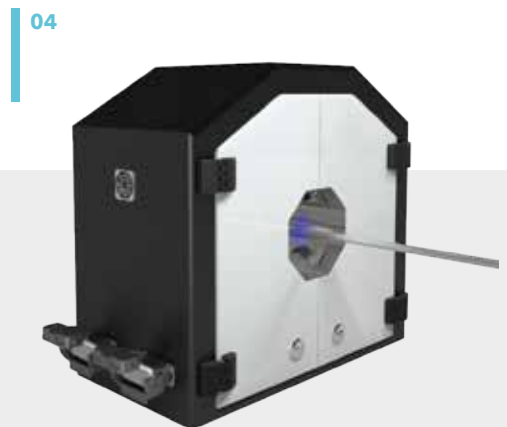
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*Dr. Gunther Voswinckel
President ITA*

Dear colleagues from the Tube and Pipe industry, dear readers of the ITAtube Journal.

Many tube producers have presented record results in 2022 and 1st quarter 2023. The Corona pandemic is under control. Supply chains have largely been restored. The Russian invasion of Ukraine in 2022 and its aftermath led to record demand for OCTG with the result that tube prices reached record highs. Now in 2023, the heated markets are cooling somewhat. Besides OCTG, other pipe market segments also offer interesting market potential. The automotive industry with its trend towards electromobility must compensate for the high weight of the batteries by making design adjustments to the chassis. Tubular products are an interesting constructive solution here. The construction market also represents a great potential for tubular products. Building constructions with demanding statics, e.g. large spans or aesthetic requirements, are an ideal playing field for tubular products. Some regions, such as the USA and parts of Asia, show impressive examples of this. The transition to environmentally friendly production also offers numerous opportunities for technology suppliers to the tube industry.

The pipe industry could clap its hands of so many interesting and promising market opportunities if it were not for the ongoing geopolitical risks, such as the ongoing war between Russia and Ukraine and the increasing tensions between the USA and China, which put a damper on free international trade. Political interventions and the availability of cheap energy also pose challenges to our industry, especially as these burdens are unevenly distributed regionally in the industrial world.

However, the tube industry and its technology suppliers have already successfully overcome so many challenges that there is great confidence that the current challenges can also be overcome.

The International Tube Association ITA has successfully contributed to maintaining the exchange in our industry. The ITA is organising several webinars for our tube industry in the pandemic period 2020 - 2022. In addition, we also participate in conferences organised by other renowned organisations with our tube market overviews.

This year, on 11th and 12th of May 2023, the ITA is organising a hybrid international conference in Düsseldorf entitled "Opportunities for the pipe industry in turbulent times", which will provide an excellent platform to discuss sustainable solutions for the pipe industry. The plant tour on 12th of May at the Benteler plant in Dinslaken entitled "Sustainable pipe production in a high-cost environment" is an interesting practical example of this. The conference is a good opportunity to exchange ideas with pipe manufacturers and technology providers of the pipe industry.

Yours faithfully

ITA Team

Table of contents



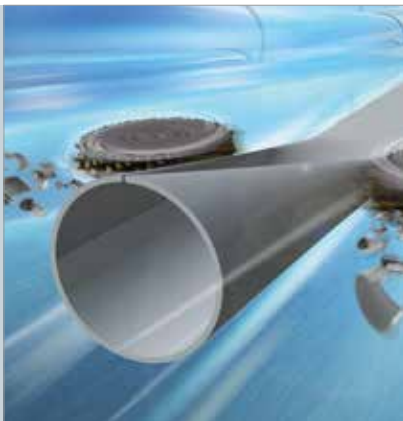
Dr. Gunther Voswinckel,
VOSCO GmbH: Factors
influencing the current
situation

8



SMS group GmbH
New piercer concept

18



Boehlerit –
Know-how from the
machining of tubes

22

Editorial

Greetings from Dr. Gunther Voswinckel	3
Table of contents	4

Market information

World Steel Tube Production – Review	6
Dr. G. Voswinckel, VOSCO GmbH – World Pipe & Tube Market	8

Technical Papers

SMS group GmbH – New piercer concept	18
SMS group GmbH – ERW Tube Welding Line RD 710	20

Press Releases

Boehlerit GmbH & Co. KG – Know-how from the machining of tubes	22
Boehlerit GmbH & Co. KG – Independent development partner for Toolmaker	24
Bültmann GmbH – Quality – the most precious good	26
CGM Cigiemme S.p.A. – Celebrating 65 Years	27
Fives Group – Catching the wave	30
Inductotherm – The sustainable ratings are in	31
Inductotherm – How long does equipment last	32
SIKORA AG – You get a measurement you trust	34
Tecnar – Tecnar is stronger than ever in Europe	36
Tecnar – Lut 2.0: Advanced dual-mode online wall thickness gauge	37
SMS group GmbH – thyssenkrupp Steel awards a contract	40
SMS group GmbH – At METEC	42
MSG Maschinenbau GmbH – GMS-E - a success story for 15 years	45

Reviews & Previews

Preview Tube Eurasia 2023	48
Preview Tube Middle East Africa 2023	49
Preview: Tube China 2023	50
Preview: METEC 2023	52
Preview: Tube Southeast Asia 2023	54
Preview: Tube 2024	55
Diary of world class tube events	56



*Preview Tube
China 2023*

ITA Inside

ITA Conference 2023	58
Join ITA	60
Rate Card	62
List of advertisers, Imprint	63

48



PROGRAM page 58/59

The ITA Conference
takes place on
May 11th 2023
in Duesseldorf, Germany.

More detailed information
www.conference.itatube.org

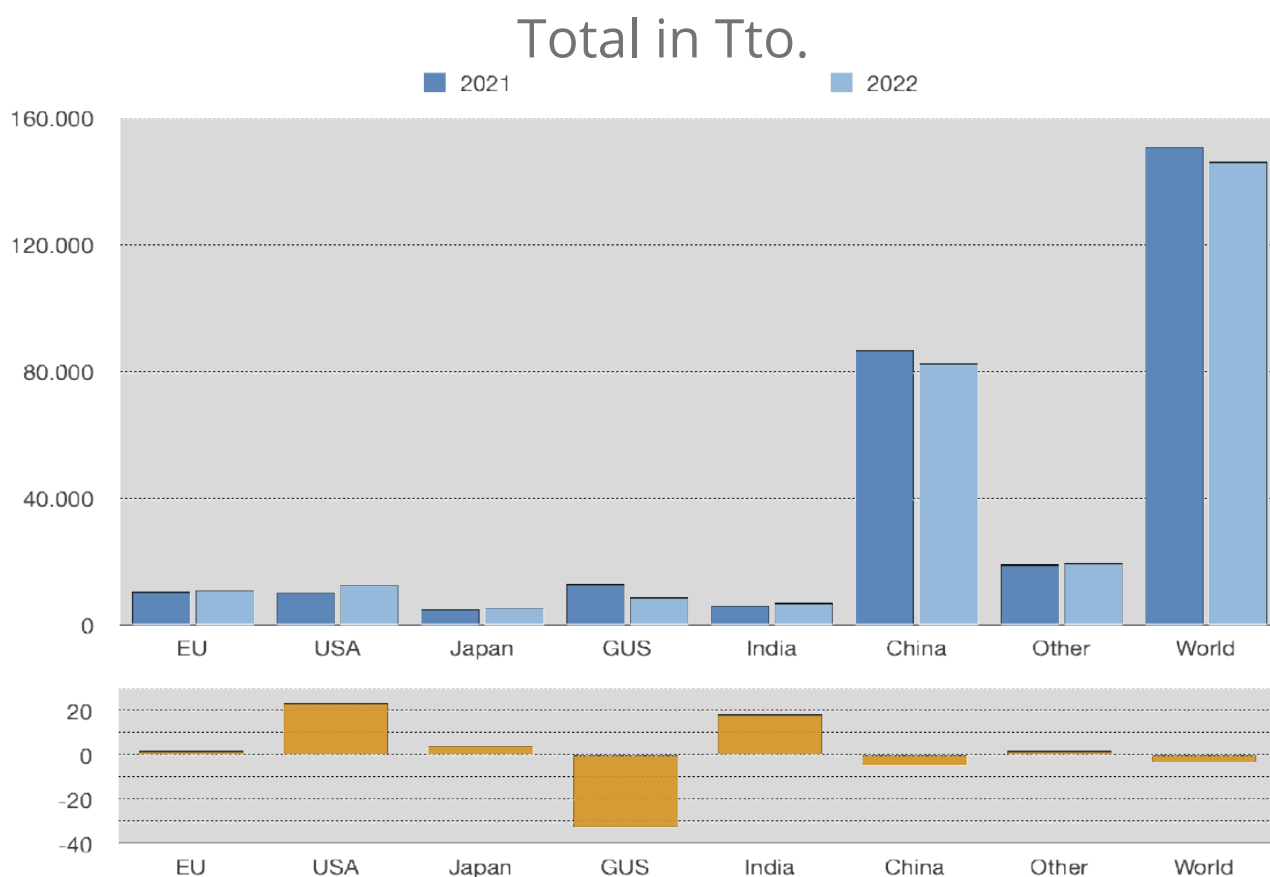
We look forward to seeing you at
our ITA Conference in Duesseldorf!



World Steel Tube Production – Review

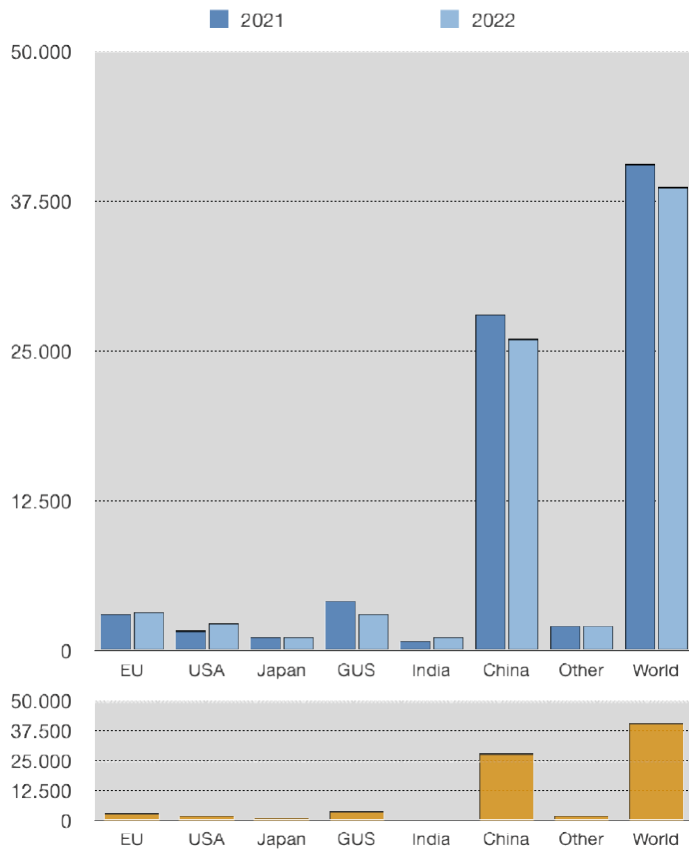
Compared to 2021, this represents a decrease of 3.1%, not least due to the huge 32.6% drop in CIS production. World production of seamless tubes fell by 4.8% to 38.7 million tonnes, with the increase in the USA being particularly significant at 35.3%. Europe also recorded a positive result in the seamless tube market, with

an increase of 16.7% and a rise in total production of 8.2%. Chinese steel tube producers produced 82.6 million tonnes, a decrease of 4.8% compared to 2021, while US production increased by 23.4% to 12.4 million tonnes. In addition to Europe and the US, Japan also recorded growth of 4.0% compared to 2021.

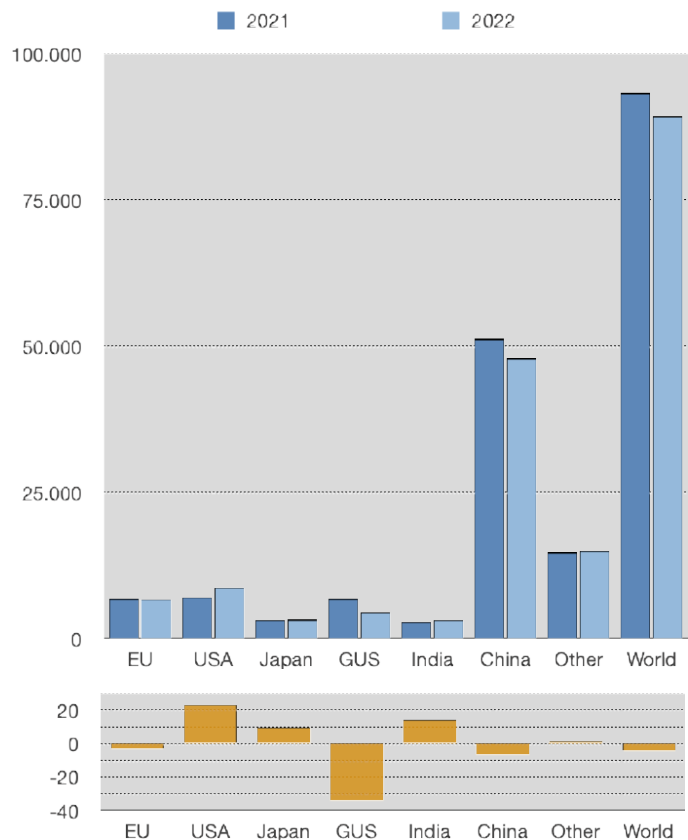


Region/ country	seamless tubes			welded tubes <406			welded tubes >406			welded tubes			TOTAL		
	2021	2022	in %	2021	2022	in %	2021	2022	in %	2021	2022	in %	2021	2022	in %
EU	3,000	3,200	6.7	6,900	6,700	5.6	600	800	33.3	7,500	7,500	0.0	10,500	10,700	1.9
USA	1,700	2,300	35.3	7,000	8,600	22.9	1,350	1,500	11.1	8,350	10,100	21.0	10,050	12,400	23.4
Japan	1,150	1,100	-4.3	3,100	3,400	9.4	750	700	-6.7	3,850	4,100	6.5	5,000	5,200	4.0
CIS	4,100	3,000	-26.8	6,800	4,500	-8.8	2,000	1,200	-40.0	8,800	5,700	-35.2	12,900	8,700	-32.6
India	820	1,100	34.1	2,800	3,200	3.5	2,200	2,600	18.2	5,000	5,800	16.0	5,820	6,900	18.6
China	28,500	26,000	-7.1	51,300	48,000	-4.0	7,500	8,600	14.7	58,800	56,600	-3.7	86,800	82,600	-4.8
Other	2,000	2,000	0.0	14,800	15,000	7.1	2,300	2,500	8.7	17,100	17,500	2.3	19,100	19,500	2.1
World	40,650	38,700	-4.8	93,300	89,400	-4.1	16,710	17,900	7.1	110,010	107,300	-2.3	150,660	146,000	-3.1

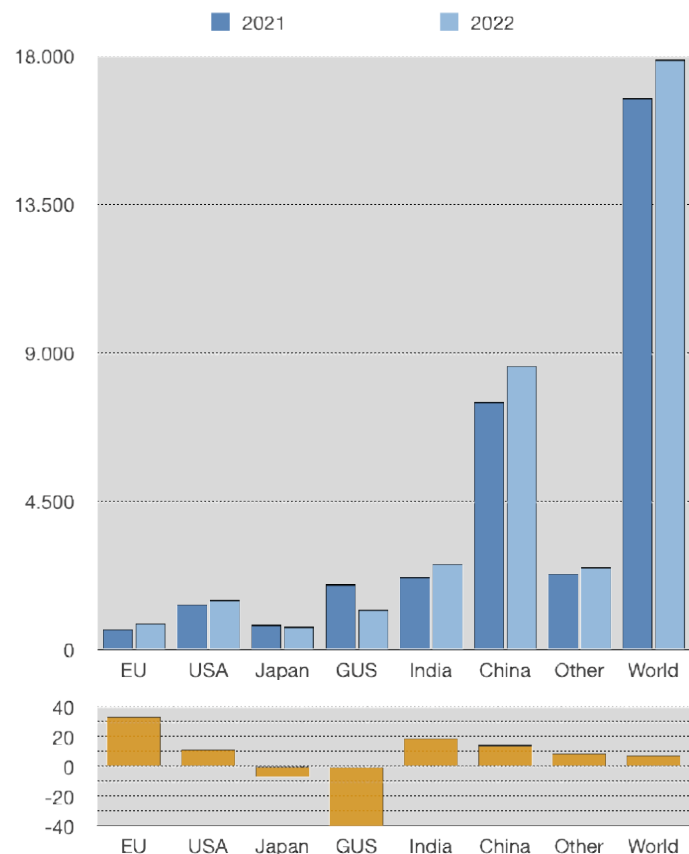
Seamless tubes in Tto.



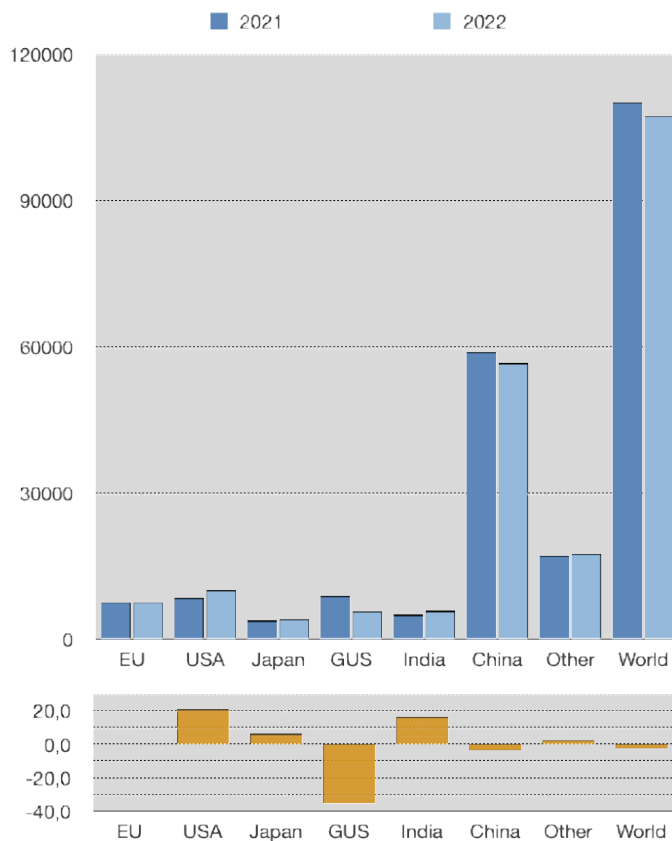
Welded tubes <406 in Tto.



Welded tubes >406 in Tto.



Welded tubes in Tto.



Dr. Gunther Voswinckel, VOSCO GmbH

World Tube & Pipe Market: Factors influencing the current situation

Dr. Gunther Voswinckel – Update as per May 2023

Welcome to ITA's and VOSCO's regular presentation of the main worldwide economic factors influencing the tube and pipe industry.

The corona pandemic is under control. The supply chains were mostly restored. The Russian invasion into the Ukraine in 2022 and its consequences are major challenges for the industry. Increasing tension between the US and China officials create threatening clouds for free international trade. Political interventions and regulations are increasingly influencing industrial strategies and actions.

The transition to environmentally friendly and carbon reduced production became a central mission of the industry. The consequences on the cost increases are unevenly distributed across the world. Europe, which was highly dependent on competitive Russian gas and oil supplies, is challenged now by persistently high energy prices and high industrial producer costs. Regions such as the USA, India, Turkey and China are benefiting from lower energy and industrial producer cost. In addition, high inflation and its countermeasures threaten our industry and present it with unexpected challenges difficult to calculate. The high level of public debt caused by the expensive measures taken to overcome the various crisis in recent years give rise to fears that the central banks' effectiveness in combating inflation will be limited and that little improvement can therefore be expected in the short term.

As always in such disruptive times, we see crisis winners who maximise their profits - but also crisis losers who have to fear for their existence. Due to the

dynamics of these developments, it is usually very difficult for the crisis losers to react appropriately. As a result, some regions are looking for suitable political countermeasures to compensate for their cost disadvantages.

Whereas previously only quality, delivery time and costs were decisive, now geopolitical and logistical risk considerations as well as current and future energy costs are increasingly taking centre stage. All sources of supply are being critically scrutinised, and one can only hope and warn that international trade will not suffer too much as a result. In particular, the regional differences in energy prices will have an impact on the current landscape of the energy-intensive steel and tube industry.

More than 70 % of total world pipe production, i.e. about 110 million tonnes, are welded pipes. Welded pipes are highly dependent on hot-rolled coil prices and large OD pipes, on plate prices. Average prices for hot-rolled coils declined from June 2022, from around USD 1500, to a minimum of USD 650 in December 2022. Since then, the prices went up again to USD 1300 this March 2023. Today, end of April 2023, the price for hot-rolled coil averages to about USD 1100. This price volatility poses major challenges to our tube industry. Although tube prices are still high, the demand for tubes calmed down with similar effects on prices. The high price for hot-rolled coils therefore leads to an erosion of margins for welded tubes. It remains quite difficult to forecast prices for hot-rolled coils. Prices for unalloyed commodity pipes in Europe are currently around 800 USD/tonne, resulting in a value added of only about 200

USD/tonne at most. OCTG pipes, having much higher material requirement, are traded at prices of about 3,000 USD/tonne in the USA. The need to replace the Russian oil and gas supplies led to increased exploration and production of other oil and gas producing countries, such as the USA. This resulted in increased demand for tubular products. Further opportunities are expected as new pipeline networks need to be built to follow oil and gas logistics as the war in Russia has made some of the existing pipeline system obsolete. Transporting oil and gas by pipelines is by far cheaper and more environmentally friendly than transporting LNG by ship.

Conversion to environmentally friendly production as well as improved infrastructure in terms of pipe mills, finishing lines, digitalisation and applied quality assurance systems also play an important role. Increasing importance is attached to agile management strategies in terms of customer benefits, process and product quality improvement as well as purchasing processes using "Industry 4.0" measures.

With a view to the return to normality, it can be seen, that plant manufacturers and technology suppliers are increasingly finding interesting business opportunities in these new market segments. Some technology suppliers have already reacted and expanded their product portfolio to environmentally friendly and digital solutions.

The International Tube Association has organised several well-attended webinars in 2020, 2021 and 2022 to maintain the exchange within our industry. The positive response to these events is a sign of the impressive optimism in our tube industry.

This year, May 11th and 12th 2023, the ITA organizes an international hybrid conference in Düsseldorf under the title "Opportunities for the Tube Industry in turbulent times" offering an excellent platform to discuss sustainable solu-

tions for the tube and pipe industry. The plant tour on 12th of May to the Benteler Dinslaken plant under the title "Sustainable Tube Production in a high-cost environment" is an interesting practical example hereto. The conference is a great opportunity to meet and exchange with tube producers as well as technology suppliers of the tube and pipe industry.

The energy cost pressure on our industry is relieving. The price of gas peaked at around 9,8 USD/MMBtu at the end of August 2022, since then the price went down to the pre-Ukraine war levels of about 2.3 USD by April 2023, meaning a price reduction of about 75% (Figure 1). Our European industry nowadays depends to a great extent on imported LNG. Despite significant price reductions since August 2022, the present price of LNG of about 15 USD (Figure 2) is still about 7 times more expensive than natural gas. Therefore, the European energy intensive industry is confronted by a significant cost disadvantage. Similar effect can be reported from the electrical energy price, which in Europe is about 3-times higher than before the Ukraine war. As long as no cheaper energy supply sources become available, this disadvantage remains as a major threat for the European energy intensive steel and tubular industry.

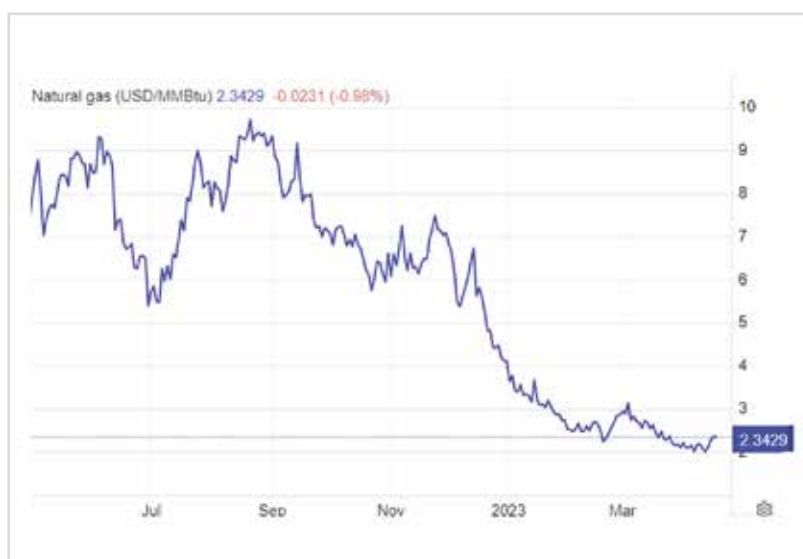


Figure 1: Natural Gas price development 1 year up to 19th of April 2023 (USD/MMBtu)

Source: Trading Economics.com

Pipe manufacturers buy hot-rolled coils, round billets, or plates as input material for their production lines.

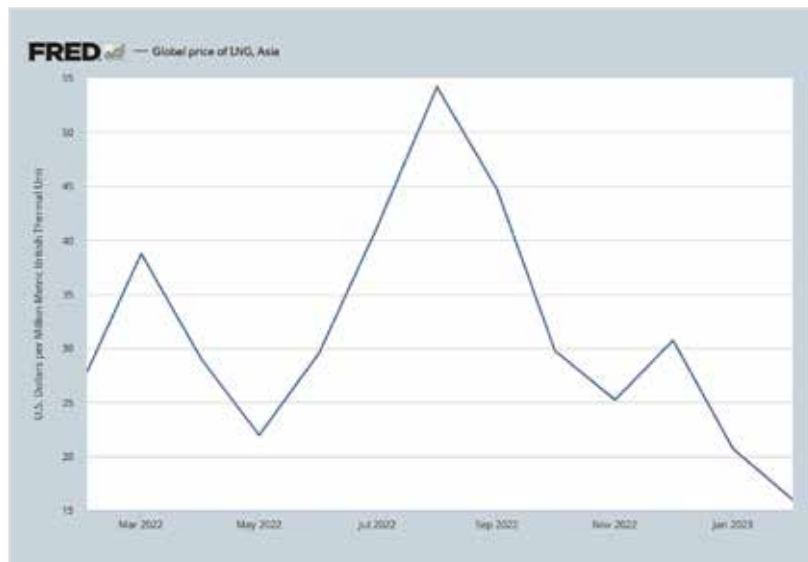


Figure 2: LNG Global Prices from February 2022 to February 2023
Source: International Monetary Fund, US Bureau of Labor Statistics

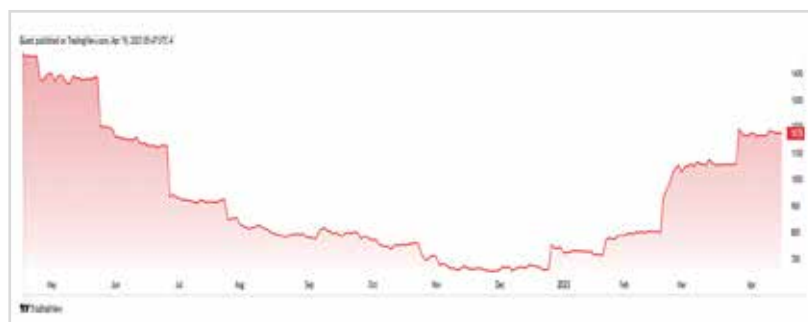


Figure 3: U.S. Domestic Hot-Rolled Coil Steel Futures Chart (average) 1 Year until 19th April 2023
Source: TradingView.com

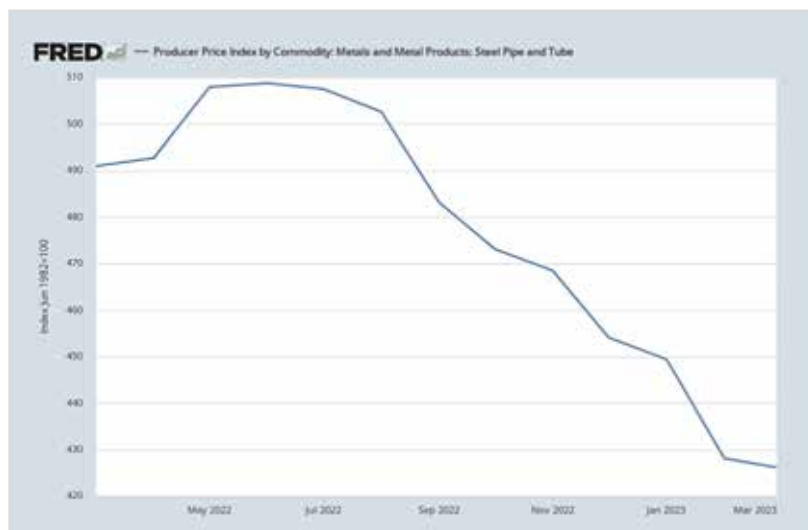


Figure 4: Average Steel Tube and Pipe Prices
Source: US Bureau of Labor Statistics

More than 70 % of the total world pipe production, i.e. about 110 million tonnes/year, are welded tubes and pipes. Welded tube producers are highly dependent on attractive hot rolled coil prices and OD pipe producers, on plate prices. Average prices for hot-rolled coils came down from early 2022 (ab. 1400 USD/ton) to December 2022 (ab. 700 USD/ton). Since then, the HRC prices strengthened again to prices of about 1200 USD/ton. Furthermore, tube producers suffer from shortages in the availability of special tube material specifications.

Steel plates were trading at an average of around 1,000 USD/ton in November 2022, now in April 2023 low grade plates are traded at about 770 USD/ton.

Billet prices, used for seamless tubes are traded for an average of around 570 USD/ton.

Since the year end 2022 almost all prices for tubular pre-materials became more expensive. It remains a challenge to predict the pre-material prices.

After the pipe price rally until mid-2022 (prices went up by 50%), now since then, the prices for tubular products weakened by about 13% (Figure 4).

Even the booming US demand was reporting fading pipe prices. Until the beginning of October 2022, pipe prices in the US were still holding at high levels, but in November fears were being voiced from many regions that demand for pipes is weakening, which had an immediate impact on prices. The decline in pipe demand and its negative impact on prices is now faster than the decline in prices for the input materials hot-rolled coils, plates and round billets. This challenges some pipe producers since they face margin losses.

As a representative example Figure 5, shows the price development for two representative tube types since June 2022:

- P110 OCTG O.D. 5,5" alloyed casing pipes
- S235 non alloyed structural pipe.

The OCTG pipe price for P110, after its high in October 2022 (ab. 3.900 USD/ton) suffered a price decline of ab. 25% until April 2023 (ab. 2.900 USD/ton). The structural pipe S235 although on a much lower price level almost maintained its price value at ab. 800 USD/ton. The world tube and pipe production after a slight recovery in 2021 of +5%, was shrinking by

-3,1% in 2022. Anyhow substantial regional differences are reported. Whereas CIS (-32,6%) and China (-4,8%) suffer from less production of tube and pipes, the USA (+23,4%) and India (+18,6%) report major growth of production, driven by a strong OCTG and construction market (Figure 7 and 8).

If we look at the European pipe market, before the Russian invasion, about 14% of pipe imports into the EU have been served by Russia. These volumes need to be supplied by other tube and pipe producers. Russian shipments to the EU in 2022 compared to 2020 have been decreased by 75% on-year to 78 million tonnes, ESTA reports (Figure 9).

Therefore, major structural supply modifications were introduced since the Russian invasion into the Ukraine. European, Chinese and Indian suppliers filled most of the gap. This end of the year 2023, Vallourec will shut down major European

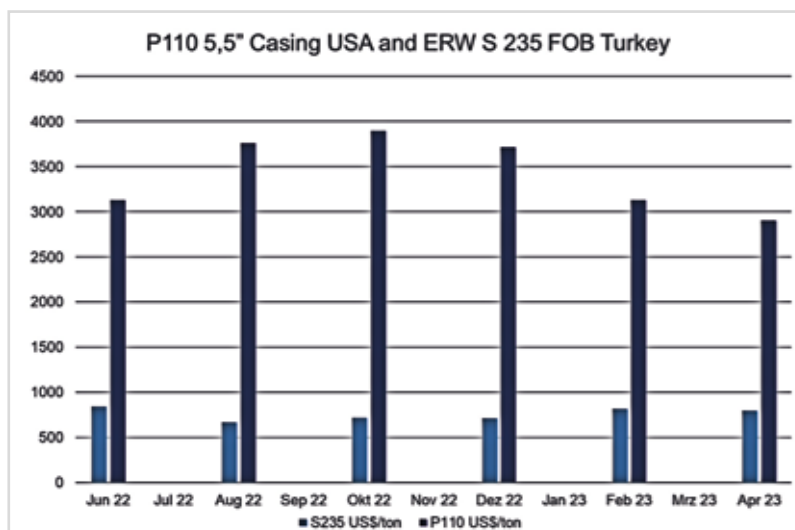


Figure 5: Representative Steel Tube and Pipe Prices (OCTG - P110 USA and Structural S235 Turkey)
Source: Kallanish.com

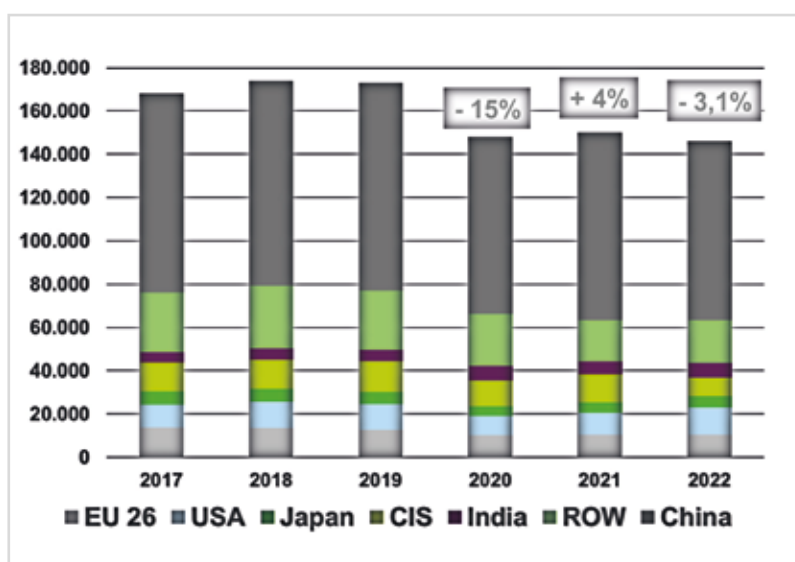


Figure 6: World Tube and Pipe Production 2017 - 2022
Source: Wirtschaftsvereinigung Stahlrohre e.V.

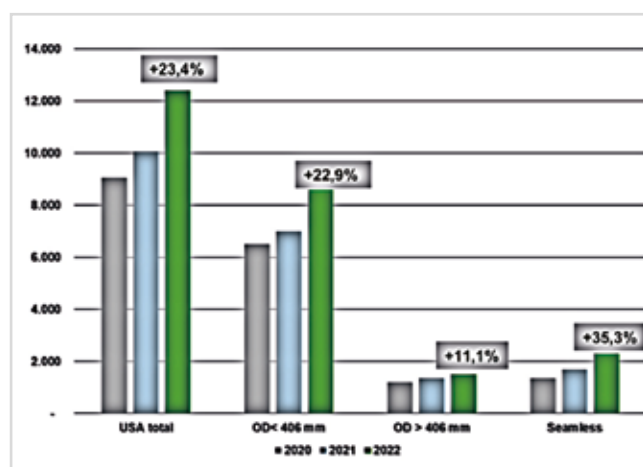


Figure 7: USA - Tube and Pipe Production 2020 - 2022
Source: Wirtschaftsvereinigung Stahlrohre e.V.

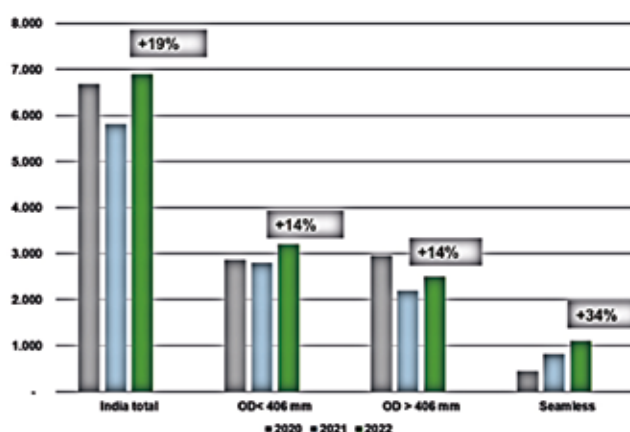


Figure 8: India - Tube and Pipe Production 2020 - 2022
Source: Wirtschaftsvereinigung Stahlrohre e.V.

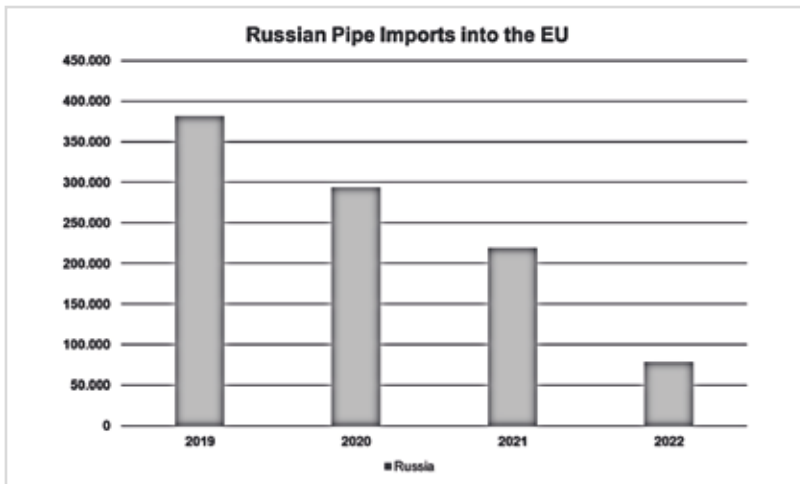


Figure 9: Russian Steel Tube and Pipe imports into the EU (1000 tons)
Source: ESTA

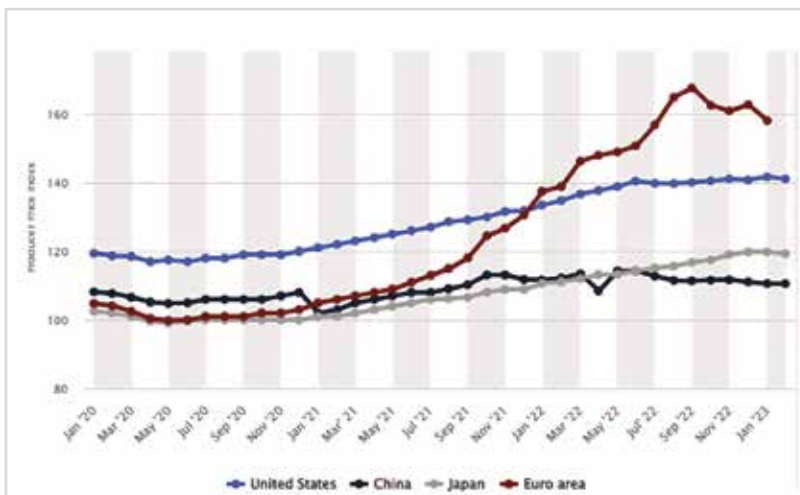


Figure 10: Growth rate of the producer price index in selected countries
Source: Statista



Figure 11: Oil price WTI development 1 year up to 19th of April 2023 (US\$/Bbl)
Source: US Energy Information Administration

production, whose capacities need to be replaced as well.

For international trade most of the supply chain bottlenecks disappeared and the freight rates normalized. Inflation seems to have passed its maximum and shall further decline until 2024. The affords of the central banks, especially these of the US FED, has stopped the galloping inflation and reversed the trend. Due to the high indebtedness of the central banks, however, it must be feared that the target inflation of 2% will not be reached for some time yet.

Besides the inflation rate, the producer price index is another important parameter for the economical efficiency, as it reflects the costs of the manufacturing industry. As Figure 10 shows, these costs vary greatly from region to region. Europe brings up the rear due to the sharp rise in energy costs. The USA has compared to Europe a significant advantage of more than 16% due to cheaper local energy. China's cost situation is particularly advantageous with an advantage versus Europe of about 48% and the US of about 32%. Japan as well has an advantageous situation. Unless Europe finds again sustainable reasonable energy supplies, this cost disadvantage can hardly be bridged in a short time.

The major driver of the tube and pipe industry is the OCTG market representing about 51% of the world tube and pipe production. The consumption of OCTG tubes directly relates with the oil price (see previous tube market reviews).

The geopolitical sanctions against Russia in 2022 created a massive contraction of Russian oil production causing speculative price increases until mid-2022 (Figure 11). To sacrifice the supply shortage and to limit the inflationary consequences of the energy supply gap exploration companies initiated massive drilling activities. OPEC-plus boomed its crude oil production in only 2 months starting in February 2022 from 37 Mio. Bbl./day to 38 Mio Bbl./day. The USA to soften the inflation and to sacrifice the crude oil demand enlarged its crude

oil production almost linear from 11 Mio. Bbl./day in February 2022 to 12,4 Mio. Bbl./day in February 2023 (+13%) by increasing the number of drilling rigs. The number of drilling rigs was enlarged from 531 in May 2021 to about 800 end of November 2022 (Figure 12).

Of these 800 rigs, 637 are dedicated for the extraction of oil and 163 for gas. The growth pattern has slightly calmed down, anyhow demand stays on high level.

The oil producing countries should compensate the anticipated reduced Russian Oil production in a range of 1-2 Mio. Bbl./day (Figure 13).

Since June 2022 anyhow, the market calmed down and the oil price stabilized since September 2022 at a price span of about 75 to 85 USD/Bbl. Only this month the price weakened again.

Although OPEC-Plus controls only less than 50% of the total world oil production volume, the oil price is greatly triggered by the OPEC-Plus oil production volumes. In September 2022 OPEC-Plus reduced its production volumes (from 38,7 to 38 Mio. Bbl./day) (Figure 14), with the consequence that the oil price stabilized. Anyhow when in January 2023 the production volume was enlarged to 38,3 Mio. Bbl./day, the oil price weakened immediately. Now in March 2023 the OPEC-Plus, mainly Saudi Arabia, decided, due to further weakening oil prices below 70 USD/Bbl., to reduce its oil production by about 0,7 Mio. Bbl./day to a total of 37,6 Mio. Bbl./day. So far, the effect of this last reduction of production volume did not show the expected strengthening of the oil price.

This reducing of the crude oil production is heavily criticised by the US and EU officials, as they fear that inflation and industrial growth will be negatively affected by raising oil prices.

The energy industry is booming, Aramco, the world's largest producer of fossil fuels, has become the world's most valuable company in 2022. Exxon Mobile even

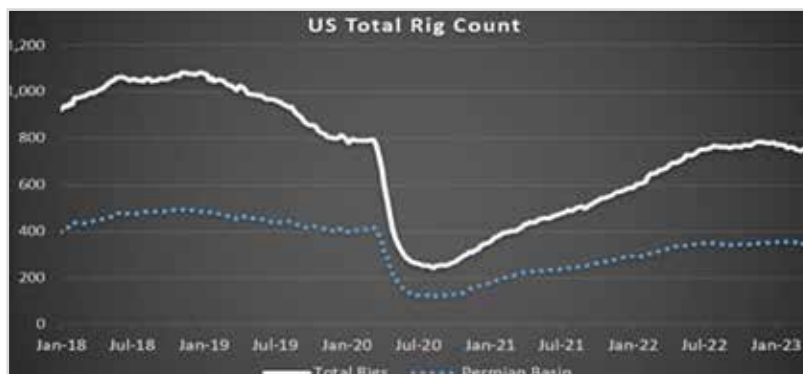


Figure 12: US Total Rig Count 4 years up to 14th of April 2023
Source: OilPrice.com

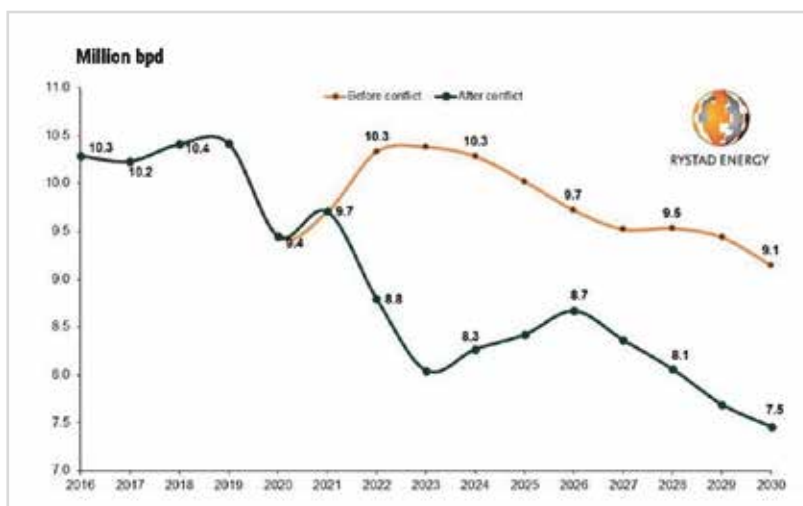


Figure 13: Russia crude Oil production before and after Invasion of Ukraine
Source: Rystad Energy research and analysis

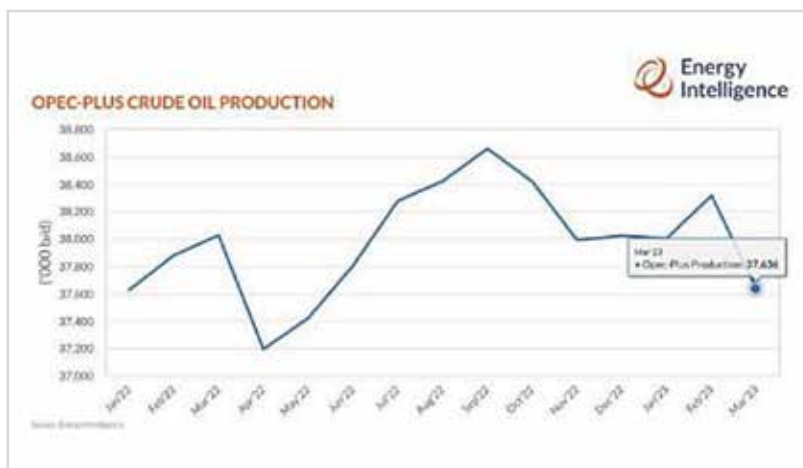


Figure 14: OPEC-Plus Crude Oil Production (Bbl./day)
Source: Energy Intelligence

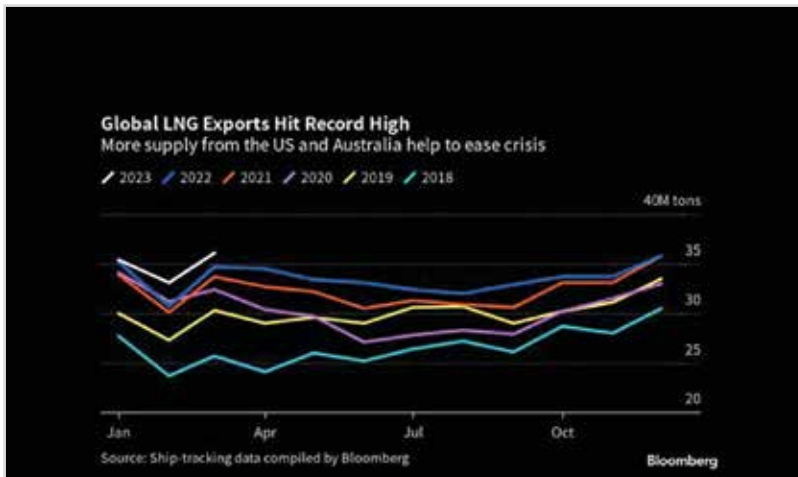


Figure 15: Global LNG Exports Hit Record High in 2023
Source: Oilprice.com, Bloomberg



Figure 16: Global planned and announced pipeline length by key countries (2023-2027)
Source: Midstream Analytics, GlobalData Oil and Gas

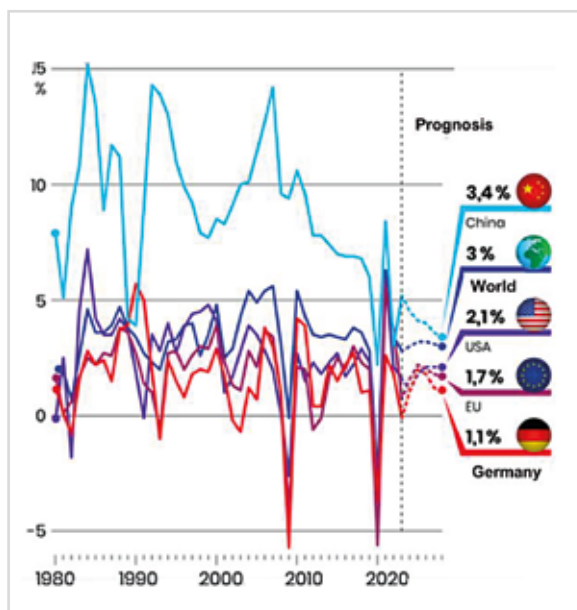


Figure 17: GDP - Growth in selected Regions 1980 until 2028
Source: IWF, Statista

extends its footprint in gas exploration planning to acquire the largest US based shale gas producer. Shell intends to widen its footprint in oil and gas as well. Anyhow currently, there is no evidence that the international oil and gas producers are increasing supply to capture market prices.

Efforts to reduce dependence on fossil fuels can hardly be successful in the short term and can only contribute to decoupling in the medium term. For our pipe industry, however, this means that high energy prices can be expected in the future as well - prices around 80-90 USD/Bbl. are most probable. The investments to secure the energy supply will keep the demand and prices for tubular products high.

Another driving factor is the record high global LNG export rate. Figure 15 shows for the US and Australia how record high LNG production became. Consequently the demand for OCTG products remain high and it eases the energy crisis especially in Europe to compensate the stopped Russian pipeline gas supplies.

In addition to exploration activities, the need to build new pipeline routes has also increased since the ban on Russian pipelines to Europe and the strategy towards hydrogen to replace natural gas. In the wake of the attacks on the Northstream pipelines, which released very large quantities of methane as an environmental load, it can be expected that the safety standards for pipelines will become even more demanding. This development offers the manufacturers of large-diameter pipes > 406 mm OD opportunities for interesting business. Globally a large quantity of pipelines is planned or announced to be built in the coming years up to 2027 (Figure 16).

In this context it is remarkable that most of the contractors building the worldwide pipeline projects are headquartered in China or India.

The global construction market with about 5% of the global tube market presents another opportunity for pipe manufacturers with growth potential. The market penetration is quite unevenly distributed in

the world and the growth pattern is greatly dependent on the regional GDP growth (Figure 17).

North America and parts of Asia are widely using tubular products for structural buildings. Europe on the other hand still designs mostly with standard concrete or steel structures. A recent study published by Global Construction Perspective and Oxford Economics, entitled "Global Construction 2030", forecasts an 85% growth in global construction output to 15.5 trillion by 2030, with three countries, China, USA and India, leading the way and accounting for 57% of global growth alone. Europe, on the other hand, will reduce its pace of investment. There is room for additional production capacity for structural tubes, especially in India, to follow the market trend. The tube industry needs to further promote the benefits of tube applications and showcase the architectural perspectives (Figure 18).

Tubular profiles are an ideal choice when visible structures are desired due to their varied shapes and closed cross-sections combined with smooth sides. Best mechanical properties and the possibility to bridge large spans are further highlights of tube profiles. Besides round shaped structural tubes, rectangular profiles are dominating architectural applications. Such profiles are normally cold rolled and formed in so-called turks-heads. In this process great attention must be given to the metallurgical properties of the edges. Normally unalloyed steel is applied, anyhow alloyed steels with its improved material properties should also be considered.

The automotive market representing about 15% of the global tube market is a quite steady and reliable market. The car registration level in 2020, which fell due to the Corona crisis, could only be slightly increased to around 77.2 million light vehicles worldwide in 2021 and 2022 due to various challenges in the supply chain (Figure 19). According to IHS, the recovery process will take longer in the volume markets of Europe and North America. Future growth will take place primarily in Asia, especially in China. However, China



Figure 18: Building with Tubular Structures
Source: Civil.IITB

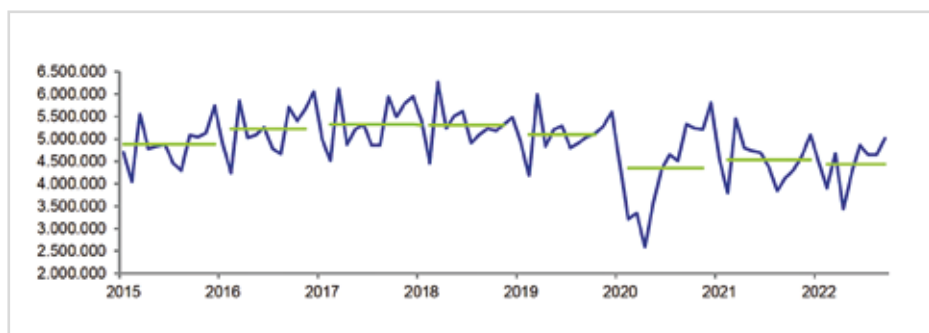


Figure 19: Figure 16: Light Vehicles: World new Car Registration (units/month and average)
Source: VDA 01/2023

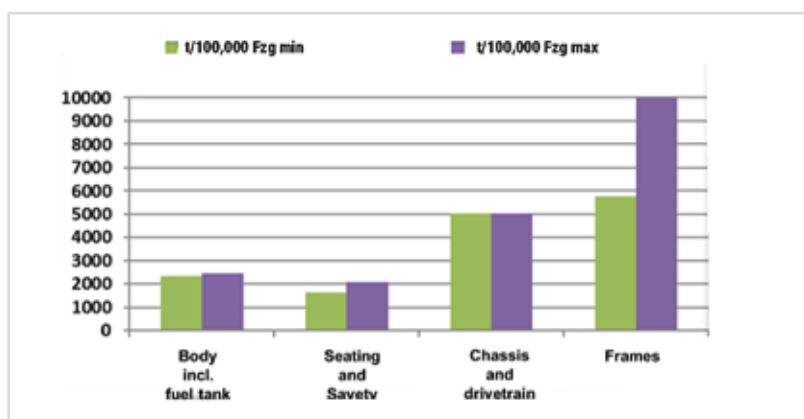


Figure 20: Focal points of potential pipe volumes in the vehicle sectors
Source: HIS

could increasingly become a sales problem for the western automotive industry due to the American decoupling tendencies and strengthening local car industry in China. However, the tendency to further reduce the weight of vehicles supports the trend towards the use of tubular products. The transition towards electromobility may also support the application of tubular components since the additional weight of the batteries need to be compensated to the extend possible. The automotive industry offers a lot of attractive tubular applications.

The greatest potential for the use of tubular products (Figure 20) is seen in vehicle frames, followed by chassis and power-trains. Tube manufacturers shall endeavour to enter new vehicle series with larger volumes to further expand their presence in the light vehicle industry.

Overall, the automotive industry is challenged by the transition towards electromobility and how to keep on serving such markets where electromobility cannot be introduced due to restrictions regarding availability of electrical energy. Therefore, automotive producers will need to follow all drive technologies to prevent losing large market potentials. Environmentally friendly combustion technologies will still have its position. Political institutions such as in Europe on the other hand, set time limits to ban combustion technologies. In this field

for machinery purchases. It remains noteworthy that the Chinese industry has taken the global lead in machinery sales since the Corona crisis.

Here, the decoupling intentions of the USA must be observed since this may become a game changer for the worldwide mechanical engineering industry. The USA and Europe continue to be significant sales regions as well. This market segment certainly has the greatest variety of tube products. Cylinder-, ball bearing- and turned part tubes, to name just a few prominent representatives of this market segment, certainly show good prospects for tube producers.

Most pipe and steel producers were able to report strongly improved economic figures in 2022 in the wake of the price increases. However, for European pipe producers, the persistently higher energy cost and the additional CO₂ levies agreed to be imposed by the European Community represent major challenges. Confidence in being able to compete on the world market in the future with these additional costs is dwindling among some tube producers. Some tube producers even reduce their engagement in Europe as a consequence hereto.

In general, there is enough production capacity to serve even the increased demand for tubes and pipes for all market segments. Raw material prices for the steel as well as the tube and pipe industry would seem to have peaked early 2023. Still markets are nervous with potential for further volatility.

Further challenge may be imposed, if political measures to prevent climate change are not introduced in a balanced way, with possible consequences being the migration of high energy consuming industries to lower-cost regions. Nonetheless, if the balance of supply and demand within the tubes and pipes industry is restored, price volatility can be expected to calm down.

Tube plant infrastructure with respect to tube mills and finishing lines as well as applied quality assurance systems also

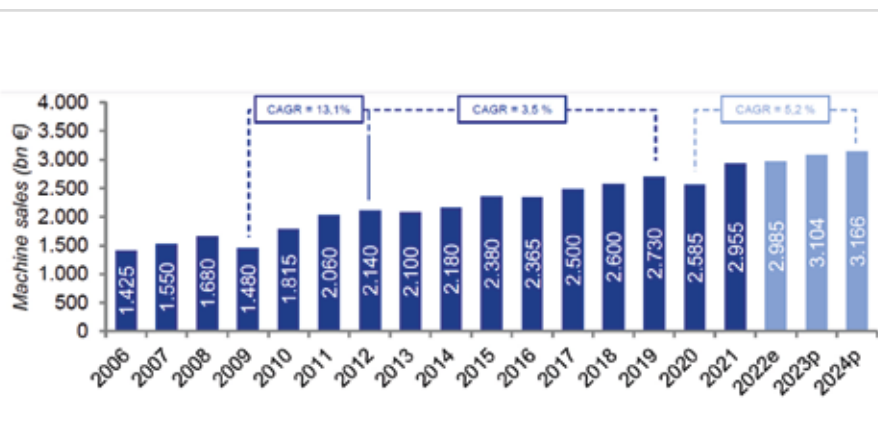


Figure 21: The Global Market for Mechanical Engineering continues to grow
Source: VDMA, IKB Research

of tension, the automotive industry including its suppliers of tubular products need to find appropriate business approaches.

The mechanical engineering market segment, which accounts for around 9% of world pipe production, has developed well in line with global GDP in recent years (Figure 21). During the financial- and corona crisis, the market was characterised by higher volatility with sharper declines and quick recoveries. In 2022, the current further recovery was slowed down by geopolitical circumstances. Asia, and China in particular, although increasingly reaching self-sufficiency are still the largest markets

plays a significant role. The transition towards environmentally friendly tube production to produce carbon reduced tubes and pipes became increasingly a major task for the industry. Tube and pipe producers who have used the corona pandemic to improve their productivity, flexibility and customer service, like introducing "Industry 4.0" measures, will benefit from such measures.

With an eye to the return to something like normal, it should be noted that plant builders and technology suppliers alike find interesting business opportunities in this new and innovative market segment. Some technology suppliers have already reacted and enhanced their product portfolio with the addition of environmentally friendly and digital solutions.

The ITA organizes this May 11th and 12th an international hybrid conference in Düsseldorf under the title "Opportunities for the Tube Industry in Turbulent Times" offering an excellent platform to discuss sustainable solutions for the tube and pipe industry. The tour on 12th of May to the Benteler Dinslaken plant under the title "Sustainable Tube Production in a High-Cost Environment" is an interesting practical example hereto. The conference is a great opportunity to meet and exchange with tube producers as well as technology suppliers to the tube and pipe industry.

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SMS group

New Piercer Concept On the way to “No-Eccentricity”

Author: Christian Haferkamp

1 Market requirements

OCTG products follow strict tolerances; standards like API form only the minimum requirement. Even though Tubing and Casing products are not necessarily seamless tubes, but can also be ERW-produced, often enough drilling companies do prefer seamless products. There are certainly different process technologies for the production of seamless OCTGs available, but one process step is common to all of them: Piercing.

2 Technological challenge

The seamless tube technology made several major developments steps in the past decades towards better tolerances and quality results: the 3-roll PQF® process in 2003, technological software like Carta Neo® optimizing the stretch-reducing process, or hydraulic adjustment of rolls, to name only a few.

The first forming step, which creates the hollow shell out of the billet, has often been overlooked. Modern rolling mills use a Cross Roll Piercing Mill for this first step. The design of Cross Roll Piercing Mills has been improved throughout the recent past

as well. One of the biggest challenges here is to control the eccentricity of the piercing process, as eccentricity has a direct impact on the result of the final tube. The subsequent processes, i.e. elongation and sizing/stretch reducing cannot correct the eccentricity, which has been introduced during piercing and have to cope with the results of the first process step in rolling seamless tubes.

However, controlling this parameter is not as easy as one might think. The impacting variables are manifold. Homogeneous temperature distribution in the hot billet, the material and mechanical properties as well as the dimensional tolerances of the billet itself are just some of the material parameters which impact the outcome of the piercing process. But also the equipment side has to be controlled, also here multiple variables impact the outcome: Alignment of the pass line, condition and adjustment of the rolls, guiding of the billet and hollow bloom, etc.

3 New Piercer Concept

SMS has been continuously working on improving the design of its Piercing Mill. A dedicated design team has been developing significant improvements. The improved design of the SMS piercing mill strives towards the vision of “No eccentricity”. The design team made improvements to some core assemblies, such as:

- Mill stand design,
- Hydraulic adjustment of the piercing rolls, and
- Diescher Disc adjustment.

The new design of the mill stand requires



approx. 30% less height, but simultaneously improving its rigidity. This new symmetric stand design improves the flow of the rolling forces by transmitting the load symmetrically in the stand. This symmetric strain in the stand allows an optimized correction behavior during rolling to compensate the mill expansion.

The new mill stand design also considers changes to the Diescher Disc bearing. In the past, this was separated from the stand. The new solution integrates the disc directly into the mill stand, improving the rigidity of the system and bringing benefits to accessibility and changeover. Furthermore, the adjustment of the Diescher Disc has been redesigned allowing an infinite variable positioning of the disc in all three axes. This allows perfect positioning of the disc in relation to the technological process requirements.

Also integrated into the stand is the three-roll-guide at the outlet side of the piercing mill. With the modifications in the mill stand design, the distance of the first guide to the gorge is shortened, thus optimizing the guiding behavior.

Additionally, a new solution for hydraulic adjustment has been integrated. The solution optimizes the original design to a compact solution by substituting the mechanical screw down with hydraulics and combining it with the already existing hydraulic adjustment solution. This results in better system stability and a reduction of the loads on the roll assemblies.

Aside from the design targets of improving the process, the new design has also been optimized from a maintenance and accessibility perspective. One of such optimizations is the improved scale removal concept. The concept contains the scale falling off and guides it into dedicated scale removal pipes toward the flume system. This improves not only the necessary cleaning effort of the mill, but also reduces the risk of failure of assemblies due to scale particles.

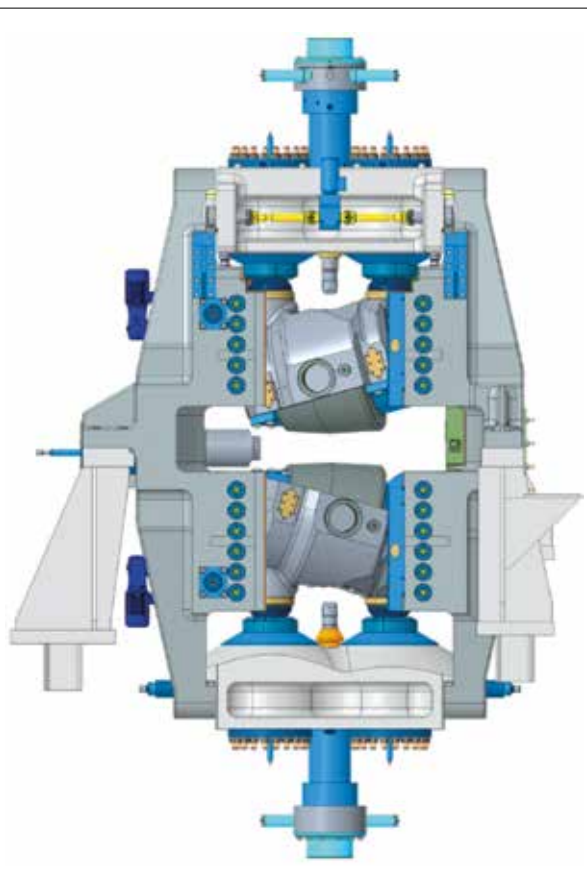
4 Conclusion

Overall, the new design of the SMS Cross Roll Piercing Mill is another technological step in seamless tube technology. The advantages and new features bring new benefits and possibilities to the producer of seamless tubes for the OCTG market on the way to "No-Eccentricity".

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SMS group

ERW Tube Welding Line RD 710 A step into new dimensions

Author: Christian Haferkamp

1 Introduction

The SMS group is worldwide known for its capabilities to design and build plants for the steel industry. Usually, these are hot rolling mills for different products like plate, beams, sheet or tubes. These mills consist of tons of steel, highly sophisticated technology and automation to make complex processes work. The overall investment in such plants quickly exceeds one billion euros.

Plants for tube-producing Electric resistance welded (ERW) tubes are not playing in the same category, since now. The new RD 710 brings a new dimension of ERW-mill to the market. This largest ERW mill can produce tubes up to a max. diameter of 28", i.e. 710 mm.

Now why this new dimension of ERW-tubes? There are tube-making processes for this kind of diameter with a submerged arc welding process (SAW). The market for OCTG, automotive or boiler tubes doesn't use such sizes.

But the construction market does!

2 Hollow structural sections

This ERW mill is capable to produce Hollow Structural Sections (HSS) with dimensions of 22" square (559 mm x 559 mm) or 34"x10" (863 mm x 254 mm). These HSS are used as structural elements in buildings and other structures. These buildings are for example stadiums or skyscrapers.

These HSS bring significant benefits versus a comparable open section. The main benefits are:

- High Strength-to-Weight Ratio
- Closed Section
- Aesthetic Appeal
- Cost-efficient production

The high gyration radius brings a high strength-to-weight ratio resulting in less weight and higher stability. Then, HSS are closed sections, which are advantageous for resisting torsional loads and, since HSS have approximately two-thirds the surface area of an open section of comparable capacity, the efforts in finishing (e.g. coating or painting) is less.

The shapes with smooth sides, rounded corners and closed sections have a natural aesthetic appeal so there is no need for cladding or facing.

On top of that, also the production process is more cost-efficient than the alternative rolling processes due to lower Capex investments and lower conversion costs.



Figure 1: X-Pact® Quicksetting by SMS group

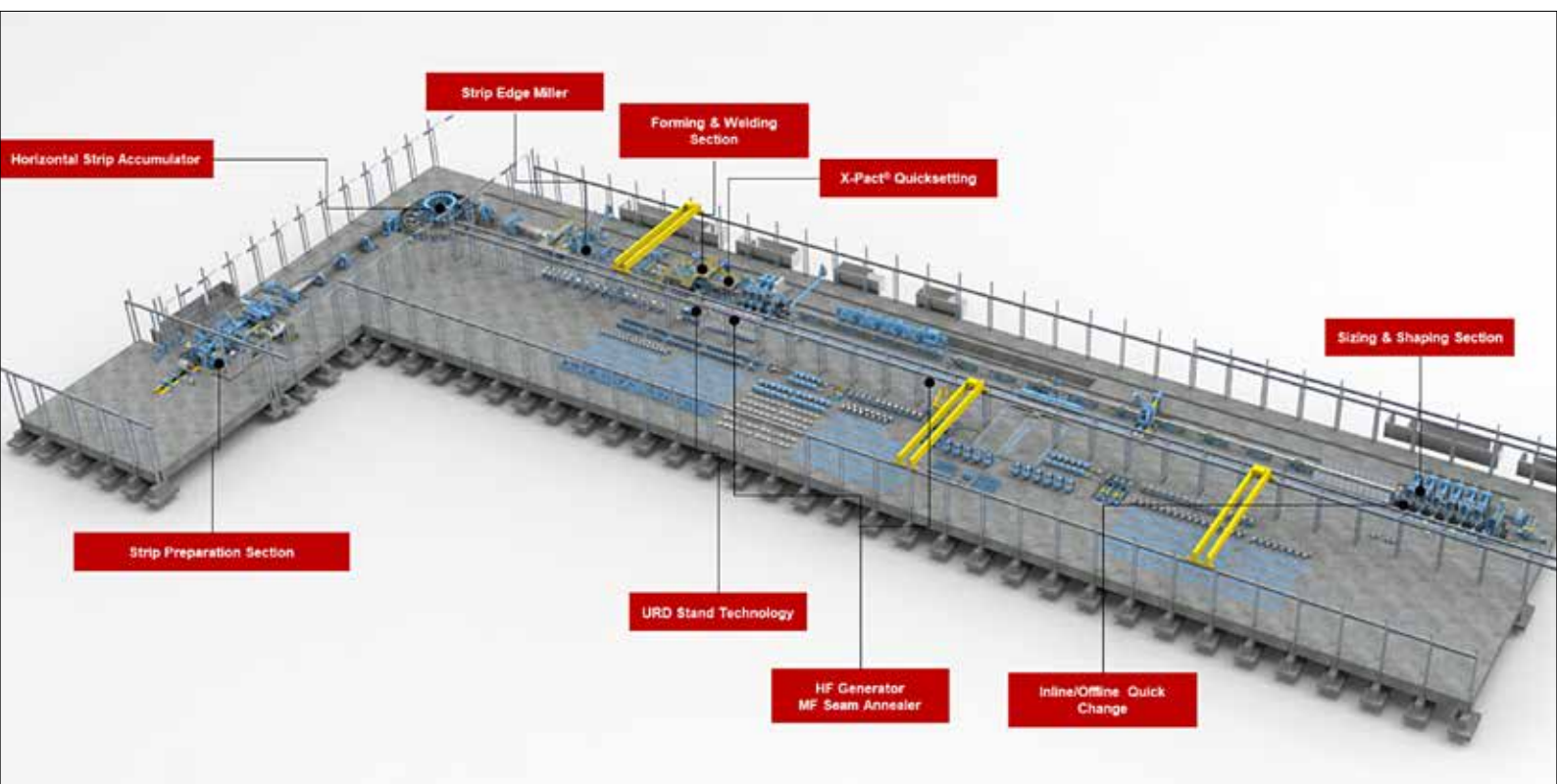


Figure 2: 3D Overview RD 710

3 Technical features of the RD 710

The RD 710 has been designed to allow customers to utilize these benefits and produce high-quality HSS. Not only the size range is pushing the limit, but also the wall thickness is. With up to 1" (25.4 mm) wall, the line is capable to produce thick walled ERW tubes. These dimensional capabilities, combined with production speeds up to 35 m/min allow the RD 710 to run a nominal capacity of 400.000 tons per year.

The line arrangement is quite usual with a strip preparation area, a horizontal strip accumulator and a strip edge miller. The forming & Welding section houses a lineal preforming section with an integrated flexible breakdown stand, three fin pass stands and a Sizing and Shaping section with six stands to produce the accuracy needed for the hollow sections.

The Quick Change System, paired with the X-pact® Quicksetting system supports the production line, reducing the changeover times to below 2 hours.

4 First reference

SMS group has successfully commissioned this RD 710 in 2022 at Zekelman Industries in Blytheville, AR (USA). Zekelman Industries and SMS group have enjoyed a long-term and trusting partnership for many years. The latest order – the world's largest continuous ERW line – is the next step in this successful cooperation. As a result, Zekelman further expands its leading position in the manufacture of structural tubes in North America.

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Boehlerit GmbH & Co KG

Know-how from the machining of tubes

Boehlerit offers a unique range of products and complete machining solutions for the entire pipe manufacturing process in all dimensions. This begins with the machining of weld edges and extends to the external and internal deburring of weld seams and pipe end machining. The decades of know-how of the Kapfenberger, also use other industries, such as in the sheet metal edge processing in shipbuilding.

The production of large pipes, such as those used in pipelines for the transport of liquids like oil or natural gas, is something of a supreme discipline in pipe manufacturing and is nowadays carried out in highly integrated overall concepts with intelligent production lines. The production of small tubes for precision applications in the automotive industry is similarly demanding. For this reason, the production steps interlinked from coil or sheet to the finished tube require maximum process reliability. This also applies, of course, to the various machining operations integrated into the process sequences. Here, exceptionally robust tool systems with long tool service lives are required in order to avoid production stoppages due to downtimes or set-up times of the expensive equipment. In addition, there is a high level of machining precision, which one would not expect at first glance at the finished product. After all, we are talking about tubes with diameters from around 500 millimeters upwards. With tube diameters well in excess of 3,000 millimeters, the production capabilities of some systems are still well above this. The high machining accuracies ultimately result from the requirements placed on the weld seams. The smallest irregularities can later lead to leaks. Their quality begins with the preparatory machining and naturally also includes the deburring of the longitudinal weld seams on the inside and outside.

In order to cover the various machining steps, Boehlerit, as the leading tool supplier

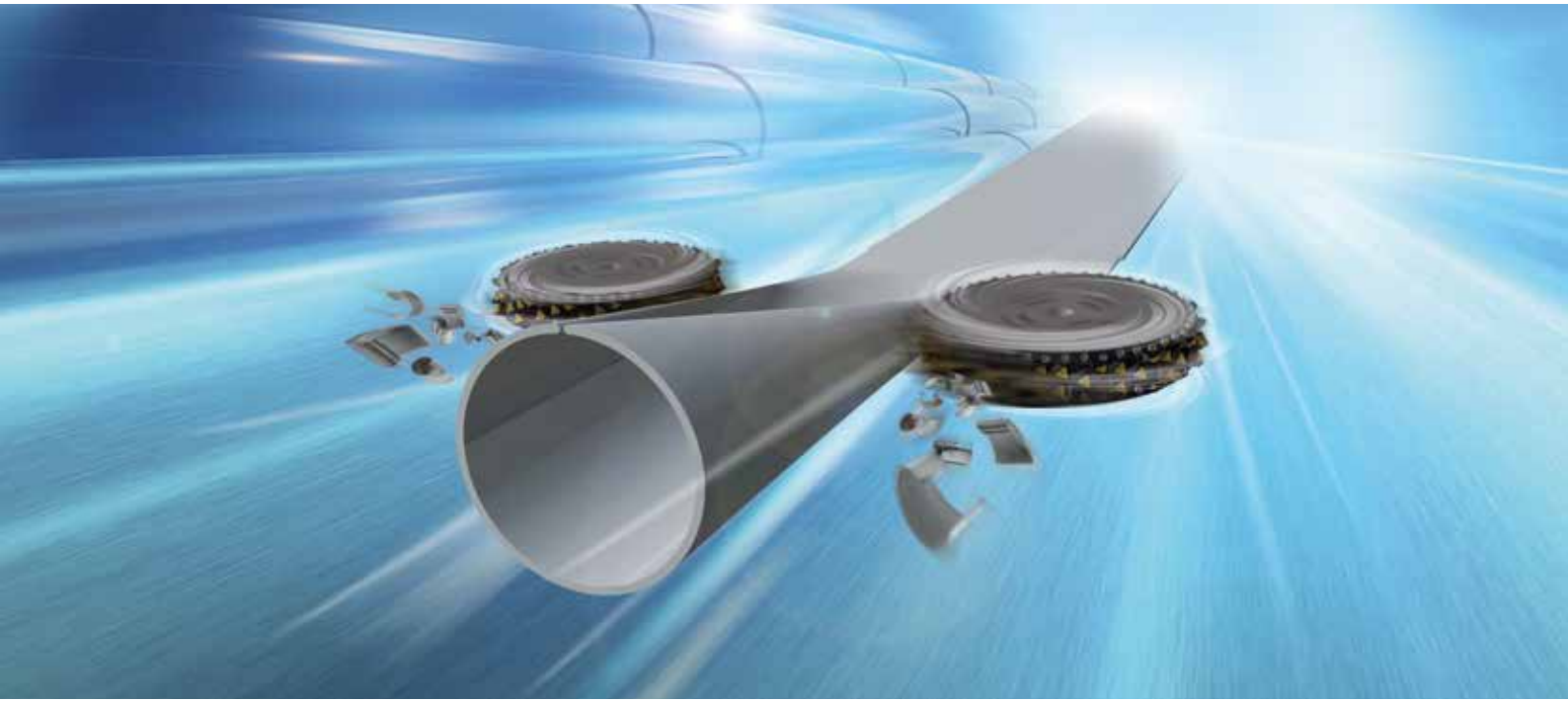
in the industry, has developed the most extensive product range on the market over the decades, including standardized solutions today. The first machining step in the process sequence is the preparatory welding edge machining. In this process, the strip or sheet edges are machined synchronously on both sides in a continuous process, with milling heads facing each other. These tools are designed and manufactured specifically for the respective systems as well as for the materials to be machined, the material thicknesses and the required edge profiles.

Modular standard components

Boehlerit offers modular profile milling heads as a particularly economical and flexible solution. They consist of a base body with exchangeable milling cassettes and indexable inserts. The cutting contour produced is determined by the shape of the cassettes. One advantage over conventional monoblock tools is that in the event of damage, only the affected cassettes need to be replaced, not the entire tool. Additional adjustment work is not required. Furthermore, by replacing the cassettes, the cutting edge profile can be changed quickly and easily if necessary, for which a completely new tool would otherwise have to be procured. This is of course an attractive added value for a tube mill.

With corresponding milling cassettes and indexable inserts, Boehlerit maps all the edge profiles in demand in the industry. This means users can choose between I-profile, X-profile, Y-profile or tulip profile.

In the case of longitudinally welded tubes, the next machining operation is to deburr the weld seam from the inside and/or outside using scraping tools. Boehlerit offers the necessary clamp holders, cassettes and cutting inserts or cutting rings. These tools are also designed specifically



for the application and their geometries are adapted to the diameters of the pipes. The particular challenge here is that deburring takes place very soon after welding, so the cutting inserts are usually exposed to the still very high temperatures in the weld seam. Special cutting edge geometries and carbide grades are therefore used here.

Large-diameter pipes for pipeline construction, in particular, require machining at the pipe ends to enable them to be welded together. The accuracy requirements are achieved using turning processes, for which Boehlerit supplies complete tool systems consisting of face plates, spring-loaded tool slides, cassette holders, copying rollers and various spindles for adjustment. For cassettes and indexable inserts, there is an extensive standard program from the catalog.

Synergy effects

Innovations for tube production mainly take place in the area of cutting materials and tool concepts. The materials to be machined in this segment are mainly high-strength special steels which withstand the high forces from inside and outside. The range of materials usually extends from X 50 to today's X 100 plates. Corrosion-resistant steels are increasingly being used. The fact that the cutting material specialists from Upper Styria are also synergistically applying their know-how in general machining technologies here is demonstrated, for

example, by the use of wear-resistant coatings and geometries for stainless steels. This ensures improved chip flow due to a low tendency to stick and thus considerably increases tool life.

The basic concept of modular tool systems for sheet metal edge processing also originates from other processing fields, such as crankshaft production. There, comparable tool systems are used, which allow a base body to be flexibly equipped with milling cassettes and indexable inserts. With basic bodies, different cassettes and the comprehensive portfolio of indexable inserts, all profiles can thus be covered. Specifically selected insert designs and system solutions ensure optimum chip and heat removal during dry machining of a wide range of material qualities.

Boehlerit's tool systems can also be found in applications ranging from general plant engineering and shipbuilding to the milling of slabs in steel mills.

Boehlerit offers in unique product diversity, the complete machining solutions in the entire process of pipe manufacturing of all dimensions.

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Boehlerit GmbH & Co KG

Boehlerit – The independent development partner for Toolmaker

Boehlerit has been a pioneer in the production of carbide since 1932. Today, the standard portfolio comprises over 70 cutting-edge carbide grades, from which almost all well-known tool manufacturers draw for a wide range of applications. In addition, as a development partner for toolmakers, the Kapfenberg-based company, with its decades of experience, offers the development of individual carbide grades, coatings and geometries. In this way, real machining innovation often begins in Boehlerit's own powder production.

Compared to the past, modern carbides are characterized by more uniform microstructures. This is primarily due to higher purity of the raw materials, but above all also to more uniform sintering conditions in modern production facilities.

High metallurgical flexibility for individual tool developments

Boehlerit's metallurgy center, with its own powder production facility, has been the hub for the development of innovative cutting materials for decades. Over 10,000 m² of production space offer maximum metallurgical flexibility for the production of indexable inserts and blanks, as well as for the provision of carbide granulate for toolmakers. The dynamic FEM calculation for the digital customer-specific design of modern tool systems is supportive here.

Boehlerit is an independent carbide specialist in the tool industry and a close development partner for Toolmaker. In its cooperation with toolmakers, the family-run company ensures direct collaboration between technologists with discretion and product protection. "When you work as a long-term partner with almost all well-known tool manufacturers, trust is program," emphasizes Dr. Christian Kolbeck, Segment Manager Wear Protection & Tool Manufacturers.

However, Boehlerit is not only a technological pioneer and one of the world's leading manufacturers of carbide cutting materials for tools used in metal, wood and plastics processing, but also ethical. Only carbides made exclusively from conflict-free raw materials are produced. This ethically justifiable, material or raw material procurement has been one of the pioneering contents of the company's compliance culture for many years.

State-of-the-art production and coating processes

A significant part of the hard metal competence is the continuous development of the production processes using state-of-the-art production equipment. This includes the latest servo-electric powder presses, which offer the highest reproducibility and dimen-



As a development partner for toolmakers with decades of experience, Boehlerit offers the development of individual carbide grades, coatings and geometries.

sional accuracy and enable the production of highly complex geometries. A special feature among the presses at Boehlerit is one of the largest carbide presses with a pressing force of 650 tons. It is used to press cubic and round parts with an area of up to 250 cm² economically and in series production. Overall, the production range extends from the smallest carbide part weighing a few tenths of a gram to large parts weighing more than 100 kilograms. The tools for this are produced in the company's own press tool shop. This guarantees µm-accurate tools with which complex inserts are precision-manufactured. "Very special know-how is required for our hand shaping, through which we produce more than 7,000 different types of carbide parts annually," adds Kolbeck. Here, the constructive shaping, taking into account the so-called sintering shrinkage, requires a great deal of experience. In addition to sintering, Boehlerit's expertise is based on its own coating center. The main coating technologies (PVD, HT-CVD and MT-CVD) for hard coating of indexable inserts are available.

State-of-the-art production facilities guarantee top quality

As part of its quality and automation drive, Boehlerit has decided on a comprehensive investment package that specifically addresses the three decisive factors of its products - substrate, cutting edge finishing and coating. Four new high-end sintering systems (three pressure sintering systems and one vacuum sintering system) were procured, as well as a large 5-axis turning/milling machine on which preforms are produced. In addition, six new grinding machines for inserts ensure a long-term guarantee of the high quality level. Boehlerit produces around 150 to 200 press tools made of sintered carbides per year for customers, but also for its own needs. For this purpose, Boehlerit procured a new 5-axis hard milling machine that now performs milling, grinding and testing in a single clamping operation and replaces the EDM technology previously used for this purpose in this area. In particular, investments are naturally being made on an ongoing basis in coating technology - one of the company's core competencies. In addition to the latest PVD technology (HiPIMS),

Boehlerit is expanding its CVD plant park to include a new coating plant equipped with its own innovations. Boehlerit is using its expertise in coating technology here and thus has the entire process in its own hands. This is one of the reasons for the company's technological edge and offers new possibilities with regard to the deposition of innovative hard coatings.

The investment program is rounded off by one of the world's most modern 4.0 piston extrusion lines, a new double-sided fine grinding machine with planetary kinematics, new cleaning and washing systems, new shot blasting systems and new simulation software which, for example, examines chip formation and chip flow even before the step into the machining laboratory. All the new systems are networked with each other. Of course, sustainability and energy efficiency have also long been high on Boehlerit's agenda. Particularly in times of energy crisis, these investments are particularly effective in many respects.

From powder to rapid prototyping and machining trials

The development tasks of the carbide pioneers at Boehlerit are defined by the performance requirements of the tool manufacturers and users respectively. Process-optimized manufacturing technologies, from in-house powder production, coupled with the latest pressing and grinding technologies to the most advanced coating technologies, guarantee toolmakers a head start in the productivity of their tools time and time again. A particular advantage in product development for toolmakers is the production of prototypes using state-of-the-art laser-assisted rapid prototyping. Boehlerit thus helps customers save time and money in tool development. This also includes machining tests including evaluation and advice. Finally, one of the most modern testing and packaging systems for indexable inserts in the industry contributes to the high quality standard. It guarantees 100% quality assurance in the µm range. With particularly strict dimensional checks and monitoring of all metallurgical parameters, Boehlerit guarantees Toolmaker consistently high tool quality.

Bültmann GmbH

Quality – the most precious good

It is without question that the BÜLTMANN production lines reliably meet increasingly demanding quality requirements.

However, the reliable recording and permanent monitoring of quality characteristics is an even greater challenge. This applies both to non-destructive testing units for tubes and bars in the eddy current and ultrasonic fields as well as to geometry and surface testing.

Specially tailored BÜLTMANN testing technology, which can be equipped with customer-supplied and also with BÜLTMANN measuring and testing units developed in-house, provides the basis for this.

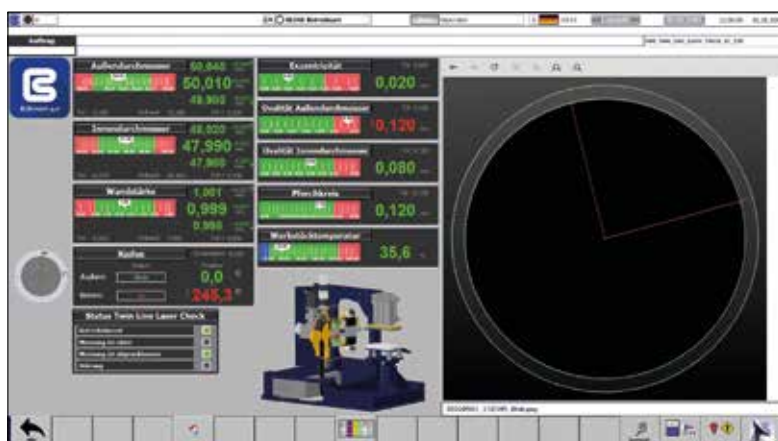
The systems are connected to the corresponding production facilities and can also be interlinked with customer Level 2 systems in order to directly transmit and evaluate quality data online in terms of Industry 4.0 requirements.

The recently founded specialized department "BÜLTMANN 4.0" provides the developments for various measuring and testing technologies that can be used for different applications.

Available currently and in the upcoming future are:

- Complete mechanics for non-destructive testing systems
- Geometry measuring systems
- Surface measuring systems
- Straightness measuring systems
- Vibration measuring systems (in cooperation with a renowned partner)

The focus here is on practice-oriented solutions that also work reliably



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CGM Cigiemme S.p.A.

CGM Celebrates 65 Years in Design and Manufacturing of NDT Equipment for Oil & Gas

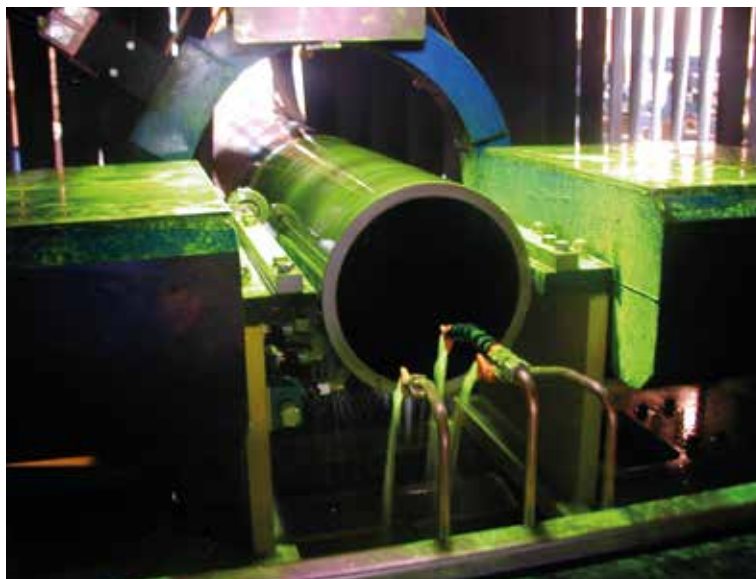
We are very pleased to announce that this year CGM celebrates its 65th anniversary of business activity in the field of Non-Destructive Testing (NDT) which is, undoubtedly, an important milestone.

Since 1958 CGM CIGIEMME S.p.A. has been delivering technological excellence and cutting-edge NDT solutions for various industries across the globe, including aerospace, railway, automotive and oil & gas and steelmaking industry, this latter being one of its major markets.

With 100% of the design and manufacturing carried out at CGM headquarters near Milan in Italy, the company has a long history of offering a wide range of high-quality Magnetic Particle (MT) and Liquid Penetrant (PT) equipment: from small portable systems to highly customized in-line automated systems.

"From the very beginning we have been customizing our systems to meet the standards and specific application needs of our clients and end users. A high level of flexibility in design and manufacturing is our major strength and competitive advantage," – says Federico Raggio, CGM's Managing Director.

CGM has a proven track record for reliability, robustness and durability of the inspection systems it designs and manufactures. Over the years, the company has created a vast portfolio of projects executed for the largest players in the steel making industry. The most significant projects delivered include high productivity automated in-line MT systems for the inspection of pipe ends and couplings. Among the latest technological solutions is an automated MT system developed for the pipe ends inspection that, in addition to high production efficiency, also ensures energy consumption optimization.





- increasing the inspection quality and reliability
- developing HMI solutions that ensure a user-friendly experience
- developing a dedicated report for each inspected part
- designing systems to meet the most rigorous audit requirements of the external certifying bodies.

These R&D goals are being achieved through the work of a team comprising new-generation engineers and technicians and senior technical staff members who have been with the company for many years.



From the very beginning the CGM's mission has been that of guaranteeing our customers the best production quality and putting at their disposal all our expertise, based on 65 years of experience in the NDT field. And today we continue to stay true to this mission!

CGM skilled team will be glad to assist you with any inquiry you might have.

To learn more about the solutions for the steelmaking industry, please visit our website at www.cgm-cigiemme.com.

To get in touch, please email cgm@cgm-cigiemme.it or telephone +39 (02) 57600400.

The propensity to constantly search for innovative solutions is one of the keys to CGM long and successful history. For these reasons, CGM has been making substantial investments in R&D activities aimed at:

- reducing the environmental impact
- increasing the safety of the workplace environment
- constantly improving the ergonomics of the systems being designed and manufactured

CGM Cigiemme S.p.A.

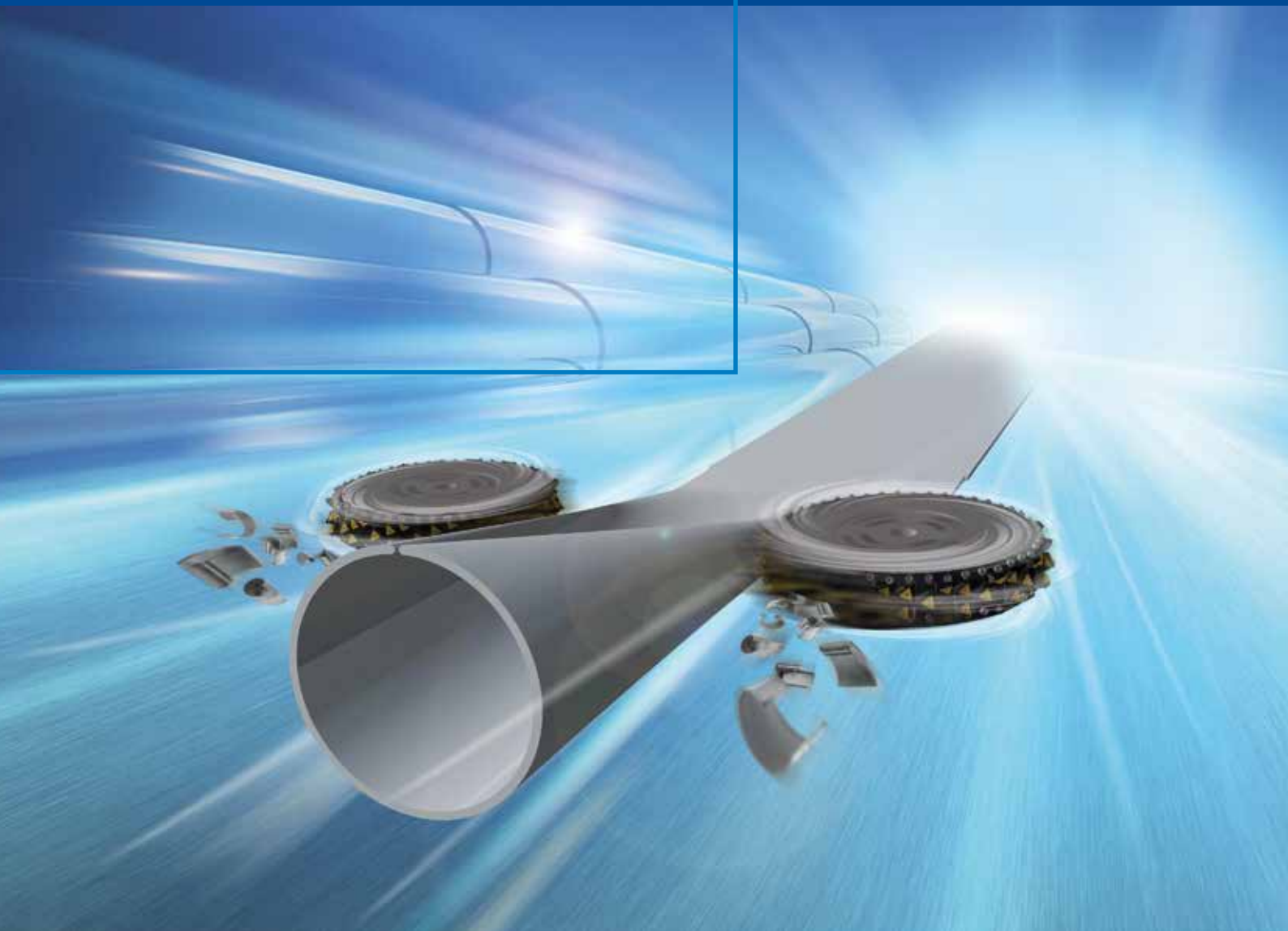
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boehlerit

Know-how in the field of tube machining



- Boehlerit offers an unrivalled diversity of products and the full range of cutting and machining solutions for the production of pipes.
- Other industries also draw on our decades of experience and know-how in very special machining processes, for example in the case of plate edge machining.

Fives Group

Catching the wave: Fives and Baowu launch new electrical steel lines



A wave of investments to serve the growing needs of e-mobility has prompted steelmakers to launch new electrical steel production facilities.

Baowu Steel Group, the largest steel producer in China, is massively investing into the production of high-performance electrical steel at its Shanghai site.

Fives, a leading engineering group with broad expertise in steel processing and technology, has designed and delivered thermal sections for a new annealing and pickling line (APL) and two new annealing and coating lines (ACL). The lines designed to produce high quality non-grain oriented (NGO) grades for electric vehicle motors delivered their first coil between December 2022 and February 2023.

Key technologies

The thermal section is key for the quality and performance of electrical steel. It includes a horizontal furnace capable of

reaching a strip temperature of 1,100 °C with the AdvanTek® combustion system, as well as the Best Available Technology for furnace atmosphere management, utilizing seal gates, high hydrogen-rich and dew point controlled sections to reach the required steel properties.

“This is a very important project for Fives Group with a privileged partner. The production of silicon steel grades presents a challenge to steelmakers, as it requires advanced technologies to produce high flux density materials with minimal core losses at high working frequencies. Fives has a broad experience in such technologies, as well as process expertise to accompany steelmakers on their road to new markets with new applications”, says Benjamin Michel, Chief Executive Officer of Fives Stein, a subsidiary of Fives, specialising in thermal technologies.

“This global project from the operational point of view has been implemented during challenging times of lockdowns and travel restrictions. Resilience was a determining factor in succeeding to overcome difficulties and produce the first coil on all three lines, respecting the client’s targets and schedule”, adds Guillaume Burstert, Project Manager of Fives Stein in China.

Fives – Steel & Glass Division

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Inductotherm Heating & Welding Ltd

The Sustainability Ratings are in!

Inductotherm Heating & Welding are delighted to announce that they have been awarded the Silver - Ecovadis Sustainability Rating. This new accolade follows hot on the heels of Inductotherm Heating & Welding's triple BSI - ISO accreditation awarded in June 2022 which included ISO9001 for Quality, ISO45001 for Occupational Health & Safety and ISO14001 for the Environment.

Inductotherm Heating & Welding are undertaking a process of developing and improving their environmental and sustainability practices to ensure they are sensitive and responsible to the local and wider environment. Implementing a wide range of changes in all areas of the business from adopting renewable energy to changing to eco-friendly supplies and engaging with suppliers as an on-going commitment by the company.

In addition to their commitment of social and environmental responsibility these accolades provide their customer base with the reassurance that they are engaging with a forward thinking and ethical company committed to providing their customers with the environmentally sound and continually improving service. Achieving the Silver rating has already allowed Inductotherm Heating and Welding to attain "Preferred Supplier Status" with existing Tier 1 customers who highly value sustainability across all areas of their business.

Ecovadis was founded in 2007 and has grown to become the world largest and most trusted provider of business sustainability rating. The Ecovadis sustainability methodology evaluates how well a company has integrated the principles of sustainability/CSR into their business and management systems based on seven founding principles:

- Assessment by international experts.
- Tailored to industry sector, country and company size.

- Source diversification to ensure rich stakeholder input for reliable scoring.
- Utilize technology to ensure a secure and confidential process and accelerated cycle time.
- Traceability and transparency of documentation
- Evidence-based.
- Excellence through continuous improvement.

The methodology is built on internationally sustainability standards, including the Global Reporting Initiative, the United Nations Global Compact and the ISO26000 with performance measure across 21 indicators in four themes:

- Environment
- Labor & Human Rights
- Ethics
- Sustainable Procurement.



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Inductotherm Heating & Welding Ltd

How long does equipment last?

After 40+ years of consistent use, Tata Steel at their site in Corby, Northamptonshire in the heart of England, are upgrading and replacing 6 x 1.8 megawatt Radyne Power converters installed at the end of 1970's. In all that time these units have been the workhorse of the factory and speak to the quality and pedigree of the Radyne brand.

Reported at the time as being the largest induction heating installation in Europe, boasting both power and space saving features, the induction generators are an integral part of the steel tube processing site which overall, produces approximately 250,000 tons a year of thin-walled tube from steel strip for the construction, engineering, and energy market sectors.

Long known as environmentally sustainable when compared to gas, induction heating was then and still is an obvious choice for the metallurgy industry. The induction process is well proven in the field and renowned for the precision and repeatability in numerous metal processing applications.

Inductotherm Heating and Welding are delighted to continue their long-standing relationship with TATA Steel by offering a turnkey solution of uninstalling their old Radyne converters then installing and commissioning the 6 new Inductotherm 1.8 megawatt converters with 6 off HV main transformers, 12 off induction heating coil assemblies, tubes drivers, water cooling systems and PLC controls. The new installation has a smaller footprint than the induction and gas furnaces it will replace, reflecting the development of the technology over time.

After supporting the old Radyne units for over 40 years the upgraded units will offer Tata Steel a more technically advanced and energy efficient equivalent replacement to

ensure continued reliable production and continued aftermarket support.

Tata Steel is one of the world's most geographically diversified steel producers, with operations in 26 countries and commercial offices in more than 35 countries and is one of the largest steel producers in Europe.

Tata Steel is founded on the principle, and operate a long-term vision, that its activities should always benefit society, in a way that is safe for their people and respectful to the environment, with special care to the surrounding communities impacted by their operations.

Dedicated to sustainability Tata Steel closely aligned their strategy with the United Nations' Key Sustainable Development Goals and as such are leaders in carbon neutral steelmaking.

Inductotherm Heating & Welding LTD are part of the Inductotherm Group which offers advanced technology for the engineering, manufacturing and service of thermal processing equipment used in the melting, heating, heat treating, forging, galvanizing, coating, cutting and welding of metals. Bringing together 40 companies with 38 manufacturing facilities located in 23 countries, Inductotherm Group delivers innovative products throughout the world. Customers rely on Inductotherm, Banyard, Inductoheat, Thermatool, Radyne, Consarc and other trusted brands in the Inductotherm Group to provide outstanding equipment and services.



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FIMI provides machines for the finishing of steel tubes, with a range from 19 to 608 mm in diameter, for thicknesses from 0.5 to 20 mm and lengths from 3 to 15 m, both in-line and off-line.

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- > Strip Accumulators
- > Cut-Off Units
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- > Hydrostatic Tube Test Units
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- > Non-Destructive Control Systems
- > Tube Packing Systems
- > Tube Handling Systems



FIMIGroup will exhibit at:
Tube & Steel | 24-27, May | Istanbul | Hall 5 Stand 505A
METEC | 12-16, June | Düsseldorf | Hall 5 Stand D29

SIKORA AG

"You get a measurement you trust"

HÖHLE uses SIKORA's X-ray measuring systems for inline quality control of microducts



f.l. Toomas Koobas, CEO, and Production Manager, Marko Hoolma, at HÖHLE in the microduct production plant in Estonia



For utmost quality control HÖHLE includes the LUMP 2000 for lump and neckdown detection in the microduct extrusion lines

HÖHLE is a manufacturer of first-class microducts that are used for building fiber-optical networks to house optical fiber cables as a protective channel. Located in Estonia, the company uses SIKORA X-ray measuring systems in its plant for quality control during the extrusion of microducts. The cooperation between both companies is based on their mutual commitment to deliver high quality products to fulfil the customer demands.

Known for short lead times and flexible services to its customers, HÖHLE puts high emphasis on the quality of the microducts they produce. Thus, they only use pure raw material of the highest quality and have also included continuous online measuring and control systems in the manufacturing process. For measuring the inner and outer diameter, wall thickness and eccentricity of the microducts the company has installed three X-ray based X-RAY 6000 PRO devices from SIKORA in their lines to measure microducts within diameter ranges between 3 and 20 mm. "The advantage of the X-RAY systems is that you are confident about the measured values and you get correct product dimensions immediately with the start-up of the line with 'one shot'", explains Toomas Koobas, CEO at HÖHLE, and adds, "For microduct production, continuous inline monitoring is the key factor when talking about quality. This can be achieved with SIKORA devices".

Special at HÖHLE is the use of three separate monitors of the ECOCONTROL 6000 processor system connected to each X-ray device. These allow the operators to have constantly access to the current measuring values. The real-time visualization is the secret of a perfect process control. Compared to alternative technologies for quality control such as ultrasound, X-ray technology provides consistent measuring values

without being affected by temperatures, or material. There is no need for coupling media and there is no calibration required. "With X-ray you get a measurement you trust and a guarantee of compliance with microduct specifications", says Koobas.

For utmost quality control HÖHLE also uses SIKORA lump detectors in their lines. These systems detect the smallest non-conformities on the microducts surface. The operator receives immediate information in case of a fault and can take necessary actions. The combination of X-ray measuring systems and lump detection during the manufacturing process ensure the highest microduct quality for highest customer satisfaction.

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HÖHLE uses the X-RAY 6000 PRO for dimension measurement during the production of microducts

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Link up on **LinkedIn**. Connect on **Google+**.
Use our platforms to further your business
connections. Get networking! +++

Tecnar Automation Ltée

Tecnar is stronger than ever in Europe with three new sales agents for the Lut 2.0

Tecnar, a Canadian developer, manufacturer and distributor of cutting-edge industrial sensors for online real-time process monitoring, is proud to announce three new European sales agents. Leruste & Cie in France, Proyecto Ilimitado in Spain and VFM Service SRL in Romania will help Tecnar expand its European reach and give customers in these regions better access to the Lut 2.0 for wall thickness gauge for hot seamless steel tube and pipes.

The Lut 2.0 is the latest, most advanced wall thickness gauge in Tecnar's product line. It offers unparalleled precision with safe, real-time wall thickness measurements in harsh mill conditions. Its advanced accuracy, reliability and ease of use make the Lut 2.0 an essential tool for seamless

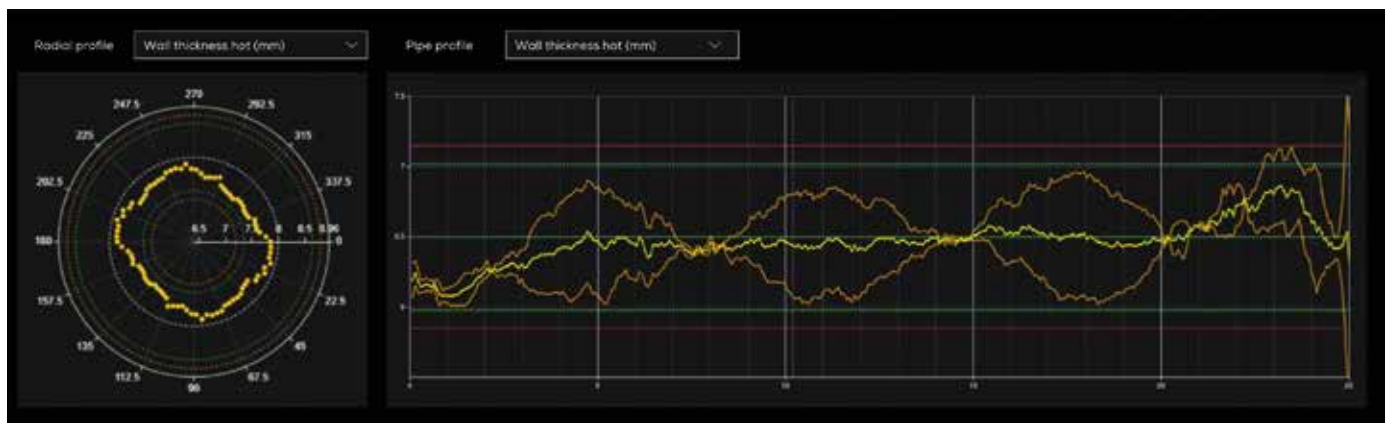
tube and pipe manufacturing plants. Based on laser-ultrasonic technology, the Lut 2.0 can be used anywhere on the production line, from piercing up-front to sizing at the end of the hot manufacturing process, with or without the presence of a mandrel in the shell, with light to heavy product bouncing and from small to large outer diameter ranges.

Now, with the appointment of three new agents in Europe, the innovative Lut 2.0 can be introduced to a wider audience in Europe. And with their knowledge of local markets and sales and marketing expertise, our new agents will help Tecnar forge strong, enduring relationships with customers in France, Spain and Romania.



Tecnar Automation Ltée

Lut 2.0: Advanced Dual-Mode Online Wall Thickness Gauge for Seamless Steel Tubes and Pipes Manufacturing with Enhanced Data Clarity and Analysis



Tecnar, a leading provider of advanced technological solutions for the seamless steel tubes and pipes manufacturing industry, has recently launched its latest product, the Lut 2.0 online wall thickness gauge. This state-of-the-art gauge offers a dual mode of operation, allowing for both scanning and static modes, providing different views of the wall thickness variation along the seamless steel tubes and pipes' length or circumference, at any stage of the hot forging process.

The Lut 2.0's advanced capabilities provide unparalleled data clarity, helping operators evaluate the situation more effectively. In its scanning mode, the Lut 2.0 provides the highest radial resolution online hot wall thickness gauge in the market. This feature offers exceptional visibility of minute details in the tubes and pipes' inner profile, such as wall variation caused by localized overfilling or underfilling. In addition, it enables operators to revise the setting of the roll-stands setup, by tracking the residual rectangular shape of the inner wall, improving production efficiency and accuracy. Moreover, in its static mode, the Lut 2.0

length profile display provides clear indications of offset eccentricities, 1st order eccentricity, caused by non-uniform heating of the billet or tool wear. This capability allows operators to pinpoint the cause of any production drifts, facilitating rapid response and resolution.

In addition to these features, the Lut 2.0 includes wall thickness cycle analysis software that identifies the source of each cycle present in the length profile wall thickness variation. This software enables operators to analyze production trends and optimize processes for enhanced efficiency and productivity.

Tecnar is renowned for its continuous dedication to delivering innovative solutions that meet its customers' evolving needs. The company works closely with its users to develop solutions that address their specific challenges, enabling them to achieve maximum value and efficiency.

The Lut 2.0 is an industry game-changer that will revolutionize how seamless steel tubes and pipes manufacturers approach wall thickness measurement and control. With its advanced technical features and

unparalleled data clarity, the gauge will enable operators to make informed decisions that enhance production quality and efficiency.

Tecnar's dedication to providing advanced solutions sets it apart in the industry, and the Lut 2.0 is a testament to this commitment. For more information on the Lut 2.0, get in touch with Tecnar directly.

About Tecnar

Based in St. Bruno, Quebec, Canada, Tecnar designs, develops, manufactures, and markets novel systems and sensors for industrial process monitoring and control. Founded in 1989, Tecnar has used its expertise to bring cutting-edge technology

to the plant floor. Over the past decades, Tecnar has diversified into four highly specialized divisions: Automated pipe and vessel welding, thermal and cold spray in-situ monitoring, continuous steel galvanizing pot chemistry analysis, and non-contact ultrasonic gauging for the seamless tube industry.

Tecnar Automation Ltée

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Today, 20 of the 20 world's largest steel and aluminium manufacturers trust our real-time and reproducible measurements and evaluations to optimise their production lines and increase quality while simultaneously reducing production costs and reject rates.



SMS group GmbH

thyssenkrupp Steel awards a contract worth billions of euros to SMS group for a direct reduction plant

One of the world's largest industrial decarbonization projects gets underway

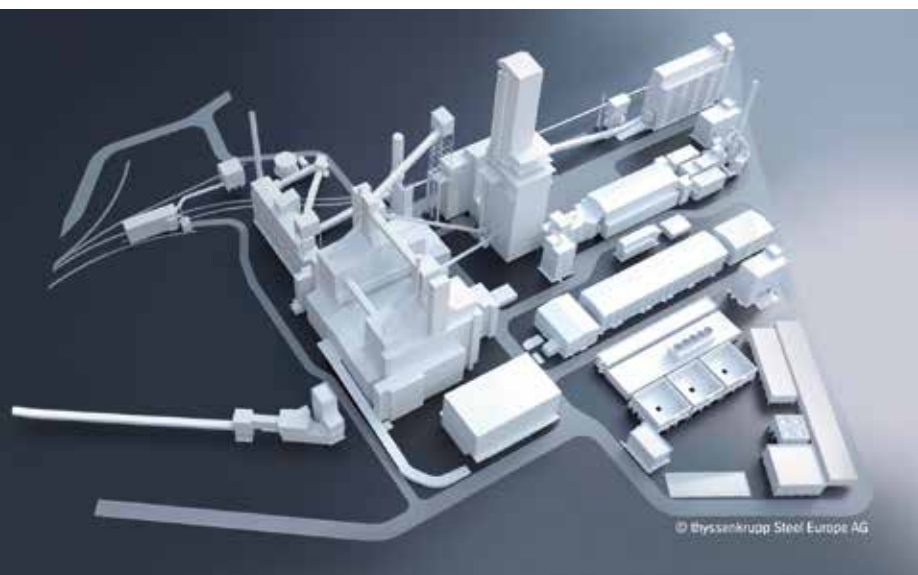
- thyssenkrupp Steel places an order with SMS for the engineering, delivery and construction of a hydrogen-powered direct reduction plant, two innovative melters, and the associated auxiliary units at the Duisburg location.
- One of the world's largest industrial decarbonization projects gets underway with an order volume for SMS alone of over 1.8 billion euros.
- Groundbreaking concept: direct reduction plant with Midrex technology combined with two innovative melters, with a capacity of 2.5 million metric tons of directly reduced iron.
- The startup is planned for the end of 2026.
- Significant step for industrial climate protection in Europe: annual saving of over 3.5 million metric tons of CO₂.

thyssenkrupp Steel places an order with SMS group, Düsseldorf, for the engineering, delivery and construction of the first hydrogen-powered direct reduction plant at the Duisburg location. This marks the start of one of the biggest industrial decar-

bonization projects worldwide, which at one stroke will avoid more than 3.5 million metric tons of CO₂ per year in the future. The order volume for SMS amounts to over 1.8 billion euros, and also marks the largest single order in the history of the company. Moreover, significant additional structural building services will be required in addition to infrastructure and media connections. The preliminary tasks can be started immediately, under the scope for an earlier start to work that has been approved. The plant will have a capacity of 2.5 million metric tons of directly reduced iron (DRI), and is scheduled for completion by the end of 2026. The overall project remains subject to European Union approval under state aid provisions, as well as the final funding decision. Both are expected in the coming months. The state of North Rhine-Westphalia and the German government have already signaled substantial financial support for the project.

Replacement of CO₂-intensive primary steel manufacture begins

The contract award marks a decisive technological turnaround for Germany's biggest steelmaker in its more than 200-year history: As part of the tkH2Steel transformation concept, the replacement of CO₂-intensive steel production by climate-friendly technologies is now beginning. Up to this point, coal-based hot iron production in the blast furnace always involved emitting large amounts of CO₂, amounting to about 20 million metric tons per year from the Duisburg location alone. Hydrogen-based processes in direct reduction plants offer a significant basis for manufacturing carbon-neutral steel in the future. thyssenkrupp Steel is already planning to avoid as much as 6 million metric tons of CO₂ by 2030, representing well in excess of 30 percent of its emissions. The transformation to carbon-neutral production should be completed by 2045 at the latest.





Order is awarded to SMS group: a globally active plant builder based in North Rhine-Westphalia

SMS group, a company from North Rhine-Westphalia, has been awarded the contract for the ground-breaking plant at thyssenkrupp Steel. SMS employs a good 14,500 people at around 100 locations. As a specialist for steel industry production plants, it is actively helping shape the transformation of the industry. The order that has now been placed is also historic for SMS: It is the largest single order in the company's history spanning more than 150 years.

High-tech for carbon-neutral steel production

In pursuit of the best technological solution, thyssenkrupp will be the first steelmaker in the world to combine a 100-percent hydrogen-capable direct reduction plant with innovative melters. Positioning the two melters immediately adjacent to the direct reduction plant allows the solid input stock produced there to be converted into molten iron immediately; this makes the entire process particularly efficient. In addition, the spatial requirements and constraints a complex iron and steel plant involves can be taken into

account. The direct reduction plant is based on MIDREX Flex technology. SMS will also deliver the innovative melters, slag granulation and other auxiliary equipment, for example water recycling. SMS is building the plant on an EPC basis. This means the company bears overall responsibility for the engineering, procurement and construction of the plant. In addition, significant further work is required relating to structural and civil engineering, infrastructure and media supply.

The innovative concept ensures consistently high product quality. This is because it is seamlessly integrated into the existing iron and steel plant, thereby allowing all subsequent process steps from the steel mill onward to be maintained. As a result, the existing plant structure can be used efficiently. Customers will continue to receive the complete, high-quality product portfolio with the premium quality they are accustomed to.

Major step toward innovative, industrial climate change mitigation

The cooperation between thyssenkrupp Steel and SMS also sends a strong signal for North Rhine-Westphalia as an indus-

(From left to right: Bernhard Osburg, CEO thyssenkrupp Steel; Burkhard Dahmen, CEO SMS group; Hendrik Wüst, Minister President of North Rhine-Westphalia; Martina Merz, CEO thyssenkrupp; Sören Link, Mayor of Duisburg; Tekin Nasikkol, Chairman of the General Works Council at thyssenkrupp Steel)).

trial center. In building the direct reduction plant, the two companies are forming a partnership for innovation and efficient industrial climate change mitigation. At the present time, thyssenkrupp Steel is still responsible for 2.5 percent of Germany's CO₂ emissions, but the first direct reduction plant alone will save over 3.5 million metric tons of CO₂. This corresponds to 20 percent of the company's current emissions, more or less, and underlines thyssenkrupp Steel's leading role in the steel industry's transformation. At the same time, the underlying technological concept can serve as a model for many other decarbonization projects in the industry in Europe and beyond.

Moreover, this step into the transformation will preserve many thousands of high-quality and highly qualified jobs. The innovation alliance between thyssenkrupp Steel and SMS will also call for new qualifications,

in addition to the jobs created during the construction of Germany's biggest direct reduction plant.

The detailed planning and preparatory work for construction of the direct reduction plant will commence immediately, under the scope for an earlier start to work approved by the German government. One of the tasks on the list involves getting the construction site ready on the plant premises of thyssenkrupp Steel.

In parallel to the project, thyssenkrupp Steel will enter into an open and transparent dialog with neighborhood residents, politicians and the general public, to explain the pioneering project that is now being developed to decarbonize steelmaking at the Duisburg site.

SMS group GmbH

At METEC, SMS group will be showing pathways leading to a sustainable and future-oriented metallurgical industry

- Mission #turningmetalsgreen bundles solutions that promote the transformation of the metals industry
- Decarbonization of production, circular economy and integrated lifecycle management will be the central topics discussed
- Burkhard Dahmen, CEO of SMS group: "Climate protection and economic efficiency must go hand in hand to achieve substantial progress"

Every four years, the Düsseldorf trade fair quartet GIFA, METEC, THERMPROCESS and NEWCAST opens its doors to the "Bright World of Metals", one of the leading platforms for the international metals industry. From 12 to 16 June 2023, SMS group, leading provider of metallurgical systems solutions for the steel and non-ferrous metals

industries, will be showing latest technologies and solution concepts, above all for sustainable metals production, at its booth E40/41 in hall 1. The key topics covered will be the decarbonization of production, the circular economy and the concept of an integrated lifecycle management.

The SMS booth will be part of the ecoMetal-Trail, a program launched by the trade fair organizer Messe Düsseldorf. The ecoMetals logo is granted to exhibitors who make an outstanding contribution to the protection of the climate with their products, processes and technologies.

#turningmetalsgreen: The green transformation of the metallurgical industry
With its mission #turningmetalsgreen, SMS group is set to spur the transformation of



the metals industry to become greener in the future. The goal of this mission is to create carbon-neutral and future-oriented solutions and process, develop and implement eco-friendly technologies, optimize processes and equipment, promote recycling and support its customers in achieving their sustainability targets.

Sustainable projects

During the trade fair, SMS group will be giving an overview of its product and performance range developed over its 150-year history, spotlighting some of its current reference projects:

- thyssenkrupp is building the first hydrogen-powered direct reduction plant at its Duisburg location, marking the start of one of the biggest industrial decarbonization projects worldwide. SMS group has been placed the order for the engineering, delivery and construction of the plant, including the peripheral facilities. Once in operation, the plant will avoid more than 3.5 million tons of CO₂ per year. The order volume for SMS group amounts to over 1.8 billion euros – the largest single order in the history of the company.
- SMS has been selected to provide all of the technology and equipment for the H2 Green Steel project in Sweden. The project will see SMS group, including Paul Wurth and its consortium partner Midrex, supply the entire process equipment from ironmaking to the finished steel products for the world's first industrial-scale steel plant based on hydrogen and electricity from renewable sources

and designed to be almost carbon-neutral along the entire process chain.

- Primobius, a joint venture SMS has entered into with Australian Neometals, provides innovative solutions in another field. The JV is specialized in the recycling of lithium ion batteries. By means of its novel hydrometallurgical process, over 90 percent of the raw materials contained in LIBs, e.g. nickel, cobalt and lithium, can be highly efficiently recovered and reused in new batteries. The Primobius hydrometallurgical process achieves higher recycling rates than thermal processes and causes almost no CO₂ emissions.
- For Aurubis, SMS will build a multimetal recycling plant for e-scrap at the Aurubis location in Richmond, USA. This state-of-the-art facility will process complex recycling materials to recover copper, nickel, tin, zinc, precious metals, and platinum group materials for reuse in the value creation chain, thus making an important contribution to resource-saving production.

SMS group's new Lifecycle Services portfolio is geared towards making processes more sustainable and more energy-efficient. To this end, SMS has combined the areas of Electrics & Automation, Technical Service and Digitalization into a powerful integrated unit.

This new set-up makes it possible to provide integrated solutions that ensure and even enhance the performance of production plants during their entire lifecycle. The solutions focus on performance indicators, such as plant availability, product quality,

productivity and timeliness of delivery, but also on sustainability and safety. The provision of integrated services within the framework of performance-based business models, such as Equipment-as-a-Service, forms the basis for long-term partnerships during which SMS relieves its customers from activities to give them more time and capacities to focus on their core competencies.

“Climate protection and economic efficiency must go hand in hand to achieve real, sustainable effects and successful results in the long term,” emphasizes Burkhard Dahmen, CEO of SMS group and President of METEC. “We have set ourselves the goal to make the metals industry greener and more competitive. In pursuit of this goal, we vigorously promote the development of innovative technologies and processes that make a positive contribution to society and the environment. The Metec trade fair is the perfect platform to drive our mission forward as it brings the key players of our industry together.”

The SMS group booth: A venue for exchanging ideas and networking

The open design of the 700 square meter trade fair booth provides the perfect setting as a meeting point for conversation and the exchange of information and ideas. Visitors are invited to attend the Leading Partner Talks“, moderated discussion rounds with experts staged in a live studio

several times a day. The booth resembles the architecture of the new, modern SMS group Campus in Mönchengladbach, which will be ready for occupancy before the end of this year.

The European Metallurgical Steel Technology and Application Days (ESTAD 2023) will take place concurrently with the ME-TEC trade show at the Congress Centrum Düsseldorf (CCD). SMS group will be prominently represented at the conference with about 50 technical papers featuring the company's latest developments and reference projects. Aspects of the steelmaking process, additive manufacturing, carbon footprint reduction and Industry 4.0 will be the main topics covered. In addition, five SMS group experts will give papers on copper production and process visualization at the EMC European Metallurgy Conference.

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MSG Maschinenbau GmbH

GMS-E – A success story for 15 years



Eccentricity, together with other geometric cross-sectional characteristics such as the ovality of outside and inside diameters or also the weld geometry of seamless and welded tubes and hollow sections, is an essential production parameter. This is measured either for final product certification according to standards at the end of the production process or also for process monitoring in previous production steps. Early digitizing of production characteristics enables timely intervention to keep reject rates low and to generate in-depth process understanding manually or even automatically. Early digitization is the decisive approach to increasing efficiency and thus sustainable competitiveness! Customer Voice

"We have been using MSG's GMS-E several times within our group of companies since 2008. Based on customer requirements, all the systems have been continuously optimized and further developed together with MSG. It reliably delivers high-quality results despite the most adverse industrial conditions," says Jörn Winkels, Technical Managing Director Mannesmann Precision Tubes GmbH.

The history

This point was already recognized by a renowned manufacturer of brass hollow sections in 2005. In order to evaluate the pressing process at an early stage, the end of the pressed hollow section, which was to be sawn off anyway, was gripped by an

MSG robot and checked for eccentricity as well as internal and external ovality by means of GMS-E. This was the first time that an insufficiently homogeneous heating of the press bolt was identified as the cause. Insufficiently homogeneous heating of the press bolt could be identified as the cause.

Shortly afterwards, several systems were used in steel tube production for both seamless and welded tubes within the manufacturing process. Among other things, to control the weld geometry. Today, more than 50 GMS-E installed by MSG are in use worldwide. These generate product safety for the customer, but above all an understanding of their own process.

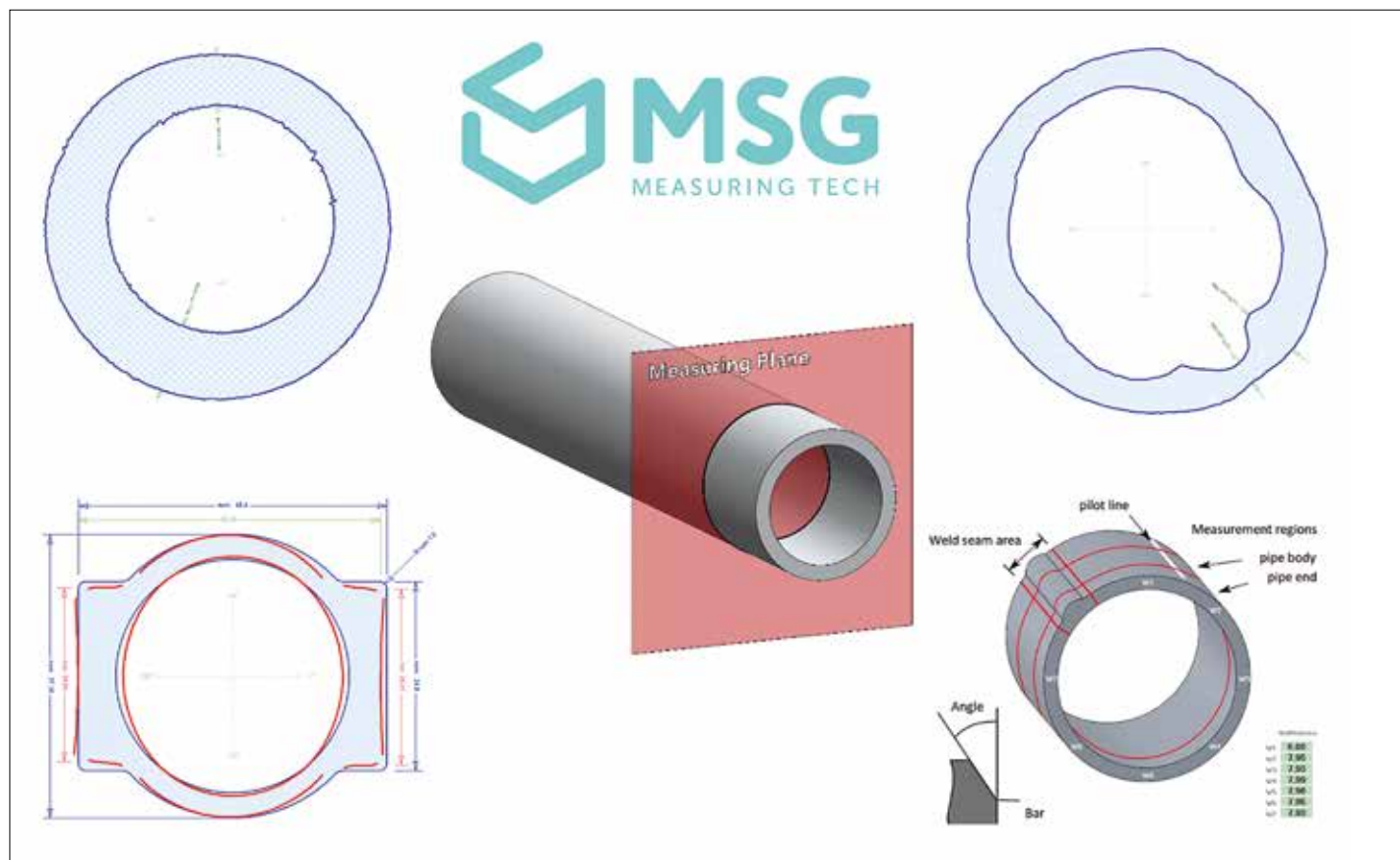
The mode of operation

Thanks to the technology developed by MSG, the cross-section geometry was already digitized internally in 2005, far behind the deformed or burr-covered pipe ends. MSG's robust mechanical engineering together with the know-how acquired since the company was founded in 1998 in the

manufacture of special machines for steel production resulted in a measuring system that is absolutely suitable for industrial use and stable in time. Through continuous further development, measurements can now be carried out on products at over 250°C. Partnership with ASMAG Group

"A production machine runs economical if it is designed to be durable and low-maintenance due to a high-quality construction and if it can be monitored and optimized in the future during its life cycle by industrial-grade and high-precision measurement technology," says Matthias Kramer Managing Partner of MSG. "In the ASMAG Group, we have found exactly this partner for sophisticated and high-tech mechanical engineering!"

For this reason, the management of both companies have agreed to further expand the cooperation. The first contacts between the two companies were established three years ago and since then numerous projects have been successfully realized together.



The cooperation is characterized by a high degree of trust and a focus on the respective strengths and experience of both companies. "With MSG, we have definitely found the top supplier of measurement technology for our machines," says Johann Vielhaber, Managing Director and owner of the ASMAG Group.

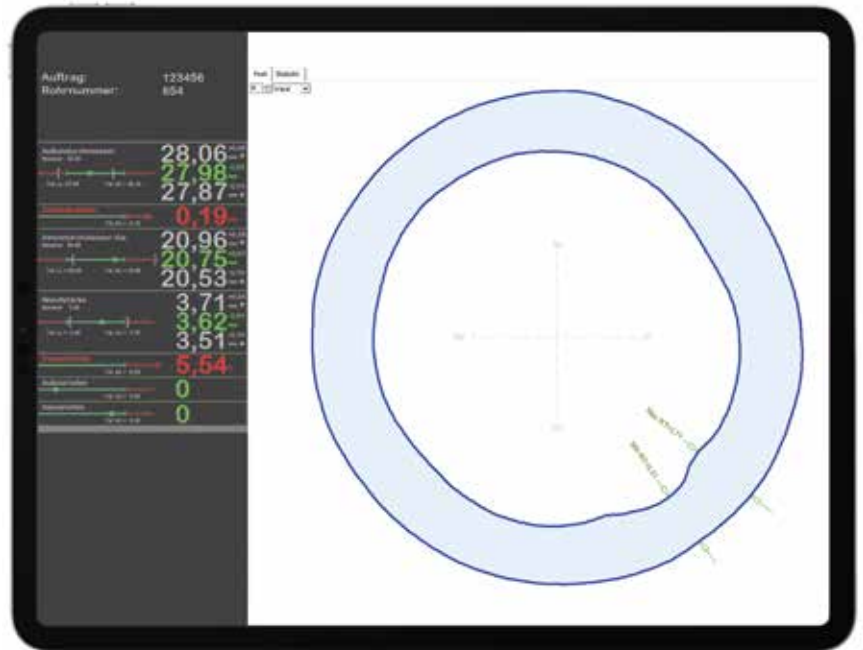
According to the motto "Straight Forward", the winners of this cooperation are the joint customers, as further automation, quality improvement and productivity increase will be the result!

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Tube Eurasia 2023

wire Eurasia and Tube Eurasia will take place as a special area within Tube & Steel Istanbul / Wire Tech



**24 - 27 Mai 2023
Istanbul**



Türkiye is considered an emerging market economy and is a member of the G-20 group of strong economies. The country has a diverse and growing economy, with major industries including agriculture, manufacturing, and services.

The steel industry is a significant contributor to Türkiye's economy. Türkiye is one of the world's largest steel producers and exporters, with a total production of around 30 million tons in 2019. The country has a well-developed iron and steel industry, with a strong presence in the production of flat steel products, long steel products, and semi-finished products. The steel industry in Türkiye has undergone above-average growth and modernization in recent years, with significant investments in new technologies and equipment.

The steel industry in Türkiye has been supported by government policies aimed at promoting domestic production and exports.

In terms of export, Türkiye is an important steel supplier to many countries, including European Union, Middle East, and Africa. Türkiye's steel exports are mostly flat steel products, long steel products, and semi-finished products. The country's main export markets are Germany, Italy, Spain, the United States, and the United Kingdom.

The wire, cable, and tube industries are important segments of Türkiye's manufacturing sector. The wire and cable industry

in Türkiye is well-developed and includes a wide range of products, such as electrical cables, power cables, data cables, and telecom cables. The industry is supported by a strong domestic market and a significant export market, with exports mainly going to European Union countries, Middle East, and Africa.

The tube industry includes a wide range of products, such as steel pipes, seamless pipes, and welded pipes. The industry is mainly focused on serving the domestic market, but it also has a significant export market, mainly to European Union countries, Middle East, and Africa.

These industries in Türkiye are facing some challenges, such as increasing competition from other countries, the volatility of global prices, and the uncertainty caused by the COVID-19 pandemic. However, these industries are expected to continue to be important contributors to Türkiye's economy in the future.

The government has implemented policies to support the wire, cable and tube industries, such as investment incentives, and they are considered as strategic sectors for the country's economy. Türkiye's wire, cable and tube industries are expected to grow in the future, driven by factors such as infrastructure development, increasing demand for energy, and the growing need for communication and transportation infrastructure.

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Tube Middle East Africa 2023

wire MEA and Tube MEA will take place as a special area within the Metal & Steel Egypt

Why Egypt? A regional economic anchor!

With more than 100 million citizens, Egypt has a large domestic market. The industrial base is relatively broad. As a result, Egypt is increasingly establishing itself as a gateway for exports to other African countries.

The oil and gas sector as well as public infrastructure projects contribute to economic growth. Egypt is not only expanding economic ties with its neighbours, but also transport routes. A boom in digitalisation and a well-educated workforce are providing further momentum.

Egypt's geographic location also makes it an attractive destination for foreign investment, as it provides access to the African market and the emerging economies of the region. This can be seen in the country's rapidly growing industries such as tourism, construction, and telecommunications.

Egypt has a diverse and complex economy that has undergone significant changes in recent years. The country has a large and growing population, which presents both challenges and opportunities for economic development.

In the past, Egypt's economy was heavily dependent on agriculture and the public sector. However, in recent years, the government has implemented a number of economic reforms to encourage private sector growth and foreign investment. These efforts have led to the development of a more diverse and dynamic economy, with growing sectors such as tourism, construction, and telecommunications.

The Egyptian government has also taken steps to develop the country's infrastructure, with major investments in transportation and energy projects. This includes the construction of the New Suez Canal, which was completed in 2015 and aims to increase the capacity of the existing Suez Canal, as well as the Aswan Dam, which provides hydroelectric power and supports irrigation for agriculture.

With regard to these upcoming major projects, it is already foreseeable that the Egyptian market will offer good development opportunities for the wire and cable machine industry, as well as for the tube and pipe processing industry.



**02 - 04 Sept 2023
Cairo**

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Tube China, One-stop Sourcing Platform for Tube & Pipe Products



**14-16 June 2023
Shanghai**

Since the adjustment of the epidemic policy announced in January this year, the organizer of Tube China has received a large number of exhibitors' reservations and inquiries, including many new customers as well as old clients hoping to increase the exhibition area. Since the booth space is in short supply, the new W4-1 hall and W4-2 hall is launched by organizer at Tube China 2023! Not only reflects Tube China's industry appeal in Asia, but also reflects the strong trend of rapid market recovery from the side!

After 20 years, Tube China has not only become Asia's leading tube and pipe industry exhibition, but also a pioneer in the industry. Tube Supply & Demand system focus on industry trending topics and provide a brand-new upgraded trade platform to present the state-of-the-art products, technologies and solutions from a professional perspective.

The countdown is on! Tube China, China's No.1 international trade fair for the tube and pipe industries, will be held at the Shanghai New International Expo Centre from 14 to 16 June 2023, concurrently with METALLURGY CHINA 2023, the leading

exhibition of the metallurgical industry. This co-hosted event will set up a professional platform to connect the upstream and downstream industries of the steel industry chain, as well as deepen the exchange and cooperation between enterprises.

Tube China: More than a trade fair

Tube China is not only a professional one-stop sourcing platform, but also a channel for exchanging the know-how of the industry with professionals and experts.

China International Steel Tube & Pipe Summit, The Green & Smart Manufacture of China Steel industry Conference, as well as the Exhibitor Technology Seminar will be held concurrently during the show time.

Some of the most influential experts and representatives from the industry will share their idea and have discussions about hot industry topics in the forums. Topics will include marketing trends in China and Asia; Opportunities and challenges we are facing currently; New demand and innovation technologies in Chinese market; as well as tips and advices shared by the leading industry players.



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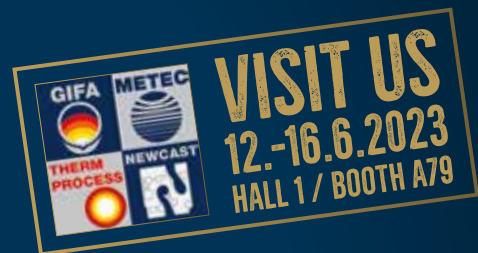
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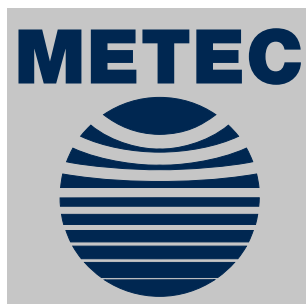
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inventory

100%

quality assurance
by remote control



The metallurgy industry in the spotlight – the METEC 2023 supporting programme



**12 - 16 June 2023
Düsseldorf**

The 11th International Metallurgical Trade Fair with Congresses is presenting a high calibre programme! Visitors look forward to this top class supporting programme and special shows from 12 to 16 June 2023 when METEC becomes the place to be in order to keep up with the giant strides the branch is taking on the road towards future.

In 2023 again the accompanying conference of METEC trade fair, organized by the Steel Institut VDEh

METEC & 6th ESTAD (European Steel Technology and Application Days) 12 - 16 June 2023 - Düsseldorf, Germany

Only those who continue to develop their businesses remain competitive. The prerequisite for this development means being constantly informed about the latest and most sophisticated technological advances, exchanging ideas and initiating and expanding networks with clients, partners and suppliers. The 6th European Steel Technology and Application Days (ESTAD) 2023 ran in parallel with the METEC Trade Fair.

The Steel Institute VDEh and its partners offered visitors the perfect opportunity to reach their objectives. At this event you acquired the latest information on new ideas and developments as well as on the state-of-the-art in metallurgical process technologies for iron and steel production, steel materials and steel application.

The Bright World of ecoMetals

Messe Düsseldorf's ecoMetals Campaign refers to the ecological path of the casting and metal processing industries and promotes exhibiting companies that invest in innovative, sustainable and economically competitive technologies. The ecoMetals brand focuses on three fields of sustainabil-

ity: Resources, Innovation and Production and/or Processes.

Trade visitors can easily identify the award-winning innovations and are guided to the respective exhibitors at GIFA, METEC, THERMPROCESS and NEWCAST by way of complimentary daily Guided Tours – so-called ecoMetals Trails.

Green metals - Breaking into decarbonisation

From e-cars to wind turbines: innovations made of iron, steel and non-ferrous metals are becoming the standard for a climate-neutral industry. However, whether businesses make it or break it in the metal industries depends on how successfully they can decarbonise within the next three decades.

The production of ferrous, light and non-ferrous metals is not only energy-intensive; due to the nature of the process, iron production in particular still relies on using coal, both chemically and physically, and thus produces CO₂ emissions. Foundries and steel mills, along with aluminum, copper, nickel and zinc smelters, are taking on the challenge to become more environmentally friendly. The ecoMetals-Trails show the paths you can take to transformation.

With new technology comes new processes

The Bright World of Metals takes the green path to a climate-neutral future by showing these processes, which aim to reduce CO₂ and eliminate it entirely by increasing implementation of renewable forms of energy and hydrogen instead of coal. The first green steel is already on the market. Green metallurgy – foundries, steelmakers and non-ferrous metal smelters are on the path to climate neutrality.



Guided tours to innovations

The ecoMetals award-winning solutions show visitors innovations for the future: products, processes and technologies in harmony with nature. The tour guides of the ecoMetalsTrails lead to the stands.

METEC is the world's leading trade fair for metallurgical technology. It consistently focuses on reflecting challenges in order to identify demands for the future. The world's best experts in the metallurgical industry meet here to exchange ideas and experiences!

The "quadruple" industry meeting for top decision-makers

It is a unique concept - and it brings unique contacts: The international trade fair quartet GIFA, METEC, THERMPROCESS and NEWCAST is THE platform for meetings

and business. International buyers, users, experts and decision-makers from the metallurgy, thermal engineering and casting industries meet here at four events at the same time and place.

Numerous seminars and symposia, special shows and technology forums as well as international congresses and lecture series are an additional trade audience magnet. Don't miss the industry's must-attend event!

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DRAWING
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One-stop gateway to Asia's thriving tube and pipe industries



**20-22 Sept 2023
Bangkok**

Tube Southeast Asia 2023 is the region's leading procurement and networking platform that connects you to key local and global manufacturers, suppliers, and service providers for the tube, pipe, pumps and valves industries. Held alongside the synergistic wire Southeast Asia, both trade events will bring together some 400 exhibitors from over 30 countries, providing an attractive focal point and springboard for both international companies and local businesses wanting to make their foray into Asia's markets.

Returning to Bangkok in 2023, Tube Southeast Asia – driven by the global expertise of Tube Düsseldorf, marks its 14th edition as Southeast Asia's leading trade fair for the tube, pipe and related industries in the region.

Since its inaugural staging in 1997, the specialist trade fair has set the bar as a trade-focused platform for international exhibitors to showcase their latest tube and pipe processing equipment and machinery, materials and solutions to key local and global manufacturers, suppliers, and service providers from the tube, metals, automotive, oil and gas, and other related industries.

Held alongside the synergistic wire Southeast Asia 2023, both trade events will bring together some 400 exhibitors from over 30 countries, providing an attractive focal point and springboard for both international companies and local businesses wanting to make their foray into Asia's markets.

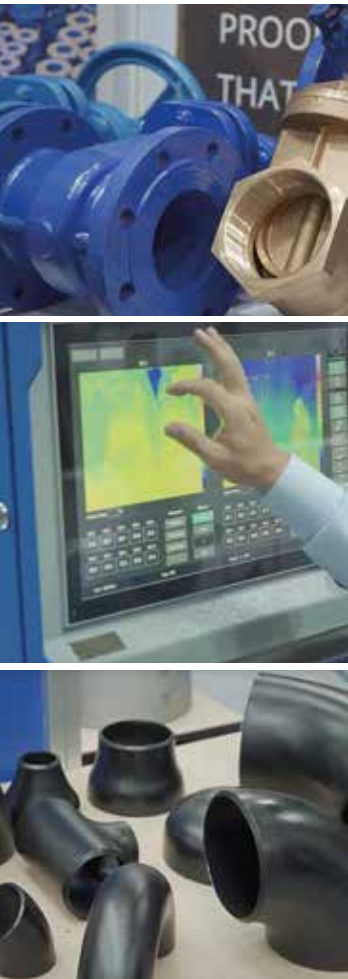
With its proven track record, Tube Southeast Asia has garnered consistent results for both exhibitors and visitors with its ability to:

- Address current and future demands by showcasing leading-edge innovations, machinery and technologies
- Connect top manufacturers and leading brands to active buyers and influential decision makers
- Maintain regional market-relevance by staying on top of global industry trends

Driven by the expertise and credentials of the no. 1 trade fair for the tube and pipe industries – Tube Düsseldorf, the latest staging of Tube Southeast Asia 2023 comes at a time where robust industrial, manufacturing, construction and infrastructure, automotive and telecommunications developments are expected across the region which will see strong demand for tubes and pipes. Tube Southeast Asia 2023 will present a choice trade-only platform to showcase the latest innovations, exchange firsthand knowledge and establish global connections in navigating the dynamic Southeast Asia markets.

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www.tube-southeastasia.com



Tube 2024

wire and Tube 2024: Register and secure early-bird prices

On 31 January 2023 that time will have come round again and companies interested in wire and Tube can apply for participation in their leading trade fairs running from 15 to 19 April 2024 in Düsseldorf.

For the first time early-bird discounts will be offered. From 31 January 2023 the following registration links will be active: for wire 2024: www.wire.de/1330 while the English link is www.wire.de/2330.

For Tube the German link www.tube.de/1330 and the English link www.tube.de/2330 will be active. The official deadline for registrations is 1 June 2023.

wire and Tube are the leading international trade fairs revolving around wire, cable, tubes and pipes. Here producers, upstream suppliers and processors will showcase the industry's complete spectrum of machinery, equipment, products and services.

Alongside heavy machinery and plants 2024 will also see many side events accompanying the trade fairs in the Düsseldorf exhibition halls: guided ecoMetals Trails, expert meetings with live lectures, conferences, workshops, photo tours and the popular after business chill following a successful day at the fairgrounds.

How green are the wire, cable, tube and pipe industries? How sustainable is their production and how eco-friendly is their handling of the used materials? These are questions that the exhibitors will also answer and demonstrate at their exhibition stands during the guided ecoMetals Trails in 2024.

At the Expert Meeting industry professionals will speak on an open-access stage about the exciting transformation processes their companies have undergone.

Every two years visitors from over 130 countries travel to see the industry highlights in the metal industry on show in Düsseldorf. International satellite events in India, China, Thailand, Egypt and Turkey form a community that spans the globe and one that is growing.

2022 saw 1,822 exhibitors from 50 countries presented on around 93,000 square metres on the occasion of wire and Tube.



**15-19 April 2024
Düsseldorf**



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www.tube-southeastasia.com

Tube events

Events for Business, Technology, Education and Networking

Diary of world class tube events

Mai 2023

11-12	ITA Conference	ita-tube.org
24-27	Tube Eurasia	tube-eurasia.com

June 2023

06	SPE	spe-aberdeen.org
12 - 16	METEC	metec.com
14 - 16	Tube China	tubechina.net

September 2023

02 - 04	Tube Middle East Africa	tube-mea.com
11 - 14	FAB Tect	fabtechexpo.com
20 - 22	Tube South East Asia	tubesoutheastasia.com
26 - 28	Stainless Steel World	stainless-steel-world-event.com

October 2023

02 - 05	ADIPEC	adipec.com
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November 2023

07 - 10	Blechexpo	blechexpo-messe.de
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January 2024

08 - 11	Steel Fab	steelfabme.com
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April 2024

15 - 19	Tube	tube.de
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May 2024

13 - 17	IFAT	ifat.de
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June 2024

10 - 14	ACHEMA	achema.de
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October 2024

03 - 05	Tubotech	tubotech.com
22 - 25	Euroblech	euroblech.com

November 2024

27 - 29	Tube India	tube-india.com
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December 2024

03 - 05	Valve World Expo	valveworldexpo.com
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ITA Conference 2023



May 11th to 12th, 2023 in Duesseldorf
Opportunities for the Tube Industry in turbulent times
Profit and benefit from strong regional tube demand

Key Themes and Topics

- Global Tube Market Overview
- A close look into the major tube market segments: OCTG, Automotive, Structural piping and others
- Energy costs, overcapacity, End-User demand, energy transition
- Market trends

Program Thursday May 11th

Congress Center Duesseldorf (CCD South, 2. floor)

09.00 – 09.15



**Welcome –
Macroeconomic and international Tube &
Pipe market outlook**
Dr. Gunther Voswinckel
(President, International Tube Association)

09.15 – 09.30



Carbon reduced tubes
Frank Harms
(General Manager,
German Steel Tube Association)

09.30 – 09.45



Hot Rolled Coil Market
Emanuele Norsa
(Editor, Kallanish Commodities)

09.45 – 10.15 Panel discussion market

10.15 – 10.45 Coffee break

10.45 – 12.00 Session 1: OCTG



Donald Gibeaut
ITA Vice President N.A.
Global Bar and Tubular
Products Manager
Ajax TOCCO



Ekaterina Bezlepina
Manager Sales
Department
Nakata MFG Co., Ltd.



Christian Haferkamp
Head of Technical
Sales Tube & Pipe
Plants SMS group



Federico Raggio
Managing Director
CGM CIGIEMME S.p.A.

12.00 - 13.30 **Lunch break**

13.30 - 14.45 **Session 2: Automotive**



Albert Sedlmaier
ITA Vice President
Europe CEO
data M Sheet GmbH



Sebastian Gaiser
Technical Sales
Manager
Wafios AG



**Dr.-Ing. Thomas
Säuberlich**
Head of Engineering
Automotive Benteler
Steel Tube GmbH



Dr.-Ing. Tilman Traub
Head of Innovation
Dreistern GmbH &
Co. KG

14.45 - 15.15 **Coffee break**

15.15 - 16.30 **Session 3: Structural piping**



Mitsuru Nakata
ITA Chairman, CEO
Nakata MFG Co., Ltd.



Adrian Alecu
Head of Strategy and
Business Development
ArcelorMittal Tubular
Prod. Europe



Erwin Bauer
Key Account South
Kloeckner Metals
Germany GmbH



Christian Haferkamp
Head of Technical
Sales Tube & Pipe
Plants SMS group

16.30 - 16.45 **Coffee break**

16.45 - 17.15 **Session 4: Mechanical / Precision piping**

Approaches to increase efficiency in high quality tube
production routes by integrating MSG measuring systems



Matthias Kramer
CEO and Owner
MSG Maschinenbau GmbH

17.15 - 17.30 **Buyers guide / Closing**

18.00 - open **ITA Tube Conference dinner**

Program Friday May 12th

10.00 - 11.00 **ITA Annual General Meeting**
(press lounge **Messe Duesseldorf**)

11.30 - 14.30 **plant tour: Sustainable tube production in
a high cost environment**
(Benteler Steel Tube GmbH, Dinslaken)

Join

- ITA – well respected since 1979
- non-commercial
- over 600 members worldwide
- sole globally active association of tube & pipe engineers from across the industry (supply and manufacture), related services and universities.
- global technical and market information platform supporting innovation and growth within the tube industry

Benefit

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Advertising at reduced prices

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- more than 15,000 visitors monthly to the ITA website
- worldwide users of social media

Free listing on the ITA website with link to your company website

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Free admission ticket for wire & Tube Düsseldorf for one day

Participate

- ITA fair seminars
- ITA fair participation
- ITA website

ITA–
your global tube platform

The following company applies for a Corporate Membership in International Tube Association for upto five members and agrees to pay the annual subscription of € 250 (EU VAT exempt).

☐ I / We agree on use of personal data as well as company data and logo particularly for registration on ITA website as well as for information purpose (revocable reserved).

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Job Title	
Email address	
Tel.	

Applicant 4

Family Name	First Name
Job Title	
Email address	
Tel.	

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Family Name	First Name
Job Title	
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Tel.	

Applicant 5

Family Name	First Name
Job Title	
Email address	
Tel.	

Applicant 3

Family Name	First Name
Job Title	
Email address	
Tel.	

Authorised Signature _____

Name _____ Date _____

Brief description of company production/services:

Additional Information – Person responsible for marketing and PR (if not shown above)

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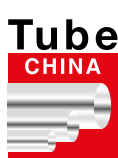
If any applicant is located at a different address to above, please advise on a separate sheet.

Please return form to:

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Inside back cover	€ 1,800.00	€ 1,710.00	€ 2,220.00
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Look at our next issue:

- Review ITA Conference 2023
- Review Metec 2023
- Review Tube China 2023
- Preview Tube 2024



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