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Greetings from Dr. Gunther Voswinckel President International Tube Association

Dear readers,
ladies and gentlemen,

It's already half over, and already we can say that 2020 has been a strange old year.

Since the turn of the year, global oil demand, already strained at the seams, has been sorely tested by the COVID-19 virus. Brent crude prices fell by 30% in a single day, the price per barrel dropping below $34 in early March.

And the oil price war between Saudi Arabia and Russia continues apace. Faced with lower demand due to COVID-19, Russia refused to cut back production. In response, Saudi Arabia forced OPEC's hand, increasing production and lowering prices still further. An energy price war and the negative impact on oil prices doesn't encourage new exploration and will push down demand for oil country tubular goods, line pipe, and other energy-related steel products.

Nonetheless, in China, even though millions were quarantined to halt infection, the mills continued to produce steel, so much so that global markets now have to deal with a sizeable surplus. China needs to export this excess production whatever the cost, posing a threat to global steel prices for some time to come.

Growing trade tensions stemming from the pre-COVID era and the resultant effects on oil prices and steel markets are familiar problems. However, combined with the massive supply chain disruptions of the past few months and fundamental changes on the factory floor and in offices across the globe, the metal and metal-working industries—including the pipe and tube sectors—are faced with a need for agility and adaptability on a scale that's entirely new.

Broadly speaking, we must now fast forward Industry 4.0 with an urgent need for greater connectivity of machines, data, value chains, and, most importantly, people. When factories in many parts of the world reopen and the machines return to full production, it will be seen that COVID-19 has changed the manufacturing ecosystem for the long term.

The world has transformed more in the last three months than it has for decades – and with it, so must the manufacturing workforce. New skillsets are required, innovation and technological progress will be central to recovery. In this situation, an organization like ours, the ITA, is precisely the forum for exchange—of ideas, of cutting-edge technology, of training and education opportunities.

All the more reason to use the tools we have at our disposal to continue our interrupted conversations; we intend to take stock at our upcoming web conference series of where we all are as we return—not to 'normal' but to a rejuvenated industry. And when we can once again meet in person, we can 'hit the ground running', as they say, and meet the challenges we face head-on.

We look forward to these conversations, both on- and offline. See you soon!

Dr. Gunther Voswinckel
President ITA

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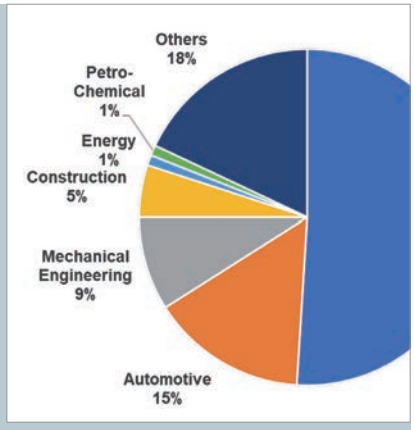

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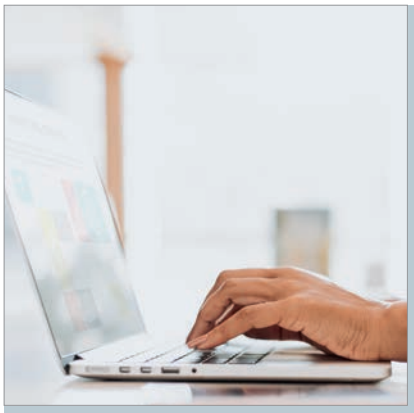

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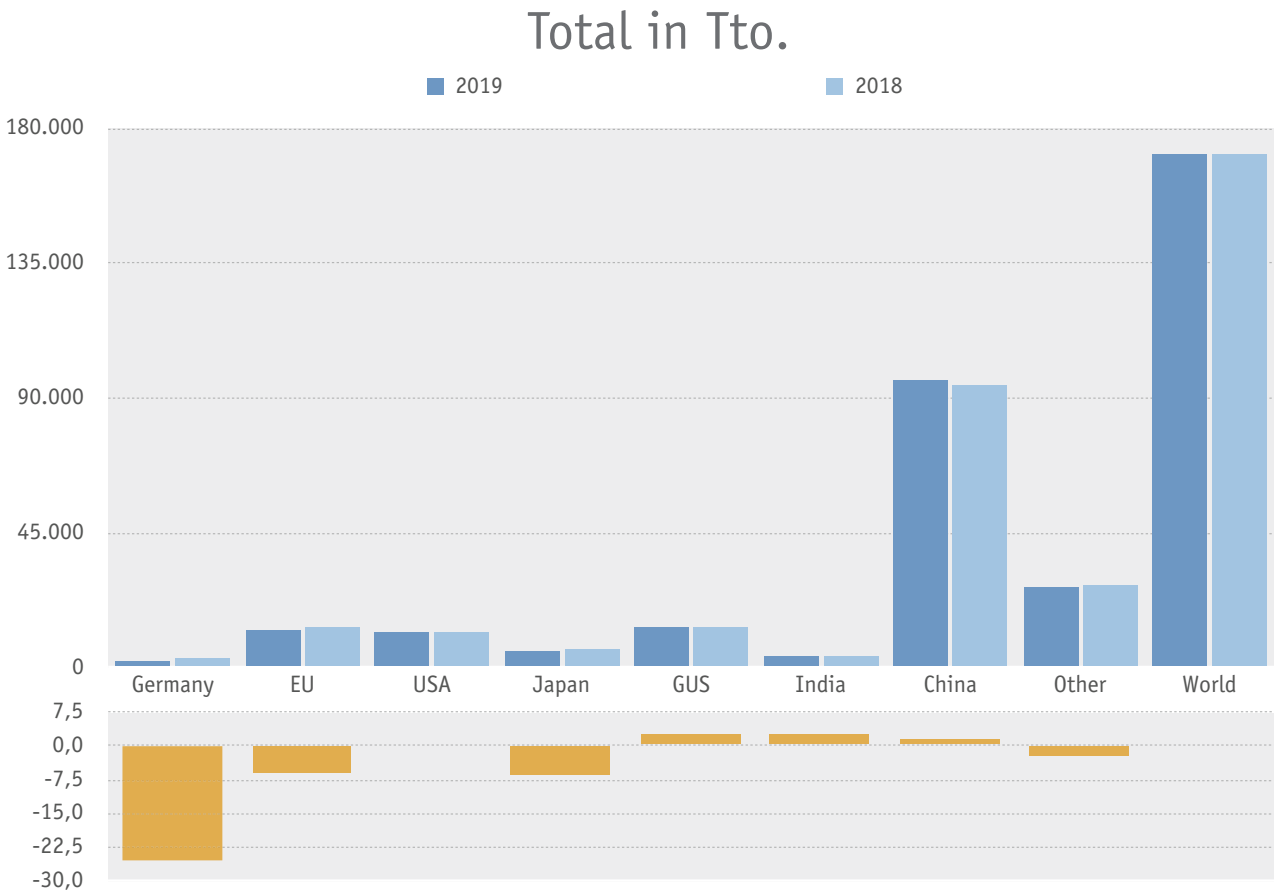
World Steel Tube Production – Forecast

In 2019 the World Steel Tube Production reaches 171 million tons, an increase of 20.1 %. The production of seamless tubes decreased 1.6 % to 43 Mio to, significant is the increase in India with 20 %. Germany reached with a loss of -14.6 % a negative result in the seamless tubes market, and a minus of 26.5 % in total productions. Chinese steel tube producers achieved a production of 96 million metric tons, a plus of 1.6 %, the USA with a production of 11.8 million tons an decrease of 0.2 %.

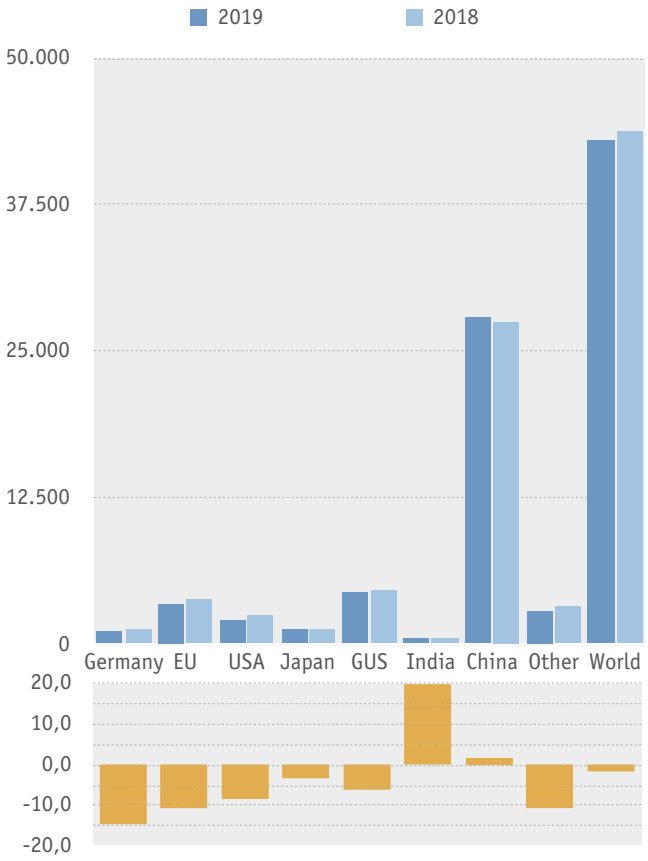


	seamless tubes			welded tubes <406			welded tubes >406			welded tubes			TOTAL		
Region/ country	**2019**	**2018**	**in %**	**2019**	**2018**	**in %**	**2019**	**2018**	**in %**	**2019**	**2018**	**in %**	**2019**	**2018**	**in %**
Germany	1,086	1,271	-14.6	828	878	-5.7	391	936	-58.2	1,219	1,814	-32.8	2,305	3,085	-25.3
EU	3,556	3,972	-10.5	8,376	8,163	2.6	928	1,538	-39.7	9,304	9,701	-4.1	12,860	13,673	-5.9
USA	2,219	2,423	-8.4	7,892	8,135	-3.0	1,762	1,334	32.1	9,654	9,469	2.0	11,873	11,892	-0.2
Japan	1,330	1,372	-3.1	3,300	3,457	-4,5	1,137	1,333	-14.7	4,437	4,790	-7.4	5,767	6,162	-6.4
GUS	4,470	4,763	-6.2	6,248	5,976	4.6	3,038	2,648	14.7	9,286	8,624	7.7	13,756	13,387	2.8
India	600	500	20.0	1,600	1,600	0.0	2,000	2,000	0.0	3,600	3,600	0.0	4,200	4,100	2.4
China	28,000	27,500	1.8	60,000	59,000	1.7	8,000	8,000	0.0	68,000	67,000	1.5	96,000	94,500	1.6
Other	2,872	3,215	-10.7	19,659	18,845	4.3	4,673	4,554	2.6	4,332	24,502	-0.7	27,204	27,717	-1.9
World	43,047	43,745	-1.6	107,075	106,221	0.8	21,538	21,465	0,.3	128,613	127,686	0.7	171,660	171,431	0.1

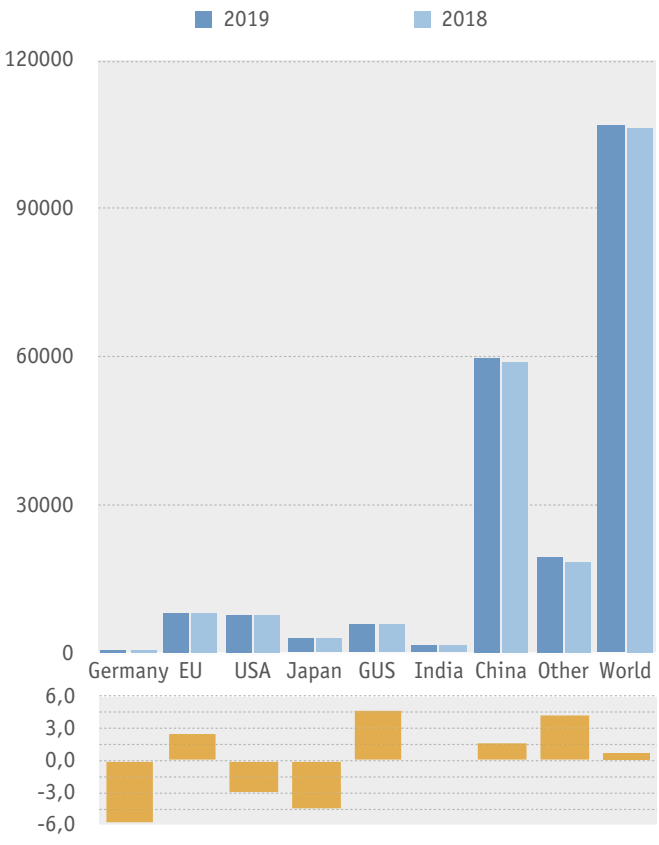
Wirtschaftsvereinigung Stahlrohre e.V.

figures include estimations

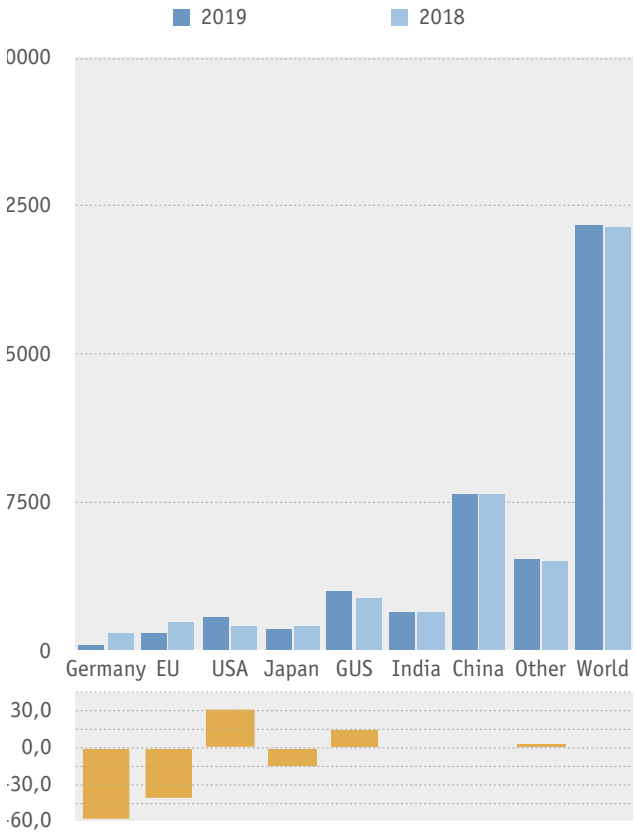
Seamless tubes in Tto.



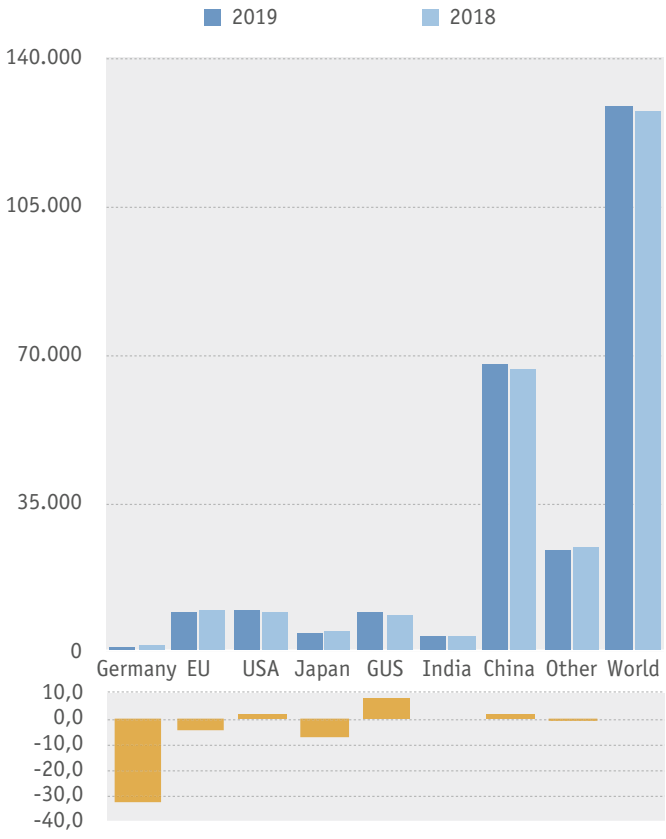
Welded tubes <406 in Tto.



Welded tubes >406 in Tto.



Welded tubes in Tto.



Dr. Gunther Voswinckel, VOSCO GmbH

World Tube & Pipe Market – some influencing factors on the present situation

Dr. Gunther Voswinckel – Update as per April 2020

This column/article, in a consecutive way, discusses several economic consequences for the tube and pipe industry.

These last weeks have really caused unforeseen consequences to the world. The corona pandemic starting in Asia, mainly in Wuhan and the Hubei province, has meanwhile took control of Europe, the USA, and many other countries. It is even very likely that we will experience the corona roll out throughout the entire world. In consequence many countries have already limited some substantial human rights, such as the freedom of movement as well as the freedom of property and the freedom of practicing an occupation. Many countries have decided to lock down major parts of the public, industrial and private activities to protect human lives.

In this article I will not discuss the sad and disastrous consequences for the mankind (as of 21. April 2020 worldwide ab. 2,5 Mio. known persons in 185 countries are infected by Covid-19 and about 165.000 persons have died being infected by Covid-19). The latest epicentre being the USA with 790.000 infected persons and 42.200 killed persons. The comments on the human consequences of this sad catastrophe shall be made by analysts who are mor experts in this field.

In the following I will only concentrate on the fast-developing consequences for the tube and pipe industry.

Many countries have decided to lock down major parts of the industry. Consequently, major supply and service chains are not working any more. It will take quite some time to recover the well-established globalized production network. In the meantime, the consumption of energy and most industrial goods has fallen apart.

The by far largest market segment for tubes and pipes is the OCTG (Oil Country Tubular Goods) market. With about 51 % of the world tube and pipe market share it is largely dependent on the oil and gas price, which still can be considered as the blood line of industrialisation. The daily consumption has reached a peak value of about 100 Mio. barrel/day early 2020. Since the corona pandemic started in China, the world oil consumption dropped by more than 30%. A tremendous oversupply of oil was the consequence immediately reflected in an oil price drop of about 60% (60 US$/Barrel to 25 US$/barrel in only 5 weeks). The OPEC lead by Saudi Arabia, and major non-OPEC oil producing countries tried to find international agreements to reduce the daily oil production. But due to the significant implications of such measures to some countries first attempts for an agreement failed. Subsequent internal conflicts between the oil producing countries even put further pressure on the oil price level. Only on April 20th the oil producing countries could agree to reduce the world daily production by about 10 million barrel/day for the months May and June. This reduction of the daily production anyhow did not show the desired consequences, since even this reduced production level is by far higher than the present world oil demand caused by the lock down due the corona pandemic. Unless the world oil demand will raise again or the oil producing countries can agree on further significant reductions on the oil production, the oil price will probably remain on such low level.

Due to the crash of the oil price, the world drilling activities are significantly reduced having negative impact on the tube and pipe industry. The tube and pipe industry is partially still covered by long-term delivery contracts, anyhow it can be expected, that the renewal of such delivery contracts will be challenging for the tube and pipe industry.

Other tube and pipe markets such as the automotive (15%) and the mechanical engineering (9%) are also significantly hurt by the industrial shut down caused by the corona pandemic. Many automotive production plants and mechanical equipment plants around the world were shut down during April 2020. Even the world car sales volume collapsed by about 70% this month. Now since China and some other countries are restarting its production facilities, there is hope for a fast recovery within 2020.

The mechanical engineering market with its uncounted applications represents many interesting segments for the tube and pipe industry, such as e.g. hydraulic cylinder tubes or ball bearing tubes. It can be expected that the investment in capital goods will slow down and be postponed to secure companies assets, anyhow the market will recover and may even become stronger like we have seen after the last financial crises.

The building and construction industry (5%) also represent an attractive market segment for our industry. The building and construction industry market is growing by about 4%/year. If the recession caused by the corona pandemic does not last long, this market may even be spared and not so negatively hurt. In this market we can see a competition between steel/tube structures and concrete elements. Lobbying activities are required, especially to further enlarge the steel/tube penetration for skyscrapers and bridges.

The tube and pipe price index weakened since September 2018 from 367 down to 339 in March 2020 (-8%). April figures are not yet published, anyhow it can be expected that tube and pipe prices will drop even more significantly.

In the high wage countries, demanding high-tech products are strategic targets rather than commodity-grade tubes and pipes. Limiting factors are sometimes the availability of steel quality and quantity for strip, plate and billets as well as the tube plant infrastructure regarding machines and the applied quality standards.

Anyhow the still unpredictable consequences of the worldwide corona pandemic, the trade conflict between the USA and China, the instable political situation in many countries are creating an atmosphere that put pressure on our industry with great danger for a global economic recession.

Strategical measures for our industry are consequently quite demanding. Lean and agile organizations with flexible and customer orientated production facilities are adequate to prompt the demanding and volatile market requirements. Agile digital solutions in the sense of "Industry 4.0" offer further opportunities to stay successful.

In this column/article I would like to discuss some important segments of the tube and pipe market.

These last weeks have really caused unforeseen consequences to the world. The corona pandemic starting in Asia, mainly in Wuhan and the Hubei province early February 2020, has meanwhile took control of Europe, the USA, and many other countries. It is even very likely that we will experience the corona roll out throughout the entire world. In consequence many countries have limited some substantial human rights, such as the freedom of movement as well as the freedom of property and the freedom of practicing an occupation. Many countries have decided to lock down major parts of the public, industrial and private activities to protect human lives.

In this article I will not discuss the sad and disastrous consequences for the mankind (as of 21. April 2020 worldwide ab. 2,5 Mio. known persons in 185 countries are infected by Covid-19 and about 165.000 persons have died being infected by Covid-19). The latest epicentre being the USA with most infected (790.000) and killed persons (42.200). The comments on the human consequences of this sad catastrophe shall be made by analysts who are more expert in this field.

In the following will only concentrate on the consequences for the tube and pipe industry.

Many countries have decided to lock down major parts of the industry. The international stock markets are flooded with huge amounts of financial support to avoid bankruptcy or unfriendly take overs. Some countries are trying to compensate the corona consequences with financial support also for mid-size and small entities. Major supply and service chains are not working any more. It will take quite some time to recover the well-established globalized production network. In the meantime, the consumption of energy and industrial goods has fallen apart. The tube and pipe industry, unless still protected by long-term delivery contracts is also hard hit by this global pandemic.

The by far largest market segment for tubes and pipes is the OCTG (Oil Country Tubular Goods) industry with 51% market share (Figure 1).

The OCTG market is subdivided in pipes used for oil and gas exploration rigs, such as drill pipes, joints, tubing and casings and further downstream line pipes to transport oil and gas.

The OCTG tube and pipe consumption is heavily depending on the number of rigs, as well as the depth of drilling and the capacity of the rigs. The number of new oil and

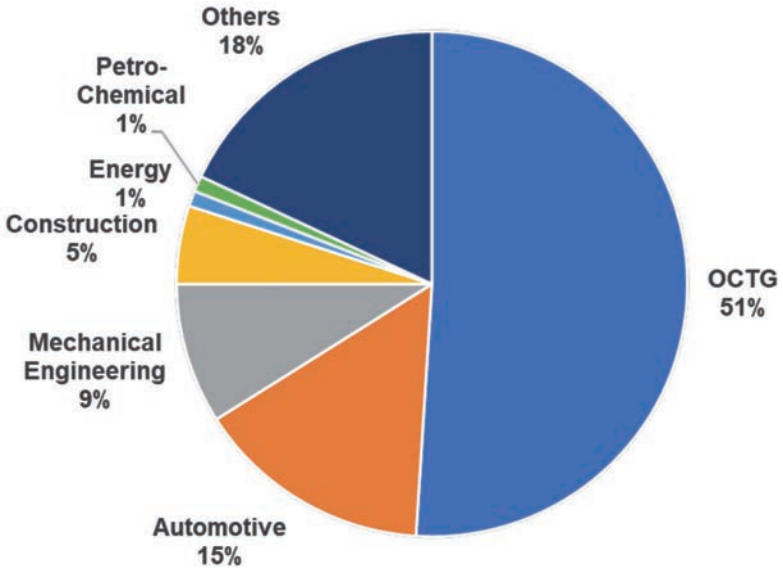


Figure 1: Markets of Steel Tube and Pipes
Source: ITATube Journal/Wirtschaftsvereinigung Stahlrohr

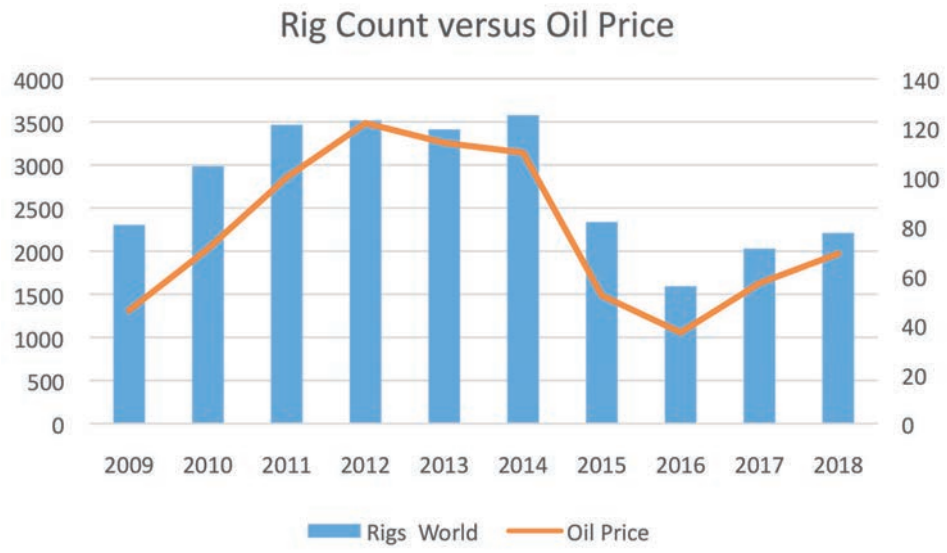


Figure 2: Correlation of Oil and Gas Rigs versus Oil Price
Source: based on Baker Huges and Nasdaq

gas rigs itself is heavily depending on the oil price (Figure 2).

The oil price chart of North Sea Brent Oil (Figure 3) shows, after a long period of raising oil prices from early 2016 (41 US$/barrel) to October 2018 (85 US$/barrel), the crude oil price fell down to 53 US$/barrel in only 2 months, to recover to about 72 US$/barrel until April 2019. Since April 2019 to January 2020 the oil price fluctuated between 60 US$/barrel to 68 US$/barrel. These developments were mainly determined by political interventions e.g. in form of imposing trade embargos on oil producing countries like Iran and Venezuela to balance demand and offerings of oil. End of January 2020, the first corona infections were reported from Wuhan/China, and the Chinese government took first countermeasures and shut down parts of social life and their industry. Other countries followed with such measures afterwards. These measures were prompted by a world oil consumption decrease of more than 30% (from about 100 Mio. barrel/day to only 70 Mio. barrel/day). A tremendous oversupply of oil occurred reflected in a crude oil price collapse of about 60% (64 US$/Barrel to 25 US$/barrel in only 5 weeks). The OPEC lead by Saudi Arabia, and major non-OPEC oil producing countries tried to find international agreements to reduce the daily oil production. But due to the significant implications of such measures to some countries first attempts for an agreement failed. Subsequent internal conflicts between the oil producing countries even put further pressure on the oil price level. Only on April 20th the oil producing countries could agree to reduce the world daily production by about 10 Mio. barrel/day for the months May and June 2020. This announcement to reduce the daily production anyhow did not show the desired consequences, since even this reduced production level is by far higher than the present world oil demand caused by industrial lock down due the corona pandemic. The International Energy Agency (IEA) expects, if the industry restarts within May 2020, an overall oil consumption reduction for 2020 of about 9 Mio. barrel/day for the entire year. This may be optimistic, anyhow the agreement of 20th of April by far does not outbalance the reduced demand for crude oil in the present months March and April. Therefore, the crude oil price continued its free fall to 18 US$/barrel as of 19th of April. Unless the world oil demand will raise again or the oil producing countries can agree on further significant reductions on the oil production, the oil price will probably remain on such low level.

The two charts (Figure 4) show the US WTI (West Texas Intermediate) and the European Brent (North Sea Oil) for the last 6 months. Normally the price level of these two dominating brands are quite concurrent. Right now, since the corona pandemic let the oil demand fall apart, the situation seems to get out of balance.

The WTI oil prices has lost by far more compared to the Brent price. WTI is to a great extend subject to trading with futures. The US based oil storage capacities, e.g. at the central US handling location Cushing/Oklahoma, are full and cannot store more oil. Another about 160 Mio. barrel of oil is on its way in tankers swimming on the ocean. The May futures become due; the collapsed market does not take the oil; the oil must be physically taken, unless the oil can be stored by the owner of the future. Therefore the owner of the May oil futures sold at any price. Resulting in a situation that the WTI oil price noted on the 21st of April 2020 at – 37 US$. First time ever the traders had to pay to get rid of their oil!

The European North Sea Brent oil, at the same time noted at about 20 US$/barrel also very low but was not so severely hit by speculation.

Considering the cost of the different countries to produce and pump oil and gas (Figure 5) it becomes obvious how critical it is if the oil prices crashes down to levels, we have seen this April 2020. Considering the cost of the

Figure 4: Oil Price Brent and WTI Development 6 Months until 21. April 2020
Source: Nasdaq

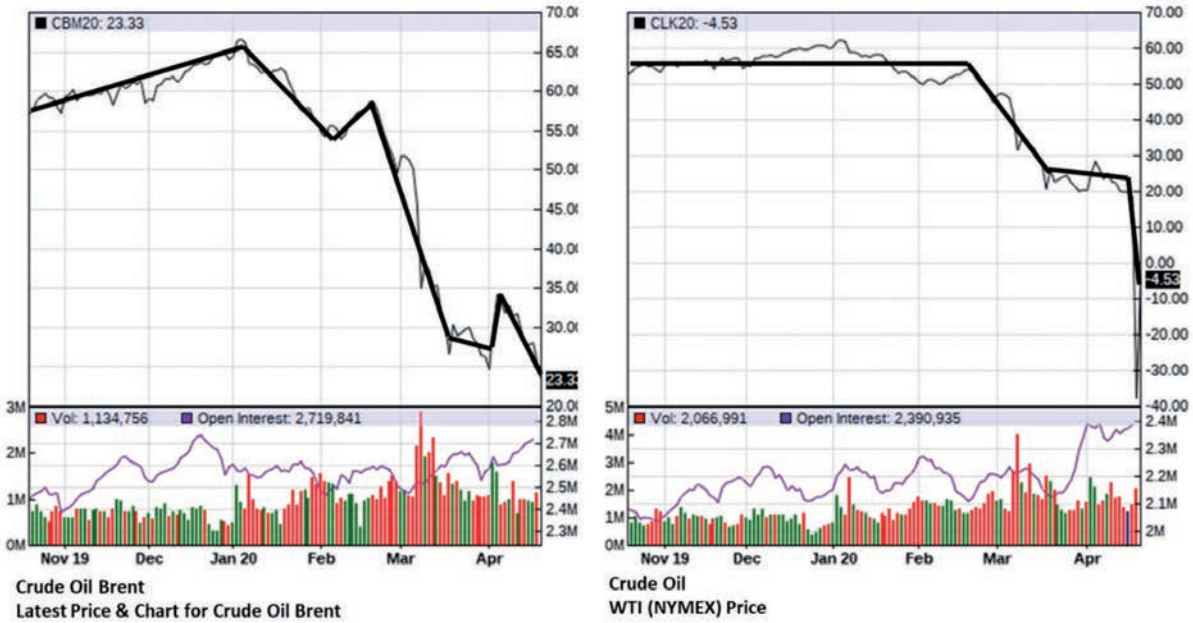


Figure 4: Oil Price Brent and WTI Development 6 Months until 21. April 2020
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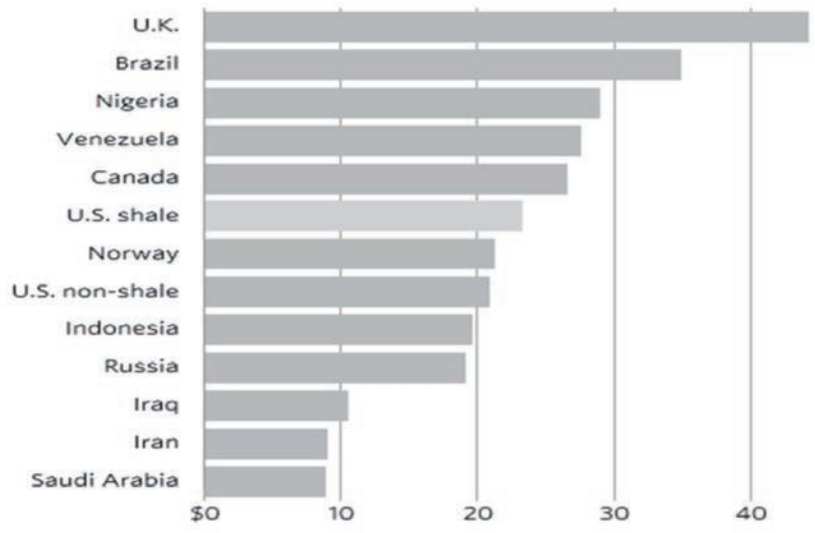

Figure 5: Cost to produce a barrel of Oil
Source: UCube by Rystad Energy, published October 2nd, 2018

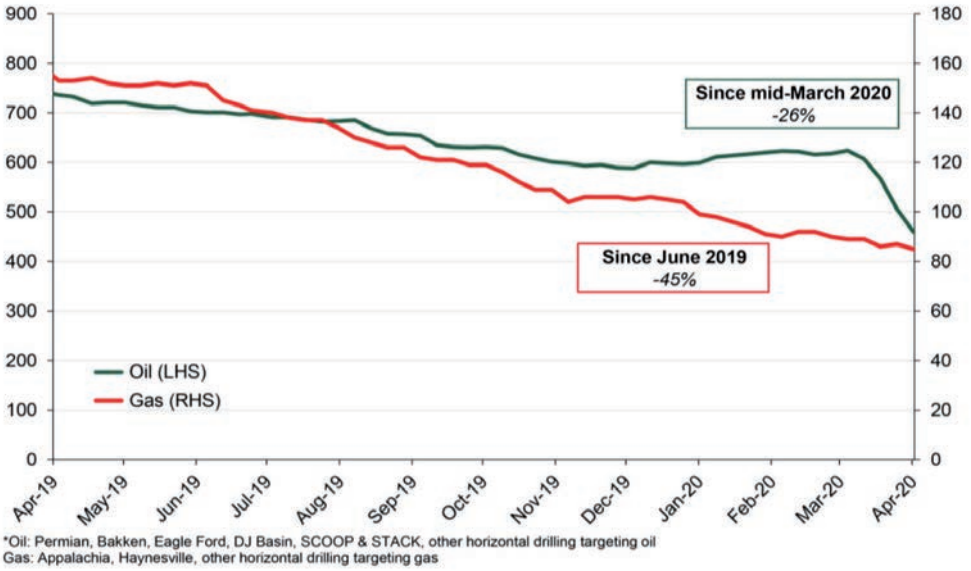

*Figure 6: Horizontal rig count by main hydrocarbon type**
Source: Baker Huges, Rystad Energy research and analysis, published April 2020

different countries to produce and pump oil and gas (Figure 5) it becomes obvious how critical it is if the oil prices crashes down to levels, we have seen this April 2020.

The oil exploration industry stops its drilling activities at such low oil prices. The USA for example, who became, due to its fracking boom, the largest oil and gas producing country in the world, reduced its horizontal drilling activities by about 26% since March 2020 (Figure 6). The cost to produce US fracking oil is much higher than the present market price. Many analysts even expect bankruptcies of such companies who produce oil at higher prices. At the same time, the storages for OCTG tubes and pipes are filling up causing order volumes and prices sliding down for the tube and pipe industry.

To stimulate the oil market the US president Mr. Trump announced on April 21st to increase the oil demand by enlarging the national oil reserve volume.

The second oil and gas market represent gas and oil pipelines. The pipeline market is a project-based business with long planning periods and high political determinations. Most of such projects are not yet so much affected by the corona pandemic if the relevant global supply chains are working. Pipeline projects are planned in e.g. Europe, USA and Asia. In Europe gas pipelines are mainly built to serve gas from gas and oil fields in Russia and in the North Sea. In the USA the new Keystone XL pipeline is planned to transport oil from Canada to the petrochemical centres in the US. In Asia they shall serve the new petrochemical complexes in Malaysia and Indonesia. All these projects are intensively discussed on political and environmental platforms. The European project "Nord Stream" is a good example, since the US president Mr. Trump and the Polish government are using all their influence to ban this project (Figure 7).

The US government has even imposed trade sanctions on the involved international companies. Although the US oil and gas exports to the EU have been raising significantly, the US government want to ban competition from Russia. - Poland on the other had want to secure its income related to oil and gas being transported through pipelines on their territory. On the other hand, the US pipeline project "Keystone XL" (Figure 8) is supported by Mr. Trump but environmental activists are fighting hard against the project. Due to such interventions is becomes more and more difficult to predict pipeline project

Figure 7: Pipeline Project North Stream 2
Source: North Stream

Figure 8: Pipeline Project Keystone XL
Source: CTV News

developments in the oil and gas business.

Therefore, also this market can be considered as difficult in regards of strategical forecasts, which is reflected in the volatile regional production figures of pipeline pipes.

If we now take a look at the price level of steel tube and pipes as published by FRED, the US bureau of labor statistics (Figure 9), we can see that the tube and pipe price index since September 2018 weakened from 367 down to 339 in March 2020 (-8%). April figures are not yet published, anyhow it can be expected that tube and pipe prices will drop even more significant.

Besides OCTG, as dominating market, the automotive (15%), mechanical engineering (9%) and construction industry (5%) are also strong market segments for the steel tube and pipe suppliers.

The second important market with a market share of 15% is the automotive market. Tubes and pipes

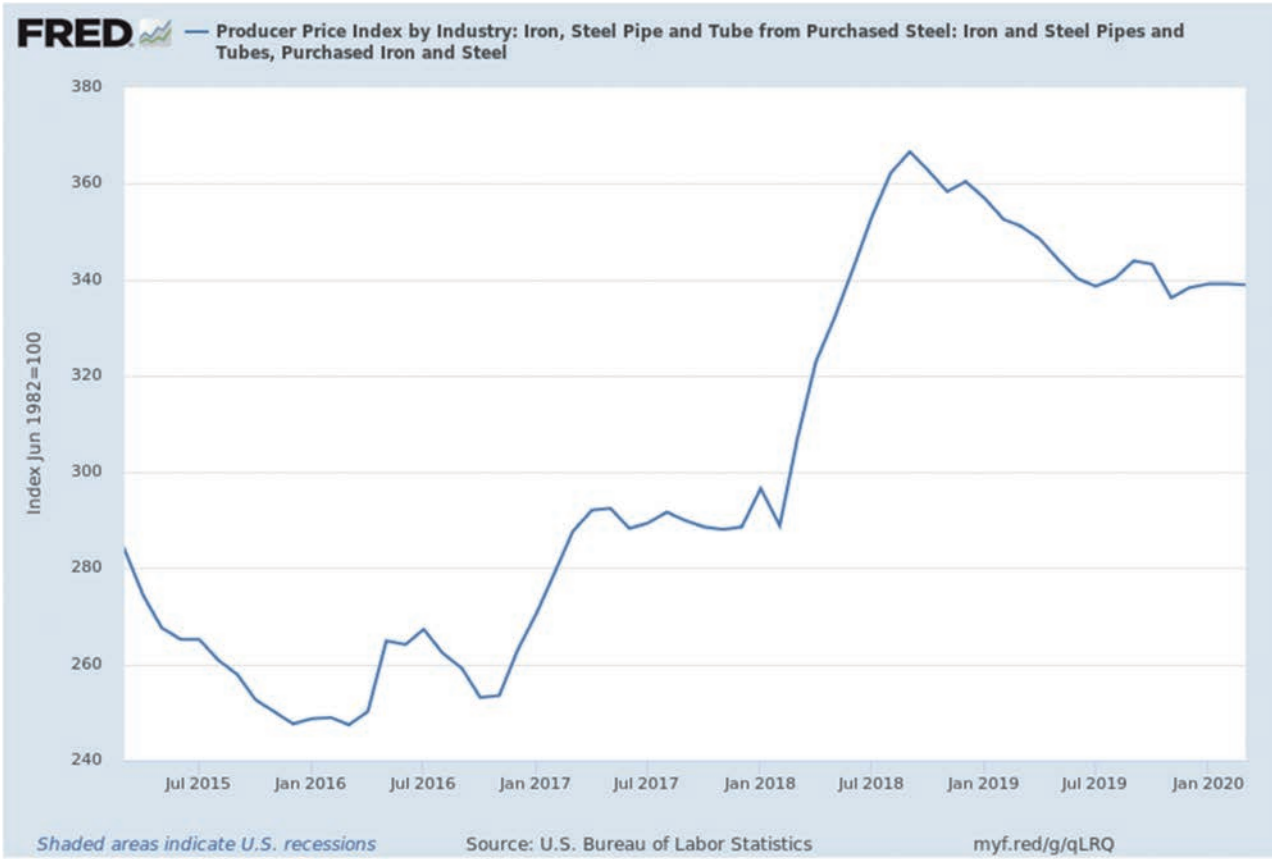

Figure 9: Pipe and Tubes Producer Price Index as per 31st of March 2020
Source: FRED US Bureau of Labor Statistics

Figure 10: World Car Sales (Mio. units)
Source: gathered from Statista, PCA, Bloomberg, Bain

with diameters up to 90 mm are mainly applied.

Since 2017, after many years of stable growth, the annual world car sales figure was declining 2018 (-1%) and 2019 (- 4%). 2020e due to the corona pandemic is expected to materialize another significant decline (-16%) of the world car sales (Figure 10).

The automotive industry is characterized by very global supply chain systems, demanding by its just in time deliveries. The car sales figures 2020 dramatically fell apart (e.g. China minus 82% this February) and many OEM and supplier's production plants were shut down. This April 2020 the world automotive industry is almost totally shut down. Some suppliers report production levels in April and May 2020 of only 20% to 30% of the originally planned production figures. Starting with the Chinese production plants, now also some European and other countries are planning to restart production in May 2020. Anyhow many countries, due to the ongoing corona pandemic, still will not be able to restart its industries. Therefore, it will be a great challenge to restart the complex global supply chains in a reliable way.

Analysts from various well reputed organisations show impressively (Figure 11) how they anticipate the world car sales development throughout 2020. This so called probable scenario was established under the condition that the automotive industry will reliably restart in May 2020 without further delays due to the corona epidemic. It is assumed, that after the dramatic cutbacks in April and May (ab. 70% of original values), the sales volumes will rapidly recover until September 2020.

The tube and pipe industry supplying the automotive industry faces even more challenges if the ramp up would not perform as steep as stipulated in this study. The industry is used to large production lot sizes which will sig-

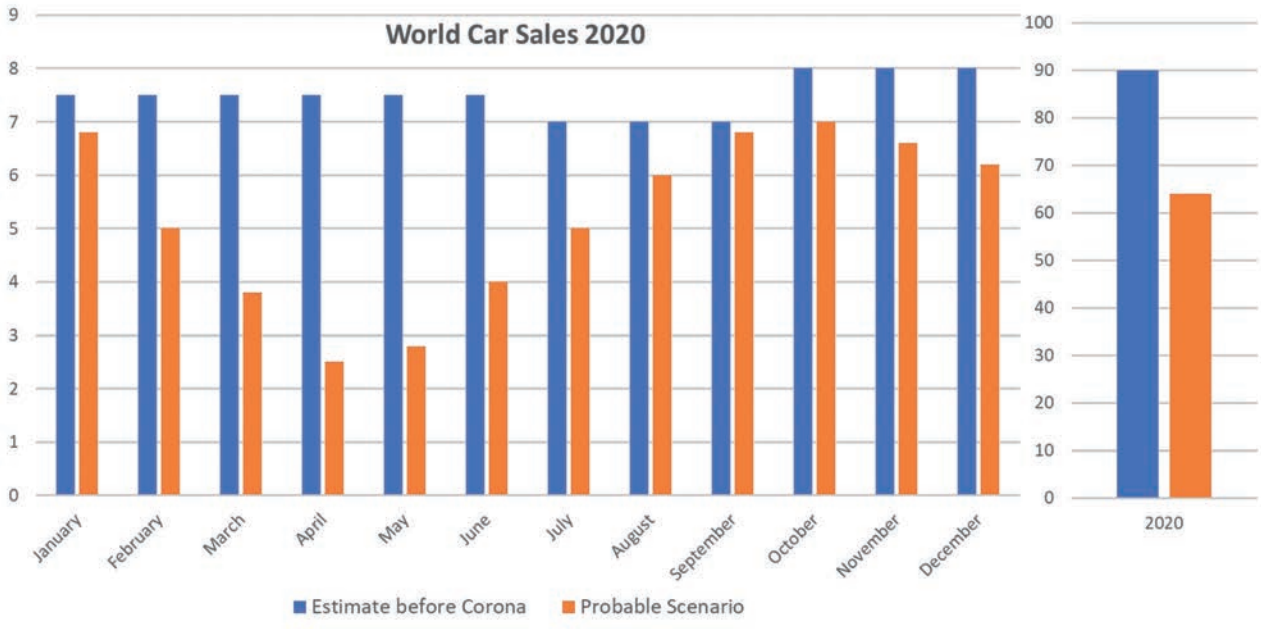

Figure 11: World Car Production (Mio. units) 2020
Source: IMC, PCA, Bloomberg, Bain & Company

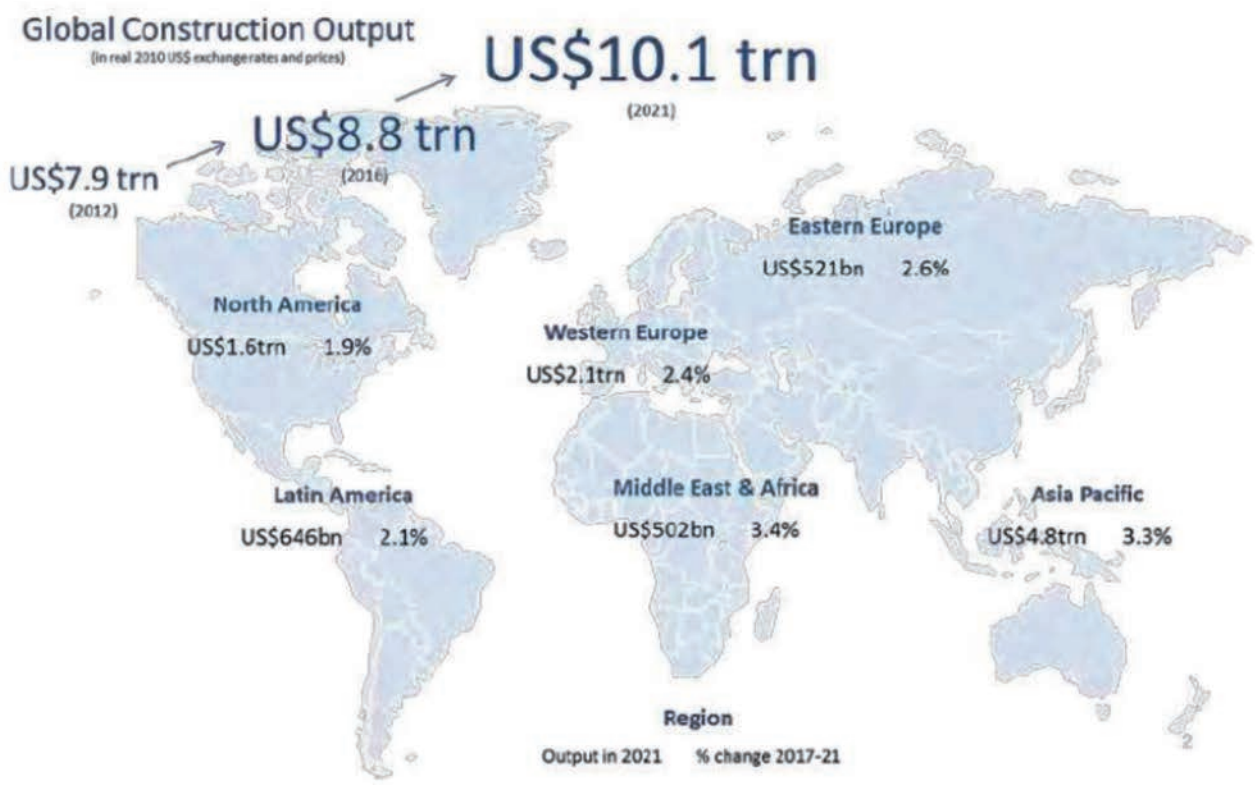

Figure 12: Global Construction Output 2017 versus 2021
Source: Construction Intelligence Center 27th June 2018.

nificantly melt down if the ramp up curve would be flatter. In such a case the industry may even not reach minimum critical lot sizes.

The market of mechanical engineering for tubes and pipes, representing 9% of the total tube and pipe market, is quite diversified due to its uncounted applications.

The impact due to the corona epidemic will be different for many products. Assuming most companies will postpone any possible capital investment to secure the assets, the demand for tubes and pipes will consequently be reduced as well. The pressure on tube and pipe producers serving this market on production flexibility and efficiency will even further increase over and above the present, already demanding, level.

Another attractive market for tube and pipe producers is the construction market, representing about 5% of the world tube production. The construction market is steadily growing along with the GDP growth. There is some hope, if the world recession would be only of a short duration, as stipulated by many analysts, the construction market and its suppliers would experience only smaller impacts due to the corona epidemic.

The growth potential of the construction market is quite impressive (Figure 12).

Another report recently released, Global Construction 2030, forecasts the volume of construction output will grow by 85% to 15.5 trillion worldwide by 2030, with three countries, China, USA and India, leading the way and accounting for 57% of the global growth. The benchmark global study from Global Construction Perspectives and Oxford Economics, show average global construction growth of 3,9%/year to 2030, outpacing that of global GDP by over 1 percentage point, driven by developed countries recovering from economic instability and emerging countries to industrialize. The construction market in India will grow almost twice as fast as China to 2030, providing a new engine of growth in emerging markets. India´s urban population is expected to grow by a another 165 million by 2030, swelling Delhi by further 10,4 million people to become the world´s second largest city. Due to this market potential the Indian chapter of the ITA has just organized a well-attended and most recognized conference in Mumbai regarding the structural applications for tubes and pipes.

When it comes to Europe, whilst it won´t recover to reach pre-crisis levels until 2025, the UK is

a growth market, overtaking Germany to become the largest in Europe and the world´s sixth largest construction market by 2030.

The mayor market applications for tubes and pipes in the construction market are buildings as e.g. skyscrapers, bridges and load bearing applications. Here we find a significant competition between steel/tube structures and on the other side concrete elements. For skyscrapers the trend in emerging countries to build high-rise towers is supporting the application of steel/tube structures. An outstanding advantage of steel/tube structures are applications for buildings with seismic requirements and/or dynamic loads as applied to bridges.

The success of tube and pipe applications in this mayor segments of the construction market, anyhow require intensified lobbying efforts of the tube and pipe producing industry to further convince regulation authorities and project stake holders about the advantages of steel/tube structures as cost effective, aesthetic and sustainable alternatives to concrete elements.

All these steel tube and pipe markets can be subdivided in commodity volume markets and the market part with high-tech requirements. For the high-tech requirements, the decisive factors are the steel quality and the tube plant infrastructure. The steel quality for many high-tech steel tube and pipe applications is demanding regarding chemistry and homogeneity. The availability of such steel qualities with the relevant uniformity and quantities for welded tubes and pipes as steel strip and plates as well as billets for seamless tubes and pipes is limited and creates sometimes a significant hurdle to supply tubes and pipes into such high-tech markets. On the other hand, the tube plant infrastructure regarding tube mills, finishing lines as well as applied quality assurance systems have also a significant importance. Growing importance can be seen in agile management strategies regarding customer benefit, process and product quality enhancement by applying "Industry 4.0" measures. Some interesting applications of "Industry 4.0" in the tube and pipe industry were presented by various speakers at the trend setting ITA tube conference in Düsseldorf 2019.

Plant builders as technology suppliers may find interesting business opportunities in this new market segment. Some technology suppliers have already reacted and complimented their product portfolio by digital solutions.

Dr. Gunther Voswinckel

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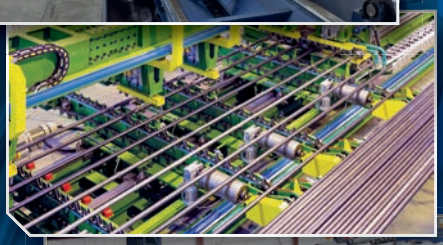




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Tube Düsseldorf

Messe Düsseldorf GmbH

Energy bundles in demand more than ever

You can't see them when they're doing their job – yet the spotlight is on them more than ever now. Pipeline projects, energy bundles laid underground or on the seabed, yet they are the stars with a constant presence in media headlines. An ever-growing trend. New pipelines such as the TurkStream, Nord Stream 2, EastMed and the Baltic Pipe Project are delighting energy providers and users alike, and their suppliers too. There is a huge thirst for piping – it must be quenched swiftly using the best quality products.

TurkStream joined the numerous existing pipelines in the Black Sea at the beginning of the year – it connects the Russian and Turkish gas transport system. One line supplies gas to Turkey and more gas through Turkey to south and south-east Europe. Together the pipelines supply 31.5 billion cubic metres – newsworthy in itself. The pipeline stars stand out on the red carpet, however, also because it is the first time, worldwide, that a pipe with a diameter of more than 810 mm has been laid as deep as 2,200 metres. More boundaries are shifting, however, as also pipe manufacturers are making monumental product developments.

Open construction

Nord Stream 2 is also showing off its innovation with two lines planned, that will run broadly parallel to the already laid Nord Stream pipe, running through the Baltic Sea. They should carry some 55 billion cubic metres of gas a year from Russia to Germany, where it will be further distributed throughout the European Union. "The rectilinear shore-based section was built using an innovative open construction method using trench coffers," reported Nord Stream 2 AG. This procedure minimised the construction site, as the pipework was pulled through pre-prepared trenches and connected in the middle of the shore-based section.

The pipe supplier had to shoulder a mammoth task: Over 200,000 pipe segments were delivered. The total volume came to 2.2 million tonnes for a total stretch of 2,500 kilometres. Europipe – whose partner companies are Salzgitter Group and Dillinger Hüttenwerk AG – made 890,000 tonnes of this amount for around 1,100 kilometres.

Pipelines and environment protection

And there's more in the pipeline: In January Gaz-System signed a contract with Europipe for the delivery of underwater pipes for the offshore segment of the Baltic Pipe Project. From October 2022, the scheduled pipeline should enable the import of more gas – up to 10 billion cubic metres – from the deposits on the Norwegian continental shelf to Poland.

"Europipe manufactures pipes with a nominal diameter of 900 mm, and a nominal length of 12.2 metres per section," explain the project partners, Energinet and Gaz-System. The contract also includes pipes of the same diameter for the short, shore-based section from the gas main to the receiving terminal. It will also include all the protective coatings in the project, "that will protect the pipeline as well as minimise the effects on its surroundings and the environment."

The steel wall thickness of the gas main will be between 20.6 mm and 23.8 mm. "The pipeline will be plated with a special 4.2 mm thick corrosion protection coating, which will protect the seabed during its operating life," the project partners point out. The Baltic Sea pipeline will also be protected by a 60-110mm thick concrete coating.

Gas switch-over

Construction work on the 216-kilometre long remote gas pipeline Zeelink has officially begun in April 2019. The project also include the construction of a new gas pipeline from the Belgian-German border to Legden bei Ahaus (Northwest Rhine Westphalia, NRW). The gas main should guarantee the switch-over from L- to H-gas, i.e. from natural gas with a low calorific content to natural gas with a higher calorific content for millions of household, commercial and industry clients in NRW among other places. Background: The share of L-gas is dropping due to declining outputs in the Netherlands. The project company is a joint venture between Open Grid Europe (75 per cent) and Thyssengas (25 per cent). The commissioning is planned for March 2021.

The project brings Mannesmann Großrohr an order that includes around 215 km of gas piping with a diameter of 1,016 mm (DN 1,000). The pipes, coated with polyethylene, are about 18 metres long and weight up to 8 tonnes. The ca. 100,000 tonnes of hot wide strip as a raw material for the spiral seam-welded gas main come from Salzgitter Flachstahl. The 543 arches for the gas main were produced in the Group's own pipe-bending plant, where long seam-welded main pipelines from raw materials from Salzgitter Mannesmann Grobblech were processed.

Speedy order processing

And the industry continues to step on the gas: Schedules for the Eastern Mediterranean Pipeline (EastMed) are taking shape. In January, Greece, Cyprus and Israel signed a deal to build the EastMed, that from 2025 should be carrying natural gas from the Leviathan field in the Mediterranean, via Cyprus and Crete to the Greek mainland. This, together with the Poseidon and IGB pipelines, that further transport natural gas on to Italy and other European regions. The plans show that the EastMed pipeline should be 1,900 km in length and have an annual capacity of 10 billion cubic metres. There are numerous pipeline projects awaiting pipe suppliers. Investment is necessary for speedy order processing with the best possible quality. An example is Butting's readiness. Up to now, the company has had a 12-metre hydro-forming press in which a corrosion-resistant Butting stainless steel pipe and a carbon-manganese steel pipe can be mechanically joined to form a BuBi® pipe. The company would like, in the long term, to double its monthly output of ca. 15 km of BuBi® pipe with average pipe dimensions. By building a new hall and making the accompanying adjustments to processes, production processes should be optimised and productivity increased.

In addition, working with a mechanical engineering company, a new 12-m hydro-forming press was planned and commissioned for production. Production of the first BuBi® pipes in the new production cycle should begin in the third quarter of 2020.

A win-win situation

Investment that pays off. As the increasing number of pipelines not only secures energy supply, but also provides for increased earnings at energy providers and pipe manufacturers, this is a win-win situation for all those involved. If the quality is right, nobody has to take a peek into the pipes...

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Increasingly electrified

According to the German Association of the Automotive Industry (VDA), electric vehicles are suitable for the market. A "young, still small market with high dynamics" has developed around e-cars – even though vehicles with combustion engine technology currently still dominate the global automotive market. Suppliers of the wire and cable industry are already picking up speed and see e-mobility as an opportunity.

"The market potential is enormous," Wafios emphasises. "Accordingly, the forecasts are positive." For this reason, emobility became the focus of the company's attention already some years ago. "Technical triggers were enquiries from the automotive sector, both on the OEM side, supplier level and in the equipment sector about three years ago," explains the supplier of machines for bending wire and tubes. E-mobility picked up speed.

However, the industry is still "clear and concentrated on a few market participants", explains Wafios. According to AlixPartners Global Automotive Outlook 2019, the global market share of electric drive units in terms of vehicles sold amounted to 2.7 per cent in 2018. A share that is clearly expandable, which is shown by the growth rate of the e-drive of more than 65 per cent. Thus, according to Outlook 2019, the market is speeding ahead "in the irreversible market run-up".

Faster than expected

According to the VDA, electric mobility is coming faster than many expect. One reason is, for example, the tightening of regulations and the improved incentive systems for electric mobility in order to reduce CO_2 emissions. For example, there will be no new registrations for conventional drives in Norway from 2025 – the sale of electric cars will be promoted with massive tax incentives.

The Netherlands, Ireland and Israel want to use only emissions free vehicles from 2030. A sales ban on combustion engines is planned from 2040 in Great Britain and France. In the USA some states, such as California, plan to permit only emissions-free cars from 2040. In order to get their act together, suppliers have to target these figures.

Globally, a drastic increase in hybrids and electric vehicles can be expected between 2020 and 2025. The VDA predicts that "by 2030 a production share of electrified vehicles of 60 per cent or more worldwide is likely". China will be a pioneer here - every third vehicle could be fully electric by 2030. In Western Europe, the share could rise to 25 per cent due to stricter regulations and driving bans. According to the association, a breakthrough in Africa and South America is not to be expected so soon. For Japan, Korea and North America, a share of hybrid vehicles of around 80 per cent would be conceivable. The car world is electrified - a realistic view.

Huge investments

Car manufacturers and automotive suppliers must therefore make massive investments: The AlixPartners Global Automotive Outlook 2010 reports that at least 202 billion euros will have to be spent globally over the next five years to master the technological change to the electric drive and the development, production and marketing of up to 300 planned new e-vehicles. "The level of investment is still out of all proportion to demand," says Dr Elmar Kades, Global Co-Lead Automotive and Managing Director at AlixPartners. At the same time, the current and expected weak sales development for the next few years will increase the short-term pressure on the margins and cash flows of the suppliers, Kades continued. Weak sales and massive investments therefore coincide.

Even though the situation is challenging, the wire and cable industry remains optimistic. "Electrically powered vehicles promise higher sales for our company because more or higher quality cables are needed," explains Leoni. Hybrid vehicles, in particular, which contain both an electric and a combustion engine, require a higher product share from the company.

High-quality cables are required in various areas of the electric car: In the charging cable from the charging station to the vehicle system and from the charging connection to the battery. Lines finally transport the electricity via the inverter to the electric motor. The internal wiring supplies other high-voltage components, such as air-conditioning compressors or electrical heating, with energy. Electrifying outlook...

Battery cabling and connector systems

Leoni is focusing, in particular, on the high-voltage battery as an energy storage device for electric vehicles and plug-in hybrids. The company concentrates primarily on data and power distribution within high-voltage batteries. "We assume that the HV battery in future vehicles will contain parts of the previously exposed high-voltage cable harness due to its large-area arrangement." The aim is to offer customers system solutions for battery cabling from a single source. Together with its partner Diehl, the company is working on offering complete solutions. Already established products of both companies in areas such as cabling, connector systems and cell contacting would be combined to form a complete package. This means that sustainable strategies are needed.

Laser for copper welding

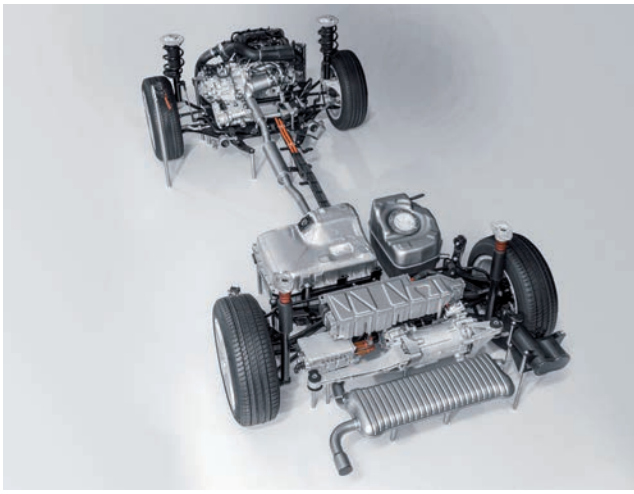
Trumpf is also experiencing electric mobility as a growth-promoting driving force. A central role is played by a new laser, the development of which the laser specialist has accelerated in the course of its e-mobility strategy and which, according to the company, is proving to be very suitable for welding copper. Copper is considered to be the most important material for conducting electricity and an electric car would be inconceivable without it. With the new laser, copper can be efficiently welded, for example, for the high-performance electronics of electric cars. "The shift towards electromobility offers great opportunities for German industry," emphasises Christian Schmitz, Managing Director for Laser Technology at Trumpf. The company expects further growth for its own business as a result of the changes in the automotive industry. Compared to the previous year, the company's sales of products and solutions that flow directly into electromobility have doubled. "20 per cent of our order intake from the automotive industry now comes from electromobility, twice as much as last year," Schmitz continued.

Products and processes are changing

Changing times require flexible suppliers – the right curve position is crucial. You must bear in mind that the exhaust gas and fuel system, the combustion engine and the low-voltage vehicle electrical system are not required for the less complex electric drive. Instead, they must adapt to electric motors, cooling systems for electronics and batteries, chargers, a high-voltage electrical system and a PTC heater - components that sometimes require high-performance wires and cables to prevent vehicles from stuttering.

The changes associated with the switch from combustion to electric vehicle technology are therefore fundamental and affect products and processes. "Competencies such as blow moulding, pipe extrusion and machining technology are also becoming less important, while processes such as winding processes and forming techniques for parts made of aluminium and magnesium are gaining in importance," explains the VDA. In order to continue on the road to success, the wire and cable industry must therefore flexibly steer in the right direction. Then it will head full speed towards high profits.

Innovative technologies will be presented at wire and Tube from 30 March to 3 April 2020 at Düsseldorf Fairgrounds. More information under www.wire-tradefair.com and www.Tube-tradefair.com. Please also visit our new metalflow portal under www.metalflow-alliance.com and learn more about our international metalflow portfolio.



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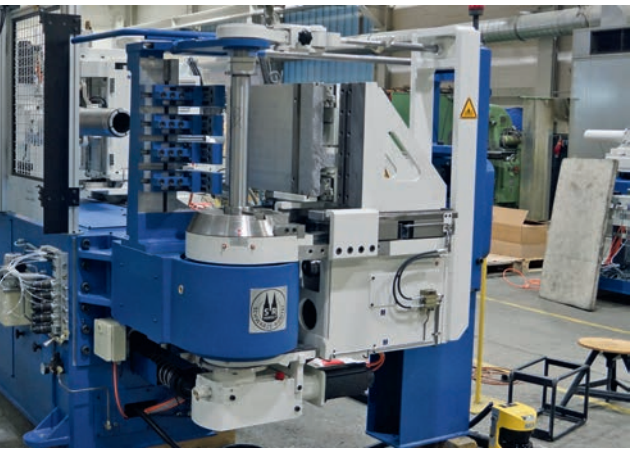
Schwarze-Robitec GmbH

As good as new: General overhaul of tube bending machines

An alternative to buying a new machine

To buy new or second-hand? When purchasing a car, consumers tend to make their decision based largely on price. And if you happen to have a well-maintained car in the garage whose only downside is a stuttering engine, then a trip to the workshop is usually the first port of call. A similar approach can be applied to tube bending machines. Many companies have been reliably using the high-investment machines for decades. But at some stage the technology might reach its limits. In some instances, a general overhaul can be an alternative to buying a new machine. In which cases does this make sense and in which not? The tube bending machine manufacturer Schwarze-Robitec provides an overview.



An overhauled machine: as good as a new, with state-of-the-art technology.

From the automotive industry to shipbuilding to power plant or boiler construction: In many industries, tube bending machines are an indispensable part of the manufacturing process. They have to bend tubes precisely and quickly. Although a high-quality machine is a major investment, the costs are rapidly amortized. In addition, good machines are often in use for decades. Once the technology reaches its limits, many users decide in favour of a general overhaul of their machine.

Old machine frame, new components

One of the leading international experts in the sector of tube bending machines is Germany-based company Schwarze-Robitec. When a client orders a general overhaul of one of their machines at Schwarze-Robitec, it is usually back in operation six months later. However, clients only have to do without their machines for around eight weeks. Prior to the overhaul the tube bending machine manufacturer procures the necessary materials and purchased parts, and manufactures the components. Only then the machine is delivered and fully disassembled into its individual parts. Schwarze-Robitec sandblasts all welding components and the entire machine frame in order to remove the old paintwork. All welding seams are also checked. So whilst the machine frame and the welding components are re-used, all hydraulic and electrical installations are replaced, including hydraulic piping, cables, control cabinet, control technology and control panel. In addition, the entire machine safety system, including the CE components, for instance, is newly installed during a general overhaul. This is due to the fact that statutory safety regulations have usually changed since the machine was first put into operation. This is ultimately followed by the assembly of the overhauled machine – including the preliminary acceptance test at Schwarze-Robitec's site in Cologne and the machine being put into operation at the desired location – as is the case with a new machine. A 12-month warranty period is offered.

General overhauls are usually ordered by clients. However, in some instances the manufacturer sells a machine that has undergone a general overhaul. This can be a particularly interesting prospect for buyers if the machine configuration is ideally suited to their performance requirements and they are working on a tight budget. Since expensive parts such as the machine frame and welding components are re-used, an overhauled machine is roughly one-third cheaper than a new machine. And yet the buyer receives a product which is as good as new with state-of-the-art technology.

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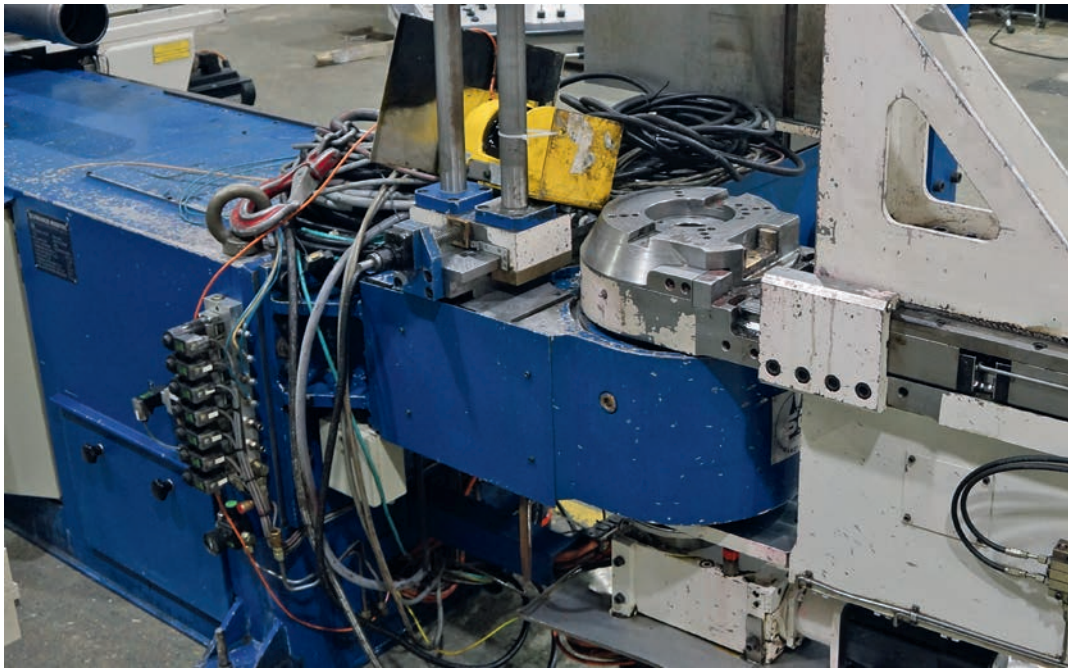
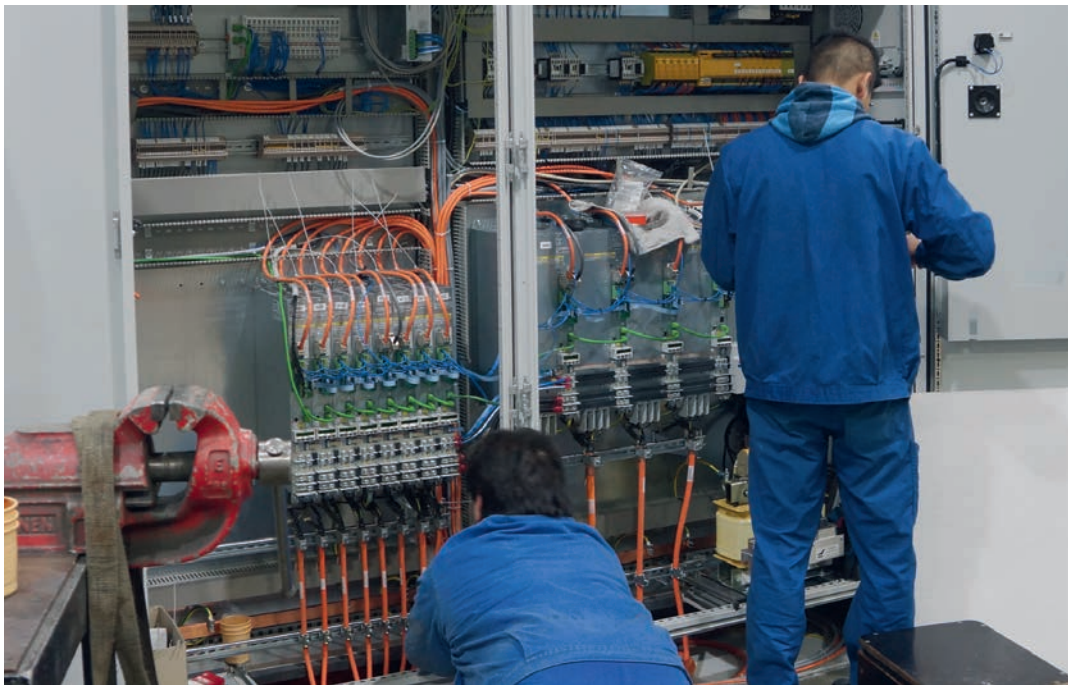
Keeping an eye on a machine's overall condition

If a car suddenly starts to stutter and breaks down on the road, this doesn't mean that it is a complete write-off. Perhaps it only requires a new oil filter, new spark plugs or maybe even a new engine. For tube bending machines, this is equivalent to a component overhaul. If, for example, a new pressure die assembly, a new swing arm or a new bending head is installed, it is possible to get the machine back up and running again. However, it is necessary to keep an eye on the overall condition of the machine. For instance, for Schwarze-Robitec's control systems from previous generations prior to the year 2000, there is often only a limited availability of spare parts and upgrades are no longer possible. If such machines are mechanically refurbished, the control technology will still pose a risk of failure – a general overhaul including a replacement of the control system is therefore a more sensible option. But should a client's production requirements change fundamentally, then a new machine is in order. Just as with a car, installing a new engine is not worthwhile if this is then shortly followed by a gearbox failure – or if the owner now needs a van instead of a station wagon.

Tube bending machines are also similar to cars in terms of the intervals between necessary maintenance work: The car of an everyday commuter – equivalent to a machine working at high capacity in 3-shift operation – will be in for its next inspection quicker than that of the casual weekend driver. The frequency with which tube bending machines require maintenance work varies depending on their utilization, workload and regular maintenance. It is therefore the combination of many factors that determines whether a general overhaul is a reasonable option: the time, the condition of the machine and the performance requirements in production.



Since expensive parts such as the machine frame and welding components are re-used, an overhauled machine is roughly one-third cheaper than a new machine.



Hydraulic and electrical installations as well as the entire machine safety system are newly installed during a general overhaul. This is due to the fact that statutory safety regulations have usually changed since the machine was first put into operation.

Nataliia Kvitka, Nataliia Koriaka

Roll calibers for plugless rolling of pipes

The process of rolling pipes without mandrels (calibration or reduction) is the final operation in all technological manufacturing lines of hot-rolled seamless pipes. The parameters of metal forming in the case of continuous longitudinal rolling of pipes without mandrel largely determine the characteristics of quality and accuracy of the finished product. In the processes of reduction and calibrating, oval-shaped calibers are preferably used, the profile of the working area of which is formed by one or more forming radius R. Characteristics of a profile of one or another caliber (fig. 1, fig. 2) are defined by the number of radiuses R, their sizes, values of eccentricities e of those radiuses in relation to the center of the caliber (rolling axis) O and ovality of the caliber $\lambda = b/h$ (here, b, h – height and width of the caliber).

The most common are single-radius calibers (Fig. 1), which are used in industrial setups for almost 80 years. These calibers are relatively easy to manufacture. They allow to obtain pipes that until recently fully met the requirements of existing standards and specifications.

Based on the requirements of the new specifications of the world's largest consumers of steel pipes (Shell, Shevron, Exonn Mobil, ADCO, Saudi ARMCO, LUCOIL, GAZPROM, ROSNEFT etc.) requirements for product quality and accuracy are constantly increasing. Therefore, there is an urgent need for improvements in production technologies. One of the ways to solve this problem in terms of improving the accuracy of the pipe is to find rational profiles of calibers for rolling.

In the patent [1] a three-radius caliber roll for longitudinal rolling is proposed, which is presented in Fig. 2. A characteristic feature of this caliber is the requirement according to which the eccentricities e_1 and e_2 must only gain positive values. However, there are studies [2, etc.], according to which when $e_1 < 0$ deformation conditions help to reduce the transverse wall thickness variation of the pipes and to increase their accuracy.

In works [3, 4] a mathematical model was developed, which analyzed the influence of caliber parameters on the calculated transverse wall thickness variations of pipes rolled in a 24-stand reduction mill along the route 119x5 mm → 42.5x5 mm.

Fig. 3 represents the calculated values of the resulting wall thickness variations $B_{\Sigma i}$, which is accumulated when rolling the pipe from the first stand of the mill to the stand with the current number i when using one-radius caliber (curve 1) and three-radius calibers, the parameters of which are calculated using the condition $e_1 > 0$ (curve 2) and without it (curve 3) with the same distribution of partial deformations ε_i between the stands of the mill (curve 4). As follows from the data shown in Fig. 3 when rolling using single-radius calibers the resulting final relative wall thickness variation equals $B_{\Sigma 24} = 10.45\%$. If using three-radius calibers $B_{\Sigma 24} = 8.98\%$ (if $e_1 > 0$), and $B_{\Sigma 24} = 4.67\%$ (if e_1 is not constrained).

This example shows that when designing three-radius calibers under the condition to have eccentricity $e_1 < 0$, the level of relative wall thickness variation of the finished pipes can be significantly reduced (1.9…2.2 times), that is, to increase tubes' accuracy.

Reduced value of the wall thickness variations $B_{\Sigma i}$ when using the proposed three-radius calibers can be explained by the characteristics of their shape, which is due to the fact that the eccentricity e_1 of the radius R_1 of the caliber is negative ($e_1 < 0$). Because of that in a stand

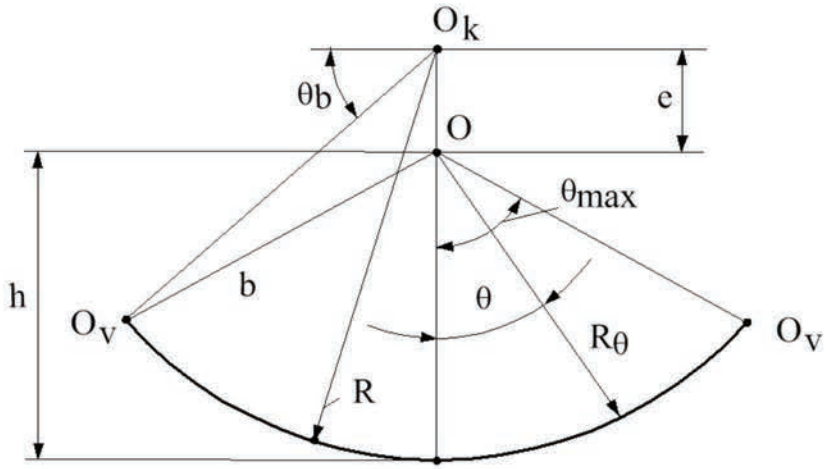


Fig. 1. One-radius oval caliber

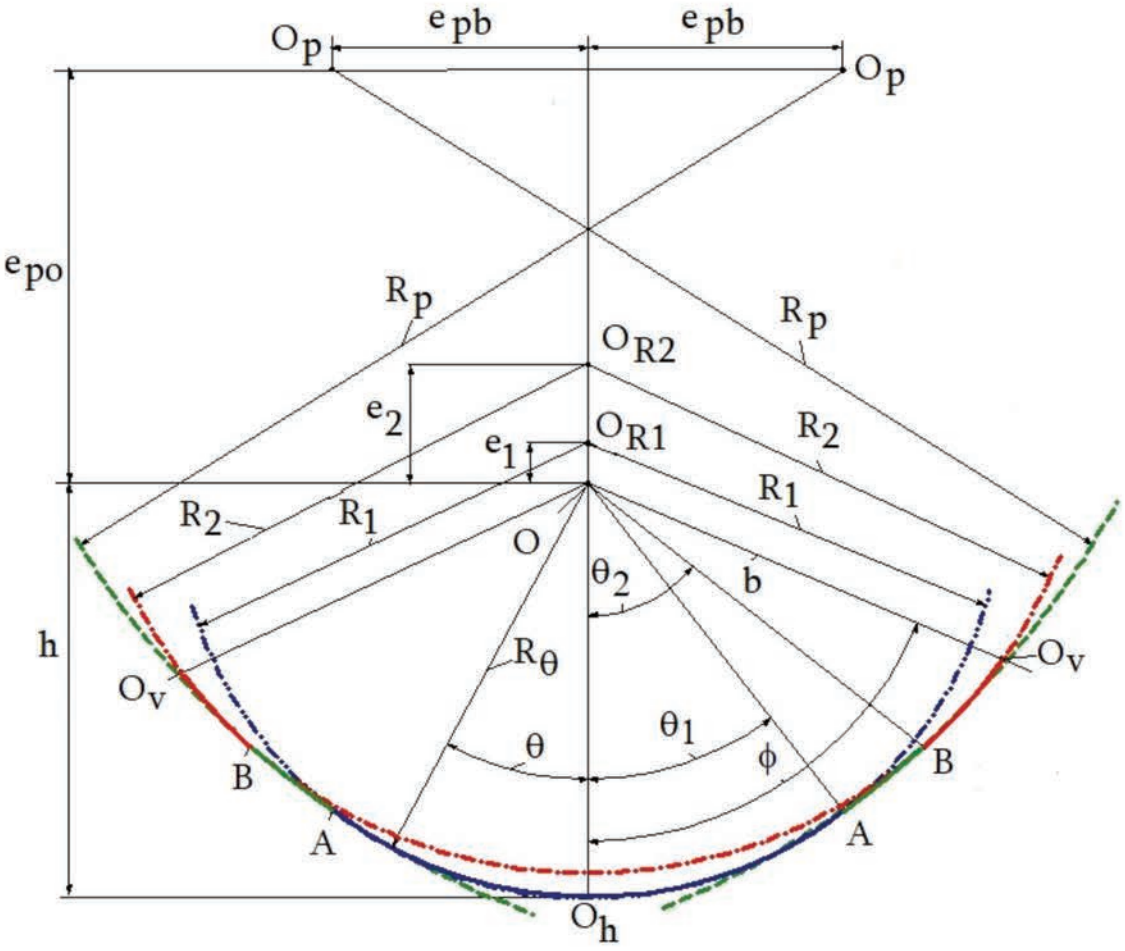


Fig. 2. Three-radius oval caliber

with a serial number $i = 16$, in contrast to the one-radius ($R = 29.347$ mm, $e = 1.851$ mm, $\lambda = 1.032$) and the known three-radius ($R_1 = 27.659$ mm, $e_1 = 0.010$ mm, $R_2 = 30.262$ mm, $e_2 = 3.300$ mm, $\lambda = 1.030$) calibers:

- radius R_θ of the proposed caliber ($R_1 = 17.540$ mm, $e_1 = -10.709$ mm, $R_2 = 33.591$ mm, $e_2 = 7.990$ mm, $\lambda = 1.022$), in the top area is smaller than the average radius of the caliber R_{cp} (Fig. 4);
- radial compression $\Delta R_\theta(\theta)$ gains maximum values in the middle of the caliber (when $\theta \approx 30^o$), rather than monotonically decrease from top to release (Fig.5);
- the initial contact of the workpiece with the roll happens not at the top of the caliber, but in its middle zone (Fig. 6).

The fact that the radius of the proposed caliber is smaller than the radius of the known caliber at $\theta \approx (20...55)^o$ (Fig. 7) and radial compression ΔR_θ gains its maximum values not at the top of the caliber but at $\theta \approx 30^o$ (Fig. 5), causes "bilateral" flow of the forming metal from the middle of the caliber in the direction of its top and release. In terms of the formation of the transverse wall thickness variation, such deformation conditions are more optimal than the conditions under which there is a one-way flow of metal in the direction from the top to the release of the caliber. This was confirmed by industrial tests under conditions of Pipe Rolling Machine 30-102.

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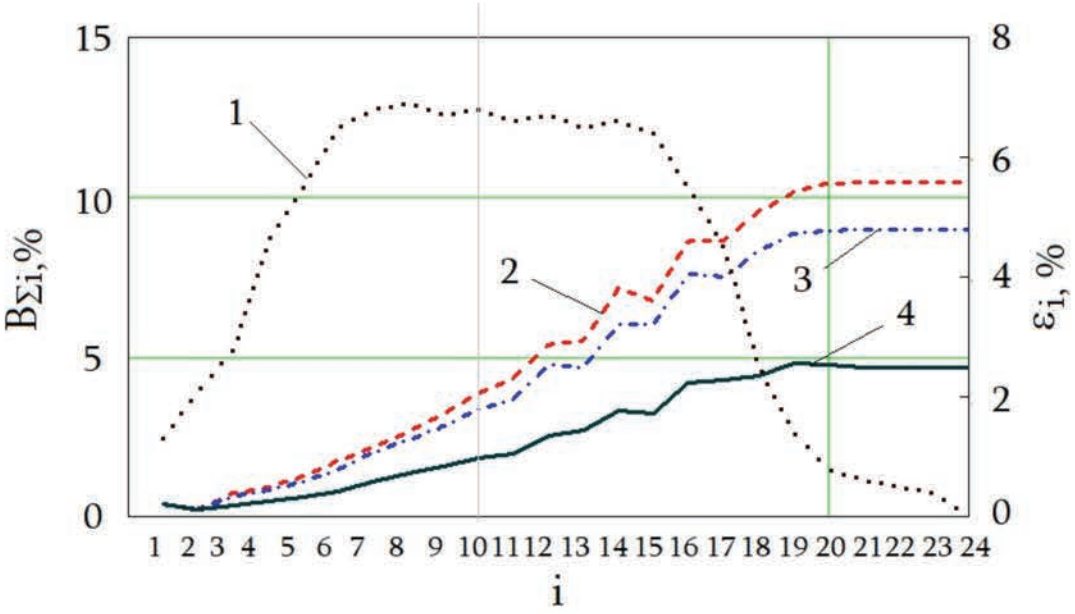

Fig. 3. Calculated dependencies $B_{\Sigma i}(i)$ and distribution of partial relative compressions ε_i (notation - in the text)

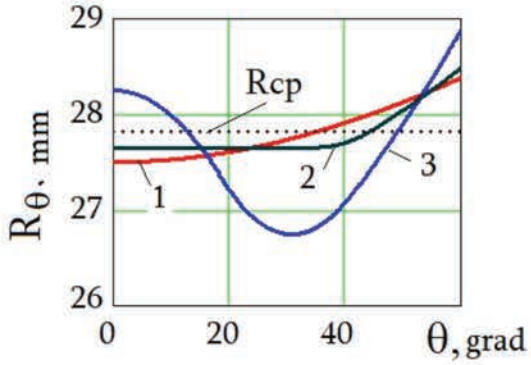

Fig. 4. Change of radius R_θ at ½ of caliber's perimeter: 1 – one-radius; 2 – three-radius [1]; 3 – proposed three-radius

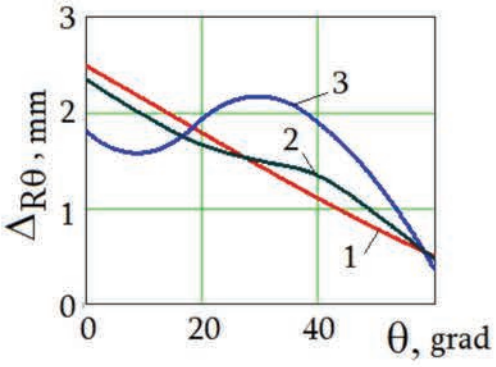

Fig. 5. Change of compression ΔR_θ at ½ of caliber's perimeter: 1 – one-radius; 2 – three-radius [1]; 3 – proposed three-radius

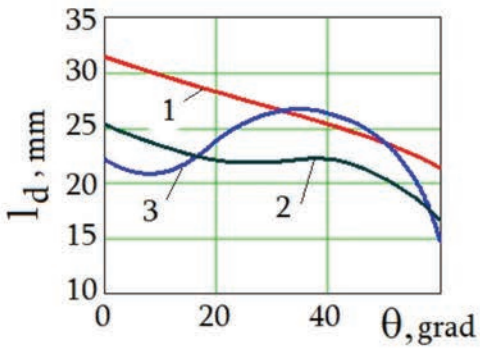

Fig. 6. Change in length of the deformation zone l_d at ½ of caliber's perimeter: 1 – one-radius; 2 – three-radius [1]; 3 – proposed three-radius

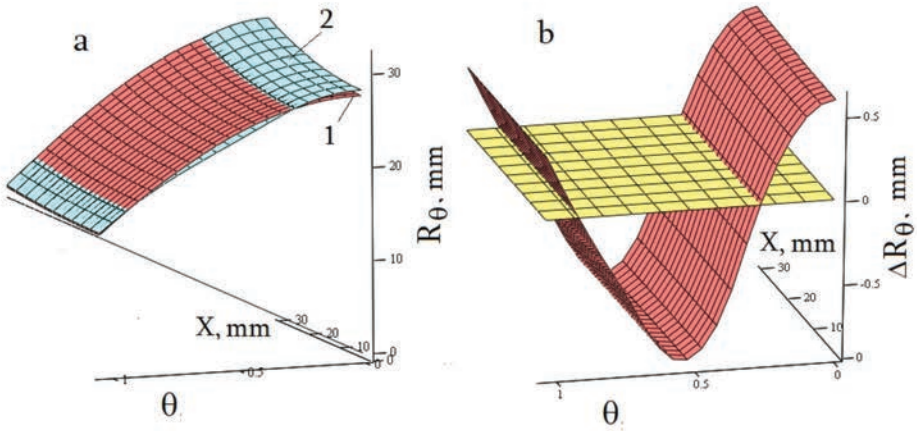

Fig. 7. Change of caliber's radius R_θ (a) and differences between radiuses ΔR_θ (b) along the length and perimeter of the deformation zone at ½ of caliber's perimeter: 1 – proposed three-radius; 2 – three-radius [1]

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VOSCO Consultants

Industry 4.0 in the tube industry as a key for solving the present crisis

Face the opportunities now and lead the future, VOSCO

The corona crisis is challenging the world tube and pipe consumption strongly. This affects nearly all areas as the OCTG, automotive, mechanical and construction markets. Better chances on the market are still given to those who offer higher material qualities and tighter tolerances, but especially to those who manage to implement technologies for a cost-effective and intelligent production. Among low fault tolerance and consistent quality, customers of tubes and pipes expect in particular an increase in delivery reliability and flexibility, which is determined by the entire supply chain. At the same time, the industry will have to consider uncertainty factors such as decisions on national/international climate policy, which could result in considerable cost increases. Due to these trends, companies understand more and more the need to exploit data in real time to use them for production and process optimization and the necessity to follow the trends of digitalization and to drive Industry 4.0 forward.

But how does the individual company manage this balancing act between increasing delivery reliability, specialization, environmental consciousness etc. - especially in view of global competitive pressure and advancing digitalization? What measures can the tube and pipe industry take to meet the growing challenges of global competition? Which digitization measures and developments regarding Industry 4.0 are company-specific relevant and capable of being implemented?

To answer these questions, it has proved helpful to first analyze and evaluate a company's individual level of maturity with regard to Industry 4.0. Figure 1 shows the path of this maturity – from simple computerization over transparency in the production to a completely self-optimizing, adapting company.

In an already internationally recognized approach, the company-specific degree of maturity is multidimensionally assessed, categorized and compared in its categories. The maturity assessment serves to identify potentials and weaknesses or, more generally, to uncover digitization needs. The need is not only derived from the potential offered by existing digitization possibilities and new technological developments, but especially from the harmonization of the individual digital progress

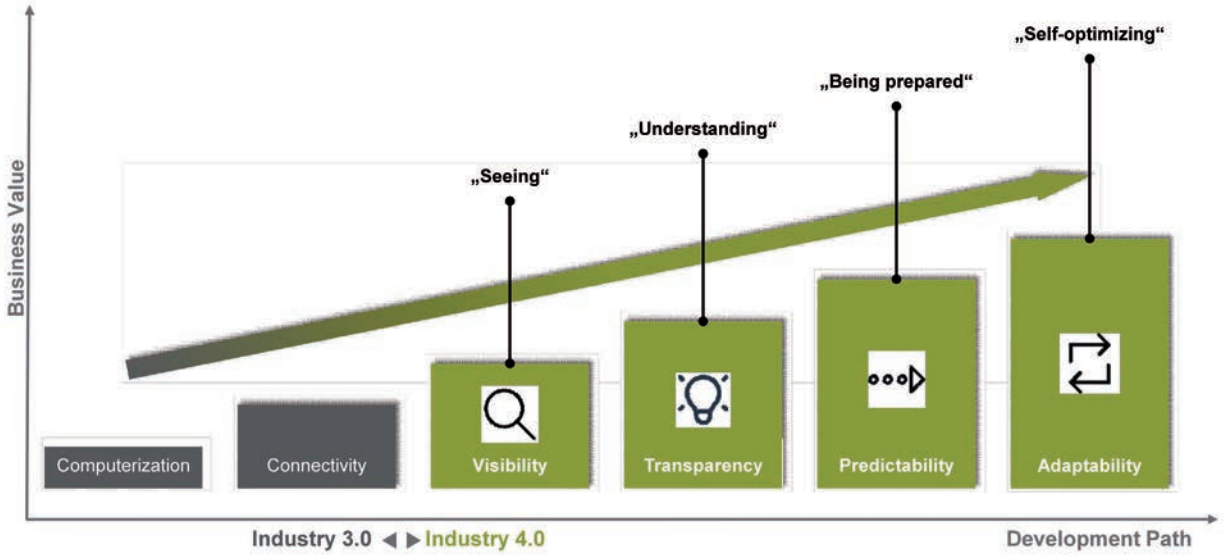

Figure 1: The development path to Industry 4.0 (in the style of Acatech study 2017)

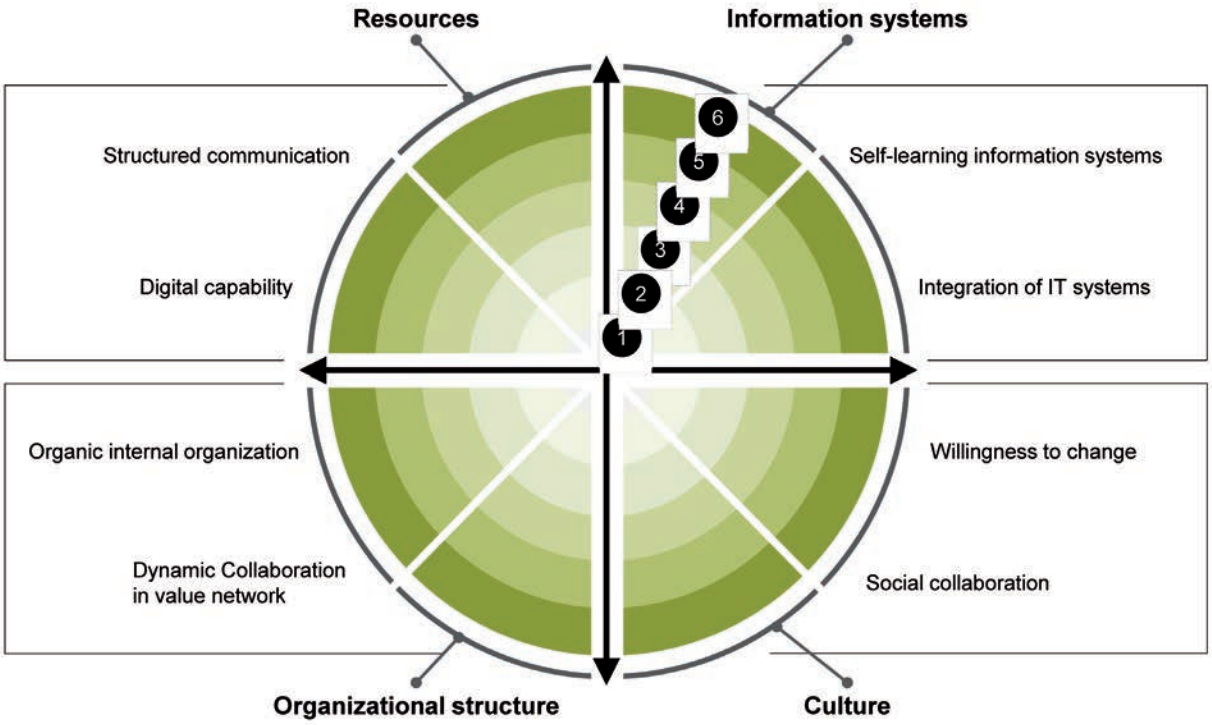

Figure 2: The categorization of individual maturity levels (in the style of Acatech study 2017)

of the company. Thus, the resulting multidimensional picture of the current digitization and its possibilities can generate a sufficiently precise description of the status quo as well as of the measures – which can vary from technological solutions, over organizational and processual adjustments to cultural aspects – to be urgently implemented. It should be taken into account for each individual company that a low level of maturity in a particular category, as having bad business processes while using highly developed technologies in the same time, can hinder the whole progress of further company development. This is graphically illustrated in figure 2. Based on this as-is analysis of the degree of maturity towards a future-proof company, a project roadmap can be developed individually and in accordance of the latest approaches from industry 4.0. The decisive factors for the success of this roadmap are the previously identified potentials, the alignment of specific digitization categories and the prioritization of the individual projects in terms of company-individual needs.

An overall higher level of digitalization capability will lift the performance and quality of products and processes. Thus, companies in the tube and pipe industry will be enabled to remain competitive in the long term.

Managing the change in an efficient and target oriented way, a company requires the regarding expertise in industry 4.0 and the related competence concerning organizational requirements, process optimization and technological opportunities. Only with an objective and unbiased perspective on an organization, these vital opportunities can be mastered.

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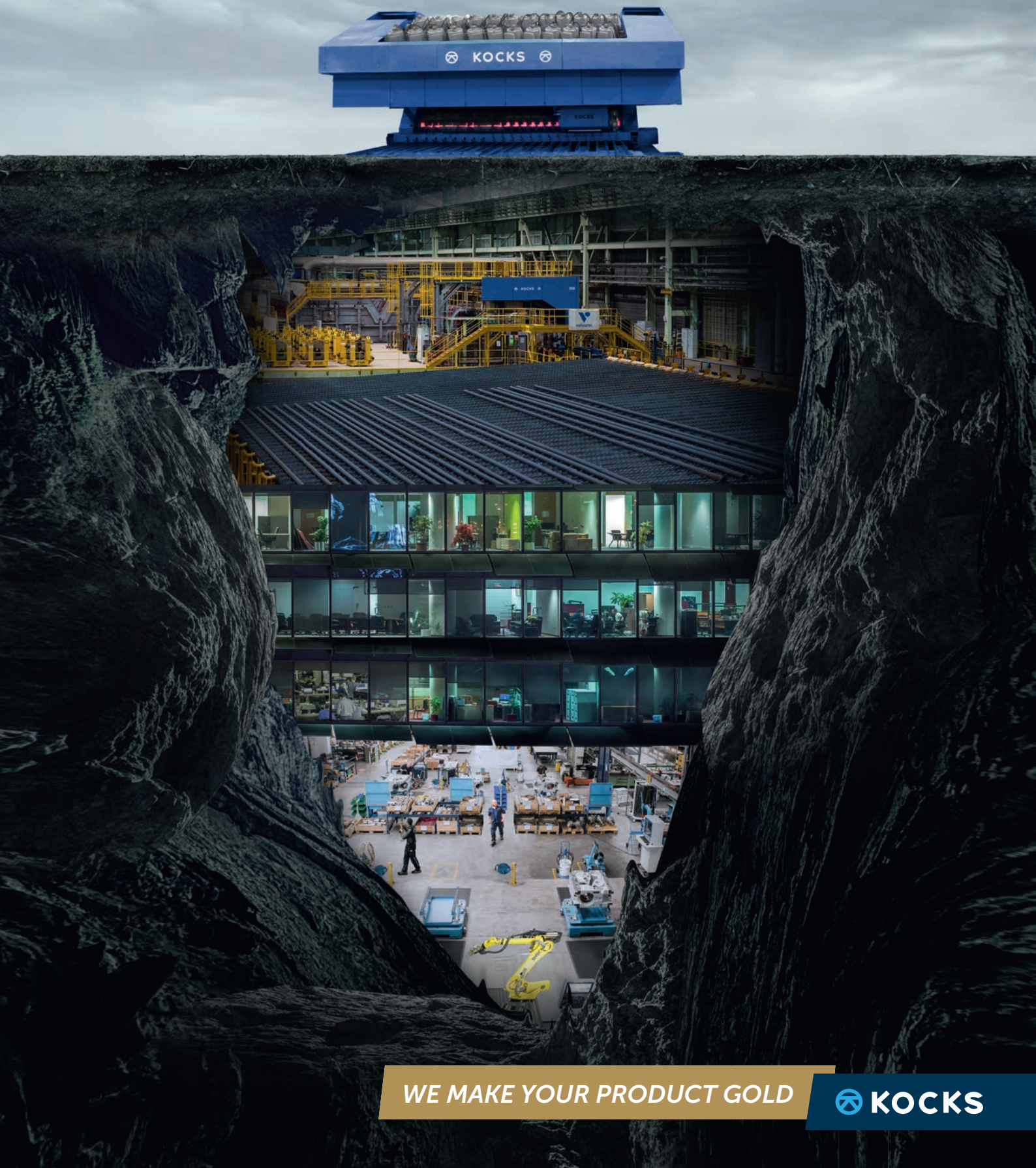
IT'S MORE THAN JUST A MACHINE.



WE MAKE YOUR PRODUCT GOLD

KOCKS

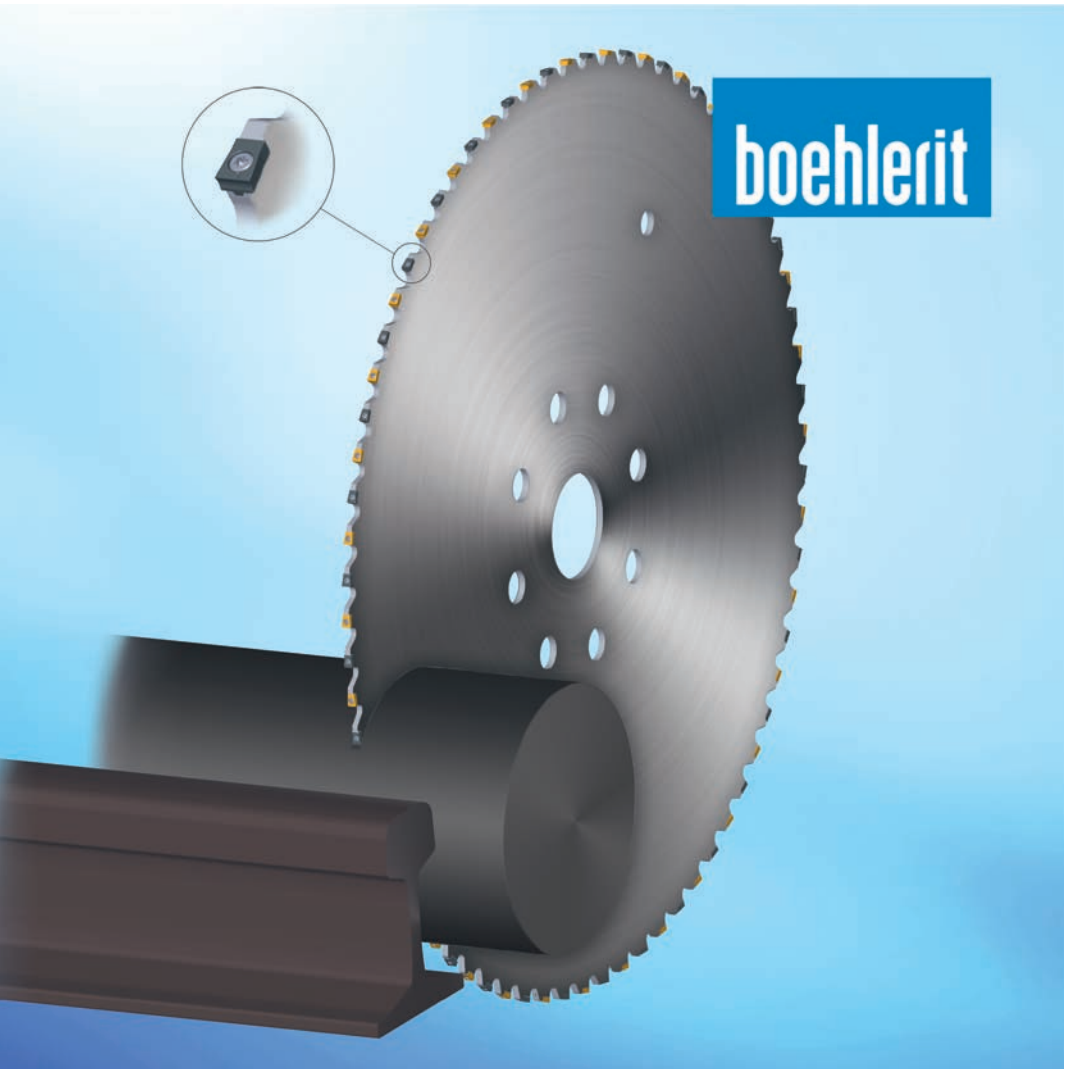
Boehlerit GmbH & Co. KG

Sawtec 2.0 – saws with replaceable teeth

Austrian carbide and tool specialist Boehlerit, whose development expertise is based on its close connection to the steel industry, is exploring new paths when it comes to sawing and will be launching the "Sawtec 2.0" tool system with replaceable teeth, an intelligent, next-generation machining solution, in May 2020.

Saw blades are used by the metal-processing industry all over the world for separating rods, blocks, pipes, rails and profiles. In most cases, saw teeth are welded on, which is labour-intensive and costly especially for large saw diameters, given the need for re-sharpening and the logistics involved.

Kapfenberg-based development pioneer Boehlerit has reacted to this situation by creating the innovative "SawTec 2.0" tool system, which offers a solution for large-diameter saw blades, using screw-mounted, replaceable saw teeth. A tangible benefit of this product is that the screw-mounted carbide saw teeth of the SawTec 2.0 are easy and quick to exchange. The patented "SawLock®" clamping system ensures stability, efficiency, precision and a high degree of flexibility. A range of tooth geometries are available to enable users to choose the right blade for steel, stainless steel and highly heat-resistant steel, depending on the material to be sawn.



The initial programme will consist of replaceable teeth with a width of 9mm, in three cutting geometries (SP, SM, SS) and two cutting grades (BCP40X and BCM40X), suitable for all standard steel, stainless steel and highly heat-resistant alloys. The replaceable teeth come with a state-of-the-art coating that increases the cutting surfaces by up to 200% in m2, while increasing the cutting speed at the same time. Saw blades are available in a diameter range of 600 to 1500mm, with the drilling hole for holding the spindle being executed according to customer requirements.

Users who need to keep an eye on costs for their sawing operations and are looking for a cost-effective solution will make the right choice with the "Sawtec 2.0" tool system with replaceable teeth by Boehlerit!

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Huntingdon Fusion Techniques

Argon Regulator for Pipe Purging Systems

Dramatic savings can be achieved when welding stainless and chromium steels and also titanium alloy tube and pipes with the use of an Inflatable Pipe Purging System.

By restricting weld purging zones, Inflatable Pipe Purging Systems achieve a huge saving in time waiting for pipes to be completely filled with argon, purged down to a low enough oxygen level to start welding safely and also the cost of using a large amount of inert gas.

To avoid such risks and to see that the inert gas being delivered to the pipe purging system is controlled, Huntingdon Fusion Techniques HFT® have designed and developed PurgeGate®, a unique valve which regulates the pressure and flow of gas that is passed through the system, ensuring that it will not burst regardless of the pressure and flow rate.

Ron Sewell, Chairman for HFT® said: "Purging larger diameter pipes has never been easier. PurgeGate® has found valuable applications in the welding industry where inflatable devices are used for weld purging of tubes and pipes. Setting flow rates and pressures on gas regulators can be interfered with. The pressure inside a purge system can also rise dramatically during a welding sequence, to create a burst. If inflatable devices burst during a tube or pipe weld sequence then the loss of protective gas can result in a highly expensive and extremely inconvenient weld repair."

PurgeGate® is a low cost, reusable accessory that has been designed and constructed to pass a maximum of 7.5 litres/min and 0.5 bar pressure. Other versions of 1 bar and above are also available.

PurgeGate® is fitted as standard on HFT®'s QuickPurge® and HotPurge® Tube, Pipe and Pipeline Weld Purging Systems and is an optional extra for their lower cost PurgElite® series. PurgeGate® is designed to fit on all brands of Pipe Purging Systems and the valve can easily be moved from system to

PurgeGate APGV PHO-04C fitted PurgElite 4 inch

PurgeGate APGV PHO-12C with Fittings

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Huntingdon Fusion Techniques

Gas Hose for a Variety of Applications

It is important when transporting inert gas supply to the welding zone that the hose is of high quality, ensuring the gas arrives without contamination.

Tailor made Inert Gas Feed Hoses are available from Huntingdon Fusion Techniques HFT® with leak tight fittings. Luke Keane, Technical Sales Manager for HFT® said: "Our range of gas hoses are available for transporting gas at both high and low pressure. Using a high quality gas welding hose will ensure a leak tight method of feeding non-contaminated gas into the welding zone for weld purging.

Argon Feed Hose PHO-01C 30m Hose Fittings-APBH430

"All of our products are made to the highest quality and standard and are the best available for argon, helium and other gas use."

The special low outgassing rate rubber feed hose comes complete with a regulator, which directly connects to any range of Inflatable Tube and Pipe Weld Purging Systems at one end and to the gas source at the other. Regulators can be changed or eliminated.

Conforming to British Standard BS EWN 599 Quality Standard, the Inert Gas Feed Hoses each have a temperature range from -30° up to 80°C and a safety factor of three times working pressure 20 bar (300 psi).

A selection of leak tight adaptors is provided for attaching the inert gas regulator whilst the pre-fitted other end joins up with all HFT® Argweld® Pipe Weld Purging Systems. All of these high quality fittings will eliminate welding connection difficulties that welders might experience on site.

The Inert Gas Feed Hoses can also be supplied to all other TIG / GTAW welders as well as laser operators with their own special fittings as required. The hoses are available off the shelf in a standard range of lengths, 30 m, 25 m, 20 m, 15 m, 10 m and 5 m, with special made hoses made to order.

In the event of operators working in high temperature conditions as for heat-treated chrome steel pipework for example, special high temperature resistant hoses are available, complete with special heat resistant fittings.

HFT® advises welders and laser operators to only use top quality hose assemblies to feed inert gas for top quality welds!

Huntingdon Fusion Techniques HFT® has a worldwide Exclusive Distributor Network. For your nearest Exclusive Distributor, please visit:

https://www.huntingdonfusion.com/index.php/en_gb/contact/worldwide-offices

Huntingdon Fusion Techniques

Low Cost Pipe Stopping when access is tight

Pipe stopping where access is tight can pose challenges for when duties such as repair work, leak testing and weld purging are required.

Pipestoppers®, a Division of Huntingdon Fusion Techniques HFT® design and manufacture a Range of Mechanical and Inflatable Pipestoppers® and Plugs to suit a variety of applications.

Ron Sewell, Chairman at HFT® said: "The Low Profile Stopper can fit into a pipe end that may be directly on an elbow or just inside a flanged neck on a casting. Other applications include blocking pipe ends to keep gases inside or to keep debris and vermin out."

"When used in a vertical mode, these Low Profile Stoppers have already been used to prevent machine swarf or tools from falling into pipes, into an unrecoverable and dangerous situation, in a nuclear power steam turbine."

Manufactured from tough, robust fabric, these Low Profile Inflatable Stoppers are available in sizes 6 to 88" (150 to 2,235 mm) diameter and provide excellent grip inside

the pipe, with an effective airtight seal. Each Low Profile Stopper is fitted with a standard Schrader Valve connected to a 1.2m hose, is easy to inflate using a foot pump or compressor and is heat resistant up to 80°C (176°F).

The Pipestoppers® Inflatable Stoppers Range consists of:

- Cylindrical and Spherical Stoppers: an easy way to stop the flow of gas or liquid inside pipes and ducts. Available up to 96" ø (2,440 mm). For higher temperatures, these Inflatable Stoppers can also be manufactured with a Heat Resistant Cover for temperatures up to 300°C (572°F).
- PetroChem® Stoppers: manufactured from high-grade latex, they are used for stopping off pipes with hydrocarbon gases and liquids inside.
- Inflatable Rubber Plugs: a wide diameter range and are tough, durable, can withstand chemicals and hydrocarbons, for higher-pressure applications, with a long life.

The Pipestoppers® Division of HFT® also provide Pipe Freezing Systems that make ice plugs inside pipes, to stop the flow of liquids so that maintenance can be carried out on valves, etc. This technique avoids the draining of a complete pipe system that might have an expensive product inside, ranging from heated water to expensive petrochemical fluids. Freezing can be carried out remotely, which is excellent for nuclear service personnel.

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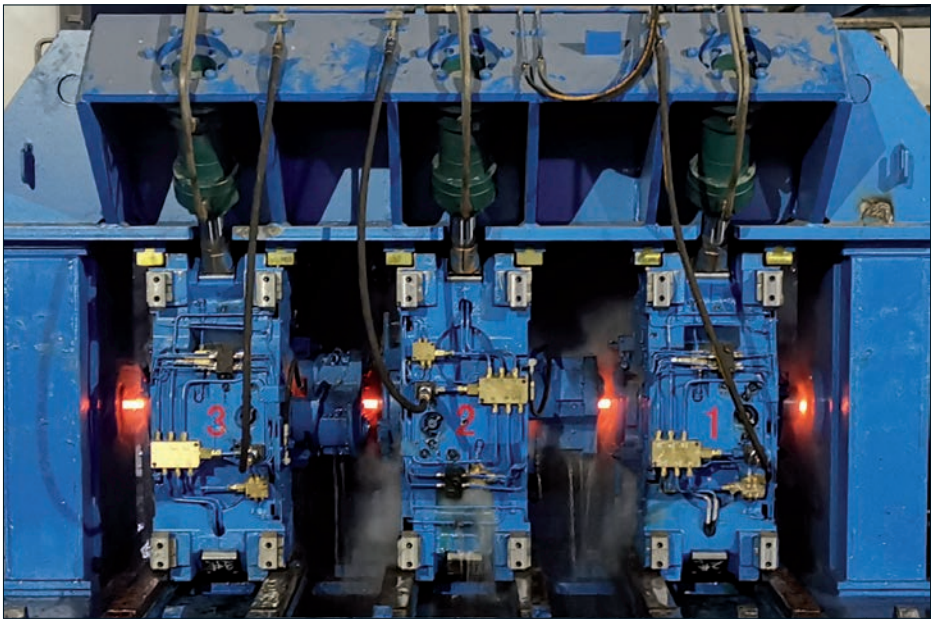
Kulessa & Associates

New 3-roll block for bar and wire rod production now available



TZIE Tong Ze Intelligence Engineering Co., Ltd, Taiyuan, China have developed 3-roll blocks 3RB as Reducing-Finishing Block for special bar production and Intermediate-Reducing Block for bar and wire rod mills. The first Reducing-Finishing Block has been successfully commissioned at Huicheng Stainless Co., Ltd., Taizhou, China.

The machines are equipped with hydraulic servo screw down or with mechanical excenter adjustment. Both designs are readily available in different scales for bar diameters of 12 – 110mm. On request additional machine sizes can be engineered.

State of the art dimensional and surface quality gauges will be supplied with the 3RB and feed the closed loop control system for the online roll position and roll speed settings.

The machines offer outstanding flexibility with large free size ranges and chance free rolling ability thanks to quick roll adjustment in line and fast roll changing in the roll shop.

Rolls are machined outside the stands. Precise roll adjustment is aided by a computerized optical bench.

With the installation of such a 3-roll block the plant layout can be drastically shorter, the operating costs will be consistently lower, the production capacity is increased and the bar quality is optimized.

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NIMAK GmbH

Manual Welding Guns for Automobile Manufacturer in Russia

NIMAK supplies manual welding guns to the new Mercedes-Benz assembly plant near Moscow

Mercedes-Benz also relies on resistance welding technology from NIMAK at its new plant in Russia. NIMAK supplies manual welding guns for the required spot welds. "We are naturally very pleased that we were able to convince our customer 'Mercedes-Benz' once again of our high product quality, reliability, and flexibility due to the longstanding and exceptional cooperation so far," emphasizes Carsten Demmer, Product Manager responsible for manual welding guns at NIMAK.

These will be used in the production of E-Class sedans and, in the future, SUV models as well. Robot welding guns, for which NIMAK is the largest German manufacturer and internationally one of the leading manufacturers, would make no sense in assembly plant production. This is where manual spot welding is called for.

NIMAK has already supplied manual welding guns to various Mercedes-Benz plants around the world. "We have been supplying our customers with welding guns of the highest quality for decades," explains Demmer. This is also a major reason for the order from Russia.

Good handling, durable, and robust

Currently, new tenders are in progress for various Mercedes Benz production sites. With its manual welding guns, NIMAK also considers itself well prepared for follow-up orders. Numerous users have confirmed their quality handling with an ergonomic and weight-optimized design as well as their high degree of user-friendliness. In addition, the spot-welding guns are known for their long and low-maintenance service life as well as their high reliability in production thanks to their solid construction. "The high-quality materials ensure that there is hardly ever a defect," emphasizes Demmer.

Even with large quantities and long production runs, the manual welding gun convinces its users with its consistently high level of quality. A modular system allows for the optimum adaptation of the gun to the welding task. "Even unusual special designs and individual requirements," says Demmer, "can be implemented for the respective welding job", which is why it was no surprise when NIMAK completed the manual welding guns for the Mercedes-Benz assembly plant exactly according to its stipulated project specifications.

NIMAK manual welding guns in production at the new Mercedes-Benz assembly plant in Russia. Photo: Mercedes-Benz AG

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Roll-Kraft

Roll-Kraft meets the Covid-19 crisis in manufacturing

Roll-Kraft is open for business and available to provide tooling to companies that are increasing their efforts to meet the challenge during the coronavirus (COVID-19) crisis. Roll-Kraft manufactures tooling for the tube and pipe and roll form industry.

Several customers have turned to Roll-Kraft for assistance in re-tooling, in order to manufacture products to meet the current needs of the community. Welded Tubes, Inc., in Ohio, is one such company.

Welded Tubes was recently awarded a significant amount of business to manufacture hospital beds in response to the demands in various COVID-19 hotspots. At the onset of manufacturing, it was determined that their mill needed an additional tooling pass to aid in production. Joe Frandanisa, Welded Tubes company president commented, "We contacted Roll-Kraft, and in less than eight hours, Roll-Kraft provided the necessary tooling to keep our production running at full capacity and enable us to fill this tremendous need. On behalf of our entire Welded Tubes team, I want to express our thanks to Roll-Kraft for its unbelievable service and support."

Roll-Kraft is exceptionally prepared to aid in the current situation. With an experienced engineering team, and multiple locations totaling more than fifty CNC (computerized numerical control) machines, customers can rely on Roll-Kraft to supply tooling to meet the current need. In addition, Roll-Kraft provides the only performance guarantee in the industry.

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Roll-Kraft's regional seminars continue to draw strong attendance

Roll-Kraft recently hosted its annual regional tube and pipe and roll forming training seminars at the LaMalfa Conference Center in Mentor, Ohio. The venue expanded to two ballrooms this year to accommodate over 100 attendees from nearly 50 companies from all over North America.

Each year, two seminars are presented - one for the tube and pipe mill industry, and one for the roll form industry. As in previous years, both seminars included tours of Roll-Kraft's state-of-the-art corporate facility in Mentor, Ohio.

Robert A. Sladky, Vice President of Tube Mill Engineering for Roll-Kraft, organized the event and also served as a speaker for each of the two-day programs. He was joined by other presenters, Dave Rostocil and Bret Molnar, Senior Technical Performance Specialists. The seminars included a working-model mill with actual demonstrations projected on-screen for clear observation of the step-by step process.

Sladky said, "The primary focus of these sessions, as well as our in-house training sessions, is to develop a standard for all to follow in the areas of mill integrity, alignment, setup, and tooling maintenance. This enables people to perform their duties in a predictable, repeatable fashion; and by extension, it minimizes changeover and downtime while reducing scrap and increasing production and profits."

Past attendees of the regional tube and pipe and roll form training seminars represented a broad mix of operators, maintenance, quality, supervisors, and management. This year, a large majority of attendees were new to the industry, which reflects a transition from veteran operators to a new generation.

Attendance at this year's regional seminars, as well as demand for Roll-Kraft's in-house programs and on-site training sessions, continues to surge. In fact, programming volume in 2019 has far surpassed all previous years in Sladky's dec-

ades-long career, and 2020 programming shows no signs of slowing down.

Roll-Kraft has its headquarters in Mentor, Ohio, and it maintains other facilities in Lombard, Illinois (Chicago Roll Company); Houston, Texas (Roll-Kraft Texas); and Ontario, Canada (Roll-Kraft Ltd.). Calls to the company's main line, (888) 953-9400 or (440) 205-3100, are greeted by a live operator who can assist callers in quickly reaching a technician, engineer, or sales staff member who can provide immediate assistance. The company's fax number is (440) 205-3110.

Roll-Kraft's annual training seminars are in high demand and have continually grown in attendance

Learn more about Roll-Kraft products and services by visiting roll-kraft.com and accessing more technical videos on the company's YouTube channel. For easy and immediate contact with Roll-Kraft that transcends time zones and working hours, the website features an easy-to-use contact form.

Roll-Kraft launches the only perfomance guarantee in the tube and pipe an roll forming industries

Roll-Kraft, the leader in tube and pipe and roll forming tooling announces the launch of the only Performance Guarantee in their industry. In addition to providing customers with an additional layer of confidence when they select Roll-Kraft, the Performance Guarantee represents the company's promise to deliver tooling that performs the first time, right out of the box.

The Guarantee outlines that customers can have their tooling repaired, replaced, or refunded for the following reasons:

- Tooling does not correctly form the profile
- Tooling has a manufacturing flaw
- Tooling cannot achieve specified tolerances

Additional information about the Guarantee can be found at roll-kraft.com/guarantee.

"It's our top priority to make the best tooling for our customers," said Chuck Gehrisch, Chairman and Chief Executive Officer of Roll-Kraft. "We know that when tooling doesn't work the first time, it causes costly disruptions to production. If there's an issue, our technicians make it right as soon as possible."

As an industry pioneer, Roll-Kraft has delivered high performance roll forming tooling and tube and pipe tooling to their customers for more than 55 years. The company consistently achieves high on-time delivery and first-time performance statistics, which are tracked online for customer access. In 2019, Roll-Kraft tooling performed right out of the box without any issues 97.1 percent of the time.

"We take various steps, including testing, a thorough final inspection, and a detailed setup package, to deliver at the highest level," said Gehrisch. "Customers can be confident every time they choose us."

Roll-Kraft

Roll-Kraft Ltd. adds computer numerical control machine

Roll-Kraft Ltd. has purchased and installed a new Computer Numerical Control Machine (CNC) at its location in Woodbridge, Ontario. Roll-Kraft Ltd. manufactures new roll tooling and reconditions worn tooling for companies that produce tube and pipe and various roll formed shapes. It is the parallel facility to the Roll-Kraft headquarters plant in Mentor, OH.

The new CNC machine has improved features that will aid in the production process. It performs both roughing and finishing operations on the rolls, and the turning capacity has increased from 24-inches to 27-inches. With the addition of this newer technology, it is expected to allow rolls to be cut more precisely and more efficiently. As a leader in the industry, Roll-Kraft continually updates and improves its facilities and processes to meet the ever-increasing demands of the market and reach its goal of first-time performance for every customer.

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Schwarze-Robitec GmbH

Schwarze-Robitec at Fabtech: Combined tube bending expertise

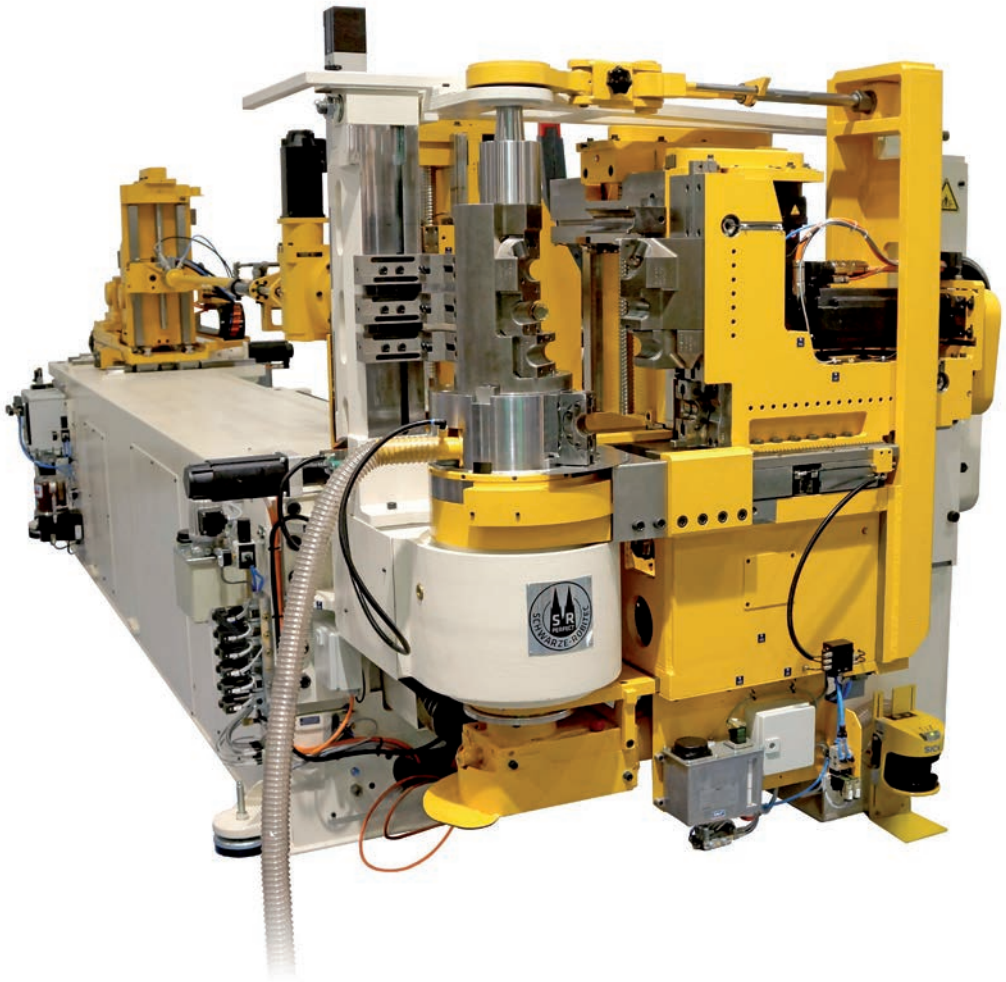
For the automotive sector, high-volume production is crucial: each step in the manufacturing process is tailored towards speed and an efficient use of material resources. And it is with these requirements in mind that Schwarze-Robitec has fine-tuned and continuously developed tube bending machines for this sector. The German manufacturer recently showcased its technology at the US metalworking trade fair Fabtech in the form of its fully equipped, fully electric multi-radius tube bending machine, CNC 80 E TB MR.

The CNC 80 E TB MR from Schwarze-Robitec's High Performance series is capable of bending tubes with diameters of up to approx. 3 inches (80mm) and can also cut them in the same process step thanks to an integrated fully electric cutting unit. At Fabtech, the German machine manufacturer had presented the fully electric version of this feature to a US audience for the first time. By combining bending and cutting processes, the machine enhances efficiency and saves resources during processing, leading to shorter turnover times and up to a 90 percent reduction in material waste. Despite featuring a multi-stack bending tool, the machine is able to cut tubes directly thanks to its extended

vertical transport carriage. A vertically adjustable pressure die moves to the individual levels in sync with the tube. This means that the contact pressure can be optimally gauged, while tool costs and tool changing times are reduced.

Furthermore, additional features of the machine help to ensure an even faster production process. For example, for each bending sequence the intelligent NxG control system assesses the interaction between all axes, operates them simultaneously and prepares the next sequences. This reduces production time by 20 to 40 percent depending on the component and the desired tube geometry. In addition, faster refitting times are ensured thanks to the Quick-Tool-Unlock system in combination with a rapid clamping system for the bend former. The tension bars can thus be opened and closed with ease for tool changing, whilst no bolts are required to fasten the bend former to the turntable. This helps to increase repeatability and process security.

Schwarze-Robitec has perfected this machine through numerous refinements, such as a freely stored bend former. Fabtech trade fair visitors in Chicago were able to witness a highly efficient tube bending process up close.



Schwarze-Robitec's fully equipped, fully electric multi-radius tube bending machine CNC 80 E TB MR is perfectly tailored to the requirements of the automotive industry.

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SIKORA AG

SIKORA ranks among the “TOP 100” of the German medium-sized companies

CEO at SIKORA AG, Dr. Christian Fra

The Bremen based SIKORA AG ranks once again among Germany’s 100 fastest growing medium-sized companies. This is the result of the study “TOP 100 ranking of the medium-sized companies 2019”, which was carried out by the management consultancy Munich Strategy Group. This year, SIKORA is the only company from Bremen that has made it into the “TOP 100“.

Dr. Christian Frank, CEO of SIKORA says: “I am delighted that we are among the “TOP 100” again this year. Once again, the award shows that we belong to the elite of the German medium-sized companies and that we set trends and play a leading role in the area of innovative measuring, control, inspection and sorting technologies. By focusing on technical innovations as well as expanding our global sales and service network and the simultaneous concentration of research, development and production at our location in Bremen, we create the conditions for a future, constant growth. I see this award particularly as a recognition of the entire workforce.”

More than 3,500 companies from all industries with an annual turnover between 10 million and 1 billion Euro were evaluated by the Munich Strategy Group. The “TOP 100” companies were determined on the basis of their long term growth and profitability. The basis for the selection is the performance of the companies during the last five years.

SIKORA was founded in 1973 by Harald Sikora and is today a leading manufacturer and supplier of measuring and control technology for the wire and cable, hose and tube, sheets as well as optical fiber, metals and plastics industries. With around 300 employees worldwide, 14 international offices and more than 30 regional representatives, the medium-sized company provides customers with innovative product solutions and individual service. The measuring and control systems are exclusively made at the headquarters in Bremen/Germany. Innovation, product quality and customer satisfaction define the daily activities at SIKORA AG.

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SIKORA AG

Dr. Jörg Wissdorf as new member of the executive board at SIKORA

SIKORA AG, manufacturer and global supplier of innovative measuring, control, inspection and sorting technology has appointed Dr. Jörg Wissdorf as a new member of the executive board since March 1, 2020. He is familiarized for succeeding executive board, Harry Prunk, who will retire in a few months after 45 successful years with SIKORA.

"It was important for us to approach the succession at an early stage in order to ensure a smooth transition", says Prof. Dr. Thomas Sikora, chairman of the supervisory board of SIKORA AG. He furthers: "We are delighted to have won our ideal candidate with Dr. Wissdorf". Jörg Wissdorf will be responsible for the areas Sales, Marketing and Service after a transition period together with the long-standing board member, Mr. Harry Prunk.

Before, the graduated aerospace engineer worked in several leading positions in Sales and Marketing as well as managing director of national and international companies. "I look forward to the new responsibility and want to further expand the growths of the company in the existing as well as in the younger markets," says Jörg Wissdorf. SIKORA's portfolio includes future-oriented systems that offer the customer an added value with regard to process optimization, sustainability and efficiency. "To bring the specific advantages of SIKORA onto the markets in order to further increase the success of the company will be one of my core activities", explains Wissdorf.

New SIKORA AG executive board member: Dr. Jörg Wissdorf

SMS group GmbH

Al Gharbia Pipe Company produces first large-diameter pipe on new turn-key LSAW plant from SMS group

Al Gharbia Pipe Company has successfully taken into operation its new LSAW (Longitudinal Submerged Arc Welded) pipe plant. The new LSAW large-diameter pipe production facility was built at the Khalifa Industrial Zone Abu Dhabi (KIZAD), by a consortium of Larsen & Toubro Limited and SMS group as the EPC (Engineering, Procurement, Construction) partner. The plant is designed for a production capacity of 240,000 tons per year. The pipes to be produced on the LSAW facility supplied by SMS group, will mainly come in grades suitable for use as onshore & offshore line pipes, including sour-gas applications. Al Gharbia is going to produce up to 12.2-meter-long pipes with outside diameters ranging from 18 to 56 inches. The maximum wall thickness is 44.5 millimeters; steel plates up to grade X80 can be processed.

SMS group was responsible for the engineering and supply the process equipment for the large-diameter pipe production facility, Larsen & Toubro Limited for the civil works, balance-of-plant and erection of the equipment. Besides the engineering and project planning, scheduling and coordination, SMS group supplied all core machines and the process equipment including workshops, laboratories and a manufacturing execution system (MES). The production line comprises an edge milling machine, a crimping press, a second-generation JCO® pipe forming press with modular frame design, tack-welding machine, inside and outside welding machines, mechanical expander and a hydrostatic pipe tester.

Al Gharbia Pipe Company has successfully taken into operation the new LSAW pipe plant.

The JCO® pipe forming process provides numerous benefits. For example, the plant operator can quickly change over to other pipe dimensions allowing even smaller batch sizes to be produced economically and with utmost precision. The Shape Automation System developed by SMS group directly determines the optimal machine parameters and fully automatically controls the forming process. The system minimizes the effect of yield strength deviations in the plates during forming guaranteeing a consistently high pipe quality.

The JCO® pipe forming press and the crimping press are equipped with variable speed pumps (VSP), assuring an efficient hydraulic system, that dispenses with any proportional valves. As a result, abrasion is reduced and hydraulic pressure losses minimized. Further benefits include short piping paths and small oil tanks and the possibility to feed compression energy back into the network as electrical energy.

Compared to conventional hydraulic systems, this reduces energy consumption by up to 50 percent.

Al Gharbia Pipe Company can now manufacture largediameter longitudinal welded pipes made of quality steels ? mainly for the energy sector ? targeting markets in Bahrain, Kuwait, Oman, Saudi Arabia and the UAE (United Arab Emirates).

Al Gharbia Pipe Company is a joint venture of investment company Senaat, JFE Steel and Marubeni-Itochu Steel (MISI). The new company leverages JFE Steel's technology for high-quality large-diameter longitudinal welded steel pipes, MISI's sales

capabilities and Senaat's industrial expertise in Abu Dhabi.

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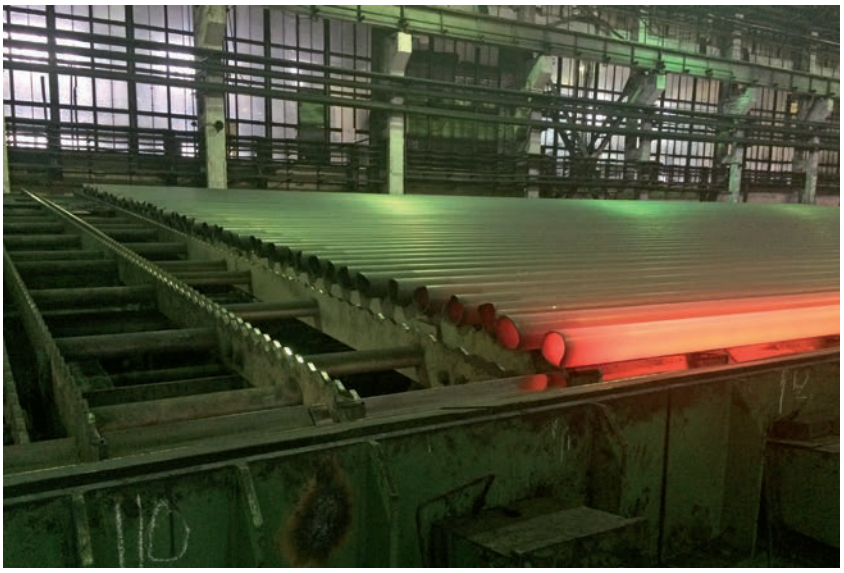
Taganrog Metallurgical Works (Tagmet) produces five millionth ton of pipes on continuous PQF® mill from SMS group

At the end of May, Tagmet, based in Taganrog, Russia, and part of TMK`s Pipe Metallurgical Company, produced the five millionth ton of pipes on the PQF® (Premium Quality Finishing) seamless pipe mill supplied by SMS group. This milestone batch of line pipes for the oil industry – of 168 millimeters diameter and 18 millimeters wall thickness - was produced using continuously cast billets from a steel plant that was also supplied by SMS group.

Commissioned in 2008, the continuous PQF® mill at Tagmet was the first pipe rolling mill in Russia to use the latest PQF® technology for the production of seamless steel pipes for the oil and gas industry. With six thousand employees, Tagmet is today one of the leading companies in the pipe industry, both nationally and internationally. The mill produces basically all types of seamless steel pipes within the dimensional range of 73 to 273 millimeters, including high-strength pipes with special material properties to meet the ever-growing demands of the market.



Seamless steel pipes on the cooling bed in the Tagmet PQF® mill.

"Undoubtedly, this milestone is a credit to the entire plant staff. A key element of the success are the well-coordinated actions of all the mill's technical service teams, who – through highly efficient maintenance of the equipment - have always ensured stable and flawless production, and of all our staff members involved in the technological process," says Sergey Bilan, Managing Director of Tagmet.

Over the years, trustful cooperation between Tagmet and SMS group has led to the continuous further development of the technology in the PQF® seamless pipe mill. Renewed proof of this cooperation is the latest order placed by TMK for the supply of a newly developed mandrel thrust block for the cone-type piercing mill. The thrust block is currently being assembled in the SMS group workshop in Germany.

SMS group GmbH

SMS group invests in Brazilian Center of Competence for industrial digitalization

German SMS group (www.sms-group.com) is investing in the acquisition of shares in two Brazil-based companies, Viridis and Vetta, thus expanding its market presence in Latin America. Part of the transaction is the merger of these two Brazilian companies to create a competency center for industrial digitalization, with emphasis on efficiency and sustainability technologies. The new business will operate under the name Vetta in conjunction with SMS digital, SMS group subsidiary specialized in digital solutions.

Viridis Energy Solutions, a company based in Belo Horizonte, Brazil, is the creator of an innovative energy and sustainability digital platform for process industries and large energy consumers. Viridis clients benefit from increased energy efficiency, reduced environmental impact, including lower carbon footprint, along with substantial improvements to their operational management and planning capabilities. Founded in 2013, Viridis is the leader in its original market and is now expanding its solutions worldwide.

Vetta Technologies, also based in Belo Horizonte, Brazil, has been providing digital solutions for various industries since 2001. Having a strong presence in the metals and mining sectors, the company focuses on customized digital transformation projects, which are based on advanced technologies developed by Vetta itself or integrated from other vendors. Vetta also specializes in industrial solutions, including data-driven models for process and planning optimization.

Fully digitalized: We are working together remotely during the CoVid-19-Pandemic, and even the contract signing took place via digital channels!

Viridis has first been funded by angel investor David Flam, and later by FIMA, a fund dedicated to the creation of new environmental technologies. FIMA, along with other funds, is managed by KPTL, a Brazilian venture capital management firm. The SMS group has acquired all shares from both investors and made a capital injection in the company to fuel its growth. The SMS group has also acquired shares from Vetta, allowing the two businesses to merge under a unified capital structure. The merged company will be managed by the two original founders, Dr. Thiago Turchetti Maia and Ricardo Giacomin. The SMS group will keep the majority of capital and the control of the business, whilst retaining the founding partners in the capital table. The new company will operate under the name Vetta Tecnologia S.A.

The learning plant is the vision of a holistically networked production site, predicting highly complex scenarios based on smart algorithms, deriving decisions from real incidents, and continuously optimizing and monitoring itself thanks to the use of Artificial Intelligence. The core elements of the concept include predictive maintenance, assurance of product quality, condition monitoring and prediction.

The learning plant transforms data into information and information into added value. It makes efficient use of the benefits of innovative technologies – 5G, for example – to enhance productivity and user friendliness – all this with a significantly positive effect on the sustainability and cost-efficiency of production.

The combination with the Vetta and Viridis merger adds the energy and sustainability business to the portfolio of SMS digital. These areas are of key importance for the entire steel and metals industry, with decisive influence on the cost-efficiency of the companies and acting as a lever in reducing their carbon footprint. With Vetta's established solutions, SMS digital is now in a position to globally supply digitalization solutions that integrate all production areas of the steel and metals industry. Also the expansion into other sectors, such as chemicals, pulp & paper, etc. becomes feasible. The SMS Data Factory and further data integration solutions will enable us to also interlink energy management, in addition to condition monitoring, quality control and production planning, understanding their interrelationships and influences and, building on this knowledge, generating significant efficiency improvements in all these areas.

Together, Vetta and Viridis will join the SMS group with a 200-strong team of engineers and IT professionals.

For further details, please visit www.vetta.digital.

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Xiris Automation Inc.

Xiris Releases New Software for Weld Cameras

Xiris' latest version of WeldStudio™ software includes powerful new functions to support Xiris Weld Cameras in capturing and processing high-quality weld images. The Pre-Recording Buffering feature captures the beginning of a weld easily with a pre-recording buffer that caches up to 10 seconds of video. It also features 3 new Advanced Edge Detectors to help highlight subtle features in the welding environment that are not easily seen by the human eye. Lastly, the latest software version includes Pattern and Template Matching Tools to locate, inspect or qualify a feature in your weld process.

With these new software tools, welding personnel can extract real-time data from their weld videos images to provide new options for process monitoring and control.

Xiris Automation Inc. specializes in developing optical equipment used for process and quality control across a number of specialty industries. With an extensive product line, Xiris provides some of the world's most dynamic manufacturers with the ability to detect, recognize, and interpret quality defects in their manufactured goods.

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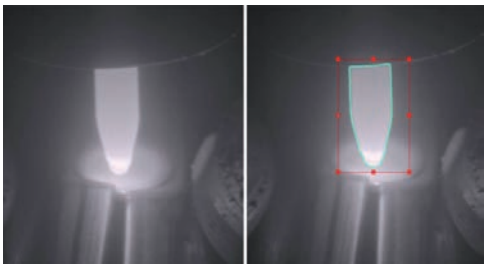

Original Image of a TIG Torch (left) and After a Canny Edge Detector (right)

Xiris Automation Inc.

Xiris Hires New European Technical Sales Representative

Eren Aydin

Xiris Automation is pleased to welcome Mr. Eren Aydin to the team as our new European Technical Sales Representative. Trained as an industrial engineer, Mr. Aydin has experience in doing technical sales for automation equipment and components across Europe and the Middle East. Based out of our European office in Ratingen, Germany, Eren will be responsible for all sales of Xiris weld cameras and inspection systems across Europe and the Middle East.

Cameron Serles, President of Xiris Automation, commented "We are very pleased to have Eren join our team. His enthusiasm, technical knowledge and attention to detail in providing solutions for a diverse customer base will complement our requirements as the metal fabrication industry increases its adoption of automation technology with the use of weld cameras and inspection systems. Welcome to Eren!"

Xiris Automation Inc. specializes in developing optical equipment used for process and quality control across a number of specialty industries. With an extensive product line, Xiris provides some of the world's most dynamic manufacturers with the ability to detect, recognize, and interpret quality defects in their manufactured goods.

Xiris Automation Inc.

Xiris Releases Next-Generation Weld Camera: XVC-700

Xiris Automation Inc. is pleased to announce the release of its revolutionary next-generation weld camera, the XVC-700. The lightweight, slimline XVC-700 camera is specifically designed for integration with welding automation in spaces too small for traditional welding cameras.

The Xiris XVC-700 packs high performance in a slimline package. Featuring High Dynamic Range (HDR) imaging in excess of 140db, an angled optics head ranging from 0° to 90° and a POE Interface, the all-digital XVC-700 takes weld imaging where it has never been able to go before. The camera itself weighs only 100g,

XVC 700

and squeezes into a 22mm x 22mm x115mm frame before optics. Industry standard S–mount lens holder, multiple mounting points, status LED, low power consumption and protective glass UV/IR filter round out the superior usability of the XVC-700. The XVC-700 is fully compatible with Xiris' industry-leading WeldStudio™ software utility, allowing camera setup, display, record and playback and image analysis all from one screen.

Xiris Automation Inc. specializes in developing Optical Systems for Quality Control for several niche industries, providing some of the world's most dynamic manufacturers with the ability to detect, recognize, and interpret quality defects in their manufactured good

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ITA – International Tube Association

ITA easy way: Stay in touch and up to date via the ITA's new web conferences

The COVID-19 pandemic began to make itself felt in industrial production, in tube production and in the tube plant supplying industries, a little bit later than in many other industries. Ongoing contracts secured production for a some time. But since some time also the tube industry is now heavily hit by the corona consequences.

This came on the heels of a difficult period for the industries in 2019, when tariffs and trade standoffs left producers embattled and experiencing early signs of a demand slowdown.

Now, the tube and pipe sector, like many other downstream metalworking industries, is monitoring the demand for products from end-users, including the oil and gas industries, the automotive sector, and others, on a day-to-day basis.

Given the unprecedented nature of this particular crisis, it is practically impossible to predict how long a recovery period may last. And this difficulty is further compounded by the fact that the usual industry discussion and exchange fora are shut down.

For some time now, the usual customer contacts, meetings and events such as trade fairs or conventions have not been taking place. Travel is curtailed. There's been the option of staying in touch online, but without a doubt the usual flow of ideas, news and developments has largely dried up.

It is clear that expos, conferences and similar events will resume later in the year. But in the meantime, the ITA is proposing a series of web conferences to restore the dialogue that our sector needs to thrive.

Each web conference will have a central theme and will take place on the Zoom cloud platform.

The first of the series is scheduled to take place on September 9, 2020. The theme at the first conference will be an overview of how the industry's main markets have fared, concentrating on the following:

- OCTG markets
- Automotive markets
- Mechanical industries
- Construction industries

There will be an introduction from ITA President Dr.Gunther Voswinckel, and at each web conference a panel with specialists and experts from the sector will be present to answer any questions that may arise following the main presentation.

The second web conference (date as yet to be confirmed) will revolve around how best to maintain contact and serve customers during the pandemic and the recovery period. It will tackle questions of more agile marketing methods and customer service.

Additional topics will include a look at opportunities arising from the crisis, and the implications for globalization.

Further details will be publicised as they become available, and the ITA will ensure that all members are kept up to date

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Tube China 2020

A letter from wire & Tube China 2020 to exhibitors, visitors, media representatives

Dear exhibitors, visitors, media representatives,

The effect of China's bold approaches to contain the rapid spread of coronavirus is recognized by international community. The organizers of wire & Tube China are pleased to see that greater number of wire, cable and tube manufacturers in mainland China have resumed production gradually with a steadily increasing production capacity. Many companies have reached out to us recently to inquire about the plans and booth reservation status of wire & Tube China 2020. As the organizer of the exhibition, we take the concerns of our customers, guests, partners and our staff regarding the coronavirus very seriously. Your safety is always our top priority!

Currently nearly 800 local Chinese companies have submitted their booking confirmation for this edition, and we have also received near 100 overseas applications from internationally renowned brands. These companies have stated that regular business operations will not be affected by the COVID-19 epidemic outbreak and they will participate in wire & Tube China 2020 this September.

In 2019, China's GDP was close to 100 trillion yuan. The sheer size of China's economy has given it a strong ability to withstand risks. The fundamentals of China's long-term economic growth have not changed, and the impact of the COVID-19 epidemic is short-term and generally controllable in China. 2020 will be the sprint year of China's "Thirteenth Five-Year Plan" and the orderly restoration of the production and living conditions, and the increasing intensity of policy adjustments will release tremendous potential and strong momentum for China's development. The current virus epidemic highlights the importance of structural reforms on the supply side. In the future, structural changes to public expenditure, such as increased investment in various areas of people's livelihood, will continue to enhance economic development.

Since the outbreak of the COVID-19 epidemic, the organizers of wire & Tube China have paid great attention to it and closely followed the updates throughout the epidemic. Through rapid internal communication, a temporary emergency team consisting of project team leaders, risk management and legal experts was put in place. On the one hand, the emergency team paid close attention to the feedback from exhibitors and key buyers, and actively contacted local and overseas trade associations. They all expressed positive expectations for the market conditions after the epidemic.

wire & Tube China 2020 will be held in Shanghai from September 23 to 26 as scheduled. The organizers will keep re-evaluating the situation in consultation with health authorities in order to create a safe environment to all the participants as always, We are full of confidence: "The dark clouds will always disperse, and the development of the industry will never stop."

Messe Düsseldorf Exhibition (Shanghai) Co., Ltd.

Shanghai Cable Research Institute Co., Ltd.

Metallurgical Council of China Council for the Promotion of International Trade, Metallurgical Center for International Exchange and Cooperation

March 6th, 2020

For more information, please visit the websites: www.tubechina.net

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Düsseldorf

International Tube and Pipe Trade Fair

Internationale Rohr-Fachmesse

Messe Düsseldorf

wire and Tube 2020

A World without Tubes, Wire and Cable – Hard to Imagine!

They are indispensable because without wire, cable and tubes buildings cannot be erected, bridges cannot be built and airplanes cannot take off. And all of the digital transformation would not be possible without cables, wire and tubes either.

This is why the key players in these industries will meet at Düsseldorf Exhibition Centre from 7 to 11 December 2020 to present the latest machinery and equipment for wire and tube manufacturing, finishing and processing, finished products, products and services at the world's most relevant sector events, wire and Tube. Approximately 2,000 exhibitors from around 50 countries are expected.

wire 2020 will be presented in halls 10 to 17, exhibitors of Tube will show their innovations in the halls 5, 6, 7.a and 7 as well as in 8a, 8b and 9.

Sustainable, environmentally friendly, energy-saving and innovative: this is how most manufacturing companies want to come across to the public. But the path to achieving this is a long and winding one, especially for the resource-intensive technology companies in the wire, cable and tube industries.

All the more why Messe Düsseldorf is focusing on the ecoMetals Campaign: for the duration of the trade fair there will now, for the first time, be guided tours, so-called ecoMetals-trails. These will guide visitors to the stands of exhibitors with sustainable, resource-saving and low-emission production.

wire 2020

The exhibitors at wire 2020 will present machinery and equipment for wire production, wire processing and finishing, process technology tools and auxiliaries, materials, glass fibre technologies, special wires and cables, measuring, control technology and inspection engineering, meshwelding machines, Fastener and Spring Technology.

For the first time finished products i.e. technical springs and fasteners will be presented, too. This means the entire value chain from machinery and equipment for wire and cable production and their processing and finishing all the way down to the finished products will be on show.

Tube 2020

Tube 2020 shows the complete process chain of the tube industry – from machinery and equipment for tube production, tube finishing and processing through raw materials, tubes and accessories, second-hand machinery, process technology tools, auxiliaries to measuring and control technology and inspection engineering. Tube trade, tube bending and sawing, OCTG technology, pipelines, profiles, machines and Plastic Tubes complement the broad, comprehensive range.

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Two premieres as part of Tube Düsseldorf

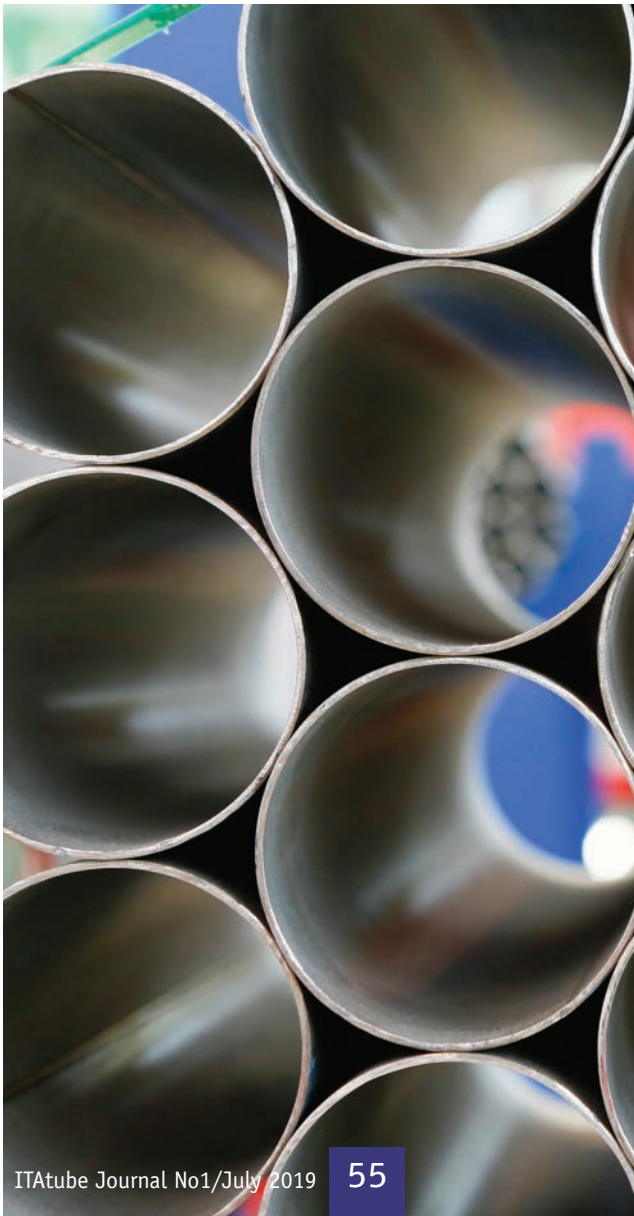
Specially signposted under the heading Saw EXPO will be sawing and industrial cutting technologies as part of Tube. From 8 to 11 June 2021 Saw EXPO will then be held as a separate trade fair at the Friedrichshafen fairgrounds. Interested companies can register online at www.sawexpo.de.

This special-interest trade fair is all about sawing machines and alternative cutting technologies, trowel equipment, deburring tools, accessories, consumables as well as peripheral machinery and systems. Saw jobbers, second-hand machinery, associations, publishing houses, service providers, science and research will complement the ranges.

Premiere for WTT-Expo, special-interest fair for industrial heat exchangers and heat transfer technology held in Düsseldorf for the first time from 7 to 9 December 2020. After all, energy-efficient systems for heat transfer are in high demand. Energy is increasingly becoming a cost factor for companies. As a result, manufacturing companies, in particular, will start investing more in energy efficiency again. According to the current Energy Efficiency Index (EEI) nearly three quarters of all companies spend more than ten percent of their total investment on this.

International Satellites on Dynamic Markets of the Future

Over a period of 30 years wire and Tube Düsseldorf have developed into the leading trade fairs of their industries – and on an international scale there are also eleven satellites featuring the themes of wire, cable and tubes. Market leaders in their respective regions, they provide impulses for the local industries and boast a high growth potential. Satellites in Russia, Brazil, China, Thailand, India and the USA therefore now form part of the portfolio of the Metal and Flow Technologies Trade Fairs made by Messe Düsseldorf.



Tube 2020

New date for wire and Tube Düsseldorf: 7 to 11 December 2020

The world's leading international trade fairs for the wire, cable, tube and pipe industry, wire and Tube, will take place from 7 to 11 December 2020 at Düsseldorf Fairgrounds.

This is Messe Düsseldorf's timely response to the postponement of the industry highlights announced at the end of February. It was agreed in consultation with all partners involved in order to counteract the increasingly dynamic developments regarding the possible spread of the coronvirus.

"It is very important for us to inform you of this new date as soon as possible in order to ensure planning security for the entire industry and its partners," says Wolfram N. Diener, Managing Director of Messe Düsseldorf GmbH, and adds: "Our customers and partners can trust us to act calmly and responsibly even in difficult situations."

Existing contracts with Messe Düsseldorf remain valid for the new date, visitor tickets already purchased remain valid as well. 2,600 exhibitors in 15 halls are expected to present their latest machinery and equipment for wire and tube production, processing and finishing, end products, products and services. The Düsseldorf hotel industry is also sending out an important signal through its umbrella organisation DEHOGA (Trade Association for the Hospitality Industry): "We appeal to our members and the entire industry to be flexible when it comes to rebooking by exhibitors and visitors. The Düsseldorf trade fairs such as wire and Tube play an enormously important role for the city, the hotel industry and the catering trade. It would be counterproductive not to show goodwill in this situation," as both DEHOGA-Representatives Giuseppe Saitta (Chairman Düsseldorf/District Group Rhein-Kreis Neuss) and Rolf D. Steinert (Düsseldorf/Rhein-Kreis Neuss Hotels and Tourism Group) emphasize.

Current information can be found in the Internet portals at: www.wire.de and www.Tube.de.

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Messe Düsseldorf

Ready for Re-Start: Messe Düsseldorf draws up Hygiene and Infection Protection Concept

Trade Fair Operations resuming in September

CEO Diener: "We offer all the prerequisites for safe and successful trade fairs in Corona times"

Here we go again: CARAVAN SALON Düsseldorf, the world's leading trade fair for motorhomes and caravans, will mark the resumption of trade fair operations at the homebase in Düsseldorf from 4 to 13 September 2020. After the lockdown in spring it has been possible to hold trade fairs and congresses again subject to specific conditions in North Rhine-Westphalia since 31 May 2020. Other Düsseldorf events on the agenda for this year include the medical technology trade fairs MEDICA and COMPAMED (16 – 19/11), the industrial fittings event VALVE WORLD EXPO (1 – 3/12) as well as the trade fair duo for wire, cable, pipes and tubes, wire and Tube (7 – 11/12).

The Hygiene and Infection Protection Concept of the Düsseldorf exhibition centre enables relevant industry platforms to be held while ensuring the greatest protection possible for exhibitors, visitors, partners and members of staff. It ensures observance of the required health precautions, hygiene measures and distancing rules and encompasses both measures for headcount and space management as well as hygiene, technical and organisational measures provided by the federal state government for holding congresses and trade fairs. The current Corona Protection Ordinance of the federal state of North Rhine-Westphalia serves as a basis.

At the same time, the gradual easing of international travel restrictions promotes the resumption of trade fair operations. Following the first border openings within Europe the German Federal Government has gradually lifted the restrictions for entries from third countries since 1 July 2020. Such initiatives especially benefit Düsseldorf's leading international trade fairs as they stand out with their particularly high international attendance. In 2019 this stood at 73.4% for exhibitors and 37.1% for visitors.

Significant Step for Business

"I welcome how responsibly Messe Düsseldorf deals with the topic of infection protection and takes all precautions to ensure that safe trade fair operations are also possible in Corona times," emphasises Thomas Geisel, Lord Mayor of the state capital and chairman of the supervisory board of Messe Düsseldorf. "With its concept the trade fair company provides the basis for the re-start that business needs so urgently. Its global No. 1 trade fairs are indispensable for this; and this not only applies to exhibitors and visitors from throughout the world but also to the numerous firms operating in skilled crafts, stand construction,

Messe Düsseldorf

PROTaction

transport, catering, hospitality and retail that all benefit from the events." According to a study by Munich-based ifo Institute, Düsseldorf's trade fair and congress operations induce annual sales of approx. EUR 2.98 billion across Germany (in Düsseldorf: EUR 1.66 billion), secure 27,692 jobs (in Düsseldorf: 16,664) and generate additional tax revenue of EUR 567 million (in Düsseldorf: EUR 36.3). One third of all overnight stays at hotels are accounted for by trade fairs.

Emphasising the special relevance for the exhibiting industries, Wolfram N. Diener, CEO of Messe Düsseldorf since 1 July 2020, says: "All signs are pointing towards a new departure. Enterprises need platforms now to present themselves and their innovations, to network and jointly chart the course for the future. With our leading international trade fairs we deliver second-to-none prerequisites for doing so. Our hygiene and infection protection standards ensure that the safety and health of our exhibitors, visitors, partners and members of staff are protected in the best possible way. We are ready."

Detailed Concept based on Proven Measures

As a matter of principle, the official distancing and hygiene rules shall be applicable at events held at the Düsseldorf exhibition centre, compliance is also up to each individual – as is the case in the public sphere and in retail. These rules include maintaining a minimum distance of 1.5 m, seeing to one's own hand hygiene, wearing a face mask, following the sneeze etiquette and foregoing such welcoming rituals as shaking hands. If needed face masks will be handed out by service staff at the entrances and at the premises.

All forthcoming events at the Düsseldorf location will be subject to a limitation on persons present to ensure minimum distancing can be observed. Tickets will therefore be limited and only available online; visitors will have to register upon purchasing them. This permits the monitoring of headcount as people enter the venue. At the same time, the provisions of the Corona Protection Ordinance of the federal state North Rhine-Westphalia governing the traceability of all persons present can be complied with and implemented.

Concrete Measures during Trade Fair Operations

Wherever queues form, floor markings will draw attention to the minimum distancing requirements. Here and on all public spaces Messe Düsseldorf staff and security personnel will ensure these distances are observed. This is performed on site and by means of existing video systems. At the exhibitors' stands this is done by their employees. To avoid bumping into people all aisles are to be used as in road traffic i.e. by keeping to the "right-hand lane". All doors – with the exception of fire protection doors – will be wide open for contactless use.

Sanitizers will be made available across the entire premises; at stands exhibitors themselves will be in charge of this. All payment transactions will be cashless – to the extent possible. For this reason all ticket counters will remain closed. Service desks, counters, etc. will be equipped with transparent partitions as hygiene guards. At least twice a day – also more frequently depending on the footfall – turnstiles and ticket scanners, service desk and counter tops as well as contact surfaces such as door handles etc. will be cleaned.

In the toilet facilities the maximum number of persons is determined by the number of open WCs and urinals. Here one out of two urinals and wash basins will be blocked off; WC cubicles will all be accessible without any restrictions. To monitor the number of users and safeguard the shorter cleaning and disinfection intervals of WCs, handles, washbasins and taps all toilet facilities will be staffed permanently by cleaners.

Constant and sufficient ventilation is ensured – by the air-handling systems and the specifications for stand construction and exhibit displays: the volume of fresh air constantly supplied to the halls exceeds the actual need many times over and the fresh air quality corresponds to the outdoor air. Furthermore, conference rooms or ground floors in multi-storey stands are only permitted with open layouts to ensure they receive sufficient ventilation. The same applies to walk-in exhibits whose doors, windows and roof hatches have to be open at all times.

As before, there will be food service and catering offered at the events. The operators have to draw up their own hygiene and infection protection concept for this based on the Corona Protection Ordinance of the federal state of NRW and its annexes. For the duration of the Corona pandemic there is a general ban on stand parties and/or exhibitor parties at the premises. Stand construction is governed by the "SARS-CoV-2-Arbeitsschutz-standard" H&S stand-

ard of the Federal German Ministry for Labour and Social Affairs.

Safety for the Workforce of Messe Düsseldorf

The protection of the workforce is also guaranteed: all members of staff will receive textile face masks; for outdoor jobs there will be an additional visor. Tools are, if possible, personally assigned to individual employees – and will be cleaned before being handed over to third parties. Protective gloves are mandatory if jobs cannot be performed with personally assigned tools or if an immediate exchange of materials and objects is required.

The hygiene and infection protection standards are constantly adapted to future developments and changing legal requirements. Messe Düsseldorf will provide timely information on any changes. Wolfram N. Diener emphasises: "The safety of our exhibitors, visitors, partners and employees is always our top priority. As usual, they can expect a high level of hygiene, safety and good medical care at the Düsseldorf exhibition centre".

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ITA – International Tube Association

Trade relations in a post-COVID world: Why the ITA is committed to Tube 2020

A polarization is already making itself felt in the debate about how society—and society's household purse, the economy along with production ecosystems and markets—is likely to reshape itself in a post-COVID world.

One assumption is that the crisis is likely to accelerate the fragmentation of the global economy. Trade and markets are tending towards protectionism, with borders becoming impermeable as a defense against the unprecedented levels of uncertainty overshadowing global markets.

Added to this, until a widely available vaccine has been found, travel restrictions will remain. National borders were shut for several months, multinational organizations have fared poorly in the face of growing nationalism in certain parts of the world—witness US President Trump's decision to opt out of the World Health Organization.

New fears have struck deep roots, and even afterwards, speculates the Economist [April 16, 2020], "local resilience will be prized over global efficiency."

The opposing argument goes thusly: Although trade tensions between the US and China, already stretched before the pandemic, have in some ways been accelerated, the world's reliance on these two main producers (amongst others) in many sectors has not diminished.

Key to a recovery will be job creation and keeping down living costs. Both of these factors mean that, however uneasy it makes them, governments may have to tolerate a continued reliance on global investment and supply chains.

Stepping up the pace of renewal

As an organization dedicated to global exchange, trade relationships and education, the ITA has every intention of continuing our work on the strengthening of such far-reaching ties. We rely on our conversations, among members scattered across the globe, to maintain the pace of progress in our industries.

A sign of this dedication is the commitment to the re-arranged Tube Düsseldorf 2020 which,

alongside the wire 2020 trade fair, will now be held—in compliance with "strict new hygiene and social distancing rules"—at a well-prepared trade fair grounds in Düsseldorf in December 2020.

As the world-leading international trade events in these industries, wire and Tube routinely attract tens of thousands of visitors from across Europe and the rest of the world. And the organizers report that initial figures indicate a COVID-related reduction in numbers of barely 6%. Clearly, we at the ITA are not the only ones who have taken the decision to fully commit to our international meetings.

Meanwhile, the COVID-19 pandemic is rekindling the debate about technology's impact on the future of work. The inevitable coronavirus-related recession, however deeply it may bite—and precisely how bad any such recession may be is currently pure conjecture—is likely to cause a spike in automation.

Why? Because research has shown that automation happens in bursts, and particularly in difficult times such as in the wake of economic shocks, when human labor becomes more expensive relative to companies' available revenue. Certain automatable tasks will easily be replaced with a mix of technology and higher-skilled workers.

This trend is of course more pronounced in some sectors than in others. As we've noted elsewhere, innovation and technological progress will be central to recovery, particularly in our industries. The reskilling of workforces, educational exchange, the exchange of ideas and groundbreaking initiatives, all of these are fundamental features of Tube. They are also the main reason why we need these events more than ever before.

Staying in touch

The ITA is dedicated to staying in touch with members and clients, even more so in periods of crisis such as the pandemic and its aftermath. We have events planned, both on the virtual plane (more on that topic elsewhere in these pages), and in anticipation of a time, later in the year, when face-to-face meetings become possible once again.

Of course we will have our usual booth at the Tube fair in December and will be organizing our well-known features, such as Students' Day and the Booth Party exclusively for members—all whilst fully observing hygiene and social distancing measures as required by the organizers.

The Annual General Meeting will be taking place virtually and details of this will be published at a later date. Also still to come are the details of our popular ITA Conference which was originally due to take place in April 2021. It is anticipated the rearranged Conference will now take place in the autumn.

We are expecting a busy second half to 2020, look forward to an eventful Tube Düsseldorf, and are excited to think what 2021 is going to bring.

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Tube 2020

The World focuses on Düsseldorf: Visitors from over 100 Countries expected to attend wire and Tube in December

From 7 to 11 December 2020 the two international No. 1 trade fairs for the wire, cable and tube and pipe industries, wire and Tube, will open their doors at Düsseldorf Fairgrounds.

The two leading international trade fairs for these industries will now be held in compliance with strict new hygiene and social distancing rules at a perfectly prepared Düsseldorf Fairground.

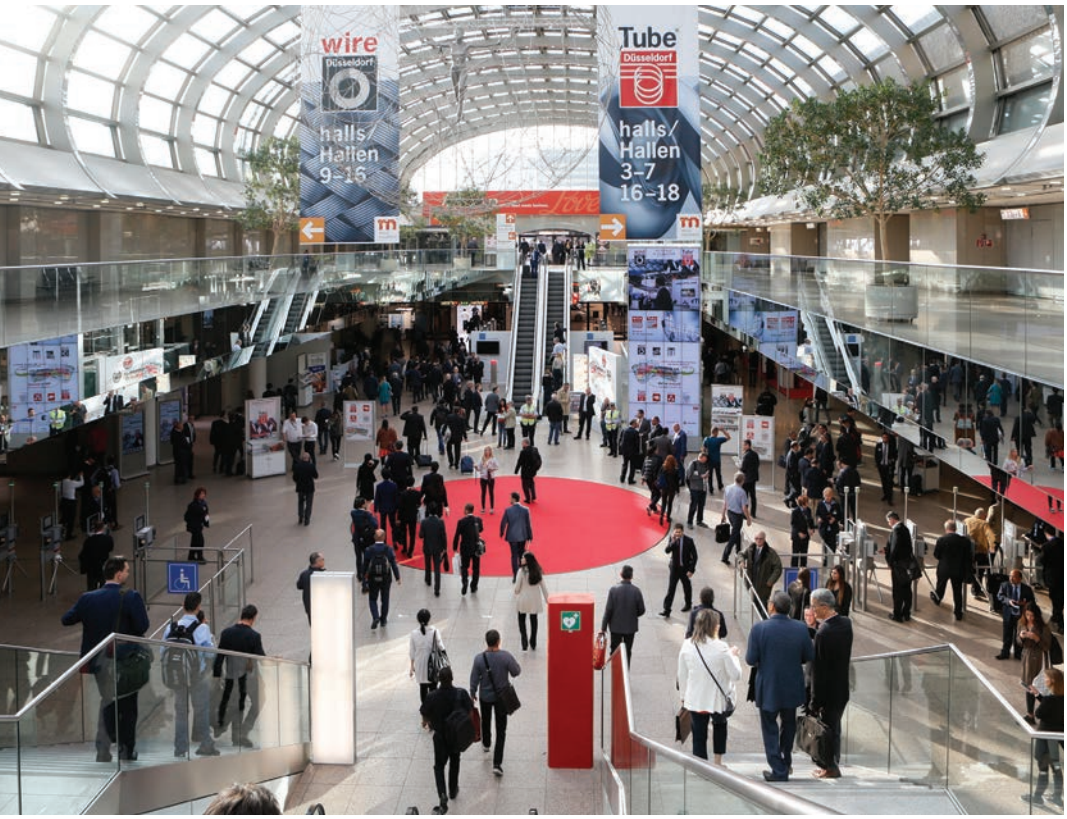
2018 saw 71,500 trade visitors (69,000 in 2016) from 134 countries visit the exhibition halls on the Rhine river over five days to learn about innovations in their sectors and conclude business deals at the world's leading1 trade fairs.

For December the organisers expect stable numbers of visitors from Europe despite the tight situation in the global economy. So far, one third of visitors at both trade fairs came from Germany while two thirds were international visitors. This means that wire and Tube are among the most internationally attended trade fairs care of Messe Düsseldorf.

80% of international visitors in December are expected to hail from Europe. Although strong producer and visitor countries such as Italy, France and Spain are seriously impacted by the consequences of the Corona crisis, these are the European countries – alongside the Netherlands, Spain, Poland, Russia, Great Britain and Turkey – where most European trade visitors will come from to visit the two trade fairs.

If the EU and national stimulus packages take effect in the European countries, then an economic recovery and increase in investment can be expected by the end of the year.

Visitors to wire come from the wire and cable industries, the iron, steel and NF-metal industries, from automotive and construction, the chemical industry, trade and the services sector. At wire 2020 they will be on the look-out for innovations, trends, new business partners and suppliers or seeking to deepen existing contacts.



Visitors' main interests focus on machinery and equipment for wire manufacturing and finishing, as well as process technology tools, finished products, auxiliary materials, forming technology and fasteners and springs as well as wire mesh welding machinery.

At Tube most visitors are interested in the latest news from the fields of tubes, plant and machinery for pipe and tube processing (as well as for finishing and manufacturing pipes and tubes), raw materials, accessories, profiles and pipe and tube trading. Likewise, pipelines, OCTG technology and sawing as well as saw blade grinding machines meet with avid interest among visitors to Tube 2020.

Tube 2020

Two Start-up areas at the World's No. 1 Trade Fairs wire and Tube 2020

Curtains up for start-ups at the leading international trade fairs wire and Tube in Düsseldorf from 30 March to 3 April 2020.

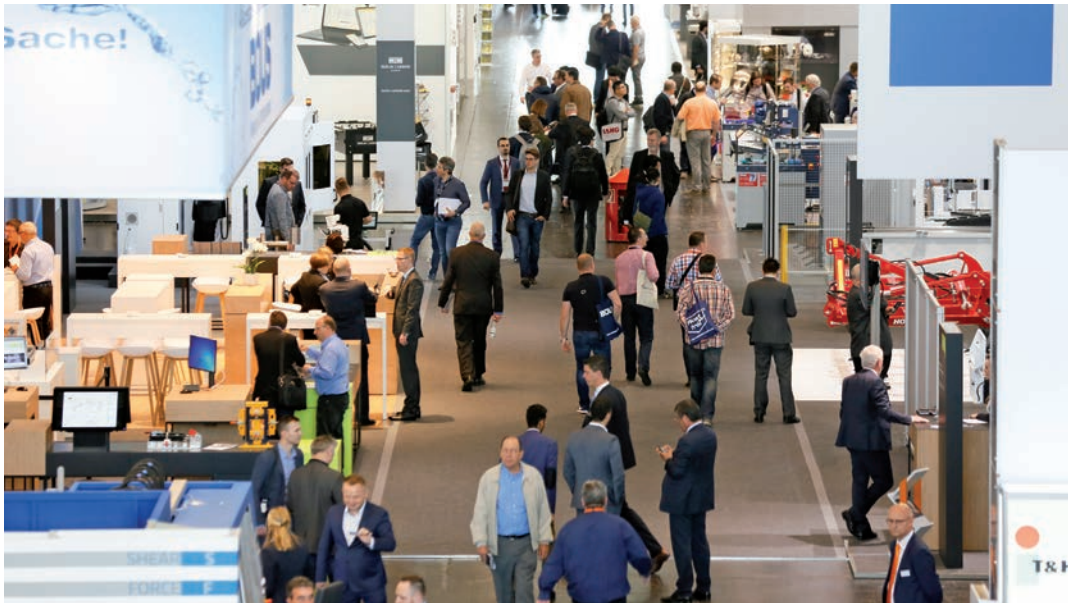
Young, innovative start-ups from Germany as well as international enterprises will – for the first time – be promoted and supported selectively as part of the No. 1 trade fairs for the cable, wire and tube industries.

You will have the opportunity to get in touch with, present your ideas to and ideally also enter into a business relationship with long-established industry representatives, over five trade fair days.

BMWi Pavilion for German Start-ups

The four German start-ups Secopta Analytics GmbH, FoxBase GmbH, API Oberflächenbeschichtung Gmbh and Mark3D GmbH have already registered as participants for BMWi's joint stand at entrance Nord.

They will showcase new developments or improvements of existing products. Prerequisite for participation is that these start-ups are younger than ten years, employ less than 50 employees and are domiciled and operate in Germany. Their annual turnover must not exceed EUR 10 million. Further registrations of German start-ups are welcome at www.wire.de/de/Aussteller.



Joint Stand for International Start-ups

There is another Area in the Nord entrance concourse for international firms, the Start-up-hub: here international newcomers also have the opportunity to present their innovations. We look forward to receiving registrations from German exhibitors at www.wire.de/startup_de and www.tube.de/startup_de and from international exhibitors at www.wire.de/startup_en and www.tube.de/startup_en

The exchange between young companies and the industrial "heavyweights" at wire und Tube can be an incentive, motivation or in fact even mark the beginning of a forward-looking business partnership. The world's leading trade fairs will therefore continue supporting start-ups in future.

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Tube 2020

WTT-Expo 2020 for the first time in Düsseldorf

Trade show for industrial heat exchanger and heat transfer medium technology from 7 to 9 December 2020 at Düsseldorf Fairgrounds

Industrial heat recovery, industrial heat exchangers and heat transfer technology systems are the focus of the WTT-Expo, which will be held for the first time as a trade show parallel to Tube Düsseldorf from 7 to 9 December 2020.

Tube is the world's leading trade fair for the tube and pipe industry, which will take place from 7 to 11 December on over 50,000 square metres and attract around 31,000 trade visitors from 130 countries to Düsseldorf.

The content synergy between WTT-Expo and Tube 2020 consists in the component 'heat exchanger tubes', the corresponding (welding) production processes for heat exchangers and, in general, the component 'tube' in process plants with regard to the visitor target groups of technical, operation and maintenance managers as well as technical buyers and planners.

Reason enough for Messe Düsseldorf to hold this three-day WTT-Expo as a trade show in Hall 7.1. as part of Tube 2020. The field of modern industrial heat exchanger technology fits in perfectly with the international portfolio of Metals and Flow Technologies with trade fairs like Tube, VALVE WORLD EXPO, Metec and Thermprocess.

At the WTT-Expo, exhibitors from the industrial heating and cooling technology sector will once again show how cost-optimised production can be achieved in this area and at the same time make a sustainable contribution to minimising emissions.

At the WTT-Expo, primarily exhibitors from German-speaking countries and neighbouring European countries (but also the USA) are expected to present systems, equipment, products and services from the industrial heat exchanger and heat transfer technology sector.

The trade fair's comprehensive range of products and services extends from planning and construction to commissioning and the complex field of maintenance.

Visitors to the world's leading trade fairs wire and Tube, which are held in parallel, have free admission to the WTT. Trade visitors who only want to visit the WTT can also visit the wire and Tube trade fairs with their admission ticket.

Further information on the WTT-Expo can be found at www.pp-publico.de and on the Messe Düsseldorf internet portal: www.Tube.de.

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Tube 2020

Premiere of ecoMetals tours on the occasion of the leading trade fairs wire and Tube 2020

Sustainable, eco-friendly, energy saving and innovative: this is how most manufacturing companies wish to come across to the public.

However, the road to reach this goal is a long and winded one, especially for resource-intensive technology companies in the wire, cable and tube industries. It often takes companies years to comply with the requirements relating to climate efficiency, sustainability and resource-saving processes.

All the more reason why Messe Düsseldorf is now focusing on an ecoMetals campaign during the leading international trade fairs wire and Tube: for the entire duration of the trade fair from 30 March to 3 April 2020 there will be guided tours – so-called ecoMetals tours – offered to the stands of exhibitors who produce in a sustainable manner that saves resources and cuts emissions.

You will be given the opportunity to inform participants on the ecoMetals tours personally and in detail about your company's innovations at your stand for a nominal charge of EUR 900.

Interested exhibitors can apply under www.wire.de/ecometals_exhibitor or www.tube.de/ecometals_exhibitor.

Interested trade visitors get information under www.wire-tradefair.com/ecometals_visitor or www.tube-tradefair.com/ecometals_visitor. There will guided information tours free of charge starting at the ecoMetals information counter at the Nord entrance.

Tube India 2021

Postponement of the Indian metal fairs wire India, Tube India, METEC India and India Essen Welding & Cutting to March 2021

Friedrich-Georg Kehrer

The leading national Indian trade fairs wire India, Tube India, METEC India and India Essen Welding & Cutting will take place from 25 to 27 March 2021 at the Bombay Convention & Exhibition Centre.

By postponing the events until next year, the Indian organiser Messe Düsseldorf India is reacting to the current dynamics with regard to trade fair shifts in the international calendar of events for metal and metallurgy trade fairs and COVID-19 and its unforeseeable after-effects worldwide.

Together with partners from business and industry, the situation was reassessed and the difficult decision was made to postpone the successful metal trade fair quartet until spring 2021. Around 400 exhibitors from 25 countries are expected to attend.

Friedrich-Georg Kehrer, Global Portfolio Director Metals and Flow Technologies of Messe Düsseldorf, explains: "We are very grateful to our exhibitors and partners for their support in these difficult times. Together we will master the challenges ahead. All the more reason to look forward to welcoming you all to Mumbai from 25 to 27 March 2021".

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Tube Russia 2021

wire Russia will take place in Moscow in 2021 parallel to Tube Russia, Metallurgy Russia and Litmash Russia

The leading regional Russian trade fair for the wire and cable industry - wire Russia - will take place in the Russian metropolis from 8 to 10 June 2021. Around 200 companies from 25 countries are expected at the Moscow EXPOCENTRE in Krasnaya Presnya.

Together with its local partner VNIIKP, All-Russian Cable Scientific Research and Development Institute, Messe Düsseldorf Moscow will once again be staging the regional highlight of the wire and cable industry in 2021 in Hall 1 of EXPOCENTRE over three days.

Many companies from Russia, its neighbouring countries and from Germany, Belgium, the Netherlands, France, Great Britain, Austria, Switzerland and Italy will be travelling to the Russian capital to establish new business relations, intensify existing contacts and present technological innovations from the wire and cable industry.

The exhibitors at wire Russia show machines and plants for wire production and wire refinement, forming technology, spring production technology, cable and strand machines, tools and aids for process engineering as well as measuring and control technology. The product range is supplemented by wire rod, bright wire, wire mesh, special wire, cables and plates.

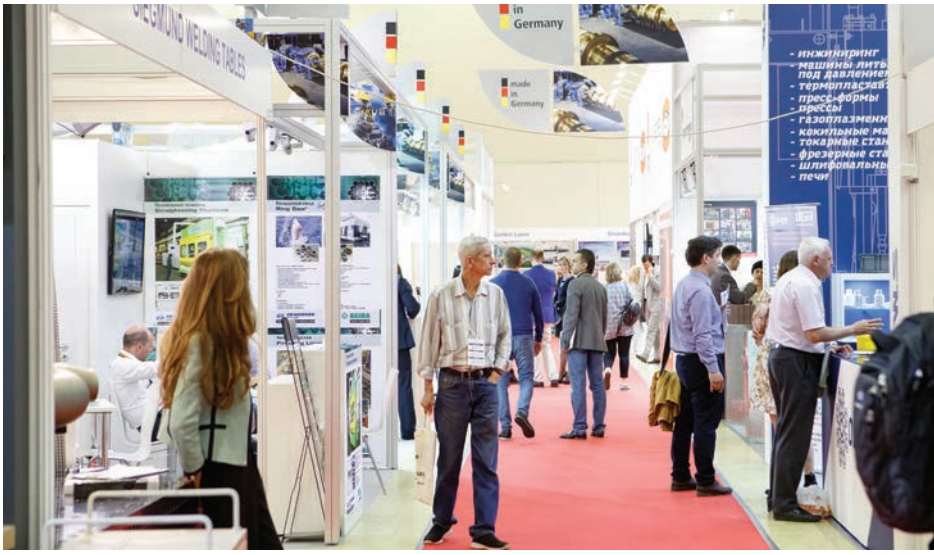
Preview: Tube Russia 2021

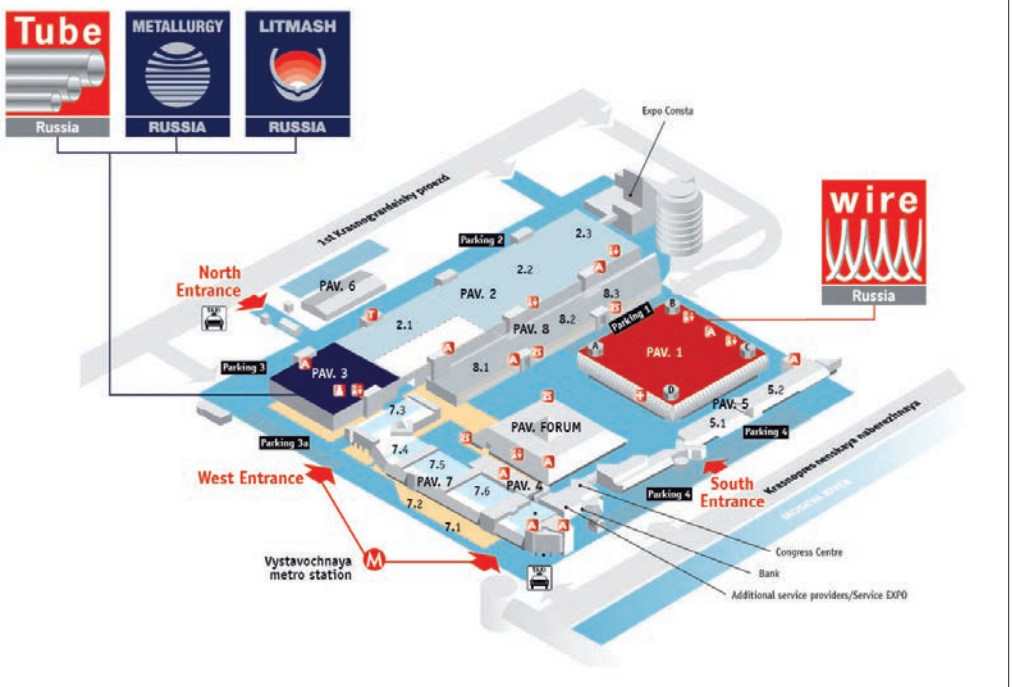
The trade fairs Tube Russia, Metallurgy Russia and Litmash Russia are held parallel to wire Russia.

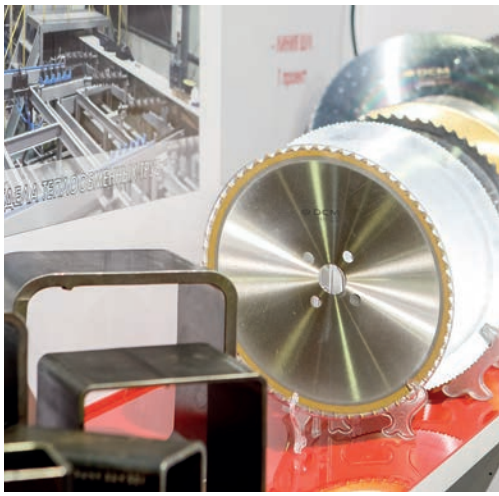
Current technologies in the fields of tube manufacturing, tube processing and tube machining are the focus of Tube Russia 2021. Once again, the ITA (International Tube Association) together with Messe Düsseldorf will be organising a Tube Industry Development 2021 seminar, which will focus on practical applications for tubes and tube technologies.

Tube Russia 2021 is organised and carried out by Metal-Expo together with Messe Düsseldorf Moscow.

Further information on wire Russia 2021 and Tube Russia 2021 can be found in the Internet portals at: www.wire-russia.com and www.Tube-russia.com.







Events for Business, Technology, Education and Networking

Diary of world class tube events

September 2020

2 September 2020	ITA WEB-CONFERENCE	Organised by: International Tube Association	
23 – 26 September 2020	SEMINAR: **Tube China** Shanghai, P. R. China	Messe Düsseldorf (Shanghai) Co., Ltd. www.tubechina.net/en/	

December 2020

1 – 3 December 2020	EXHIBITION: **Valve World Expo** Düsseldorf, Germany	Organised by: Messe Düsseldorf www.valveworldexpo.de	
7 - 11 December 2020	EXHIBITION: **Tube Düsseldorf** Düsseldorf, Germany	Messe Düsseldorf GmbH Fax: +49 211 4560 8540 LiehsemS@messe-duesseldorf.de www.tube-tradefair.com	
11 December 2020	STUDENTS DAY: **Tube Düsseldorf** Düsseldorf, Germany	Organised by: International Tube Association	

March 2021

25 - 27 March 2021	EXHIBITION: **Tube India** Mumbai, India	Organised by: Messe Düsseldorf www.tube-india.com	

June 2021

8 - 10 MJune 2021	EXHIBITION: **Tube Russia** Moscow, Russia	Organised by: Messe Düsseldorf www.tube-russia.com	

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Look at our next issue:

- Review ITA-Web-Conference 2020
- Review Tube China 2020
- Preview Tube 2020
- Preview Tube India 2021
- Preview Tube Russia 2021

ITA
International Tube Association

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