

Partner of Experts

# The Magazine

# 12

Interesting articles, technical innovations, application examples from all around the world



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## editorial

Dear Readers,

as the saying goes, nothing is as constant as change. We can see this in many areas of our company at the moment. **The economy.** While some markets such as Scandinavia, Eastern Europe and Latin America are slowing down somewhat, other regions are speeding up significantly – above all Australia and the Middle East. New markets such as Africa too are becoming more and more important for STAHL CraneSystems. **Expertise.** STAHL CraneSystems has always been known for its customised solutions. The worldwide acceptance of our products in the energy, oil and gas sectors means constantly rising demands on our engineering department. **Production.** The Hofratsmühle plant is being remodeled. After our fully automated machinery centre was installed in 2012, we are continuing to invest in the Künzelsau plant. A new paint shop is in planning, an EMAG shaft machining unit will arrive in August, from October on we will produce off-standard and turned parts on a new Gildemeister DMG, other lathes and milling machines, a drum welding unit and laser equipment for hard machining are to follow. In this way we show our clear commitment to a high level of vertical integration and the outstanding quality of our products. **Technology.** We are expanding our range of wire rope hoists with the new ASR, offering a cost-effective hoist for loads between 20 and 32 tonnes.

I hope you enjoy reading this issue of the magazine and all the reports from the exciting world of STAHL CraneSystems.

Yours, Werner Wagner



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The ›slim‹ AS 7 as a standard product

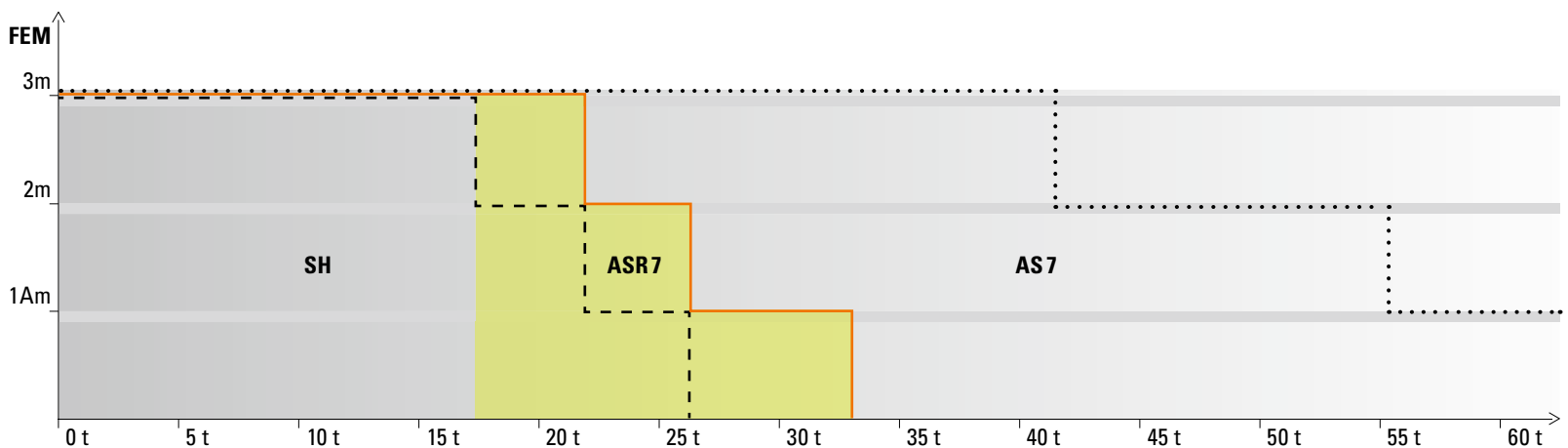
## Side by side: the ASR bridges the gap between SH and AS



STAHL CraneSystems presents a wire rope hoist specifically for the S.W.L. range from 20–32 tonnes in the form of the newly designed ASR7. It thus bridges the gap between the SH wire rope hoist lifting loads up to 25 tonnes and the AS7, which can only exploit its full potential with heavier loads. With the ASR7, STAHL CraneSystems now covers the medium S.W.L. range with a new product which is arousing keen interest from crane builders thanks to its excellent price-performance ratio.

The AS7, successful for many years, forms the basis for the ASR7. The differences are seen in the details: due to its lower S.W.L. and in some cases lower classification, smaller motors are used on the ASR7. The rope drive has been modified accordingly: a 20 mm rope is sufficient for the ASR7's lighter loads, instead of a 25 mm rope. This results in a greater height of lift with the same drum length, e.g. 10 instead of 7 metres with the shortest drum length L1. The bottom hook block and return sheave have been adapted to the thinner rope. This results in a price saving of around 25 % compared with an AS7 with double rail crab of the same dimensions. However the customers do not have to do without high-quality accessories. For the first time on the AS7 series, the load is measured at the rope anchorage as standard. This permits the load to be measured precisely during lifting and lowering and to be shown on a display.

As a standard hoist, the ASR7 can also be ordered with the CraneGuide. Depending on application, it is available as stationary hoist or with double rail crab. The new wire rope hoist can also be supplied as an ASRF with a frequency-controlled motor for smooth hoisting and stepless speeds.



Wire rope hoist classification in acc. with FEM:

⋮ SH wire rope hoist    | ASR7 wire rope hoist    ⋮ AS7 wire rope hoist



LMT and STAHL CraneSystems supply tandem crane for Vetter Stahlhandel

# You won't find these in any brochures

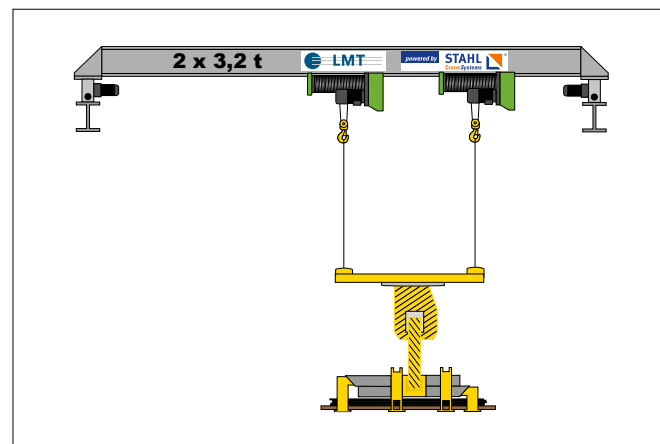
Vetter Stahlhandel supplies customers between Elbe and Ems with steel, stainless steel and aluminium. Vetter needed a purpose-built crane for the storage and packaging depot built at the company's headquarters in Bremerhaven in 2012: it needed to transport long goods such as steel sections and steel plates safely both in longitudinal and transverse directions. A simple facility for lifting pallets was also required. The solution: a tandem crane with two crane bridges, four wire rope hoists and a pallet grab. The system was developed, manufactured and erected by crane specialist LMT in Bremen in collaboration with STAHL CraneSystems.

The crane bridges have a span of 22 metres and were raised to make optimum use of the height of the building. The maximum working load of the crane system is 12.5 t, distributed over four STAHL CraneSystems wire rope hoists type SH 30 with 3,150 kg maximum working load each. The control is a distinctive feature of tandem cranes such as this: it must include specific circuits to ensure that the cranes run in synch, and guarantee the safety of the whole system if a component should fail. Radio control makes the crane system easy to handle: the joystick permits both cranes to be combined for tandem operation, the four STAHL CraneSystems wire rope hoists can also be coupled. The mode of operation selected is displayed by signal lights on the crane endcarriages. Pressing a button enables the four wire rope hoist hooks to be put into neutral position before taking up long goods. An up-to-date geo radio remote control is used for communication between the cranes, naturally meeting current safety regulations. If one of the cranes makes an unscheduled stop or one of the hoists fails, the system disconnects all motions in fractions of a second and thus prevents the load tilting. The loads on the hoists and crane bridges are added up by radio via a cumulative load controller from STAHL CraneSystems. The suspended load is also shown on the display of the radio remote control. Two separate slave radio remote controls enable the cranes to be controlled independently. However for safety reasons each crane can only be controlled by a single remote control. Changing over from slave control to joystick control must therefore be performed manually.

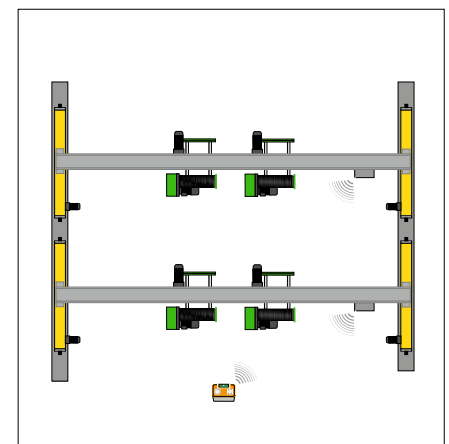
LMT ordered the crane components in the form of a CraneKit using the STAHL CraneSystems "CraneGuide" software. The CraneKit was supplemented by an off-standard control for the additional functions and a pallet grab which can be lifted by two of the four wire rope hoists. A further distinctive feature is the crane lighting



3



4



5

- 1 Long goods or pallets: LMT's tandem cranes can be used flexibly.
- 2 Optical sensors protect the cranes from collision.
- 3 Small plates are stacked onto pallets. They can be transported quickly and safely around the building and loaded onto lorries with the aid of the pallet grab.
- 4 A motor-driven rotating pallet grab can be taken up by two of the wire rope hoists.
- 5 Cable-free operation of crane, hoists and pallet grab by means of HBC's Multi-Receiver Concept. The information for tandem operation is transmitted by geo radio.



which LMT installed on the wire rope hoists above the pallet grab. Previously it was difficult to instal lighting on cranes due to the vibrations. Thanks to LMT's up-to-date LED technology, spotlights could now be fitted to the wire rope hoists to light the working area below the hoist clearly. The LED spotlights feature robust design, long life and tremendous light output while consuming only 150 W electricity.

LMT has been on the market since 2000. Bernhard Lübben, the company's energetic managing director, now employs a staff of 15. Designing off-standard cranes, refurbishing used hoists and crane service are only a few of the company's activities. For LMT Ingenieur- und Planungs GmbH is also a recognised specialist for the visual data acquisition of vehicle numberplates and container numbers, mobile workshops, lifting platforms and off-standard systems. The company's versatility pays off: "Since we were established 12 years ago there hasn't been a single day when we didn't have anything to do," says Bernhard Lübben, who looks forward every challenging problem. The other Managing Director, Matthias Cordes, adds: "We make things you can't find in any brochure, things that don't exist anywhere else: the exceptional. We always find a solution." As partner of STAHL CraneSystems, LMT has focussed on components from the South German crane

technology specialist for three years now. Bernhard Lübben explains his strategy for success: "We know a lot of specialists, and have detailed knowledge of what our customers do.

"We make things you can't find in any brochure, things that don't exist anywhere else: the exceptional. We always find a solution."

We combine all this to devise creative solutions, and so we can often provide customised solutions in a very short space of time. In STAHL CraneSystems we have at our side a reliable partner for hoists and crane components, giving us specialised assistance for our projects."

**With the kind assistance of Bernhard Lübben and Matthias Cordes, LMT**



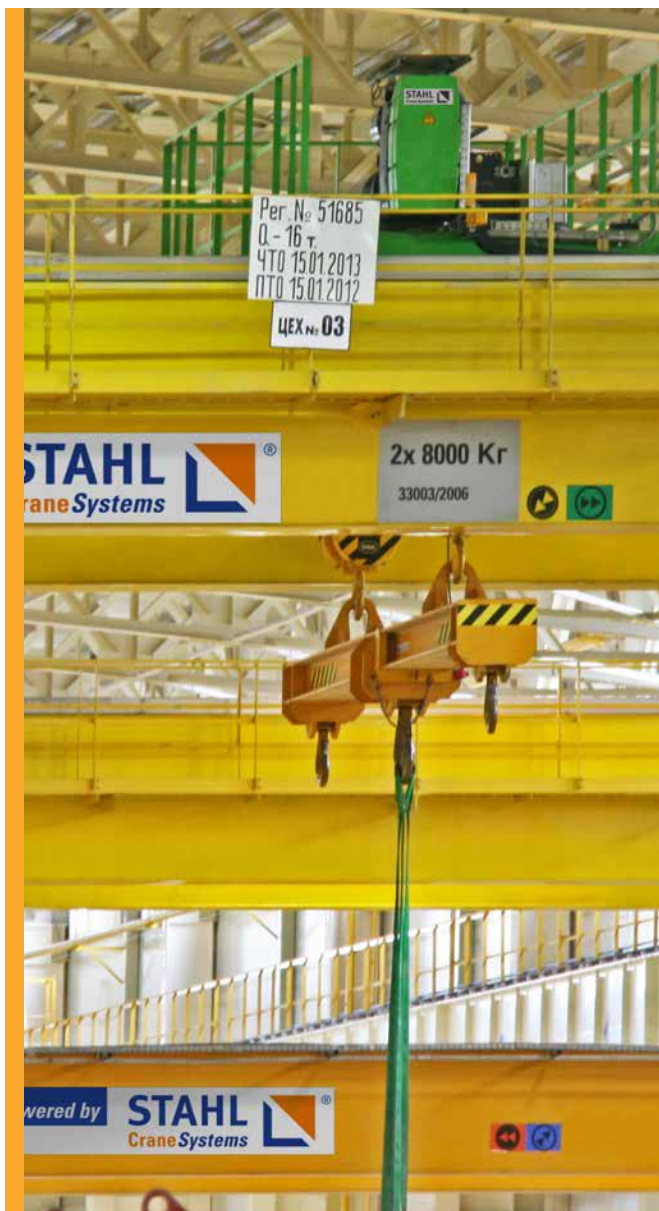
# Largest single order

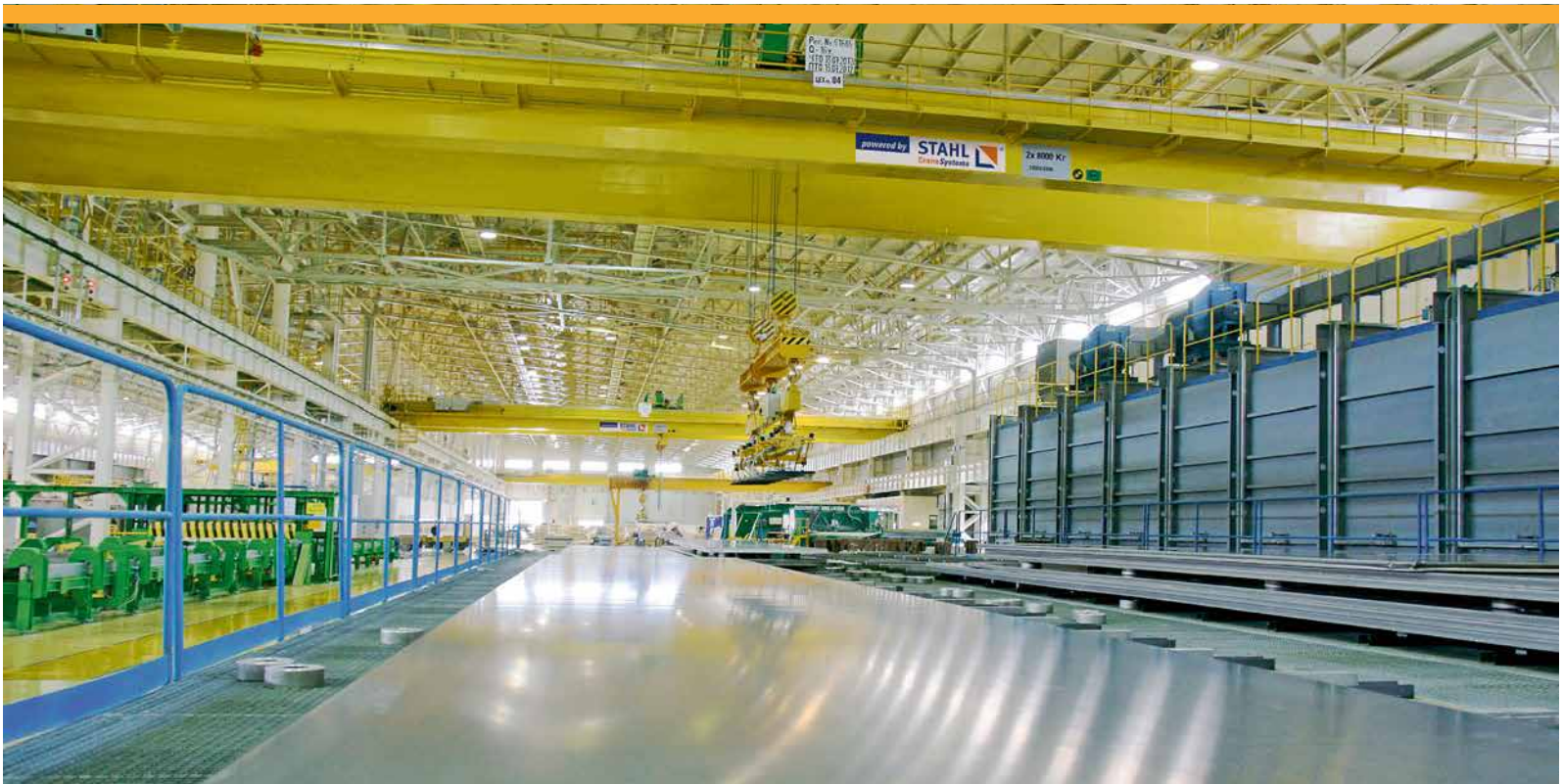
## in STAHL CraneSystems' history

The Russian company Kamensk Uralski Metallurgical Works (KUMZ) has ordered cranes and crane technology to the value of more than 10 million euros from STAHL CraneSystems to upgrade its aluminium processing plant. This is the largest single order for the South German crane technology specialist in its 135 years' history. This major order was preceded by two smaller projects in which STAHL CraneSystems with its technically mature products had proven itself to be a reliable partner.

KUMZ has been using crane technology from STAHL CraneSystems since 2006. In that year the Künzelsau company supplied 5 double girder cranes and 3 double girder semi-portal cranes with STAHL CraneSystems lifting, drive and control technology. The quality of the products and the trouble-free implementation of the project led to a follow-up order in 2012: five crane systems to the value of around 2 million euros. These cranes are at present being manufactured, fully wired and tested to STAHL CraneSystems' specifications by German partners before they set off on their journey of over 4000 km to Kamensk in the Urals. The third enquiry from Russia already followed in the autumn of 2012: 35 crane systems with safe working loads up to 35 tonnes, high classification (A7) and spans up to 33.5 metres. They include 20 off-standard double girder overhead travelling cranes and 11 semi-portal cranes, many of them designed for working with vacuum beams. Right away at the quotation stage, STAHL CraneSystems set up a multi-member project team which calculated the required crane systems including many customised solutions within just a few weeks. The contract was awarded by KUMZ between Christmas and New Year 2012 – with a total quotation volume in the double-digit millions, this is the largest individual order in STAHL CraneSystems' history. As STAHL CraneSystems had already carefully considered the actual production side of completing the project at the quotation stage, the around 20 members of the project team were quickly determined and have been responsible for project management, meeting deadlines and the smooth progress of all stages of the project since January 2013. The first crane systems are already to be delivered from May 2014 onwards, the project is due for completion in mid-2015. Due to the tight time schedule, the crane systems are being produced in close collaboration with qualified partner companies in Germany. The list of hoists used is long: 15 winches type SHW 8, 8 ASF 7 wire rope hoists and 14 wire rope hoists of the SH 50 series. Most of the systems are equipped with frequency inverters permitting smooth, jolt-free operation and stepless acceleration. KUMZ has ordered off-standard equipment for all the cranes in the form of a data transmission system with a state-of-the-art data rail which continuously transmits the operating data of the systems to a control centre. Here the operator can read out whether a crane is in operation, whether there are any malfunctions or if maintenance work will be necessary in the near future.

Most of the cranes will be used in production. In the so-called "cold rolling train" they shift aluminium plates of lengths between 1.5 and 33.5 metres, widths of up to 4.2 metres and thicknesses between 0.2 mm and 65 cm, and aluminium coils weighing up to 25 tonnes.





With over 4000 employees and annual sales of 350 million euros, Kamensk Uralski Metallurgical Works is one of the largest metal-processing plants in Russia. The company was founded in 1944 as a manufacturer of semi-finished products in aluminium, magnesium-based and aluminium-lithium alloys. Today, KUMZ is one of the most up-to-date aluminium processing plants in the world. KUMZ does not just supply the Russian market: 47% of its production is exported, e.g. to Boeing and Airbus, to shipbuilders, the energy sector, mechanical engineering and the armaments industry.

# Crane technology for more than 10 Mio. Euro



Fuelled by investments in the energy and raw materials sector, there is a need for top-quality products from abroad. The demand for German quality products continues to be high and even on the other side of the Urals the attribute "Made in Germany" stands for reliable and safe products with a long service life. Manufacture of the cranes in Germany and the technology used thus also played an important part in this order from KUMZ. STAHL CraneSystems has been well-established in Russia for over ten years as a reliable supplier of crane components and crane systems. Due to the complex legal position and numerous formalities, STAHL CraneSystems still transacts its crane business in Russia in person instead of transferring it to certified crane building partners, as in other regions of the world. All STAHL CraneSystems products are certified by the regional authorities, comprising all necessary acceptance tests, approvals and Russian documentation. STAHL CraneSystems envisages continuing high demand for high-performance crane technology for upgrading industrial plants, expanding the infrastructure and the power network in Russia. In particular in the form of customised and engineering solutions and in the field of explosion-protected hoists, STAHL CraneSystems products are in demand as never before: more rigorous requirements from users and also insurance companies set high safety standards which the products from Künzelsau naturally meet.

**With the kind assistance of Stefan Prötzel and Viktor Stoll, STAHL CraneSystems Germany**

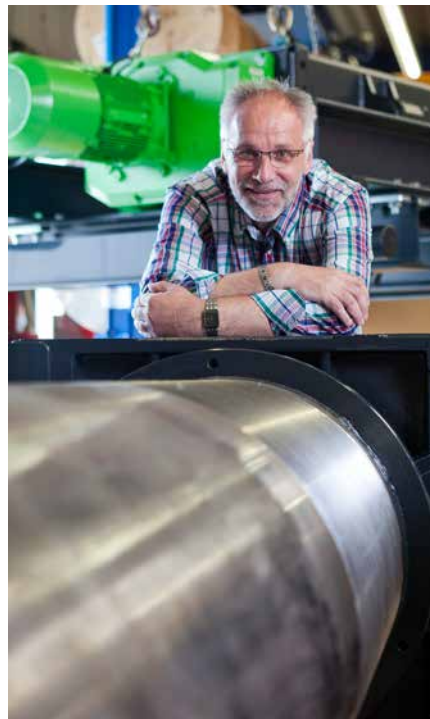




Report from Künzelsau

# Up-to-date rope drum production in our own factory

The high level of vertical integration in the Künzelsau plant is one of the most important reasons for the great flexibility of our production and the high quality of our products. In our new column "Report from Künzelsau" we would like to portray individual areas of our production. Willy Grübel is head of production and has been working for STAHL CraneSystems since 1973. We met the hoist expert in the Hofratsmühle factory.



**Mr Grübel, what exactly do you do in the rope drum production shop?**

The rope drums for all our hoists are made here – from the smallest wire rope hoist up to the winch. We use a crane to set the steel blanks in one of the two machines. Then they are turned, drilled, and milled if necessary. Fully machining the rope drums gives us a short lead time.

**What does that mean for STAHL CraneSystems?**

We've got a very high proportion of off-standard hoists. Having our own up-to-date production shop means that we can respond quickly and manufacture each drum individually and on time – without having to wait for external deliveries. This makes us extremely flexible.

**How many rope drums can you make here?**

At full capacity we can produce an average of 250 – 300 drums per week – that depends on the order situation. A medium-sized rope drum for an SH 5 wire rope hoist with drum length L3 needs about 35 minutes, the drum for an AS 7 wire rope hoist with drum length L3 takes over 90 minutes.





**“Having our own up-to-date production shop means that we can respond quickly and manufacture every drum individually and on time.”**

**What are these rope drums made of?**

We only use blanks of EN 10 220 S355J2H construction steel which we purchase in various lengths and diameters from a German supplier.

**Are there any restrictions on size?**

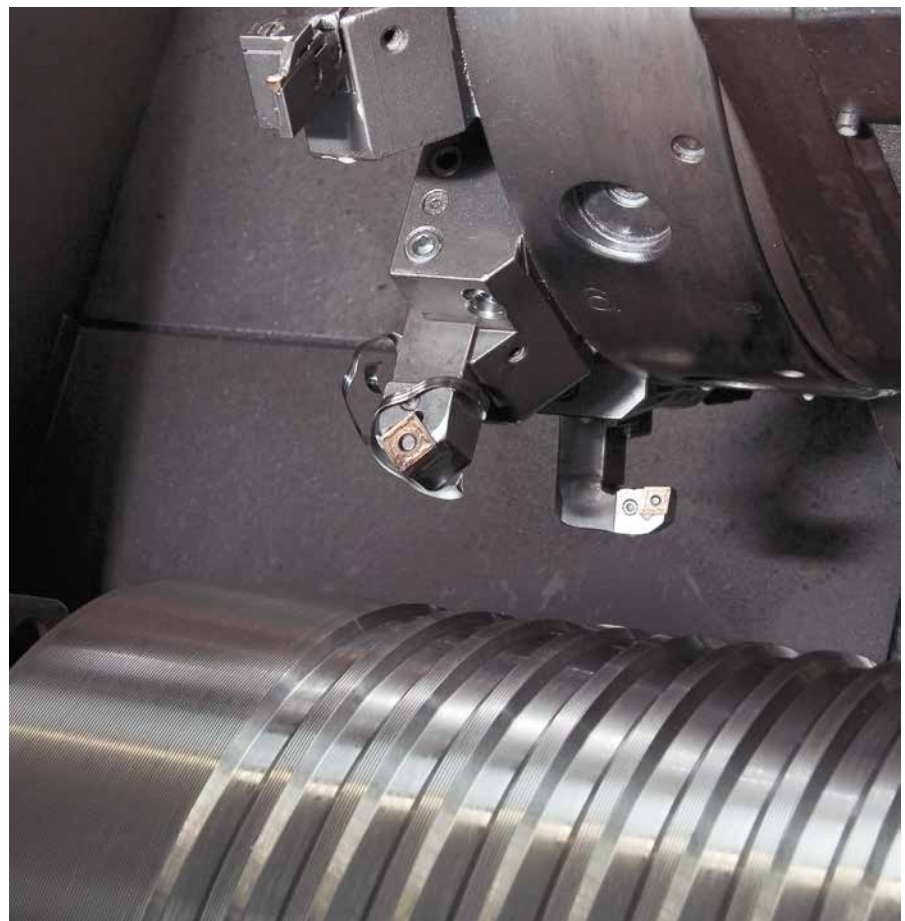
The drums can be 114–800 mm in diameter and 300–5,200 in length. With these dimensions we cover our whole range of wire rope hoists and winches including all conceivable off-standard solutions. And we can respond to every demand individually: any rope diameter, any pitch, more than one rope lead-off...

**How do the data get into the machine?**

Either the data already exist, or they're calculated for the project. That's done by the off-standard design office. The machine is programmed in the production planning department. The data are then transmitted to the machine either by a data cable or a memory stick.

**Is each rope drum actually unique?**

No. Admittedly we have a high proportion of off-standard, but we also regularly produce larger numbers of standard drums for our kanban system, so that our colleagues always have an adequate supply for assembling standard wire rope hoists.



- 1 The rope drums differ as to length, diameter, rope diameter and number of rope lead-offs.
- 2 Rope drums up to a length of 5,200 mm can be manufactured in the up-to-date production shop.
- 3 Full machining includes turning, drilling and milling the steel drums.



STAHL CraneSystems' partner Oeder builds crane for Motorway Maintenance Authority in Öhringen

# A competitive price



The new Motorway Maintenance Depot in Öhringen was inaugurated at the end of last year. It is an ultra-modern depot which merges the experience gained in many years of road maintenance service in its design and technical features. In the new depot between Heilbronn and Schwäbisch Hall the Regional Administrative Authority in Stuttgart has created the framework to provide efficient and cost-effective services on the A6 motorway. These services include maintenance work, closing off the motorway after accidents, work on bridges, and of course snow clearing and salting. The salt depot, one of five buildings, holds 2,000 tonnes salt.

The construction of the Motorway Maintenance Authority was preceded by protracted bidding and award procedures. "The bid invitation for the workshop crane system alone filled a total of 102 pages," Rudolf Lang, who calculated and quoted the crane as managing director of Stahl- und Kranbau Oeder, remembers. Apart from a competitive price, the correct form and content of the quotation were important. "A missing signature or incomplete documentation mean that the quotation is excluded when the bids are opened," explains Stefan Hein from the Regional Administrative Authority in Stuttgart, who as project manager was responsible for constructing the new building. Rudolf Lang does not find these formalities unusual: "We use STAHL CraneSystems' CraneGuide calculation program. We can get a detailed quotation for the crane components we need within a few minutes. The software provides us with comprehensive technical data so that we can draw up the quotation down to the most minor detail and answer all the questions relating to the text ourselves." The building dimensions were already specified when the invitation to tender was opened, so the crane had to be adapted to the existing construction dimensions. In this Oeder was assisted by the CAD data of the crane components which STAHL CraneSystems offers all partner companies as a download from the Extranet.

The single girder overhead travelling crane which Rudolf Lang quoted and then built after the successful tender interview has a span of 12 metres and a lifting capacity of 3.2 tonnes. It is used in the workshop for lifting heavy lorry tyres and vehicle attachments. The crane is equipped with an SH 30 wire rope hoist and with crane endcarriages and control technology from STAHL CraneSystems, delivered from Künzelsau which is only 20 kilometres away. Stefan Hein is satisfied – and not just with the new crane.

"This new building was a demanding project – a modern maintenance depot which is integrated harmoniously into the landscape. Liaison with Stahl- und Kranbau Oeder

was ideal, the crane was erected on schedule. The depot is now in operation, it all works perfectly."

The maintenance authorities of Neuenstadt and Kirchberg/Jagst were incorporated in the Motorway Maintenance Authority in Öhringen. The 38 staff will in future maintain the A6 motorway from the Bad Rappenau junction in the west to the Bavarian border in the east – shortly before the Feuchtwangen/ Crailsheim motorway interchange. The corresponding section of the motorway extends over 83.1 km one way, some sections are three-lane. Added to this are 10 junctions, two service stations, 20 parking areas and eight large viaducts including the Kochertal viaduct, at 185 metres the highest motorway viaduct in Germany.

**With the kind assistance of Rudolf Lang, Stahl- und Kranbau Oeder, and Stefan Hein, Stuttgart Regional Administrative Authority**

- 1 The crane is used to lift lorry tyres and heavy vehicle attachments.
- 2 Rudolf Lang (left), Managing Director of Stahl- und Kranbau Oeder, presents the radio remote control and the crane documents to Stefan Hein of the Stuttgart Regional Administration Authority.
- 3 The CraneGuide gives crane builders round-the-clock access to specifications, CAD data and prices for STAHL CraneSystems products.



On tour with instructors Denis Zunic and Frank Pfeiffer

# In action all around the world



STAHL CraneSystems' technical instructors Denis Zunic and Frank Pfeiffer are on the road several weeks a year to instruct partner companies' and end customers' staff in handling STAHL CraneSystems products. Yet another USA visit was scheduled for April. Denis Zunic and Frank Pfeiffer participated in the CraneKits product launch, and afterwards held maintenance training courses in our Charleston subsidiary and on partners' premises in Oakland, Portland, Denver, Atlanta and Bartow.

Many of the customers took part in this type of training for the first time, the participants displayed correspondingly great interest and asked a lot of questions – primarily on possible settings and functions of more recent products.

Due to the size of the country, STAHL CraneSystems now runs training courses twice a year in the USA – the instructors are on the road for two to three weeks each time. Product training courses are part of the close relationship between STAHL CraneSystems and its partners. The majority of the customers in the USA who were visited or participated rank among the top 20 USA partners.

Change of location: South Africa. Denis Zunic spent six days in Johannesburg-Alberton, Secunda and Sasolburg in May. A total of 44 people attended his courses there. In contrast to America, in South Africa the focus was on hoist maintenance. Zunic tried in particular to convey to the fitters how important the regular maintenance of explosion-protected hoists is. STAHL CraneSystems held one course for its South African partner AMHS, the other two courses were held on end customers' premises. The target group was mainly service companies who work in refineries and carry out maintenance work. "Again and again during courses it emerged that even experienced service companies have gaps in their knowledge when it comes to dealing with explosion-protected components," said Denis Zunic on his return. "A lot of the companies replace defective parts without having sufficient fundamental knowledge of the dangers involved if, for example, there is no temperature control on Ex hoists." This lack of information gives Denis Zunic the motivation to keep on making these long journeys in the future. Other training courses this year have already been held in Hungary, at our German crane building partner Haslinger, at Stahl Talhas and other customers in Brazil, in Spain and in four towns in Australia.



**With the kind assistance of Denis Zunic and Frank Pfeiffer,  
STAHL CraneSystems Germany**

Premium cranes in Canada

# Technology for giants

With 260,000 employees in 60 countries, ArcelorMittal is the largest steel manufacturer in the world and a leading multinational corporate group. In Canada, ArcelorMittal runs two large open-cast mining operations which extract 40 percent of Canada's iron ore output. One of the two mines is in Mont Wright near the city of Fermont in Quebec province – 1,200 km north of Montreal. ArcelorMittal plans to increase the yield from 16 to 24 million tonnes of iron ore by 2014 by means of a 2.1 billion US \$ upgrading of Mont Wright Mine, the transport fleet and the production facilities. The company required a total of five indoor cranes and ten slewing cranes for constructing new buildings, a new concentrator for processing and concentrating the iron ore and a workshop for the maintenance of the 400 tonne off-standard trucks. The order was placed with Groupe Industriel Premium, a subsidiary of Canadian crane builder CanStahl. Premium is market leader in Quebec, selling over 100 crane systems a year, and also the primary distributor of STAHL CraneSystems products in this region.



This was Premium's and CanStahl's first order from ArcelorMittal, however it will surely not be the last. STAHL CraneSystems' Canadian partners were involved thanks to Canadian systems builder SNC Lavalin, which was responsible for engineering and contract awards for upgrading the mine. SNC Lavalin had already collaborated successfully with Premium on other projects and appreciated the crane builder's experience with complex construction projects in industrial and plant construction. Some of the cranes were already put to use in building the plant. They helped install the huge processing machines and had to be erected on site right in the middle of the turbulent construction stage. Perfect timing and efficient organisation were essential for the cranes to be erected in the planned time slot without hindering the hundreds of workmen involved in the construction work. All the cranes were thus delivered some weeks before the planned erection date – commissioning was completed without any incidents and to the customer's full satisfaction. These cranes will be used for maintenance work on the machines in the coming years.





The other cranes – a 120 t crane, a 60 t crane, a free-standing 10 t slewing crane with an SH 60 wire rope hoist as lifting equipment, and nine 2 t slewing cranes – assist in the maintenance and repair of the dumpers – huge trucks for transporting the excavated rock masses.

The deciding factors for Premium's success over the other competitors were the price, high availability and versatility of STAHL CraneSystems' crane technology. In addition to crane endcarriages and controls, numerous hoists supplied by the South German crane technology manufacturer came into use, including the AS 7 ZW twin hoist with 32 m lifting height and a lifting capacity of 80 tonnes. With its design ensuring true vertical lift and equipped with frequency inverters, this hoist was the perfect choice for positioning the heavy machinery components in the processing plant.

Groupe Industriel Premium was founded in September 2009. The company, together with CanStahl, has developed into Canada's leading crane builder over the last three years. In 2012 alone Premium sold over 100 cranes. Many customers and current projects are to be found in the mining industry, which plays a significant economic role in Canada due to the abundance of raw materials.

**With the kind assistance of Alain Leclerc and Stefan Lacelle, Groupe Industriel Premium**

- 1 ArcelorMittal requires slewing and bridge cranes for the maintenance of the 400 t off-standard trucks.
- 2 Powerhouse times two: this twin design AS 7 ZW lifts loads up to 70 t.
- 3 A slewing crane for changing tyres: the SH wire rope hoist lifts up to 10 t.
- 4 ArcelorMittal runs two large open-cast mines in Canada. One of these is Mont Wright near the city of Fermont in Quebec province – 1,200 km north of Montreal.



STAHL CraneSystems supplies 210 chain hoists for Indian wind farms

## What a long chain

**You have no idea of the tremendous dimensions of these systems until you see a wind turbine from up close. Hub heights of well over 100 metres and rotor diameters of over 150 metres are now no longer unusual. In comparison, the nacelles of these leviathans are small and cramped. They have to provide space for the wind turbine and other apparatus at dizzying heights. Wind turbines have integrated cranes to transport spare parts and maintenance tools into the nacelle. These must be as compact as possible, however be able to negotiate the formidable height of lift of around 100 metres in a relatively short space of time. Indian wind turbine manufacturer INOX has found the ideal solution for its systems: designed by Indian crane builder MM engineers, equipped with German crane technology from STAHL CraneSystems.**

Wind power is on the advance around the world, including India.

The Indian wind turbine manufacturer INOX Wind Ltd. was looking for an experienced crane builder to equip its wind turbines, and develop an extremely compact and yet reliable off-standard crane. It chose MM Engineers, one of STAHL CraneSystems' Indian crane building partners. The Indian engineers, in collaboration with INOX, developed a collapsible slewing crane with two articulations and manual hydraulic height adjustment. The unusual design permits the crane to be collapsed to save space and yet to transport loads not only into the nacelle but also within the nacelle as required. In spite of low-priced offers from other hoist manufacturers, MM Engineers insisted on using German components from STAHL CraneSystems. The ST 10 chain hoists, optimised for the great heights of lift prevalent in wind farms, have already proven themselves in German wind turbines. Thanks to their high reliability, particularly large chain collector and hoisting speed of 25 m/min they were also the ideal choice for the 2 MW wind

turbines in India with their nacelles at a height of 90 m. INOX Wind relies on European technology for the wind turbines too: the 2 MW turbines are manufactured under licence from the Austrian company AMSC Windtech GmbH.

After final coordination with the customer, MM Engineers started producing the compact off-standard slewing cranes in 2010 and has since ordered large numbers of STAHL CraneSystems' wind turbine chain hoists. 210 of these customised solutions were already in use by the end of 2012. Increased output by up to 18 gigawatt of wind power in India within the next five years is prognosticated. In the light of this positive development STAHL CraneSystems anticipates increased demand in the near future.

**With the kind assistance of Anand Dayanidhi and Shobana Gopal, STAHL CraneSystems India**





- 1 Wind turbines among palms: wind energy is on the increase in India too. In the light of the positive development of the wind power market STAHL CraneSystems anticipates rising demand for off-standard chain hoists for wind farms in the coming years.
- 2 Compact dimensions when collapsed: the slewing crane with its off-standard chain hoist is the ideal choice for use in wind farms.
- 3 When opened out, thanks to the hydraulic height adjustment spare parts can be moved effortlessly within the nacelle too.

# Press Review



“MM Engineers and STAHL CraneSystems supplied 43 cranes for Volvo Construction Equipment’s (CE) factory extension in India.”  
*Issue 5/2013, Article “Cranes for excavator production.”*



“(...) The system was developed, manufactured and installed by Bremen crane specialist LMT, in collaboration with STAHL CraneSystems, Künzelsau (...)”.  
*Issue 4/2013, Article “Solution for long goods – not off the peg”*



“Now the auxiliary crane with a SH 50 type wire rope hoist helps the researchers to move the test set-ups.”  
*Issue 1–2/2013, Article “Specific requirement and solution”*



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Performance brought to the point

# Two SW winches lift 318 tonne turbine

The demand for energy is increasing all over the world, and this includes Thailand. The country needs around 4 percent more electricity every year. At present Thailand is relying on powerful combination gas and steam power generating plants – energy production is planned to rise from 39 GW to 52 GW by 2020. German companies too profit from this situation. Siemens has an excellent reputation as a manufacturer of up-to-date gas turbines and STAHL CraneSystems is extremely successful delivering wire rope hoists and rope winches to transport the turbines, which weigh over 300 tonnes, in the power stations.

One of the current projects is Wang Noi gas power station, 70 km north of Bangkok. The plant was built in the 90s, initially comprising three blocks and with an output of 1.91 GW. Wang Noi is now to be upgraded by a fourth block and 768 MW by 2014. The order for the crane systems required was placed with ALLA Ltd., STAHL CraneSystems' Thai crane building partner. In addition to several small cranes with S.W.L.s of 25 and 40 tonnes, the order included two heavy lifting cranes equipped with rope winches, with an S.W.L. of 180 tonnes each.

For loads in this range, ALLA relies on STAHL CraneSystems' new SW winch. With its high safe working load, compact dimensions and low-maintenance construction it satisfies the requirements of even demanding customers. However when positioning the gigantic gas turbines, more things count than mere lifting capacity, as the heavy load must be set in place sensitively, with millimetre accuracy and as far as possible without jolting. Frequency inverters as standard on all drives ensure smooth starting and braking characteristics and minimum load swing. Both cranes are equipped with 25 t STAHL CraneSystems wire rope hoists as "smaller" auxiliary hoists, one crane also has a further wire rope hoist with 12.5 t S.W.L.

The crane systems were commissioned at the end of 2012 and were already in use in December for transporting and positioning three 316 and 318 t turbines. For this application the heavy lifting cranes are coupled mechanically and switched over to tandem operation. In this mode all travel and hoist motions can be synchronised by remote control – a challenge both for the crane technology and the safety of the system.

The whole power station block is to be completed in March 2014. The heavy lifting cranes are needed for erection work during the construction period, later they will be used as maintenance cranes for working on the gas and steam turbines.

Wang Noi is the second project that ALLA has equipped with cranes for EPC contractor Black&Veatch. In 2010 the Thai crane builder supplied a crane with a 130 t winch and 25 t auxiliary hoist for the new Block 5 of the "Glow" power station. These hoists too were supplied by STAHL CraneSystems.

**With the kind assistance of Simon Chan, STAHL CraneSystems Singapore and Wasan Pinta, ALLA Co., Ltd.**



- 1 ALLA customised crane with STAHL CraneSystems technology: the crab is equipped with a 180 t SW winch and a 25 t SH wire rope hoist. A mobile beam with an extra 12.5 auxiliary wire rope hoist is situated under the crane bridge.
- 2 Heavy load: two of the cranes are switched over to tandem operation to lift the generators, the load is taken up by an off-standard lifting beam.
- 3 Three double girder overhead travelling cranes provide assistance during erection and will be used later for maintenance.





# Around the world

## Nogtech & Noglogistic 2013

Nigeria, Lagos  
4–6 June 2013



## SC chain hoist now available in India

The new SC chain hoist was launched in India last November. Thomas Kraus and Gerrit Buck gave a presentation on STAHL CraneSystems as a company and the advantages of the new chain hoist at four introductory events organised by our partners MM Engineers and Sparkline. After the presentation, the participants, around 50 in each case, were able to come up front and try out the new SC to their hearts' content. Gerrit Buck prophesies that the SC has a good chance on the Indian market: "The SC's maintenance friendliness and plug-in internal components combined with spare parts are a great advantage," is the opinion of the Product Manager, who himself was involved in developing the new chain hoist. High-quality German products are popular in India. "Avoiding plastic parts on the outside of the case emphasises the inside quality. The safe and accurate coupling with lifetime-lubricated gear was particularly well-received."



## Dubai runs a marathon

The Standard Chartered Marathon has been held in Dubai every January since 2000 and is one of the fastest marathons in the world. Apart from the full marathon, a ten kilometre run is staged as well – around 20,000 runners take part, making it one of the Emirate of Dubai's most popular sport events. This January once again a team from our Arab subsidiary started for STAHL CraneSystems.





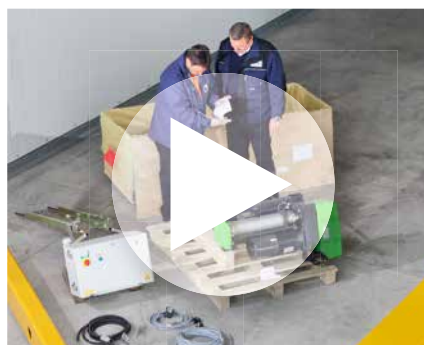
# [Plug & Play]

CraneKits play catch up

## Successful market launch in Charleston



STAHL CraneSystems presented the CraneKit in the USA at the Customer Sales Meeting in spring 2013. The reactions were positive without exception: "At last STAHL CraneSystems has a Plug&Play Kit," says a long-standing crane building partner happily, and another regular customer explains: "Now I can control my production more flexibly, as I can save 15–20 hours of electrical installation with the CraneKit's plug connections." CraneKits are very popular in the USA and are already offered by several manufacturers. The launch of the STAHL CraneSystems kit was eagerly and even impatiently anticipated. Again, representatives from our closest crane building partners were invited to the Sales Meeting, which was held as often before in the Charleston Place Hotel. A laid-back programme – this year in the form of a casino night at which the prize was a wire rope hoist – provided the communicative setting for a number of presentations on the current business situation, technical details and naturally the presentation of the CraneKit sales concept. The market launch was prepared and accompanied by an advertising campaign on the theme of "Plug&Play" and a CraneKit brochure geared specifically to the US market. Marc Philipp, the USA subsidiary's director, is confident: "Although CraneKits are treated almost as off-the-shelf articles here, in the USA too importance is attached to quality. That puts us in a favourable position." Marc Philipp anticipates that more and more customers of standard equipment will go over to CraneKits from STAHL CraneSystems. He sets the medium-term target at a 10 percent market share. However he is not losing sight of other developments either: there has been some success in acquiring international projects with engineering companies and the first projects in this field have already been brought to a successful conclusion. In the long term, the plan is for the market share of wire rope hoists and STAHL CraneSystems' market position in the USA to be enhanced.



Have a look at the CraneKit film at:  
[www.stahlcranes.com/en/produkte.de](http://www.stahlcranes.com/en/produkte.de)

Innokran and STAHL CraneSystems supply customised 20 t crane

# One coil crane instead of two

**In one of Kienle+Spiess' buildings in Sachsenheim near Stuttgart, sheet steel coils are unloaded from goods waggon and lorries, stored, processed and loaded onto lorries again. The coils, weighing up to 10 tonnes, were previously transported with the aid of three cranes. Two of these cranes dating from 1966 now had to be replaced: regular repairs, expensive maintenance, and mounting downtimes ran up annual costs of between 20,000 and 30,000 € in recent years and spoke in favour of investing in a new crane system.**

However a number of questions had to be clarified beforehand: does the company actually need a crane, or could the coils also be transported by a heavy load forklift? Not only the increased space requirement on the ground and loss of time entailed in manoeuvring the forklifts argued against this. Kienle+Spiess' management was unwilling to accept the increased safety hazards caused in particular from added movement underneath the third crane, which is still required for loading and unloading the lorries.

Kienle+Spiess thus decided on a new crane. Their idea: a new, faster crane system with 20 t S.W.L. was to replace the repair-intensive 13 t cranes and provide additional scope for future increases in capacity. The design engineers of Pleidelsheim crane builders Innokran embraced the challenge and developed the appropriate solution using crane components from STAHL CraneSystems.

“The crane runs on four  
STAHL CraneSystems crane endcarriages  
with a total of 8 wheels”

## Kienle+Spiess: “Don't react, act”

Kienle+Spiess was founded in Sachsenheim in 1935. The company soon became the most significant supplier of stampings and diecastings for manufacturing electric motors and generators. Kienle+Spiess has been able to maintain this strong market position up to the present day. In line with its motto “Don't react, act,” the company seized the initiative and placed the order with Innokran for building this exceptional crane solution. Exceptional in more than one regard: the existing crane runway, a relatively low ceiling and a 5.30 m high stamping press standing in the middle of the building did not give the designers much scope to fit the big double girder overhead crane with double rail crab and operator's cabin into the building. Only 10 cm clearance to the cabin remain when the crane travels over the stamping press, too little to meet safety regulations. For this reason Innokran planned a detour around this area in normal operation. Only for maintenance work or changing tools on the stamping press can the crane operator temporarily bridge this detour with a key switch.

The existing crane runway was only designed for the wheel loads of the 13 t cranes. In order to be able to operate the new 20 t crane on the existing runway, the higher load had to be distributed over more wheels. Innokran's solution: the crane runs on four STAHL CraneSystems crane endcarriages with a total of 8 wheels. Thus the load on the individual wheel is lower, in addition the outside wheels are farther apart distributing the forces on the crane runway over a longer distance.







**Sensitive control from a bird's eye view**

The crane is controlled either from the operator's cabin or by radio remote control. For Kienle+Spiess the decision to include an operator's cabin was obvious: the crane operators would have to walk long distances in the 65 m long building. Also taking up and positioning the heavy coils is easier with a bird's eye view. Frequency inverters on the travel motors and the hoist permit smooth acceleration and sensitive hoisting processes, facilitating fast, accurate work and offering increased convenience for the crane operator in the cabin. >>>

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- 1 A tight fit: the clearance between stamping press and operator's cabin is only 10 centimetres. For this reason the crane must detour the central area of the building during normal operation.
- 2 The crane operator has an ideal view from the cabin. Kienle+Spiess deliberately decided against a motor-driven rotating hook as the crane operators are accustomed to turning the beam by touching the coils.
- 3 Compact hoist for maximum working loads to over 100 tonnes: the twin-version AS 7 ZW.



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### Mature technology for high standards

Segment laminations for wind generators, lamination packs for traction motors and armatures for universal motors: Kienle+Spiess' product range covers all areas of application for electric motors and generators. The products are in greater demand today than ever and the Swabian company's order situation is healthy. The stampings are produced in two shift operation, thus making correspondingly high demands on the new crane. High-load periods are in particular mornings and early afternoons when the lorries are loaded and unloaded and the coils have to be moved inside the building. The high FEM classification of the hoist M7/4m (for 20 t) and M8/5m (for 16 t maximum working load) meets this sustained demand. Innokran mounted two robust AS7 wire rope hoists from STAHL CraneSystems on the crab as lifting equipment. The so-called twin AS 7 ZW was able to bring many of its advantages to bear here: its compact construction pays off in view of the low ceiling height, the high hoisting speed met Kienle+ Spiess' requirement of replacing the two scrapped cranes with a single crane. The counter-rotating ropes prevent horizontal hook movement and permit even heavy loads to be set down extremely precisely. This makes handling the coils faster and safer.

In addition to the twin hoist, the whole crane control including frequency inverters is mounted on the crab – an off-standard design from STAHL CraneSystems, enabling Innokran to test the hoist and crane electrics before they were mounted on the crane bridge. STAHL CraneSystems' cumulative load controller SMC 21 is another piece of off-standard equipment. This component guarantees continuous load measurement by means of an analog load sensor and disconnects the hoisting motion at overload. The SMC 21 calculates the load spectrum, the number of operating hours and full load operating hours, it documents motor switching operations and other operating data. The main criteria such as displaying when a general overhaul is due can be seen from diodes, all other data can be read out with a notebook. A further function is the integrated motor management to reduce wear on the system: this includes preventing of inching operating at fast speed, starting and braking via slow hoisting speed, and monitoring the hoist motors' ptc thermistors.



### Modified by experts

Innokran scheduled three weeks from dismantling the old cranes up to commissioning the new system. Apart from Innokran's experts' experience, the third crane operating at a higher level was of assistance, loading the bisected old crane bridges onto lorries. As the new crane has a span of 34.8 metres, the tricky job of installing the two new box girders was precision work, but everything proceeded according to schedule. The system has been in continual use since the beginning of 2013, achieves the projected efficiency in material handling, and Kienle+Spiess' crane operators are enthusiastic too.

With the kind assistance of Christoph Fischer, Innokran





# In conversation with...

Karsten Hönack

South America



## The crane technology market in Brazil

Brazil

Germany's STAHL CraneSystems GmbH offers the world's most comprehensive range of hoisting technology and crane components. They are supplied to crane and systems builders all around the world, including Brazil. Karsten Hönack is a sales representative for STAHL CraneSystems and has been responsible for the South American market for 13 years now. A German born in the USA and raised in Mexico, he has his own particular perspective on South America.

**Mr Hönack, what is your assessment of Brazil's economic development, what opportunities do you see?** Brazil's development continues to be positive, even though outside influences are apparently slowing things down somewhat. The domestic market is healthy and will evolve self-confidently over the next few years. The challenges are great, but the nascent free trade areas – such as the upcoming Pacific Alliance (Mexico, Columbia, Peru, Chile) – may make it possible to bypass the emerging protectionism. At the end of the day these efforts will be rewarded and this will invigorate the region. In the long run South America has better prospects than Europe as the old industrial nations aren't flexible enough to prepare for the hurricane.

**What are the predominant industries in Brazil, in what branches do you see opportunities for growth?** The motor industry and petrochemicals are traditionally predominant, that's a big market for us. But new technologies such as wind power also contribute to growth. It's like an advent calendar: windows open and windows close. We don't know which window will open or which door will close. The only thing we know is that we have to be there when a window does open.

**What role does STAHL CraneSystems play in Brazil?** STAHL CraneSystems produced hoists in Brazil from the 1960s to the 1990s. There are still a lot of local manufacturers building hoists based on our technology of 40 years ago. STAHL CraneSystems hoists and cranes are developed and manufactured centrally in our German factory nowadays – with maximum precision and the strictest quality controls. In Brazil – as in all the other countries – we collaborate closely with crane and systems builders who use our products in their crane systems.

As a manufacturer of premium products we play an ever-present role with reputable Brazilian customers and we assist their projects in the world's remotest regions.

**How big is the market for customised solutions and explosion-protected hoists – STAHL CraneSystems' specialist field?** Customised solutions are in demand in Brazil because they require innovative and reliable products paired with detailed design. This applies both to standard and explosion-protected products. We cooperate closely with our partners, devise clever solutions, train and certify their staff. In this field we are in a very good position to master the challenges posed by Brazil. However in Brazil we struggle rather more in this respect than in other regions of the world as the market here is strongly influenced by US American standards – deep down into the Latin American oil industry. These standards are based on mechanical solutions which are regarded as out-dated in Europe. However although US standards have been widespread in South America for a long time the industry has started moving in the last five to ten years. There's still a big market for us here.

**You mentioned partners – with which crane building partners do you work in Brazil?** Brazil's peculiarity is the number of different crane builders. Many of them are not ISO certified and most have fairly rudimentary facilities. In Stahl Talhas we have built up a partner which has had a healthy development and meets the industry's high demands. Our technology is put to use very successfully here. We also cooperate with two other reputable crane building partners who clearly perceive our products and their evident technological advantages to be an extension of their product line.

**How many cranes are built each year with STAHL CraneSystems components?** Numbers don't give much idea of our work in Brazil. Brazil is not a mass market for us. The focus is clearly on mature customised solutions, off-standard hoists and modernisations in which other brands are replaced by STAHL CraneSystems products.

# Information literature

## Copy, fill in, fax

Company \_\_\_\_\_

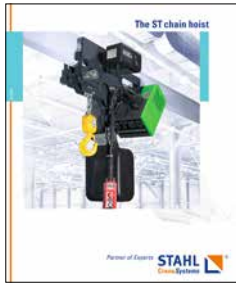
Name \_\_\_\_\_ Department \_\_\_\_\_

Address \_\_\_\_\_

Telephone \_\_\_\_\_ Fax \_\_\_\_\_



The SC chain hoist  
No. of pages: 18  
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 FR  NL  PT  
 ZH  RU



The ST chain hoist  
No. of pages: 28  
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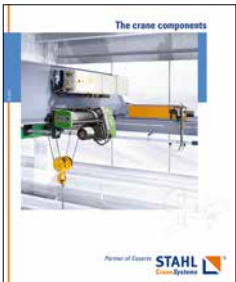
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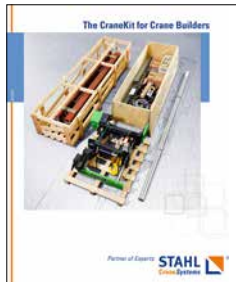
The AS7 wire rope hoist  
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 PT



The SW winch  
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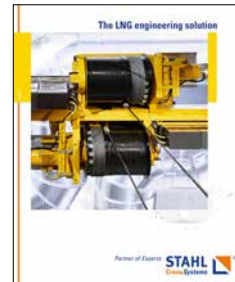
The crane components  
No. of pages: 24 Seiten  
 DE  EN  ES  
 FR  NL  PT



The CraneKit for crane builders  
No. of pages: 18  
 DE  EN  ES  
 FR  NL  PT



Expertise in explosion protection  
No. of pages: 18  
 DE  EN  ES  
 FR  NL  PT  
 ZH



The LNG engineering solution  
No. of pages: 8  
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 FR  NL  PT

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Presented by:

➔ [www.stahlcranes.com](http://www.stahlcranes.com)

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