ABI Gruppe NEWS

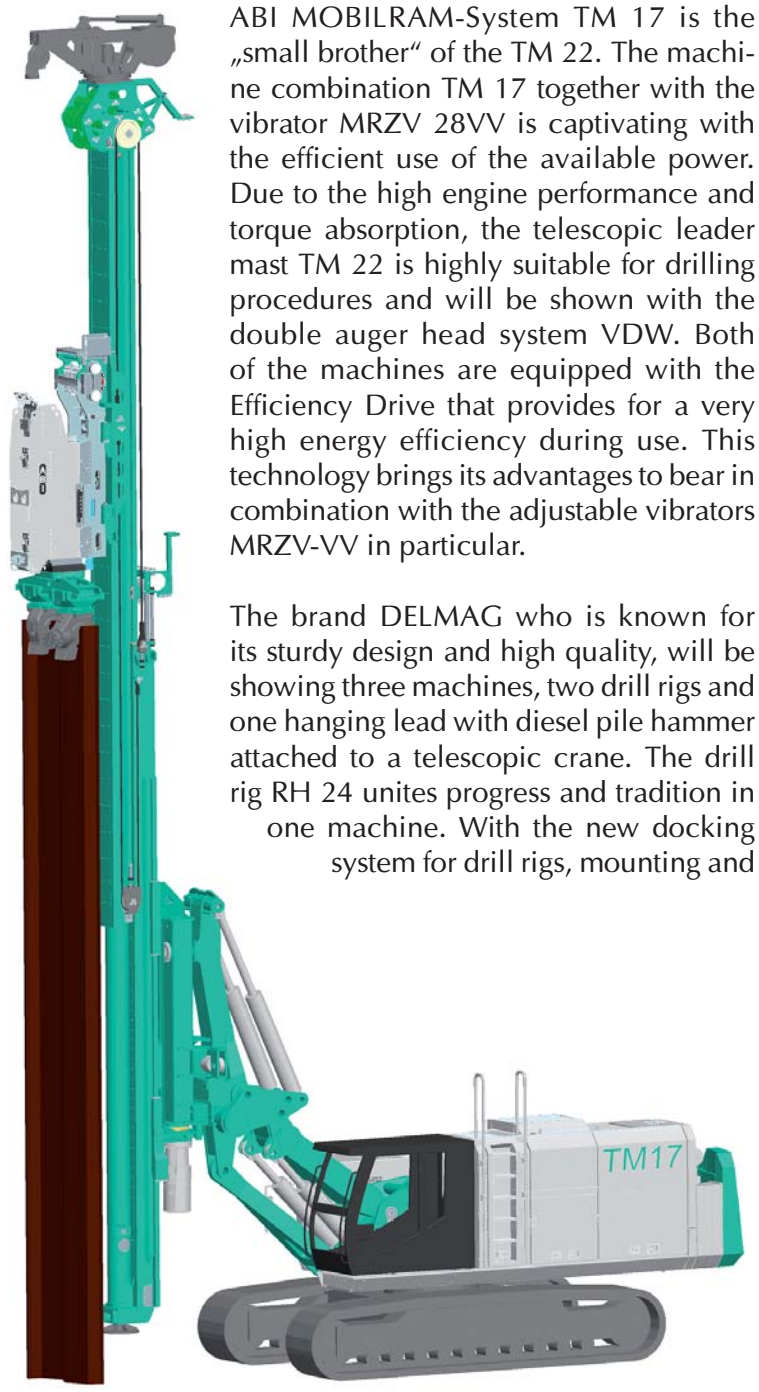
Newsletter for customers and employees | April 2013 Issue

ABI Gruppe at the bauma 2013

The ABI Group will present numerous new developments at the jubilee bauma 2013.

The ABI Group will present two MOBILRAM-Systems of the new model range: a telescopic leader mast TM 17 and a TM 22. The new leader mast generation, that made its first appearance with the TM 22 at bauma 2010, was extended. With an effective length of 17 m, the new ABI MOBILRAM-System TM 17 is the „small brother“ of the TM 22. The machine combination TM 17 together with the vibrator MRZV 28VV is captivating with the efficient use of the available power. Due to the high engine performance and torque absorption, the telescopic leader mast TM 22 is highly suitable for drilling procedures and will be shown with the double auger head system VDW. Both of the machines are equipped with the Efficiency Drive that provides for a very high energy efficiency during use. This technology brings its advantages to bear in combination with the adjustable vibrators MRZV-VV in particular.

The brand DELMAG who is known for its sturdy design and high quality, will be showing three machines, two drill rigs and one hanging lead with diesel pile hammer attached to a telescopic crane. The drill rig RH 24 unites progress and tradition in one machine. With the new docking system for drill rigs, mounting and removing the rotary head on the construction site is very fast, high winch pulling forces and the increased torque provide for fluent operating sequences.



Graphics: ABI MOBILRAM-System TM 17

DELMAG Esslingen presents a hanging lead MH 3003 with a diesel pile hammer D25-32 on a telescopic crane. As a standard telescopic crane is used instead of a cable-operated excavator, the acquisition and operating costs of the machine combination are distinctly lower. Besides a diesel hammer, a BANUT hydraulic impact hammer can be attached to the hanging lead as well.

INTEROC presents the anchor drill rig AN 150 equipped with a height-adjustable control console, a rod changer magazine KBM and a manipulator.

With its wide range of machines the ABI Group offers the appropriate solution for nearly every task in special civil engineering. ■

Content

ABI MOBILRAM-System TM 17

The presented machine combination consisting of a telescopic leader mast TM 17 and a variable vibrator MRZV 28VV sets new standards regarding efficiency, noise emission and operator convenience.

The leader mast has a usable length of 17 m with the MRZV 28VV vibrator mounted and like the TM 22, is part of the new generation of telescopic leaders. The „mast in mast" concept unites the advantages of a telescopic leader mast with the load-bearing capacity of a fixed leader mast.

The Docking-System facilitates attaching or changing the attachments. The hydraulic lines are connected automatically using quick acting couplings and the attachment is mechanically coupled to the guiding sledge. The quick and easy change of attachments at the job site clearly minimizes the danger of confusion and accidents.

The TM 17 installed on a carrier SR 35 T D has an engine output of 470 kW. The current EU exhaust emission regulations level IIIB and US EPA Tier 4i are met using an exhaust gas recirculation and a diesel particulate filter.

The Efficiency Drive control system kit increases the energy efficiency of the machine without loss in performance. The Efficiency Drive regulates the diesel motor speed and the hydraulic flow rate according to the power demanded by the attachment, and thus reduces the transfer losses. In addition, the noise emissions can be reduced considerably.

The vibrator MRZV 28VV with a static moment of 28 kgm will be presented with the TM 17. The variable static moment and variable hydraulic displacement are characteristic features of the vibrator. This technique that is only available at ABI, makes it possible to translate the power available at the vibrator over a wide speed range in an optimum way. The very favourable ratio of static moment and dynamic mass provides for a large amplitude and thus a high capability.

A combined clamp assembly MZK 1250 is mounted on the vibrator. The clamp assembly clamps double Z- and U-sections as well as pipes. The set-up for another pile element is done by hand, without any tools. The hydraulic locking takes place when the clamps are closed and remains active after they are opened. Due to the precise clamping with two single clamps, the pile element is treated with care and the „fluttering" of the sections is reduced. This also results in a further reduction of the noise level during the pile driving process.

The machine combination is a successful continuation of ABI's philosophy to build efficient, environmentally and operator-friendly machines. ■

Photo: Vibrator MRZV 28VV with combi clamp assembly MZK 1250 at a double U sheet pile

Technical data TM 17

Stroke	mm	18000
Crowd force mast cylinder 1 up / down	kN	200 / 118
Crowd force mast cylinder 2 up / down	kN	240 / 140
Torque absorption	kNm	120
Transport weight (without attachment)	kg	62100

ABI MOBILRAM-System TM 22

The telescopic leader mast TM 22 is mounted on the new carrier SR 45 T D.

The engine delivers 563 kW and meets the present exhaust emission regulations US EPA Tier 4i. The TM 22 shown at bauma 2013 will be fitted with a double auger head system VDW 1005. With the VDW auger drive cased boreholes can be executed in one working cycle and that only a few centimetres in front of an existing building. As is usual for

Photo: ABI MOBILRAM-System TM 22 mit angebautem VDW Bohrantrieb und weiteren Arbeitsgeräten dem MRZV 30VV und dem MDBA 7000

ABI MOBILRAM-Systems, the TM 22 can be equipped with a variety of attachments.

The standard device intended for pile driving work is the vibrator MRZV 30VV. It has a variable static moment of 30 kgm and a variable hydraulic displacement. In combination with a VV vibrator the advantages of the Efficiency Drive are exhausted to the optimum. This control system considerably reduces the hydraulic losses since it only allows as much oil volume flow as is necessary to transfer the power that the vibrator demands at the moment. The speed of the diesel engine and the hydraulic displacement of the pump are adjusted to the respective power requirement. At part load operation that mainly occurs at easy pile driving operations or short driving depths, the potential savings are particularly high. During operation on the construction site double-digit diesel fuel savings were measured. ■

Photo left: ABI MOBILRAM-System TM 22 while pile driving

Graphics right: the new DELMAG drill rig RH 24

DELMAG Drill Rig RH 24

The RH 24 will make its first appearance in Munich.

The new, powerful machine is equipped with a rotary head with a torque of 240 kNm. It is mounted to the leader mast using a novel docking system. This proven principle was borrowed from the telescopic leader masts. The docking system connects the hydraulic lines by means of quick acting couplings and facilitates attachment and removal on the construction site. It is no longer necessary to screw on the hydraulic lines manually, and thus there is no more danger of confusion and accidents.

The newly developed rotary head and the high winch pulling forces are ideal for the Kelly drilling procedure that is used quite often. The outside diameter of the Kelly bar is 419 mm. At bauma 2013, the machine will be presented in CFA gear with continuous flight auger and auger cleaning device. The auger cleaning device leads off the drilled out soil material near the ground already, and is designed for drilling tools with a diameter from 800 to 1000 mm. Using a conversion kit it can be adapted for drilling tools with a diameter of 600 to 800 mm.

The RH 24 is equipped with a mechanical connection for casing oscillators as standard. The mechanical connection is suitable for casing oscillators with or without integrated control unit.

The SR 30 BT with 257 kW that was reworked as well, is used as carrier. The economical engine meets the present EU exhaust emission requirements level IIIB using an AdBlue system. The nitrogen oxides are reduced inside a SCR catalytic converter (SCR = Selective Catalytic Reduction), no additional diesel particulate filter is required. The system requires only minimum maintenance since no regeneration and no change of filters are necessary. ■

Rod Changer Magazine by INTEROC

Typical of the INTEROC anchor drill rigs is the patented rod changer magazine made of aluminium.

The magazine is available in four sizes. The largest one can hold five double rods with a diameter of up to 220 mm and a length of three meters, the smallest one can hold seven double rods with a diameter of up to 133 mm.

The magazine considerably facilitates handling of the rods and reduces the risk of accidents. The double rods can be grabbed with the manipulator and coupled to the auger drive in one move. Depending on the anchor type the rods can be extracted separately. First the inner rods are extracted and put back into the magazine using the manipulator. After completion of the anchor the outer casings are also removed and put back over the inner rods in the magazine so that the double rods are available to drill the next anchor. ■

Photo: INTEROC rod changer magazin with manipulator for easier handling of double rods

Three ABI Machines Are Working on the Once Biggest Soccer Stadium of the World

Three ABI machines will be used during modernization work on the Maracanã stadium in Rio de Janeiro in Brazil.

The official name of the stadium is Estádio Jornalista Mário Filho, named after a sports journalist who supported the construction of the stadium in the Rio's district Maracanã. The short form is Maracanã stadium. At its inauguration in 1950, after a short construction time of not even two years, it ranked among the biggest soccer stadiums in the world. The capacity was 200,000 visitors at the time. In the course of numerous reconstruction measures, the number of spectator places was significantly reduced and will be further reduced to app. 77,000 for the soccer world championship in 2014. The stadium is used for other events as well. Frank Sinatra, Tina Turner, Bon Jovi, The Rolling Stones and many other artists attracted hundreds of thousands of visitors to the stadium. In the year 2016, Brazil is the host country for the Summer Olympics. The opening and closing ceremonies are also planned to be held in the Maracanã stadium.

During the reconstruction and modernization of the Maracanã stadium four new water and surge reservoirs will be built in total. The underground reservoirs are located directly next to the stadium and have a depth of 4 and 8 m. Due to the high groundwater level, an execution with steel sheet piles was chosen for the construction.

The company ThyssenKrupp GfT Bautechnik do Brasil received the contract for the sheet pile work. Larssen 603 double steel sheet piles with lengths of 9, 12 and 14 m were used. Three ABI

Photo: ABI MOBILRAM-System TM 18/22 B with vibrator MRZV 20V at the Maracanã Stadium

MOBILRAM-Systems were employed on the large-scale site, one TM 14/17 B with vibrator MRZV 30VV, one TM 18/22 B with vibrator MRZV 20V, and one TM 20/25 with vibrator MRZV 36VV.

Approximately 100 double sheet piles per reservoir were used up. Due to the difficult soil conditions, the average daily output was 10 double piles. As gravel was found at many locations, pre-drilling had to be performed. The auger flight diameter was 450 mm. The pre-drilling depth depended on the length of the piles, in most cases the pre-drilling was done app. one meter shorter than the pile length. The auger drive MDBA 4000 was used on the telescopic leader masts in this process. Thanks to the rapid change device, the change from the vibrator to the auger drive could be realized in short time. Double piles of 9 m were introduced for the first box. The second was made of 12 m piles, and for the third and fourth the sheet piles had to be driven to a final depth of 14 m.

The cost of the entire modernization measure is estimated at 316 million in Euros. The inside of the stadium will be taken down completely, the rows of seats will be built ascending and roofed over. In addition, a new press stand and boxes will be built. ■

Photo above: Two ABI machines at Maracanã Stadium in Rio de Janeiro. The TM 18/22 B with auger drive MDBA 4000 pre-drills approx. one meter shorter than the pile length, the TM 20/25 with vibrator MRZV 36VV drives the double steel sheet piles to the required depth of 14 m.

Photo left: ABI MOBILRAM-System TM 14/17 B while picking up double steel sheet pile

Explosive Jobsite - INTEROC Anchor Drill Rigs AN 150 Drilling Blast Holes

Two INTEROC anchor drill rigs were utilised in the Waneta Dam Expansion project located in British Columbia / Canada.

The Waneta Dam hydroelectric power station at the Pend'Oreille river commenced operations in 1954 with a capacity of 89 MW (120000 horsepower) and was over the years gradually increased to 450 MW. At the end of 2010 the construction of a second hydroelectric power

Photo: Working in spotlight, AN 150 while drilling at Waneta Dam during late shift

station began with a projected capacity of 335 MW to be generated by the water spilling currently over the existing dam. The constructional works are scheduled to take 4,5 years.

Two penstock tunnels approx. 10 m in diameter and approx. 200 m in length are constructed with a slope of 14 % to 17 % as water inlet for the new power plant. At their end two turbines are positioned transforming the water power into electrical energy.

To achieve a proper operation of the turbines a specific depth for the water inlet shaft is required. Therefore solid rock material at the top of the intake shafts had to be blasted and removed. Lying below the water surface of the reservoir the area was refilled first for an easy access to the intended drilling positions.

Photo: Drilling blast holes at the construction site of Waneta Dam in Canada

The blasting had to be carried out with special diligence not to affect the operation or the structure of the existing power plant. Altogether 1800 blast holes in difficult and frequently changing soil conditions were drilled. To achieve a flat solid rock bottom all boreholes had to reach the same level and so the drilling depth varied from 6 m to 13 m.

BELPACIFIC Excavating & Shoring an industry leader in designing and installing bulk excavations, shotcrete shoring, micro piling and tieback & tiedown anchors and located in Burnaby / Vancouver in Canada were assigned for the drilling works. BELPACIFIC used among other equipment two Interoc anchor drills AN150 with drifter BE 2400 and down-hole hammer to perform the challenging drilling. Both machines were delivered and supported by Traxxon, ABI's INTEROC sales and service partner in Canada.

The thickness of the overburden material (mixed gravel, refill) determined the final drilling depth into the solid rock and respectively two different working methods were made use of. In areas with thick overburden layers the drilling was carried out in complete with the Interoc. In shallow overburden the Interoc units drilled down into the rock for approx. 0,5m only, and then the inner drill rods were removed, a 3" (76,2mm) PVC tube inserted and the outer casing (133 mm) pulled. A second machine did the final drilling for the blast holes through the PVC tubes with a diameter of 2,75" (70 mm). This was due to the customer's demand for smaller blast holes to have a better control of the blasting vibrations close to the dam.

The entire job site turned out to be challenging and very demanding. BELPACIFIC had to master a lot of challenges to meet the demanding schedule and work environment. The works were carried out in two 10 hour shifts per day, allowing only 4 hours for maintenance until restarting. On an average 150 line meters per day were achieved and the AN 150's showed to be reliable with very little down time during that time. ■

DELMAG Drill Rig RH 18 Helps in the Development of Renewable Energies

The company Schaubeck Spezialtiefbau GmbH executed special civil engineering work during the construction of a new hydroelectric power plant in Pillhofen near Moosburg on the Isar.

Last summer heavy-duty machinery turned up at the Amper weir near Pillhofen to built a new hydroelectric power plant. In summer 2013 already, the turbines are supposed to generate climate-friendly energy. The output of the power plant will be app. 450 kilowatts, and some 2.2 million kilowatt hours will be fed directly into the local mains. This output is sufficient to supply energy to app. 450 households.

The company Schaubeck from Mainburg was awarded the contract for the replacement drillings. The traditional company that was founded in 1934 already, has specialized in consultation, planning and execution of foundation, sheeting and dewatering works. In Pillhofen, their new DELMAG drill rig RH 18 was employed for the first time. The compact RH 18 is extremely well suitable for the narrow construction site. In addition, it stands out for an effective transport position. The machine can be transported with Kelly bar and rotary head. Thus, the set-up times on the construction site are significantly reduced.

One part of the construction measure demanded the introduction of sheet pile walls. As the present ground was not suitable to drive, soil replacement measures had to be performed first. Schaubeck Spezialtiefbau executed a total of 63 drillings and replaced the difficult soil with a drivable fill so that the sheet pile walls could be driven afterwards. The boreholes had a diameter of 1200 mm and a depth of 10 m. The drilling work took barely 11 days with a daily output of 57 m per day. ■

Photos: Replacing soils in Pillhofen at construction site of a new hydroelectric power plant

ABI MOBILRAM-System TM 13/16 Staying with Sennebogen

The building enterprise Hubert Schmid drove sheet pile walls with a TM 13/16 on the company site of Sennebogen in Straubing.

The company Sennebogen, a longstanding business partner and supplier of carriers, extends its premises in the industrial zone port of Straubing. A spacious demonstration ground and a new building will be constructed on a total area of about 25,000 m². The prominent building with its glass pyramid reminds one a little of the Louvre and will accommodate an academy and a museum in the future.

The academy offers the most favourable conditions for the theoretical and practical training on the machines. Up to 140 persons can be trained at the same time. Training halls with a length of 24 m are large enough even for the bigger Sennebogen machines. In addition, the students can look inside the hall from two class rooms. The theory learned can then be applied on the demonstration ground under realistic operating conditions. Machines can be experienced intensively and closely by drivers, customers and dealers on a course with uphill and downhill sections as well as locations for material handling.

In the museum, the visitors can travel through over 60 years of company history. The idea and the architecture of the museum follow the drafts of the founder of the company Erich Sennebogen. There, the history of the family-owned enterprise can be experienced

Photo: Telescopic leader mast TM 13/16 working on company site of Sennebogen in Straubing

through historical documents and magnificently restored machines.

Foundation work had to be executed for the new building and on the demonstration ground. The company Hubert Schmid Bauunternehmen GmbH installed a total of 1500 m² of sheet pile walls as a permanent structure using their telescopic leader mast TM 13/16 with a variable vibrator MRZV 18V. U steel sheet piles Larssen 602 to 604 with lengths from 7.5 to 9.0 m were used. The sheet pile walls served to define the building pit and as foundation for a machine ramp on the demonstration ground.

The installed sheet pile walls were fixed on a second sheet pile wall using horizontal anchor elements. In technical jargon these anchor elements are called deadman structure. The ground consisted of loamy, compact gravels. The average daily output was between 250 and 300 square meters. Once again, the telescopic leader mast demonstrated its strengths regarding reach and stability. The compact machine could approach all ramp positions and introduce the sheet pile wall at full reach even underground. ■

Graphics: The new Sennebogen demonstration area the new building of academy and museum in Straubing

New Leader Mast in Continuous Operation

The company SAT GmbH & Co. KG installed vibro stone columns according to the IMPACT® system using its ABI MOBILRAM-System TM 11/14 SL nearly in continuous operation.

The company from Erfurt which is specialized in ground improvement for over 10 years adopted the latest state of the art by purchasing a telescopic leader mast TM 11/14 SL in May 2012.

The company has 40 employees and has established itself in Germany and the neighboring European market with the making of full displacement columns and GEOPIER® rammed aggregate piers. The new machine is mainly used to make IMPACT® vibro stone columns.

The ABI telescopic leader mast was used in a current project in Tuttlingen in the Land Baden-Wurttemberg. The building owner, the Aesculap AG, a branch of the group B. Braun Melsungen, is a manufacturer of surgical instruments and devices and is the biggest employer in chief town Tuttlingen. The schedule for the ground improvement of the future multi-purpose building was very tight. In addition, the high demands of the client regarding the vibratory peaks permitted on the construction site had to be taken into account.

The company SAT executed the ground improvement with its telescopic leader mast with vibrator MRZV 15S. 1,115 vibro stone columns with a total of 6,700 running meters were installed within only 23 working days in January and February 2013. The driving depth varied between 2.79 and 7.45 meters. Due to the tight schedule work was carried out in two shifts. Another challenge were the wintery conditions with much snow and frost. However, to the great delight of the building owner, the action could be finished as scheduled, so that the subsequent construction work could be started on time.

The ABI MOBILRAM-System was convincing through its reliability and met the high demands of the clients regarding performance, emissions and flexible usage. ■

Photo: ABI MOBILRAM-System TM 11/14 SL with vibrator and mandrel

ABI In-house Exhibition 2012

More than 700 invited guests from near and far came to Niedernberg on September 27 to 29. On Saturday the Heichel family invited their employees with family to machine demonstrations and a cozy get-together.

On the demonstration grounds the machines were demonstrated in action. The new control concept known as Efficiency Drive was presented live on the demonstration grounds and in lectures. Two ABI telescopic leader masts, a TM 22 with Efficiency Drive and a TM 16/20 without Efficiency Drive, were driving a double steel sheet piles and while doing so, the current diesel consumption was transmitted on a big screen. The operational concept was explained in details on a DELMAG drill rig RH 34 on ABI carrier. INTEROC presented the unique rod changing magazine for the installation of double rods on anchor drilling work.

A selection of machines of different sizes and from all brands of the ABI group was presented in the courtyard. The control technology department showed the transmission of the touch screen mask on mobile communication devices like smartphones and touchpads, as well as the monitoring of the diesel tank fuel level on a model.

The exhibition program was completed by lectures and exhibits from guest exhibitors. In the hall the visitors received information on the newest engine technology from Caterpillar and Scania. The company Sennebogen provided a cable-operated excavator 660 for the attachment of a DELMAG hanging lead MH 3003. STS Scheltzke exhibited two pump mixing stations. ThyssenKrupp Bautechnik presented its extensive product portfolio as well.

The reactions of the clients and the feedback showed that the 2012 in-house exhibition was a successful presentation of the company. ABI thanks its guests and the guest exhibitors for their visit and is already looking forward to the next in-house exhibition in 2015, when you will hear: „Welcome to Niedernberg“ again. ■

Photos: demonstration ground (above) and the presented machines in courtyard (below) during the in-house exhibition

Efficiency Drive
The advantages of the Efficiency Drive were demonstrated with two telescopic leader masts. In a comparative pile driving contest the classic TM 16/20 B with vibrator MRZV 30VV and the new leader mast generation TM 22 with vibrator MRZV 28VV competed with each other.

Photo: DELMAG drill rig RH 34 on ABI carrier T102D

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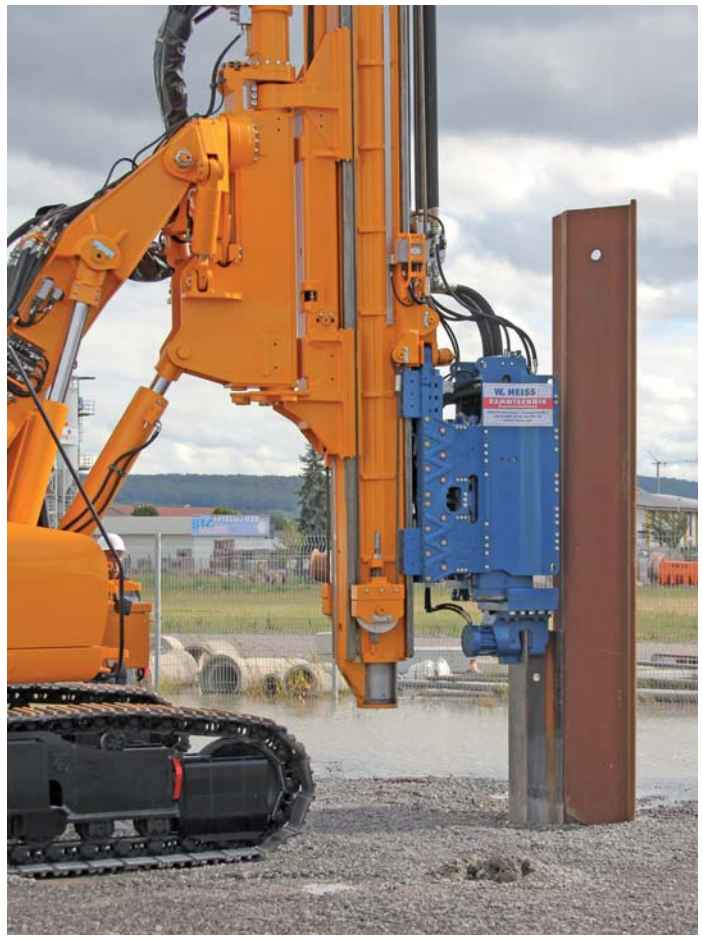

Pile driving in front of the wall
Pile driving directly in front of an obstacle was demonstrated with the vibrator MRZV 10VV and a special clamp assembly.

Presentation of the control system
The display in the cabin was transmitted on a big monitor on the outside so that the visitors could see exactly the same as the driver.

Rod changing magazine with double rod, manipulator and remote control
The INTEROC anchor drill rig AN 120 was equipped with a lot of extras. The demonstration showed how the double rods are handled.

Photo: SM 14/18 HD with auger drive MDBA 5000 and clamping and breaking device

Photo: DELMAG drill rigs RH 12, RH 18 and RH 28 (from right)

Impressive inclination
The fixed leader mast SM 14/18 HD is equipped with many options. This customer-specific configuration allows an inclination of up to 18 degrees to the front and of 20 degrees to the rear. The auger drive can be slewed inside the sledge 80 degrees to the front inside and driven out of the drilling axis. The machine configuration is specially adapted to the operation with down-the-hole hammer.

Engine exhibition by Scania and Caterpillar
Due to the numerous new regulations regarding the emission limits for construction machinery, the visitors could get information directly from the manufacturers.

Professional lectures
ABI presented the new developments in the field of vibratory pile driving technology and Efficiency Drive. Scania explained the exhaust treatment with AdBlue.

ABI Charity Drive at the 2012 In-house Exhibition

Getting the diagnosis of a congenital heart defect means a heavy blow for the parents and a long ordeal with many stays in hospital for the child. ABI supported the society „Kinderherzen heilen e.V.“ (Heal children‘s hearts) with a charity drive.

T-shirts were created as a memento of the in-house exhibition and to celebrate the 90th company anniversary of DELMAG, which were then available during the exhibition for a donation to a good cause. The society „Kinderherzen heilen e.V.“ was chosen among the numerous suggestions made by the organizational team and the employees.

The society does a great deal for children with heart disease and their families in our region. The mission of the society is to care for the children and their families during a stay in hospital and also to support them in their everyday worries. The members organize e.g. family vacations and seminars for brothers and sisters, and provide information on medical findings in their doctor-parents seminars.

With the financial support of the society a common room in the Gießen hospital and apartments in the vicinity of the hospital could be furnished. They serve as accommodation for parents on long in-patient stays of their children.

ABI invited the chairman of the society, Mr. Michael Hauk, for handing-over the check. 3,000 Euros were raised from direct donations, and the company Waidlich, a longstanding supplier, transferred another 1,000 Euros. The amount was then topped up by ABI to 5,000 Euros. At the gathering Mr. Hauk told us about the society‘s work and the history of its beginnings. All members of the society are working voluntarily and the donation will help to realize further projects. On the behalf of the society he thanked everyone who had donated. For more information on the projects and the commitment of „Kinderherzen helfen e.V.“ please refer to their website: www-kinderherzen-heilen.de. ■

Photo: Michael Hauk, chairman of the society Kinderherzen heilen e.V

Universal-Spetstechnica – New Sales and Service Partner in Russia

Since February 2013 „Универсал-Спецтехника“ (Universal-Spetstechnica - UST) is the exclusive distribution partner for ABI MOBILRAM systems, DELMAG drilling rigs, BANUT and INTEROC products in Russia.

The company with its 1100 employees is on the market since 12 years now and is one of the market leaders for the distribution and service of fork-lift trucks, warehouse technology and construction machinery in Russia. Among others, UST is an official partner of renowned manufacturers of construction machinery, like John Deere, Manitou, Ammann, etc.

In addition to its headquarters in Moscow, UST maintains 40 branch offices all over Russia and has 180 mobile service teams. Aside from the distribution of new and used construction machinery as well as warehouse technology, UST also runs an extensive rental park. The broad range of services is completed by an individual and customer-oriented after-sales service.

ABI is pleased to have found a competent and reliable partner in UST and is looking forward to a good cooperation. ■

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