

# ABI Gruppe

# News

News for customers, employees and suppliers

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## Vibrator MRZV 16VV

**The new MRZV 16VV with 16 kgm static moment is an all-rounder that is also very well suited for processes with greater mechanical loads, for example stone columns or other full displacement methods.**

With a maximum speed of 2600 rpm, the MRZV 16VV complements the product range of leader mast guided ABI vibrators with variable static moment and adjustable hydraulic displacement. Its performance is underlined by the fact that the full static moment is available up to the nominal speed of 2070 rpm.

In terms of design, the MRZV 16VV offers many advantages. The typical ABI all-round guidance of the

vibrator on the leader mast enables precise positioning of any pile. Thanks to the vibrator's reduced construction depth, any pile can be placed and driven very close to obstacles such as existing building structures. In combination with the narrow width, piling work in corners can be carried out very efficiently. In addition, the narrow width allows easy insertion of single U-profiles, such as PU 18, PU 28, and PU 38.

**Project: „EUGAL“**  
European gas connection pipeline from Lubmin on the Baltic Sea to Deutschneudorf in Saxony (480 km)

**Construction Company:** PRB Spezialtiefbau GmbH from 14797 Kloster Lehnin

**Construction site:** EUGAL section near Anklam, Mecklenburg-Western Pomerania

**Machine type:**  
ABI MOBILRAM TM 11/14 SL with Vibrator MRZV 16VV

**Procedure:**  
Driving and extraction of U-single and double profiles

**Task:**  
Creation of start and target construction pits for crossings under railway lines and roads

**Challenge:**  
Constantly changing locations with partly low load-bearing capacity subsoils required a machine combination that was not only as light as possible but due to the nature of some of the soils, also as powerful as possible. The MRZV 16VV was heavily tested in some of the very dense clay soil layers.



In terms of the design features, extra attention was also paid to ease of maintenance and servicing so that worn elements are easily accessible.

The new SKZ 900 for the MRZV 16VV is offered as a standard clamp assembly. This has more space for larger sheet pile interlocks and is available in two versions with a 30 mm or 40 mm clamping gap. Other clamp assemblies such as the SKZ 720 or the SKZ 1120 can also be used via the 7 x 7 M30 hole pattern customary on ABI vibrators. The MZK 800 double clamp assemblies are recommended for driving double profiles or tubes.

For attachment to the leader mast, ABI offers three connections for the MRZV 16VV: A rapid changing

device, a Docking-System D4 or D6/4. With the Docking-System, attaching the vibrator takes just a few minutes and increases the safety and efficiency on the construction site. The existing variants enable the use of the MRZV 16VV on many machine models, such as the TM 11/14 SL or TM 13/16 SL. A very efficient combination is the MRZV 16VV vibrator attached to a TM 13. The TM 13 belongs to the new leader in leader generation and has the D6/4 Docking-System as standard.



*Photo (above and left): ABI MOBILRAM TM 11/14 SL with vibrator MRZV 16VV on a job site of the company Firma PRB near Anklam*

## Smart motorways - ABI machines expanding the motorways in Great Britain

**In 2020 and 2021, various ABI MOBILRAM-Systems were used by ABI's esteemed customers in the United Kingdom on „Smart motorway“ infrastructure projects.**

„Smart motorways“ are part of a large-scale infrastructure upgrade to modernise and expand the capacity of the heavily congested arterial highways. ABI MOBILRAM-Systems worked, for example, on the M1 motorway from London to Leeds, on the M6 motorway which leads towards the Scottish border and is one of the busiest motorways in the country, and on the M4 motorway, the east-west connection from London to Wales.

When the „Smart motorway“ is expanded, the hard shoulder will be converted into another traffic lane. Emergency bays are strategically set up for broken down vehicles and other emergency situations and gantries are installed for traffic control and monitoring. In some sections particularly prone to congestion where there was previously no hard shoulder, an additional traffic lane was added. Even during the pandemic crisis, the construction workers continued to do an excellent job under difficult conditions.

ABI MOBILRAM-Systems from the smaller TM 13 to the larger telescopic leader TM 22 have been involved in installing steel sheet piles. These serve primarily as support structures for the new emergency bays, sign gantries and other technical installations. The range of installed sections varied from lighter Z-profiles AZ12-770 to very heavy Z-profiles AZ52-700 in combination with some specialist wide-flange HZM beams. Pile lengths of up to 17 m, with a maximum driven depth of 12 m were installed. In some places, due to difficult ground conditions, it was necessary to pre-drill the pile line or back drive using a DELMAG diesel pile hammer.

The construction work was typically carried out during normal motorway operation. The ABI MOBILRAM-Systems worked in narrow corridors, on steep slopes, near watercourses, bridges, tunnels, and at times were close to existing gas and water utilities. The soil conditions changed constantly between soft clay to loose sand, hard clay and sandstone.



*Photo: Two ABI MOBILRAM-Systems pile driving on the M6 motorway (TM 22 and TM 20)*

The ABI TM12/15 H-LR (Long Reach) was put to good use on the M1, with its extended reach capability it removed the need for extensive groundworks and soil stabilisation to be undertaken before the piling operation could be started. The long reach capability meant that the TM12/15 H-LR could be positioned on secure stable ground further back from the pile line whilst still being able to reach the pile positions. The bigger brother of this machine was commissioned into service for the first time during this period of works - the TM 20 LR.

Confined spaces were also a big issue on the M4 where an already compact mid-sized TM 14/17 VSL MOBILRAM had to be replaced by the new and even more compact model TM 13. Despite its diminutive size, and the smaller MRZV 12VV vibrator this was able to handle proceedings admirably.

During the piling work and in constantly changing soil conditions, the VV vibrator technology guaranteed the best possible adaptation to the soil conditions and thus high production rates.

On the M6 alone the ABI MOBILRAMs installed 5 km of sheet piles along a 28 km stretch of the motorway. In soils that could not be driven, pre-drilling was carried out (often utilising the VDW double auger systems) or a DELMAG diesel pile hammer was used for impact

Andrew Cotton, Sheet Piling (UK) Ltd Managing Director says:

„Our long reach MOBILRAMs have become the rig of choice for motorway projects around the UK. By using them we have considerably reduced the environmental impacts of the piling work on ancient woodland and species such as dormice and badger, which have habitats in the undergrowth.

The use of long reach technology has also removed the need for expensive earthwork stabilisation and groundworks when undertaking this type of project. Resulting in both cost and time savings. Indeed, the work on the M1 has been completed three months ahead of schedule.”



Photo: Credit - Sheet Piling (UK) Ltd - [www.sheetpilinguk.com](http://www.sheetpilinguk.com)  
TM 12/15 H-LR with extended reach while pile driving with vibrator MRZV 20VV

back driving. The swapping of working attachments was quick and efficient thanks to the rapid Docking-System. The installed Efficiency Drive also increased the environmental compatibility of the machines by saving significant amounts of fuel and greatly reducing exhaust emissions.

Paul Kelly, Contracts Director at Dawson WAM Ltd says:

„We like the ABI rigs as they offer quick docking systems for changing between attachments (pre-augering, vibro-driving and impact driving), offer both powerful and efficient performance, and have the most powerful rig mounted vibrators available in the UK, minimising the need to impact drive.

We were also extremely impressed with the new MRZV 12VV vibro on the TM 13 – thinking originally that this machine may have struggled to take over from the TM 14/17 VSL with MRZV 20VV, but in fact it proved itself more than up to the job!”



Photo: ABI MOBILRAM TM 13 with vibrator MRZV 12VV

## Long Reach MOBILRAMs for Sheet Piling (UK) Ltd

**In the summer of 2020 ABI Equipment Ltd were delighted to be able to hand over a brand new, uniquely designed, long reach MOBILRAM piling rig to their client Sheet Piling (UK) Ltd.**

This is the second such rig that has been produced in collaboration with this client – in both instances manufacturing a bespoke machine to fit with their very precise requirements, from concept through to build.

Sheet Piling (UK) Ltd Managing Director Andrew Cotton was accompanied by Plant Manager Bill Lloyd, who also had a major hand in refining the design and capabilities of both machines, to an official handover at ABI Equipment's base in Northampton, UK. Mark Lee, ABI Equipment Ltd MD, proudly unveiled the rig which later departed their depot for its new home after familiarisation training for all plant fitters and sheet pile operators had taken place.

Commenting on why a second long-reach sheet piling telescopic leader rig was required, Andrew Cotton says: „The demand for our first long-reach rig, the TM 12/15 H-LR was phenomenal and it quickly became

evident we needed to secure a second long-reach machine. As a forward-thinking business, commissioning the TM 20 Long Reach was a relatively easy decision to make.

We studied the TM 12/15 H-LR rig's key performance attributes, to further enhance the benefits of using these sheet piling rigs, and believe we now have two superb long-reach rigs, not just unlike anything else in the construction sector but also as suited to delivering on the requirements of Tier-1 contractors as they can possibly be.

At a time when costs are under such scrutiny, it makes no sense to stick to old and expensive ways of dealing with earthwork stabilisation, groundworks and infrastructure widening. With our two rigs, we believe long-reach sheet pile installation will become the new normal.”



*Photo: Socially distanced, „long reach“ handover: From left to right Mark Lee, ABI Equipment, Andrew Cotton and Bill Lloyd Sheet Piling (UK) Ltd.*



Photo: Credit: Sheet Piling (UK) Ltd - [www.sheetpilinguk.com](http://www.sheetpilinguk.com), Pile driving with ABI MOBILRAM TM 20 LR with extended reach

## ABI MOBILRAM TM 20 LR - technical data

Total height (without winch)	23920 mm
Stroke guiding carriage	20000 mm
Max. load capacity at 360 degrees operation, reach dependent on ballasting	13000 kg
Max. reach with vibrator MRZV-VV (centre slewing ring to piling axis)	8040 mm
Operating weight with vibrator MRZV 30VV	84500 kg
Counterweight, detachable	21940 kg
Engine power	470 kW
Emissions standards	EU Stage V / US EPA Tier 4f
Emission after treatment system	DOC, DPF, SCR

## ABI Invests in the Expansion and Increase of Production at Their Niedernberg Location

ABI has been producing specialised foundation equipment since 1974 and this production has been in Niedernberg Bavaria for over 40 years. In 1979, ABI and 30 of its employees moved location from Babenhausen to the then newly built facility at Boschstrasse 8 in Niedernberg. Due to the increasing production requirement and employee numbers, the facility was constantly being expanded. Even before the turn of the new millennium, considerations were being made to expand the production area once again. To accommodate this requirement land at Am Knüchel 4, also in Niedernberg was acquired and in 2001 the first production facilities and the office building were constructed. Today ABI employs approximately 240 people at its Niedernberg location, and this growth is increasing.

The large construction machines, some of which tower over the high hall roofs in Niedernberg, are used

to carry out a wide range of special civil engineering works. One of the many possible uses for example, is the installation of steel profiles into the ground using vibration. So called sheet piling is used to secure any open excavation, or as a border for port facilities in the form of harbour walls. The drill rigs produced by ABI are used to create all forms of concrete foundation piles (some up to 2000 mm in diameter and 60 m deep) required for bridges or building foundations. ABI exports its machines to a worldwide market and is renowned for its support and customer service. ABI is one of the market leaders among specialist civil engineering machine manufacturers, and its products are a benchmark, especially in the field of vibration technology. In order to be able to flexibly react to the increasing demands within the industry, the decision was taken to expand and also extend the production depth and capacity.



*Photo: Driving steel sheet piles for the foundation of the future location of the CNC machine with an ABI MOBILRAM-System (left), excavation of the foundation in the almost finished hall (right)*

In 2017, ABI acquired another area of land in Niedernberg at Boschstrasse 2 for the construction of a new welding and mechanical production facility. This area was formerly owned by Weitz concrete plant, and on which the company Lithonplus produced precast concrete parts until it was sold to ABI. With almost 28000 m<sup>2</sup>, the industrial site offers great potential for further company development and expansion.

During the first construction phase, the old existing buildings were demolished. Only one factory hall could be partially preserved and adapted for the new welding shop; this was then modernized and expanded, so that a production area of 1500 m<sup>2</sup> with the latest advanced welding equipment was created and this then went into operation at the end of 2019. The welding shop currently has five employees, which is to be expanded further in the future. In addition to the production of new welded parts, necessary repairs are also carried out.

Directly after the welding shop was finished in 2020, the construction of a second factory hall with a production area of approximately 2500 m<sup>2</sup> began. The mechanical production will move into the new hall later this year. The mechanical production area at Boschstrasse 8 is no longer sufficient to cover the required production demands. In addition to the move, the direct connection

to the welding shop offers the possibility of designing an optimal material flow.

The mechanical production will be equipped with two new modern CNC machines FP 6000 and FP 20000. This had to be taken into account during the foundation planning phase. The sheet pile shoring that was necessary to accommodate the foundation process for the new facility was installed using equipment from own equipment rental park. Many employees were able to observe the use of their own equipment up close and under real construction site conditions and sometimes even participate in the installation themselves. With the CNC traveling-column, milling, turning and drilling centre FP 20000, components with a length of up to 20 m can be machined.

Through the purchase of land, demolition, new factory hall construction and machine equipment purchases, ABI invests significantly in maintaining and expanding employment at its Niedernberg location. There are also further plans to expand and optimize production at the new site. Due to the extensive in-house manufacturing capacity and the resulting know-how, ABI sees itself well positioned for the future, even in a challenging competitive environment.



*Photo: ABI premises at the Boschstraße 2 in Niedernberg, Germany with new halls mechanical production and welding shop*

## Expansion of Production Capacity at SPD in Sala

After the integration into the ABI Group, the demand for production space and personnel at the subsidiary Scandinavian Pile Driving (SPD) in Sala, Sweden increased.

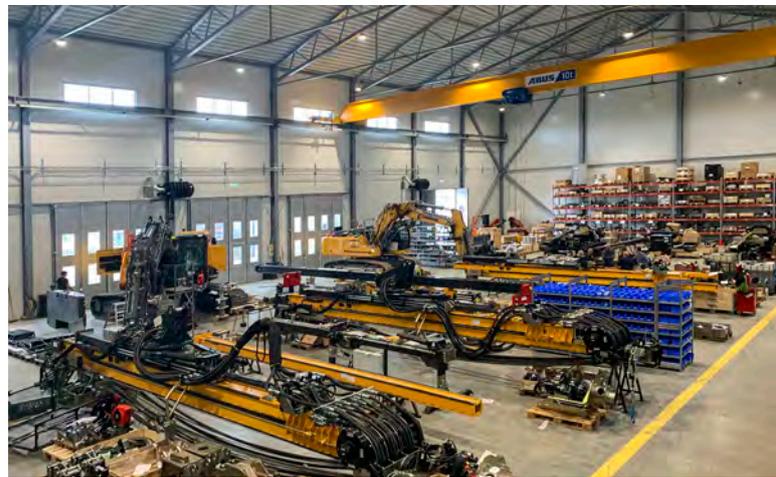


*Photo: The Company's own personnel and machinery, in this case a PM85-EC290 piling rig, were used for the foundation works in Sala, Sweden*

SPD took a new production hall into operation and restructured its production processes. The new hall has a production area of 1680 m<sup>2</sup> and is used for the assembly of new units for the SPD and INTEROC product lines. It also offers modern social rooms for the employees as well as office space and meeting rooms.

Customer services combined with the welding facility now have an area of 1260 square metres within the original premises. Due to the expansion of the product ranges, the requirement for storage capacity has also increased, so the warehouse is housed within its own facility with an area covering 680 square metres.

„The investment at the Sala facility was enormously important for the further growth of the company. The expansion provides sufficient space for the current 41 employees and also for future projects. We see ourselves as well positioned for the future.” commented Magnus Andersson, Managing Director of SPD.



*Photos: The new production hall in Sala, Sweden (left)*

## RH 20 at the Valley Bridge Thalaubach

**The first operational use of the new DELMAG drill rig RH 20 owned by GBS from Aschaffenburg took place on the A7 motorway near Döllbach, Germany.**

For the new bridge to be built, some preliminary works had to be carried out before the end of the year. One of the preliminary works to be completed was the new construction of the Thalaubach rainwater retention basin below the A7 near Eichenzell-Döllbach.

The new Delmag RH 20 is built on the F-series carrier. Equipped with the new cab, it offers the driver exceptional comfort and enables a smooth working process. The control system is enhanced by numerous automatic functions, such as the automatic leader mast alignment system or the automatic repositioning system, which enables the stored drill hole position to be relocated with pinpoint accuracy.

During Kelly drilling, the driver can switch on the automatic spin-off function. The change of direction during this function takes place automatically and the driver conveniently controls the speed using the joystick. The Delmag RH 20 is powered by a 280 kW engine which, with the built-in emission after treatment systems DOC, DPF and SCR, complies with the current EU Stage V and US EPA Tier 4f emission regulations.

Compared to its predecessor, the new powerful rotary head BT 200 is equipped with external exchangeable drive keys. This rotary head does not have to be removed for transport. The RH 20 with a transport weight of approx. 64 t can be transported with a rotary head



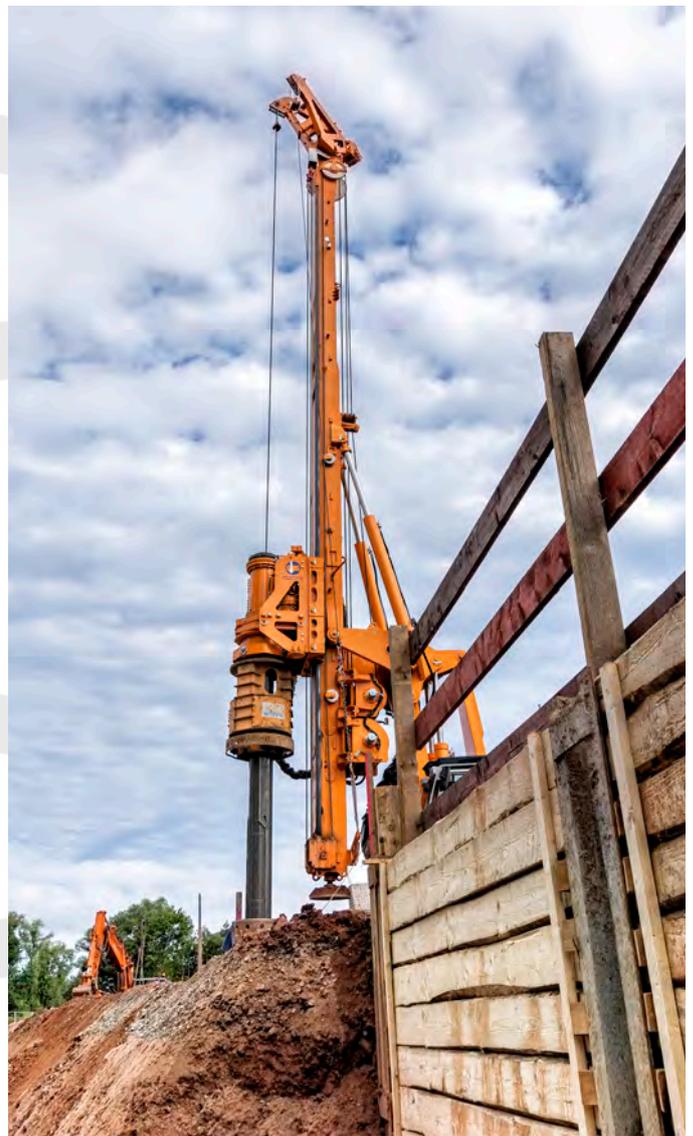
*Photo: The new RH 20 at the job site near Döllbach, Germany*

and Kelly bar still attached. This feature significantly shortens set-up times on the construction site.

During the preliminary works for the new rainwater retention basin, the RH 20 drilled the holes for the soldier piles and lagging retention system often referred to as Berliner Verbau. The drilled holes with a depth of up to 15 m were constructed using the Kelly drilling method. Beams were placed into the drilled holes, and then set in concrete 2,5 m high and the remaining cavity filled with backfill material. As the excavation progressed, the shoring was secured at three anchor levels.

The existing geology, a so-called red formation (weathered sandstone), posed no particular challenge for the machine. The new RH 20 effortlessly drilled a total of 133 piles with a diameter of 750 mm.

*Photo: DELMAG drill rig RH 20 of the company GBS at the job site near Döllbach, Germany drilling piles with the kelly drilling procedure*



## DELMAG Drill Rig RH 20 - technical data

Total height	19990 mm
Stroke rotary head	12400 mm
Free diameter in front of the rope pulleys	1600 mm
Operating weight with rotary head and Kelly bar KS368/3-21 without casing connector and starter (approx.)	64000 kg
Transport weight without equipment	54300 kg
Counterweight, detachable	8000 kg
Engine power	280 kW
Emissions standards	EU Stage V / US EPA Tier 4f
Emission after treatment system	DOC, DPF, SCR

## Stormwater regulation with TM 20

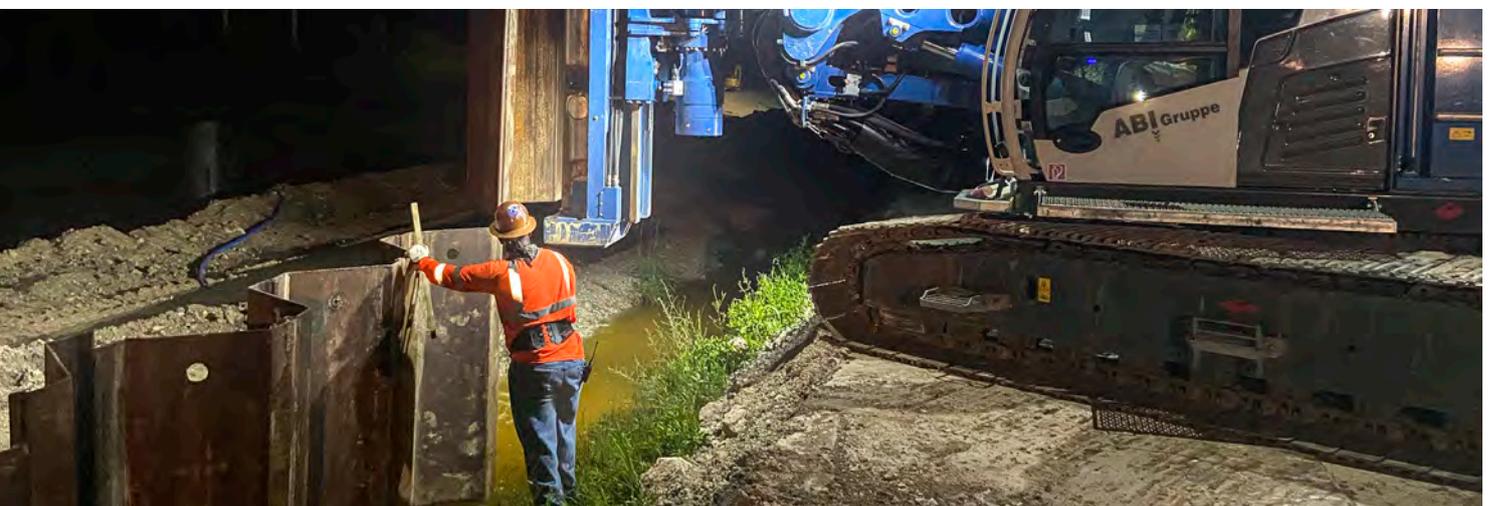


**ABI sales partner Hammer & Steel rented an ABI MOBILRAM TM 20 to Thalle Construction for sheet piling works for the expansion of the stormwater treatment area 1W in Florida.**

The Stormwater Treatment Areas (STA) are wetlands that are primarily designed to absorb and filter nutrients from surrounding agricultural land before they enter the Everglades. The expansion includes three new wetland sections covering 840 hectares. The extensive measures include the construction of a connecting canal to the existing area, new canals, culverts, boat and maintenance ramps as well as pumping stations. Besides the ecological aspect the construction measures will also be used for water regulation for sugar cane and rice fields on an area of over 1400 hectares.

Thalle Construction used the TM 20 for the installation of 7.6 m long sheet piles along the canal. The temporary steel sheet pile walls are needed for water regulation during the construction works. The sheet pile walls, which total approx. 300 linear metres, are installed and removed using the MRZV 30VV vibrator. The steel sheet pile wall “moves along” with the construction progress.

The natural conditions of the surroundings, e. g. the encounters of the construction workers with alligators, wild pigs, snakes and insects, turned out to be the main challenge at the job site.



*Photos: ABI MOBILRAM TM 20 at the job site near Loxahatchee, Florida installing steel sheet piles with MRZV 30VV vibrator*

## INTEROC AN 150



**The Company Kirchner Spezialtiefbau has exchanged its older INTEROC AN 150 anchor drill rig for the latest current model.**

The new machine came from the ABI subsidiary in Sweden Scandinavian Pile Driving. The machine was put into operation on the construction site in Bad Vilbel in Germany and immediately put through its paces.

The contract to install 99 inclined micro piles for wall anchoring is part of the large-scale “Frankfurt Rhein-Main plus” project, in which the S6 railway line from Frankfurt (Main) to Friedberg is being expanded. Two



*Photos: INTEROC AN 150 at the job site in Bad Vilbel, Germany. The drill rod is pulled out of the quiver using the manipulator.*

separate rail tracks and eleven new railway stations are being built to enhance the S6. The construction phase in Bad Vilbel is the first part of the expansion project. The existing embankment is being widened to accommodate the new rail tracks. The boundary wall of the extended embankment will be erected on bored piles and anchored.

The AN 150 is equipped with a double head drill system, consisting of a rotary drive RH1700 and a hydraulic drifter HD4010. The micro piles (TITAN system) were drilled using the hydraulic drifter. The individual drill rods could easily be loaded into the circular arc magazine. They were then pulled out of the quiver

using the manipulator and installed for the drilling process. The construction team achieved a steady daily output of four anchors with a length of 22 m using the AN150. In doing so, they injected around 1,2 t of suspension per anchor.

The machine operator is very satisfied with the performance of the new machine. In addition, the new AN 150 is equipped with a handy remote control, which is also very popular.

## TM 13 with VDW Double Auger Head System



**The smallest model in the telescopic leader series is most commonly used in combination with a vibrator. In addition to the MRZV 12VV vibrator, the Belgian company Nico Godrie also acquired a VDW 4230 double auger head system for smaller, primarily inner-city projects.**

The TM 13 with VDW 4230 was used on a construction site in Malle (Belgium) to create a secant pile wall. On the site of a former doctor's house dating from 1935, two residential buildings with a total of 15 apartments and an underground car park are being built. For the construction and the foundations, 7 m long piles with a diameter of 420 mm had to be installed an optimal deployment for the TM 13. Using the VDW, the piles are installed in a single pass, the casings are drilled down to depth and concrete is poured during the extraction process.

The construction team needed approximately 15 minutes to install each pile. The customer was very impressed and commented on the TM 13 for its small footprint and the associated maneuverability on site. The low diesel consumption and the low noise level of the machine were also very impressive factors.

*Photo: ABI MOBILRAM TM 13 with auger drive VDW 4230 at the job site in Malle, Belgium*



*Photo: Maximum use of space, construction of a secant pile wall directly in front of an existing wall using the VDW method.*

## Foundation of a cardboard production plant using SPD machines

**Borrpoolen Grundläggning AB carried out demanding foundation works using a total of seven SPD DT145 machines for an extension to the cardboard production factory in Grums, Sweden.**

Borrpoolen Grundläggning AB rents out their machines with or without an operator for projects throughout Sweden. They have a total of eleven machines from SPD in their machine portfolio.

For the expansion to the cardboard production factory in Grums, the necessary machinery for the foundation work was rented by the company NCC Infrastructure.

In addition to the seven SPD DT145 drilling rigs, two spinner units and rod handling manipulators from SPD were also in use on the project.

A hall for the modern cardboard production unit totalling 400 meters in length was constructed on concrete and drilled steel piles. The originally planned quantity of 12000 m of steel pipes with a diameter

of 323 mm for the foundation increased to 24000 m during the course of the construction period.

The increased need for steel piles was a result of the difficult soil conditions. The steel piles were drilled through different layers of gravel to a depth of 24 m using down the hole hammers. However due to the large number of machines the foundation works were completed within the planned time period.

One of the most modern cardboard production plants in the world needs a secure foundation so that it can produce 550000 t of packaging material annually at a maximum speed capacity of 60 km/h.

Christoffer Nordin, CEO Borrpoolen Grundläggning AB:

„We at Borrpoolen work hard to stay up to date and always be at the forefront when it comes to development and technology. Together with our supplier SPD Scandinavian Pile Driving AB, which delivers machines to us of a very high quality, we are the Nordic region's strongest supplier of equipment for drilling, piling and foundations.“



Photo: Foundation works in Grums (Sweden) for an extension of a paper mill with numerous SPD machines

## DELMAG Drill Rig RH 24/270

**The new RH 24/270 is a small conversion miracle. Using the appropriate conversion packages the flexible leader mast construction enables a relatively quick conversion from long to short leader mast.**

The RH 24/270 is available in a 4 or 5-part version. The 5-part leader mast construction enables a conversion from a maximum of 22,9m to a short leader mast configuration with a height of approximately 10,4m. In between, three other mast length versi-

ons can be implemented by using the appropriate conversion kits.

Because of its modular construction, and following a customer request, a special configuration was developed, which enables the transportation of



*Photo: DELMAG drill rig RH 24/270 during concreting, the contractor pipe was lowered into the borehole with the auxiliary winch*

the machine with a rotary head and Kelly bar still attached. The transport dimensions of this special version are 3750 mm in height, 17700 mm in length and 3000 mm in width.

Due to its flexibility in configuration, the RH 24/270 is suitable as a classic Kelly drilling rig and also adaptable for many other applications, such as soil mixing, CFA or VDW applications.

The machine is built on a base carrier which has 310 kW of engine power available and also has a telescopic undercarriage. It offers perfect stability, which is characterized above all by its great manoeuvrability. This allows work processes to be carried out a lot easier.

The RH 24/270 has a new style of rope tensioning device. With the DELMAG drill rigs, the crowd for the

**Project:** Local bypass Münchhausen, Wetter, Lahntal B62 and B252 (district Marburg-Biedenkopf, Germany)

**Construction Company:** J. Kukor Brunnenbau GmbH from 66333 Völklingen  
www.kukor.de

**Construction site:** Construction phase north near Treisbachau, construction of irritation walls especially for bats, birds and dragonflies

**Machine type:**  
DELMAG drill rig RH 24/270

**Procedure:**  
Kelly drilling

**Task:**  
Foundation for irritation wall with concrete piles: 80 piles, diameter 750 mm, depth 7 m

**Geology:**  
Backfilled soil, partly strata water

rotary head is delivered via a cable feed that moves the working attachment up and down on the leader mast. The ropes are exposed to extreme forces during the drilling process and lengthen over time. This can lead to premature wear of the crowd ropes if they are not re-tensioned on a regular basis. The rope tensioning can be corrected quickly and easily by combining the new rope tensioning device for the upper feed rope with the rope tensioning cylinder on the lower rope. If a rope exchange is nevertheless required, the new rope tensioning device simplifies the assembly and the setting process for the required rope installation and tension. This reduces down time and lowers maintenance costs.

The machine operators are very pleased with the cab interior arrangement and the ergonomic operating concept. The cabin offers an excellent view of the

drilling process and drilling axis and the winches are also clearly visible to the operator. The control via touch displays and joysticks have been extended to a radio remote control for the loading process. This makes the loading process far safer and easier to monitor.

The rotary head BT 270 with a nominal torque of 270 kNm is attached via a Docking-System and driven by radial piston motors with a very high degree of efficiency. The electronic stages of the automatic transmission are freely adjustable and can be switched without interrupting the drilling process.

The maximum spin off speed in third gear is 53 rpm. The new assembly not only has a positive effect on the performance, but also reduces the noise emissions of the rotary head. Also on the BT 270, special emphasis was placed on the ease of maintenance, the drive keys a high wear item on the rotary head can be exchanged from the outside, reducing down time and costs.

In the medium drilling performance range, the stable and powerful RH 24/270 in combination with the first-class ABI customer service is a valuable addition for every special civil engineering company.

*Photo: DELMAG drill rig RH 24/270, the contractor pipe was pulled out after concreting.*



## Imprint

### ABI Gruppe NEWS

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Publisher:

ABI Maschinenfabrik und Vertriebsgesellschaft mbH

Am Knüchel 4

63843 Niedernberg

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eMail: info@abi-gmbh.de

Design and print:

ABI Maschinenfabrik und Vertriebsgesellschaft mbH

