

# BETEK NEWS

Progress!



BETEKINTERNAL

## BETEK SUCCESSFUL AGAINST PRODUCT PIRATES

More on page 3



BETEKINTERNAL

### SQUEEZING OUT EVERY POSSIBILITY

Direct moulding using high-tech power

More on page 4



BETEKREPORT

### DRILLING DEEP TO REACH THE TOP

Special round shank cutter bits for foundation work

More on page 5



BETEKGLOBAL

### ROUND SHANK BIT FOR OIL EXTRACTION IS RECORD BREAKER

More on page 6



BETEKRESEARCH

### A HARD CASE TO CRACK...

In search of the ideal compound

More on page 7





## I EDITORIAL

Dear Reader,

This year is still only a few months old, but already long since dominated by the omnipresent financial crisis. Around the globe governments are introducing major economic stimulus packages to try to avert a slide into a deep recession. A core part of such economic stimuli is investment in infrastructure – at long last, dare I say?

If you consider that the traffic jams that are an everyday occurrence in Europe cause on their own economic losses of a good one percent of gross domestic product, then the money put into infrastructure projects is very well invested. Even more so if you bear in mind that freight transport by road is today eight times what it was at the start of the 1960s and that the global, complex flow of goods, including the international division of labour, is increasing rather than decreasing. The best logistics concepts in the world can do nothing to help this if they are thwarted by an inadequate road network. Governments thus now have an obligation to make the road network efficient again as the artery of life for our economy and the basis of our prosperity. It can, in fact, be put no more succinctly than by former German top manager Eberhard von Kuenheim: "The mobility of people and goods is not the consequence but the basis of our prosperity." The media and numerous TV discussions are currently giving the impression that there is a lot of talking going on but little being done. Yet those from business, politics and society who think and act in an entrepreneurial way want above all to do just one thing: to make progress! Here at Betek we will be playing our part in this with efficient and innovative tools and together with our partners getting things done and achieving progress – including in the construction of the road infrastructure.

Best regards,

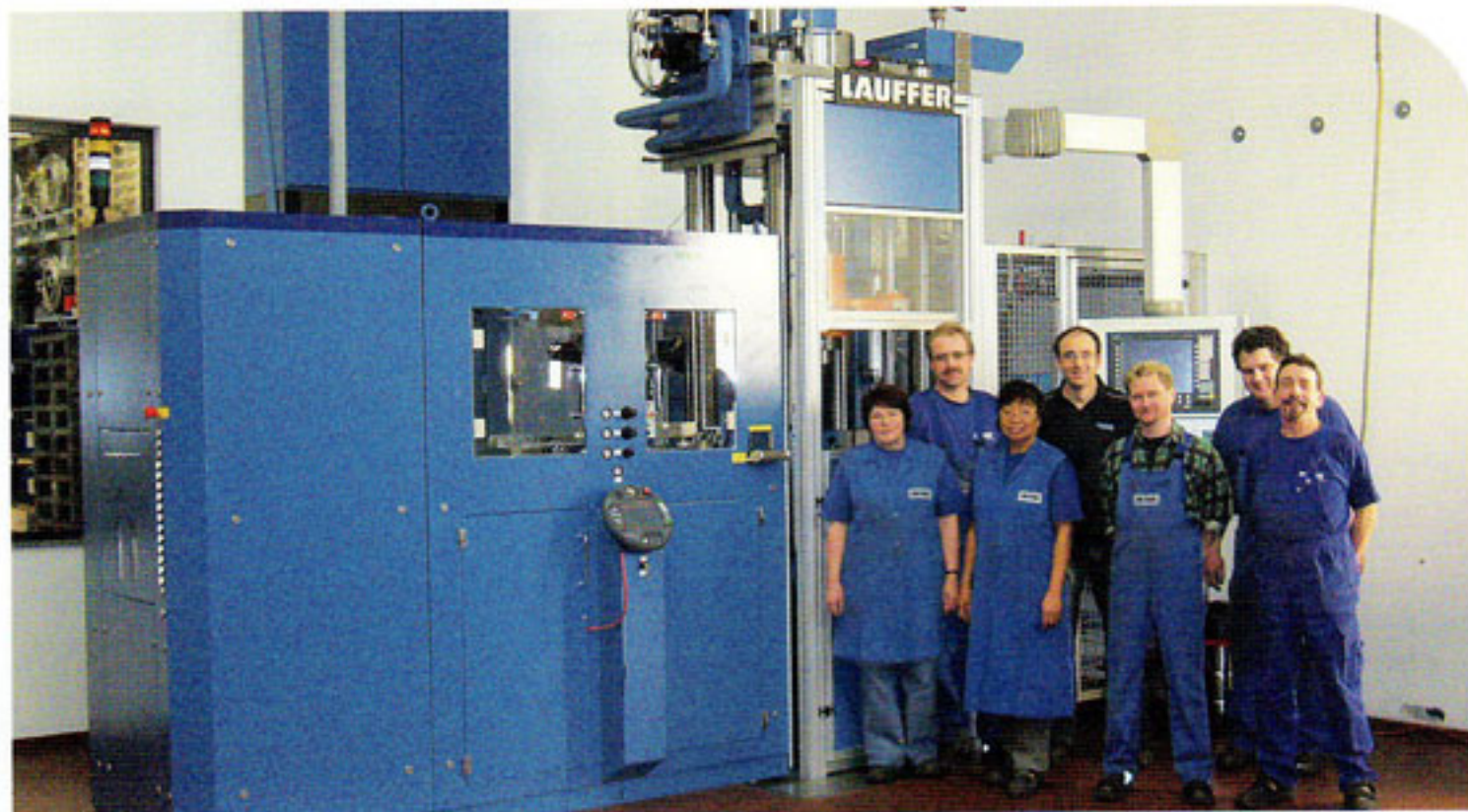
Yours,

Karl Kammerer

Managing Director, BETEK Bergbau- und Hartmetalltechnik  
Karl-Heinz Sirrion GmbH & Co. KG

## HIGH-TECH POWER

# SQUEEZING OUT EVERY POSSIBILITY



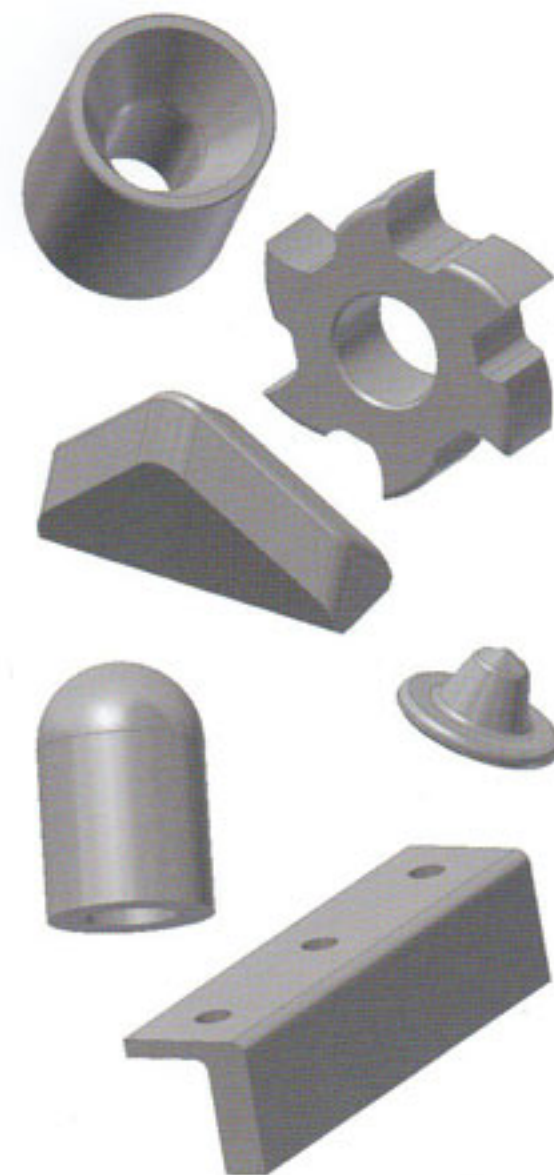
*'Nothing is impossible' – that's the philosophy of Jochen Kern and team, proud to be producing tungsten carbide parts by direct moulding.*

**"Nothing is impossible" – that is actually the advertising slogan used in Germany by a Japanese carmaker. However, when it comes to innovative tungsten carbide tools and especially their production, it also applies to Betek.**

Clients' demands for complex tungsten carbide shaped parts are increasing constantly. These demands can only be met in a cost-efficient manner if the parts are produced in a direct moulding process.

Using a new form of pressure moulding technology, Betek succeeds in satisfying such client demands.

Using CNC controlled axes and stamps, this new and innovative form of press moulding technology enables production to be performed in a fast, clean and economic manner. Betek has one eye here not only on innovative technology, but also on protecting workers' health. Great efforts are made in this regard too, with efficient vacuum techniques a typical feature of the production process, ensuring that powder particles are removed completely during the processing operation.



*Complex shaped tungsten carbide parts like these are manufactured using the new 'handling press'.*



## FORGERIES IN CHINA

# BETEK DEFENDS ITSELF AGAINST IDEAS THEFT

The audacity with which Chinese companies copy European businesses' products is incredible. Last autumn Betek came across several Chinese tool producers at the 'Bauma' trade fair in Shanghai who had breached Betek intellectual property rights with many of their exhibits. Betek took systematic and well-prepared action against the product pirates – with success: one Chinese exhibitor had to remove its cutting tool copies, complete with toolbox, from its stand.

*Shortly after the 'Bauma' trade fair opened in Shanghai, Chinese exhibitor 'Everpads Machinery Accessory' had to remove products from its stand, as Betek had successfully lodged a complaint.*



Betek management assistant Stefan Dettinger and Martin Lenz from partners Wirtgen GmbH discovered the copy of a Betek bit and toolbox on the stand of Chinese exhibitor 'Everpads Machinery Accessory'. Apart from that, not only were the products a copy, the illustrations in the catalogue and in the supposed patent documents also did not tally. They immediately reported this to the 'Intellectual property complaints office' that the show organisers had set up at the fair. Almost as expected a counter claim came in the following the day. In the absence of any legally valid patent documents, this was, however, quickly dismissed. There was thus nothing left for the Chinese exhibitor other than to remove the samples of the cutting tool and toolbox copied from Betek for the remainder of the show. Betek was assisted in Shanghai by an international law firm that specialises in, amongst other fields, product



piracy. According to a study produced by the VDMA (Association of German Plant and Machinery Manufacturers), the worldwide losses caused by such product copies is estimated to be up to 660 billion euros a year.

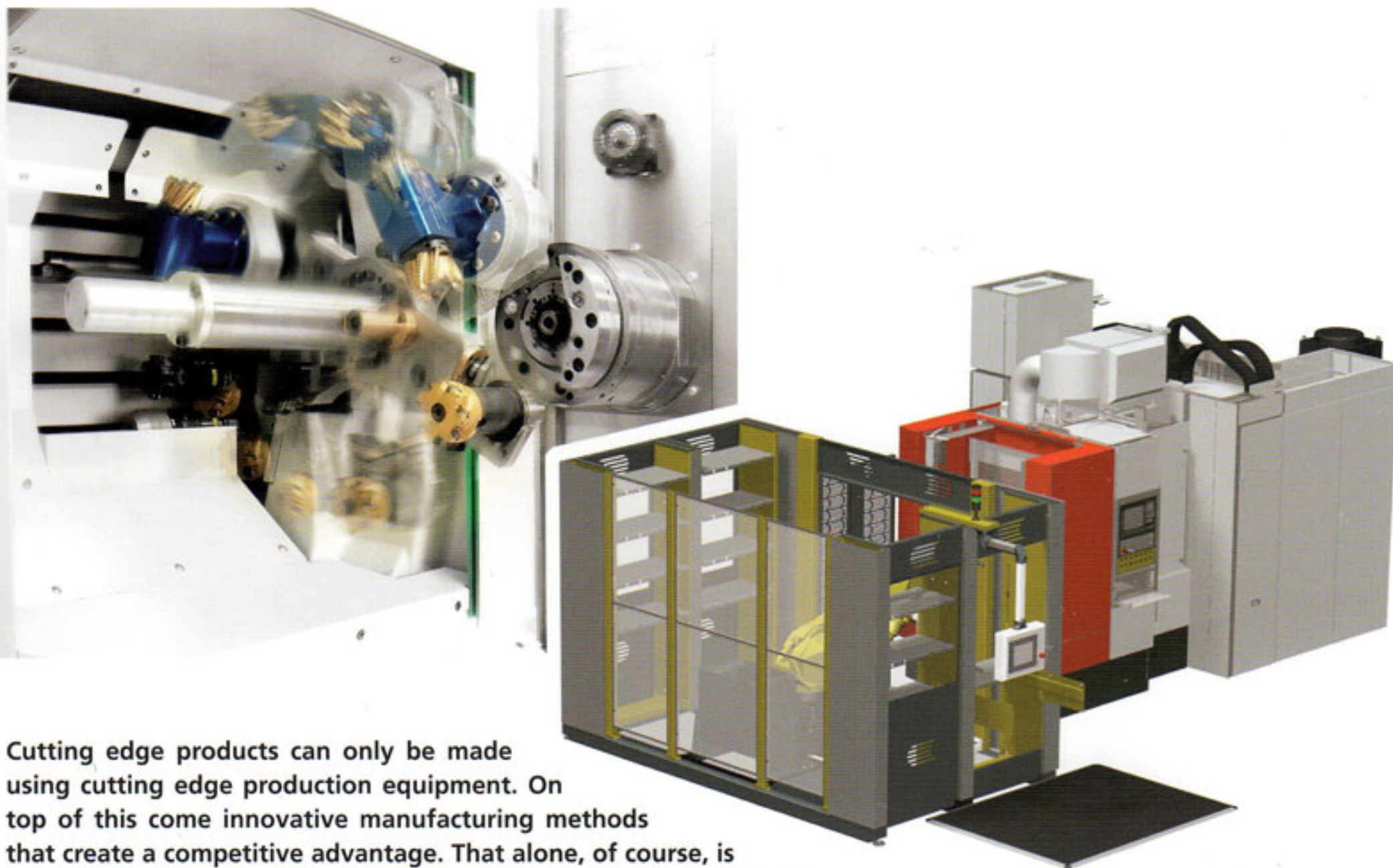
Karl Kammerer, Betek CEO: "We have registered a large number of patents that are globally protected. With high value products in particular the chances of getting justice in the event of patent violations are better than people assume. However, you have to be well prepared – many product pirates work on the premise that 'where there is no complainant, there is also no judge'. In this case our best form of defence was attack." Betek products were getting copied increasingly quickly and in ever-poorer quality, added Kammerer, who at the same time underlined the importance of Germany as a production site. "The enormous pressure on prices created by

foreign products is naturally a challenge for us. However, with our highly qualified and committed staff, our innovative and high value products and our excellent technical support we are well ahead of the rest. Those are success factors that are 'Made in Germany' or 'Made in Aichhalden' and are impossible to copy!"



PRODUCTION WITH LOW WAGE COSTS

# SOME WITH CLEVER MINDS, OTHERS WITH HEARTS OF STEEL



**Cutting edge products can only be made using cutting edge production equipment. On top of this come innovative manufacturing methods that create a competitive advantage. That alone, of course, is not enough: the right combination of trained workers and automation is one of the keys to economic success, which is often also measured in short production times and low wage costs.**

A part is played in the economic success of many manufacturing companies both by workers with clever minds and by those with 'hearts of steel' – meaning in the latter case industrial robots. In many areas of manufacturing robots provide valuable services. A 'worker made of steel and electronics' can, for instance, feed the horizontal processing centre with material and continuously mould stamped and forged parts without taking a break. Human workers thus have mind and hands free for other jobs. Visitors from all over the world who come to Betek in Aichhalden always take a close, admiring look at the automatic manufacturing operation, complete with its robots. Guests will in future find this manufacturing section in a new environment. The workforce – including robots – has moved into the toolmaking division's new building, which provides not only bright, well-lit facilities, but also vibration-free floors. The expensive machines run around the clock. If needs be, they do

not even come to a stop at weekends, which accommodates fast production and ultimately keeps wage costs low. Just like the machines, the humans too must work at a hundred percent, with 100% checks ensuring that the quality is always right.

*'Insatiable and never tired' – industrial robots work day and night and help to keep wage costs low. The new building housing the toolmaking operation provides ideal conditions both for the humans and the 'high-tech workers' made of steel and electronics. It is large, bright and full of light.*







## BESPOKE DRILL BIT

## DRILLING DEEP TO REACH THE TOP

It is not without good reason that Frankfurt am Main is often called 'Mainhattan'. If you look at the city's skyline, associations with the American 'Manhattan' are obvious. In a prime central location between the exhibition centre, main railway station and banking quarter, the foundations for a new skyscraper, Tower 185, are currently being prepared – creating in the process a particular challenge for the firms doing the work.

During the construction of 'Tower 185' a bunker from the Third Reich became a major challenge even for highly experienced foundation digging companies Max Bögl and Ed. Züblin AG. The bunker wall had to be ruptured and 36 piles bored through it. Using three drilling machines – each fitted as necessary with drill buckets, bore screws and casing shoes – the firms created overlapping pile walls going 18.3 metres down into the earth. In the process the drills ground through the thick, steel-reinforced concrete of the bunker wall. A high percentage of operating costs in foundation work goes on tools. It is therefore well worth it if these are particularly durable and resistant to wear. Even in the toughest conditions of use, such as drilling through this bunker wall, special tool systems fitted with tungsten carbide tips excel due to their robust strength, which is

achieved not least through the use of tungsten carbide of the highest quality grade.

Betek service engineer Thomas Neff followed the foundation work in Frankfurt with great interest – after all, Betek developed a special bit specifically for this task: the BKH81 round shank cutter bit, with which it was possible to achieve a significantly better tool life. Thomas Neff: "Outstanding and individually adapted tools are one thing. On top of that comes the fact that, with the knowledge we have from application techniques and from the experience that we have gained from close collaboration with users on building and excavation sites all over the world, we have such extensive know-how that it will be a long time before there's anything new anybody else can teach us."



When you see the steel-reinforced core you get a sense of the great strain put on the boring machine and drilling tools. In special foundation work the high durability and resistance to wear of Betek tools really pay off.

*Betek – a leading global manufacturer of tungsten carbide tipped tools – provides its customers not only with ingenious tools of the highest quality, but also with personal service and extensive know-how in application techniques.*





HIGHER PERFORMANCE

# WIRTGEN PLACES VALUE ON PERFECT CUTTING TOOL

As is the case with many applications, it is clear in surface mining too that special demands need special solutions. Success is then achieved above all if not only the product works really well, but also the partnership between toolmaker, machine manufacturer and user.



*Surface mining replaces traditional blasting and is used primarily for extraction of rock in opencast mines. Seen here is a limestone quarry in France.*

The miner glides slowly on the limestone bed and eats through the rock. Though it may appear leisurely, it is in fact an act of great force and involves 'surgical precision'. Specialists from Betek and Wirtgen performed a series of tests in a quarry in France in order to achieve even higher performance in surface mining. In doing so they exhausted every option.

It was only after the (2200 SM) miner had had two tons of extra weight added to it and Betek and partner Wirtgen had fine-tuned the cutting system and the tools being used that maximum performance was achieved for the machine as it worked on the stone. It was then possible to extract over 1,000 cubic metres of limestone in one 8-hour day. A gre-

at performance, to which Betek engineer Uli Krämer along with colleagues from partners Wirtgen had all contributed. Surface mining replaces the method of quarrying otherwise used, namely blasting, which not only causes noise, dust and ground vibrations, but also makes it impossible to mine the required material with any degree of precision. Selective extraction of the limestone, on the other hand, enables a higher proportion of the deposit to be mined. The machine used for this cost-efficient and environmentally friendly method in the test in France was Wirtgen's 2200 SM surface miner, fitted with Betek cutting tools.



*In the extraction of limestone for the cement industry the pebble size is precisely defined.*



*This is what the miner's milling drum looks like.*





## REDUCING WEAR

## ROUND SHANK BIT FOR OIL EXTRACTION IS RECORD BREAKER

The investigation and exploitation of unconventional sources of oil such as oil sands and oil shale is a matter occupying many industrial countries – all the more so as the oil price rises and conventional sources of oil dwindle. Technical advances and better and less expensive methods of extraction are turning unconventional sources of oil like these into exploitable deposits – even if in this regard we are still at the very early stage ...

There are deposits of oil sand all over the world, with the largest being in Venezuela and Canada. Oil sand deposits could make up around two thirds of global oil resources. In Canada there is thought to be oil sands under an area of over 140,000 square kilometres – an estimated one third of global oil deposits. Experts believe that the sands contain at least 175 billion barrels of crude bitumen that can be extracted using modern technology.

On average you need two tons of oil sand to produce one barrel (159 litres) of crude oil. The average cost of extracting the oil sand is just under 20 dollars a barrel. By the time it is converted into synthetic crude oil, the price climbs to around 40 dollars. As well

as sands, clays and water, oil sands consist of hydrocarbons, with the level of hydrocarbon content ranging up to twenty percent. At 12% and above it is deemed to be 'rich'. Discovering the deposits, though, is only half the job. It is only with suitable conveyor and extraction technology that mining it becomes interesting. When working oil sand, the breakers suffer extremely costly wear and tear caused by the clay and silicon elements that it contains. Betek – globally recognised as innovative consumable parts specialists – develops economic tool solutions for just such machines. The result in this case breaks all records: Betek provides for this task the largest and most expensive round shank cutter bit that the company has ever made!



*The largest and most expensive round shank cutter bit (shown compared with traditional bits) that Betek has ever made is being used in breakers for working oil sands.*



## A HARD CASE TO CRACK...

In search of the ideal compound

**In the research projects being carried out by Dr Wolfgang Strelsky, Head of R&D at Betek, finding a way to combine two different properties is at the very top of his list of objectives. The aim is to create a material that is as hard as diamond and as impact resistant as tungsten carbide.**

However, this task is going to be occupying the staff in the R&D department for a while yet. The greatest hurdle is combining these two hard substances, diamond and tungsten

carbide, with each other. The manufacturing technology to do this has still to be developed! However, Betek's business partners would benefit enormously from a material featuring the optimum combination of the two properties, 'hard' and 'impact resistant', as this would enable the service life of tools to be significantly improved. Research is continuing at full pace and the team from R&D is getting ever closer to the objective – once the technical issues are solved, the cost-effectiveness will then be assessed.



*Nothing is harder: a diamond drill for exploratory drilling. The objective of the research is to give such a drill not just hardness but also impact resistance.*





COMPANY GROUP  
**Simon**

## IN THE RIGHT PLACE AT THE RIGHT TIME

Utilising synergies



*The driverless forklift collects everything from the rack that the Simon Group companies need.*

**We only see how important a well thought out system of warehousing and transportation is when something in the logistics operation does not work. In the Simon Group, however, that is never the case. With its Central Logistics department, Karl Simon is unbeatable – something from which everyone benefits.**



*Frank Dresel and his logistics team do an excellent job and reliably ensure that materials in the production plant get replenished.*

In the Central Logistics department everything runs smoothly – thanks to Frank Dresel and his logistics team. "Supplying the right quantity of the right material in the right place at the right time in the right quality" – the task is just as complex as it sounds. As everywhere within the Simon Group, here too high tech plays a major role. Karl Simon's logistics operation is unbeatable and supplies all Simon companies, which thus gain space and time for their own actual work. Central Logistics thus, for example, delivers material to the production plant for Betek products just in time. Of course, the internal logistics operation is not the end of the story. The containers stored on the central logistics site full of goods for export provide a hint of the long distances travelled. Here too, the logistics chain naturally continues with the route to the customer – just in time, of course.

+++ WELCOME ON BOARD! +++ WELCOME TO AICHHALDEN! +++



**David Huber** from Schramberg joined the 'Central Services' team on 3<sup>rd</sup> November 2008. Mr Huber works in the Automation Technology section of the Electrical Engineering department. After training as a mechatronics engineer with Hansgrohe in Schiltach, he did a degree in mechanical engineering at Furtwangen Technical College, specialising in automation technology.



**Dieter Lambrecht** from Deißlingen joined the Simon Group on 1<sup>st</sup> September 2008 as Head of Quality Assurance. Mr Lambrecht is a graduate in mechanical engineering / production technology and a 1<sup>st</sup>/2<sup>nd</sup> party auditor to ISO/TS 16949:2002.

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