

**Putzmeister**

# post



Projects  
successfully  
mastered  
worldwide

Innovations  
at bauma

**Close to  
your  
business**



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# Close to your business

Groundbreaking machine technology and outstanding availability combined with an extensive sales network and first-rate service you can rely on – Putzmeister offers you the complete package.

We work closely alongside you and your business and play an active role in helping you achieve success.

## Welcome to bauma 2016

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**6** Brighton's new attraction i360



**14** The new M 47-5



**20** BSA 1409 D4 building a bridge in Slovakia



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## Brighton's new attraction i360 is based on a stable foundation

Text: Andrew Turner, Camfaud Concrete Pumps Ltd

Work is currently underway, on the seafront near the site of Brighton's historic West Pier, to build the Brighton i360, a visitor attraction which will be the world's first vertical cable car and is designed by the London Eye architects, Marks Barfield.

Once completed, the Brighton i360's tower will be 162 metres high and will carry visitors in a glass observation pod that will glide up slowly to 138 metres, making it Britain's highest observation tower outside London – taller even than the London Eye.

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## Putzmeister is close to our business

Andrew Turner, Area manager for the South Midlands at Camfaud Concrete Pumps Ltd:

„Camfaud Concrete Pumps is solely focussed on concrete pump hire. It is our only business and so we are reliant on all of our suppliers, most importantly our concrete pump suppliers, for the continuing success of our company. The majority of our pumps are from Putzmeister and so it is critical to us to maintain and strengthen our relationship with the company. We depend on all of the Putzmeister departments; Sales, Technical, Parts and Service to support us in developing and growing our business.“



## Concreting the basement

Visitors will have 360 degree panoramic views giving a new perspective of Brighton and Hove with its Regency squares, Grade II listed Victorian pier, seafront and Royal Pavilion. On a clear day, they will be able to see for more than 40 km: across the Seven Sisters and Beachy Head to Bexhill-on-Sea in the east, Chichester in the west, over the South Downs National Park to the north and far out into the English Channel to the south.

The key contractors involved in the construction of the i360 are the Dutch company Hollandia, who are fabricating and will erect the steel tower, the French company Poma, who are manufacturing the visitors' pod and local firm J.T. Mackley & Co Ltd who are carrying out the civil engineering works on site.

Mackley, based in Small Dole, West Sussex and founded in 1927, have extensive experience in major infrastructure projects and have made a speciality of delivering projects at coastal locations.

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**Low-emissions machines are required: All of Putzmeister's concrete pumps are mounted on highly sophisticated chassis that comply with Euro 6.**







## Concreting the basement

The first task that faced Mackley as they started the project was to divert a large sewer and power cables that ran through the site. Then the site had to be piled, a task subcontracted to Simplex Westpile who installed 43 bearing piles and 252 secant wall piles.

The bearing piles are external to the tower and have been constructed to support a single storey reinforced concrete building. This building will house the ticket office, a large beach-side cafe/brasserie, an exhibition space, a shop, a children's soft play area and a dedicated hospitality suite with rooms available for private events, conferences and weddings.

The secant wall piles were installed to provide a retaining wall to allow the excavation of a basement to house the main foundation for the tower. The foundation is a 24 m x 24 m x 3 m deep, reinforced concrete base with a ring of bolts cast into the concrete to support the main tower. This base is not supported on any piles, rather it is supported directly on the chalk. The piles only serve as a retaining wall; the load from the tower is not in any way transferred into the piles.

The base was poured in two layers, the first approximately 2 m deep and the second 1 m deep. The first pour, of approximately 1,200 m<sup>3</sup> concrete was carried out on a Saturday at the end of





May 2015. Due to the high volume of concrete to be placed, Mackley chose to use two local ready mixed concrete suppliers; Hanson, who supplied from their plant at Shoreham Port, Portslade, and Dudman, who supplied from Southwick.

The concrete mix supplied by both companies was a C28/35 mix with a minimum cement content of 320 kg/m<sup>3</sup>, water cement ratio of 0.55 and consistence class of S3.

There was some concern that the mass of concrete would generate excessive heat and would be

susceptible to thermal cracking. To minimise this risk, a blended cement (50 % Portland cement and 50 % Ground Granular Blast-furnace Slag) was chosen and a controlled delivery rate of between 100 and 120 m<sup>3</sup> per hour was planned.

Pumps for the first base pour were hired from Camfaud Concrete Pumps Ltd. Four Putzmeister truck-mounted pumps were supplied on the day; three working and one on standby: 1 x M 47-5, 1 x M 38-5 and 2 x M 36-4 boom pumps. The standby pump operator acted as the relief operator, allowing each

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driver to get regular breaks in turn during the day.

All of the pumps supplied were high volume models with a theoretical output of up to 160 m<sup>3</sup>/h. Though this output was not required, the large cylinder, slow stroking design of the pumps ensured that there was minimal movement in the boom, making for an easier day for the hose-man.

In keeping with the i360 project's ethos of sustainability, the pumps supplied were all mounted on the very latest, low emissions, Mercedes Benz, Euro 6 truck chassis. In addition, the M 38-5 pump supplied uses biodegradable hydraulic oil to further enhance its green credentials.

The placing boom of each pump was equipped with a pneumatic, end hose shut-off valve to prevent concrete from falling from the boom while being repositioned. This prevented material spilling onto finished concrete but, more importantly, created a safer working environment for the concreting gang.

The pumps arrived on site at 05.00 and were set up in time for the first load of concrete which arrived on site promptly at 06.00. With Mackley's logistics team coordinating the traffic, Hanson and Dudman achieved the desired delivery rate and the pour was completed in a fraction over 12 hours. Once the pour had been completed, the pumps were cleaned out, derigged and left site to return to their depots.

The consensus, from all those taking part, was that the pour had been a great success, going exactly to the plan that had been developed over the previous months. And thousands of locals, day trippers and holidaymakers strolling along the seafront that day seemed intrigued by the activity with many stopping to watch for a while and take photographs. In addition, hundreds more were able to watch online via the i360 webcam and participated via social media, excited as the project completed this major milestone. ■





# British Airways i360

In November 2015, main sponsor British Airways lent its name to what had been provisionally known as the Brighton i360.

In February 2016, the spectacular new landmark on the Sussex coast earned itself a place in the Guinness Book of Records as the world's thinnest tower.

And to cement its reputation as a bona fide record breaker, it will also feature the world's first vertical cable car, which lifts the glass pod to 138 m above the ground.

The British Airways i360 was designed by the same architects responsible for the famous London Eye.

The tower is scheduled to open in the summer of 2016.



# Less weight, more performance: The new BSF 47-5

The BSF 47-5 features a 5-arm placing boom mounted on a 4-axle chassis. With a gross weight of less than 32 tons, it is one of the most lightweight machines in its class.

The newly designed 47-5 from Putzmeister raises the bar in terms of the weight, operation, safety and efficiency of concrete pumps. It weighs less than 32 tons including sufficient reserves for payload, water, fuel and other functional fluids.

## Economical and safe

The 47-5 is extremely economical to run, as the operating costs of the machine have been reduced across the board. The individual components of the machine are highly resistant to wear. A high proportion of the components are completely maintenance-free. Overall, the machine achieves an exceptionally long service life and an attractive resale value. This has enabled the quantity of costly functional fluids such as hydraulic fluid used to be significantly reduced. The operating costs of the 47-5 remain extremely low throughout the entire service life of the machine.

In terms of safety, the 47-5 is a clear winner: All current standards have been taken into account in full. >>





### Optimised design

Modern design and calculation principles have enabled the structure of the 47-5 to be optimised on all levels. The extremely flexible 5-arm boom with the roll-Z fold system has excellent slip characteristics, can be deployed quickly and makes optimal use of the available space. Dead space is largely avoided. This means that the machine has a wide range of applications and can be used flexibly on any construction site. The smooth behaviour of the arm further optimises the application

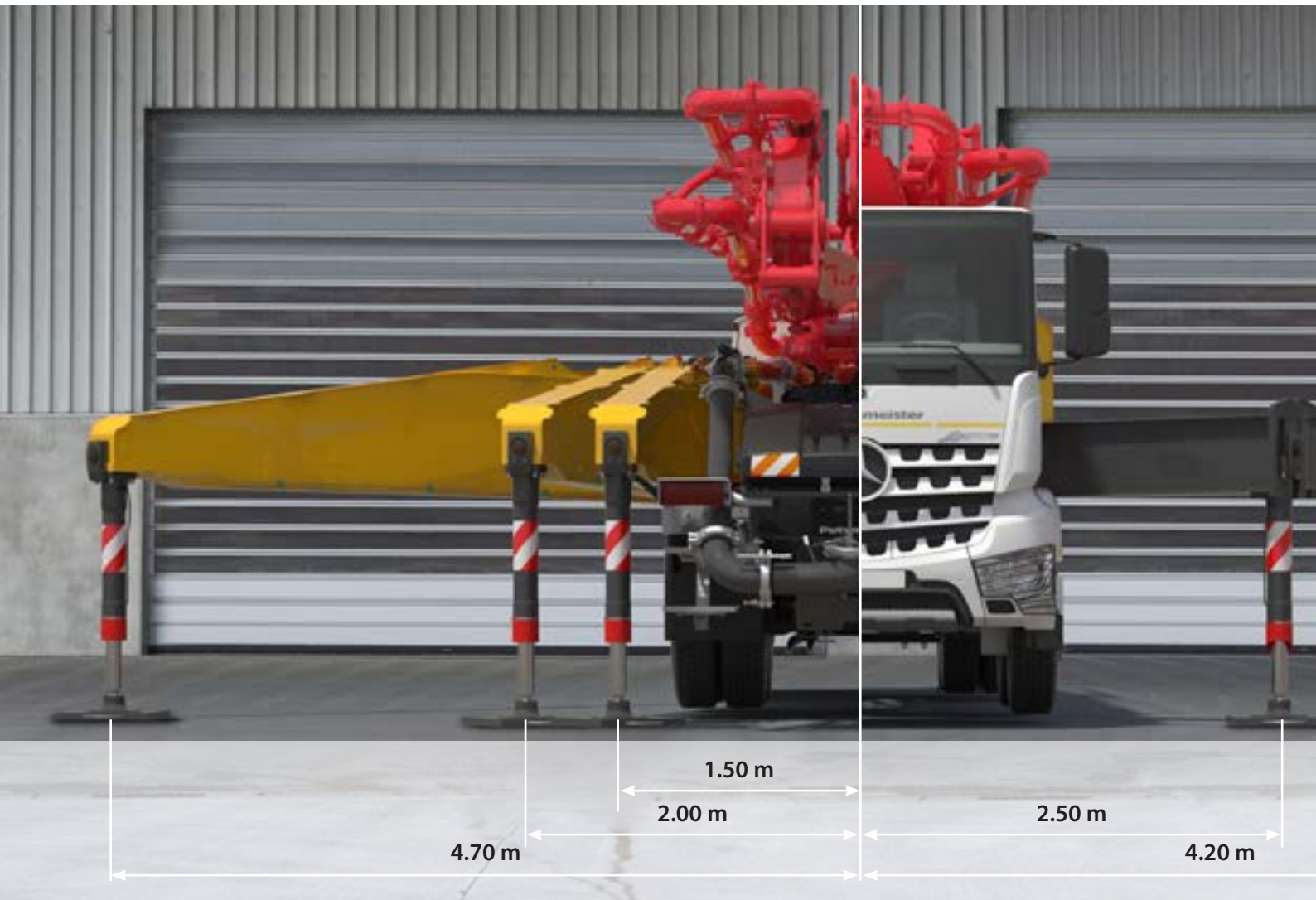
of the machine. Vibrations in the boom remain at a low level even at high delivery rates. These benefits require intelligent laying of the delivery line and a balanced progression of stiffness in the steel structure. This ensures that concrete distribution is safer and more efficient.

As an option, the concrete pump can be set up with even smaller space requirements thanks to a new, flexible support. The sophisticated technology used in this support enables the telescopic front support legs to be adjusted

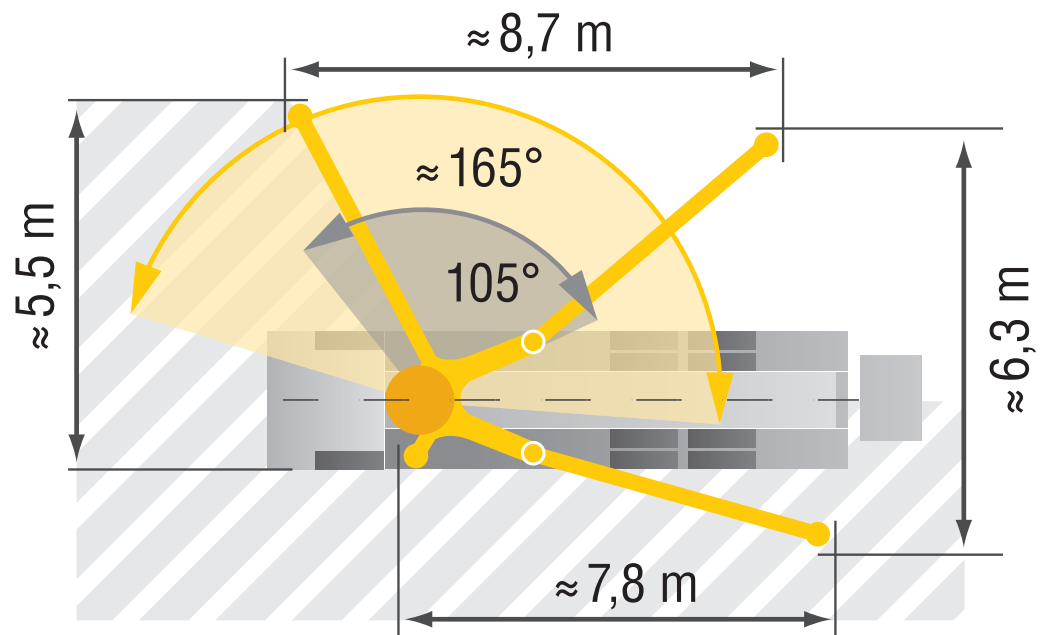
to any length. This enables operation on construction sites with extremely limited space available.

Equipped with ESC (Ergonic® Setup Control), the range of applications and the working radius of the new 47-5 are significantly increased. The operator is supported with the safe and flexible machine setup. This effect becomes very clear in particular on long, strenuous days at work as concentration levels diminish. A special feature with Putzmeister is that the machine operator

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## Placing concrete on the safe side with ESC

Telescopic support legs that can be adjusted to pre-defined support position prove their value, particularly where space is extremely limited. ESC (Ergonic® Setup Control), the safety system from Putzmeister, ensures absolute control, enabling you to work flexibly in accordance with the EN 12001:2012 standard.



**Three defined support positions for the rear swinging support legs**  
 Dimensions from the centre of the chassis: 1.50 m; 2.00 m; 4.70 m  
**Two defined support positions for the front telescopic support legs**  
 Dimensions from the centre of the chassis: 2.50 m; 4.20 m  
 Numerous flexible support configurations are possible

is provided with an image of the working area live on the display of the remote control, i.e. directly at the work place. Both the safety of the persons at the work site and of the machine are significantly increased.

The pump unit on the 47-5 has been comprehensively reworked and equipped with a significantly improved S transfer tube bearing. A chrome-plated delivery cylinder and an automatic centralised lubrication system for the entire pump are standard features. The pump has an output of up to 160 m<sup>3</sup>/h.

#### **New base structure offers greater flexibility and plenty of space**

The base structure of the 47-5 is designed in accordance with the new I-frame concept. All parts are screwed in, enabling them to be replaced flexibly and at low cost. The wide flatbed with

anti-slip surface provides sufficient space for attaching hoses and pipes. It also offers sufficient storage space for small and large accessories. The 47-5 is designed for ease of maintenance and enables easy access from all sides.

#### **Ergonic® 2.0: Customizable control system**

Concrete pump operators can conveniently and precisely control the placing boom via the joystick using the computer-based Ergonic® Boom Control system (EBC). This means that concrete pump operators are free to concentrate more on their surroundings and the movement of the end hose. Putzmeister presents the new Ergonic® 2.0 control system generation at bauma. The fully electronic control system of the EPS (Ergonic® Pump System) pump is provided as standard in all BSF machines. It continuously regulates the

operation of the concrete pump and the truck engine, reducing the effort required by the operator. The pump operator can display important information about the machine centrally on the Ergonic® Graphic Display on the radio remote control. The newly developed colour display on the 47-5 and the optimised menu structure enable data, parameter settings and error management to be read easily.

More than 50 years of experience have gone into the development of the Putzmeister concrete pumps. Constant innovations have opened up unprecedented possibilities for pumping and conveying concrete. This progress is based on the tried-and-tested and robust concrete pumps from Putzmeister, which are constantly being improved and adapted to meet modern requirements. ■

**All possible displays and settings can be read optimally on the large, high-resolution colour display – EGD-RC (Ergonic® Graphic Display Remote Control).**



The wide flatbed with anti-slip surface offers a great deal of freedom of movement when working as well as simultaneously providing storage space.



Best possible access to all important components: Makes maintenance and service work easier, saves time and money, and reduces stress.



# The best solution when it comes to performance and efficiency: Stationary concrete pump from Putzmeister

**Aichtal/Čierne (Slovakia) – Improving Slovakian infrastructure is crucial if the country is to achieve its desired economic growth for the coming decades. The first step towards this target will be to bridge the gaps in the main D3 route between Bratislava and Katowice and connect the highway to neighbouring Poland.**

**This calls for modern street and bridge building methods, made possible with the collaboration of VAHOSTAV (Slovakia), Putzmeister (Germany) and Kolex (Slovakia).**

The construction of the D3 highway stretching between Žilina and the Polish border will be a

challenging project, requiring the construction of two tunnels and 11 bridges over a space of 11 km. VAHOSTAV, a company based in Bratislava, is one of four contractors that have been hired to oversee the building of this section and the construction of the bridges and tunnels. VAHOSTAV is also in charge of producing and pouring the concrete for the Svrčinovec-Skalité bridge. >>



The Putzmeister BSA is demonstrating its strengths in northern Slovakia and will soon be set to work on several bridge pillars for quick and easy concrete placement.

The imposing bridge towers over the small town of Čierne.



### Time is money – even when it comes to building roads

Finding the ideal overall solution for coordinating the machines, concrete spreaders and accessories is important for any project. Process-oriented planning is therefore a matter of course for Putzmeister engineers – another reason why the Slovakian company VAHOSTAV is happy to trust our Swabian expertise and work with our BSA stationary concrete pumps.

The task for the Slovakian motorway bridge project will be to produce six bridge pillars at differing heights: The shorter pillars will be concreted using the Putzmeister M 52-5 and M 42-5 truck-mounted concrete pumps, while a BSA 1409 D4 will be used for the pillars with heights between 60 m and 85 m.

### Achieving the right balance of productivity and efficiency

For this project, VAHOSTAV needed a very cost-effective solution that could be implemented despite being under considerable time pressure. Construction of parts of the other sections of the highway had started up to 9 months beforehand, so catching up with this progress was imperative. The solutions were developed by Putzmeister project engineer Steffen Kimmerle and VAHOSTAV in intensive discussions. An alternative to the crane bucket had to be found, as it was far too slow for the building company with a cycle of around 13 minutes. The solution came

in the form of the BSA 1409 D4 stationary concrete pump from Putzmeister, used in combination with two RV 10 rotary distributors – an ideal concept from an economic and technical standpoint, while also taking the time factor into account.

### Always in perfect balance – with the BSA 1409 D4

Concreting takes place every 3 days during the working cycle, during which time a stationary

concrete pump can work on several pillars. For this reason, a BSA 1409 D4 with GVH a 2/2 hydraulic gate valve will be used on this Slovakian bridge. It was possible to create an ideal attachment for the conveyor line (SK125/5.5‘) using pipeline holders, which have not registered any damage despite being subject to high pressure. The effective output of around 15 m<sup>3</sup>/h for this operation is far below the performance limit of the pump, but it is no longer possible to place concrete



in large quantities on this site. The pump places approximately 80 m<sup>3</sup> of concrete in the chosen grades (C45/55 – XC4, XD3, XF2 with a grain size of 0.16 mm) per road segment (box girder), constantly alternating between 5 m<sup>3</sup> on the left-hand side and 5 m<sup>3</sup> on the right-hand side to maintain the balance of the pillars. A diversion valve DVH 5/2 and 2 rotary distributors RV 10 takes over the cement spreading in the box girders for the lanes and pylons.

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Steffen Kimmerle (right-hand side) from Putzmeister Concrete Pumps, and his contact at VAHOSTAV, Peter Večerek (left-hand side), have developed the best solution for concrete placement on location from an application and commercial point of view.



The concrete is placed in a dizzying height by a diversion valve, alternating between left and right so that the balance of the pillars will not be disturbed.

Meanwhile, for the parts of this job where the BSA will be operating at a delivery height of 85 m, it will be operated piston side, as this enables higher concrete pressures to be achieved. The BSA can also be operated rod side (leading to higher outputs with lower concrete pressures) by instead connecting it directly to the job site, ensuring that its application can always be quickly and flexibly adjusted to suit local conditions.

### The future is on track

The SO 244-00 bridge on the new four-lane motorway in northern Slovakia is on sched-

ule and is planned to be completed in November 2016. If all contractors work as reliably as VAHOSTAV with their partners, e.g. Putzmeister Concrete Pumps from Aichtal, Germany and the Slovakian Putzmeister distributor Kolex s.r.o, then there will be nothing standing in the way of the final opening of the approx. 16 km long section in 2019. This will make life considerably easier for inhabitants of the small town of Čierne. As the small town and its neighbouring communities currently still have to deal with constant traffic moving towards Katowice in Poland day and night, the residents are delighted about this invest-

ment surge from the European Union. This boost in economic development will be much appreciated.

### The BSA 1409 D4 at a glance

The particular strengths of this reliable stationary all-round concrete pump from the 1400 series lie in the medium performance range, whether for high-rise pumping, tunnel concreting or pole filling. Its individual components such as engine, piston pump with free-flow hydraulics, S transfer tube and the EPS (Ergonic® Pump System) computer-aided control system work in perfect harmony to ensure the

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## Close to your business in Slovakia

KOLEX, s. r. o. is Putzmeister's representative in the Slovak Republic. KOLEX has been active on the market as a distributor of construction machines since 1993. The work of the company primarily involves the sale and service of Putzmeister concrete pumps, tunnel technology and truck mixers. KOLEX additionally offers used machines and personally collects machines for resale. Project-specific rental of Putzmeister equipment is another mainstay of the business.

KOLEX is regarded as a stable and reliable partner in the Slovakian market, both by large construction companies and smaller construction firms.

**A good partnership for over 20 years: Miroslav Majba (left-hand side) and André Pitz (right-hand side), Putzmeister Sales Director for Eastern Europe**



Miroslav Majba, the Managing Director of KOLEX, discusses himself and his team:

**„Our goal is to constantly improve the quality of the services we offer. Our highest priority is providing an individual service to customers and understanding their needs. Together with the excellent products produced by Putzmeister, this is a clear advantage for us over the competition.“**



The gate valve is hydraulically driven and controlled by the stationary pump

highest possible pump output and maximum smoothness:

- Higher output of 94 m<sup>3</sup>/h at 106 bar concrete pressure
- Hydraulic control over EPS FFH: Lower oil volume, lower service costs (fewer oil changes), environmentally friendly
- Minimal susceptibility to corrosion, improved durability and fewer uncontrolled motions (less wear) with new, one-part C-frame design
- User-friendly operation from a single side thanks to clear control panel layout

- Agitator safety shutdown via RFID (Radio Frequency Identification)
- Central lubrication of hopper, manual or automatic (optional) for reduced daily maintenance tasks
- Reduced service costs thanks to standard components, fewer operating materials and improved accessibility
- Comprehensive, practical standard equipment configuration and a functional range of accessories ensure flexible application options and a high level of utilisation of the BSA 1409 D4

### The goal: Cleaner air

The D4 series is here with the latest engine technology, equipped with a diesel particle filter and catalytic converter, therefore precisely conforming to the emissions stage Tier 4 final, which have been in place for Europe and the USA for nearly 24 months.

The current guideline 97/68/EG aims to reduce nitrogen oxide and particle emissions by 90 % in the long term and contribute to improving air quality with the current limits. ■

**VÁHOSTAV-SK, a.s.**

VAHOSTAV – SK, a.s boasts a tradition spanning more than 50 years, and is of the three largest construction companies in the Slovak Republic. VÁHOSTAV is primarily active in transport infrastructure construction for roads and railways and in the area of industry construction, such as industrial parks or factories. One of VAHOSTAV’s current building projects is the construction of the bridge and lanes for the D3 Svrčinovec – Skalité motorway section.



The S0 244-00 bridge near Čierne is one of the highest in Slovakia. It features nine segments and a length of 592 m, spanning a deep valley over 80 m high.

The Slovakian Putzmeister distributor KOLEX is a partner of VAHOSTAV for almost 25 years and was the clear choice for this project, providing an expert concrete technology solution.



# PUMI® 25-4/28-4 NEW Generation

Putzmeister presents the next generation of its tried and proven truck mixer concrete pumps: the PUMI® 25-4 and the 28-4 NEW Generation. The most important advancements include the unique stepless monitored support, the 4-arm distributing boom, the new S transfer tube pump, the Ergonic® 2.0 control and technologies for reduced operating costs and exhaust and noise emissions.

The PUMI® 25-4 and the 28-4 NEW Generation are causing a stir with numerous innovations. The stepless monitored support, which offers incredible flexibility on constricted sites in particular, is an absolute novelty. Just like the 4-arm placing boom with optimised slip characteristics and maximum working range.

Easier and safer operation, thanks not least to the extensive lighting concept and the new computer-assisted Ergonic® 2.0 control. The newly developed S transfer tube piston pump with large hopper, ideal accessibility and optimised performance data was developed specifically for PUMI® applications.

In order to counteract wear, Putzmeister has further refined the design of its machines. The torsion-resistant integral frame and shape-optimised mixer drum ensure a consistent axle load

distribution, preserving the machine over the long term and keeping operating costs low. The new PUMI®s are proving to be eco-friendly and economic thanks to lower operating fluid consumption and reduced exhaust and noise emissions.

As usual, the PUMI® 25-4 and PUMI® 28-4 NEW Generation are available with either piston or rotor pump.

## **Innovative stepless monitored support**

The stepless monitored support allows a flexible and safe machine setup. The ESC (Ergonic® Setup Control), Putzmeister safety system, guarantees permanent control at all times through the interaction between support, boom movements and pump function. In addition to the full support, the machine can also be setup with one side support.

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#### 4-arm placing boom with 125 mm delivery line diameter

The 4-arm placing boom with Z-fold offers optimised slip characteristics. The perfected kinematics enlarges the spatial working range and prevents "dead space". This increases the effectively attainable operating reach. A 125 mm diameter delivery line supplies the required amount of concrete.

The direct response characteristics of the boom control, the minimised boom vibrations, the arrangement of the delivery lines and the rigidity of the steel structure guarantee extremely precise concrete placement.

#### Operation and service – simple and safe

The PUMI® 25-4 and the 28-4 NEW Generation are the first truck mixer concrete pumps to be fitted with the Ergonic® 2.0 control. An operating concept developed specifically for the machines makes operation of new PUMI®s intuitive and hence very simple. The machine support is controlled by the Ergonic® Setup Control (ESC) safety system. The support ranges are displayed to the operator, thereby minimising operating errors.

Other operator-friendly details, such as the new extensive light concept for illuminating the >>



**The 4-arm placing boom with Z-folding system offers optimised slip characteristics and maximum reach, and can be operated most precisely.**





The unique stepless monitored support offers a large operating range and a high level of safety even in confined setup conditions.



Thanks to a powerful hydraulic pump and a new filter concept, the new PUMI® Generation needs less hydraulic oil and pumps at a lower engine speed. The result is a lower diesel and oil requirement.



The new operating concept employed for the PUMI® is based on the tried and proven Ergonic® 2.0. A control system which is already used successfully in mobile concrete pumps (M 38). The clear information flow, including the graphic display of the working ranges, simplifies operation.

operating positions and the support ranges, allow work to be completed more conveniently and faster. The new models also offer extensive equipment for active support during use and afterwards.

#### **Innovative design – Made by Putzmeister**

The latest generation models are recognisable even by their altered appearance. The shape-optimised mixer drum aids optimised axle load distribution. Additionally, the torsion-resistant integral frame ensures force is optimally transferred from boom to frame, from where it is conducted directly into the stabilisers. The incredibly stability and minimum movements during the pumping operation minimise wear and hence the associated costs.

The S transfer tube piston pump, designed specifically for the new PUMI@s, is another innovative development. A large hopper, optimised accessibility to the water box and top performance data ensure a concrete pump that is ideally suited to the new PUMI@s.

#### **Eco-friendliness pays off**

Lower exhaust and noise emissions, as well as reduced diesel and hydraulic oil consumption are easy on the budget and on the environment. This is made possible by a new drive concept and larger hydraulic pump. So the machine operates at a lower engine speed while the pump is operating. The new filter concept, which significantly reduces the number of oil changes, is also eco-friendly. ■







The torsion-resistant, integral frame reduces wear, cuts costs, and ensures stability, especially during the pumping operation. Ideal force distribution from boom to frame and into the support legs.

All benefits at a glance:

**PUMI**

- **More flexibility with an innovative stepless monitored support:** Extremely compact and safe with ESC (Ergonic® Setup Control)
- **4-arm placing boom** with optimised slip characteristics and most precise handling
- **Safe operation with new lighting concept** for improved illumination of the control points and setup locations
- **Intuitive, simple operation via Ergonic® 2.0®** with numerous convenience functions for efficient work
- **Maximum service life** thanks to torsion-resistant, integral frame and optimised mixing drum shape for the ideal axle load distribution
- New optimised hydraulic system **conserves resources and protects the environment**
- Maintenance-free components, numerous Putzmeister standard components and optimised access **minimise maintenance and service costs**
- **Wear-resistant delivery lines** rated for the load
- **Rugged mechanical construction of all core components** designed for continuous operation
- **Mixer drum from high-strength special steel**, extremely wear-resistant over maximum service life
- **Pumps to suit every requirement (S, Q, CS):** Rotor pump or piston pump, longitudinal or transverse mounting
- **Expert service**, ensuring maximum machine availability

The new lighting concept for illuminating the operating points and the support ranges offers not only comfort, but also more safety around the machine.

# Putzmeister truck mixer with new control system: Ergonic® Mixer Control

All truck mixers that are produced by Intermix, a subsidiary of Putzmeister based in the Bavarian municipality of Heimertingen, will be available to purchase with the new Ergonic® Mixer Control (EMC) system as of bauma 2016. The Ergonic® Mixer Control system is part of the Ergonic® range of control systems from Putzmei-

ster, which the company has been using in all of its concrete pumps for almost 15 years now.

**Robust hardware = robust system**

The EMC system employs robust and reliable components, such as the sensor, fitted on every

concrete pump that controls the switching of the S transfer tube up to 32 times a minute.

The sturdy keypad is resistant to sunlight and has been fitted in an ergonomic position on the rear of the machine to protect it against regular cleaning using a high-pressure cleaner. The driver even



# ergonic<sup>®</sup> inside

has the option of operating the drum using an operating element integrated into the driver's cab or a radio remote control. In addition to control using four pre-programmed diesel engine speeds, the drum is now also controlled by an EOC (Ergonic® Output Control) system. EOC helps to ensure that the truck mixer operates with high fuel efficiency by automatically changing the engine speed to the optimum setting with the lowest possible diesel consumption, wear and noise. Just like Putzmeister PUMI® truck mixer concrete pumps, Putzmeister truck mixers now also come with a fully automatic cleaning program. This cleans the drum using a small amount of water and can be activated at the touch of a button after draining the mixer drum. Constant Speed Drive (CSD) ensures that the mixer drum rotates at a steady speed irrespective of how fast the diesel engine is running.

The EMC truck mixer control system is available in two different configurations, with the mixer drive being operated either electronically or mechanically via a bowden cable. Both designs meet all safety standards that are currently in force.

## Facilitating planning by improving reliability

The EMC control system determines the speed at which the mixer drum is discharging and transmits this information to standardised interfaces via CAN bus. Truck mixers that feature an integrated fleet management system enable controllers at the mixing plant to not only follow the progress of the truck mixer via GPS but also more accurately predict when the truck mixer will be ready for reuse, which then enables them to plan new journeys. ■



Above: The sturdy keypad has been fitted in an ergonomic position on the rear of the machine

Below: Operating element in the driver's cab (as an option)



## The small, light radio remote control (as an option)



# Solutions start with suggestions

We have provided three examples here to help demonstrate how we create detailed solutions to make your day-to-day work easier, safer and more efficient.

We are close to your business.  
We understand you and your work.

## Example 1

# More safety: Hydraulic folding hose magazine that allows for safe operation

- Safe operation thanks to easy-to-access locking lever
- Eliminates the need for arduous work underneath the flatbed or in the hazardous area



1 The locking lever is vertical: The upper hose magazine is securely locked.

2 The locking lever is pushed down: The hose magazine folds down hydraulically.

3 Ready for use: The magazine is ready and at a convenient height for inserting hoses.



Example 2

# More perspective: The 360° camera displays everything happening around the truck



- No blind spots – obscured areas and persons behind or along-side the machine can be seen
- Prevents accidents

Example 3

# More light: Optimal lighting for working areas



- Improved safety for personnel on the construction site
- Prevents collisions with other vehicles
- Assists the machine operator by ensuring that operating elements are ideally lit



# Concrete at the Cathedral

Dating back to 1892, New York City's historic Cathedral of St. John the Divine is the fourth largest Christian church in the world. The massive, gothic-style building is a Manhattan landmark that stands, along with its surrounding gardens and buildings, on an 4.6 ha campus.

With the help of three Putzmeister placing booms and columns, two new 15-story apartment towers have been constructed on the campus, adding 430 new residences to the bustling neighbourhood. Known as Enclave at the Cathedral (Enclave), the housing project actually touches the church at one point and is located just





12 m away from it at other portions of the project, making its design and construction especially challenging.

The project, being developed by The Brodsky Organization, was divided into two towers to allow for views of and access to the cathedral. The façade is composed of a series of architectural concrete columns and different shaped cast-in-place structural concrete ribs, derived from the transformation of the cathedral's buttresses.

General contractor for Enclave, T.G. Nickel & Associates LLC (T.G. Nickel), enlisted the expertise of Casino Development Group, Inc. (Casino) to construct the concrete superstructure, including pouring of all columns, walls, beams, and slabs. Casino started work on the project in Fall 2014.

“Given our past experience working with Casino, we knew they were the right partner for a job of this size and complexity,” said Richard Connors, executive project manager for T.G. Nickel. “They are an extremely reliable, professional company.”

#### Limited space

In addition to the limited space due to the project's proximity to the historic cathedral, crews faced multiple other significant logistical challenges. The construction site is located directly across the street from Mount Sinai St. Luke's emergency room entrance, thus access and vehicle traffic were extremely restricted and crane placement was not an option. For these reasons, Casino decided the best strategy for concrete placement was to invest in three new Putzmeister RS 850 tubular column placing systems

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and three new Putzmeister placing booms, including two MX 24-4's and a MX 28-4. They also utilised a VS 100 HP truck-mounted line pump, which was owned by SNA Concrete Pumping Corp.

“We needed to come up with a concrete placing solution that minimised any congestion at ground level,” explained Bill Charon, president of Casino. “Utilising the boom placing systems allowed us to access the entire site, while essentially containing all the equipment within the confines of the project footprint.”

Two of the placing systems were located on one of the apartment towers, while the third was located on the second tower. The pump delivered concrete up through the column placing systems to the booms for accurate and efficient placement. The crew was able to easily switch the flow of concrete between the towers using a Putzmeister DVH 5/2 hydraulic diversion valve.

Putzmeister's RS 850 column placing system features a fully automatic self-climbing system, and easy-to-assemble, compact design for high-rise pumping. Its M-profile design incorporates the climbing and delivery systems into a small, square footprint – one meter by one meter – so it



is easier to create and repair the holes the system travels through during construction. The booms easily climbed the 140 m to reach the top of the building, helping to place 13,000 m<sup>3</sup> of concrete required for the job.

### Architectural Details

Due to the proximity of the beautiful, gothic-style cathedral, the design of the Enclave project incorporated intricate architectural details, including uniquely shaped concrete columns. The design of the architectural columns and shear walls required that their concrete had no drop height at all. Thus, a tremie-style placing system was used to eliminate the free fall of concrete and the risk of separation of aggregate from the concrete.

“With the placing booms we were able to keep the lower end of the pipe immersed in fresh concrete, as was required by the design of this structure,” said Charon. “This tremie method would have been very difficult to achieve without using Putzmeister’s placing system.”

“Putzmeister placing systems were integral in how we placed the concrete for this project,” added Connors. “The system was efficient, cost effective, and helped us achieve our schedule.”

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## Close to your business

Bill Charon, president of Casino Development Group, Inc., owner of the concrete placing equipment:

**“We were extremely pleased with how the placing booms performed. They were able to jump vertically with very little effort. We were very happy with the ease of the controls and the quality engineering in their design.”**

**The crew was able to easily switch the flow of concrete between the towers using a Putzmeister DVH 5/2 hydraulic diversion valve.**



## Stationary booms

### A gathering place

The Enclave development was uniquely designed to bring residents together, with an abundance of amenity space inside and outside both towers. The western tower will showcase studio, one- and two-bedroom residences and the eastern tower will have one- and two-bedroom residences. Each home will be equipped with cohesive appliances, custom cabinetry, wood flooring and modern fixtures to provide residents with special meditative spaces. The towers were topped out in spring 2015 and the project was completed at the end of 2015. ■



The RS 850 stationary placing boom system features a fully automatic self-climbing system, and easy-to-assemble, compact design for high-rise pumping.



Casino invested in three new Putzmeister RS 850 tubular column placing systems and three new Putzmeister placing booms, including two MX 24-4's and a MX 28-4.

# Putzmeister Wetkret team builds Santiago de Chile metro extension

The construction of line 6 in Santiago, which will link in previously disconnected neighbourhoods through 16 new kms of network, is one of the key underground development projects in Chile's capital.

Putzmeister Underground continues to support the underground construction industry in Latin America, working on site with its range of underground shotcrete machinery.

Work on the project began in June 2013 and will join ten stations between Cerrillos and Providencia, opening to passengers from 2016.

“The building of the new line 6 for Santiago de Chile's metro network is an important advance for the city, not only because it will make the network faster and more efficient, but because it will also link in neighbourhoods like Cerrillos,” said Metro Development Projects Manager Jaime Adasme.

Obras Subterráneas S.A (OSSA), together with local group Echevarría Izquierdo (EI), is working on the segments covering shafts, galleries and tunnel building in sections 3 and 4 with a total budget of 126 million € which will help consolidate OSSA's presence in Latin America.

Set up in 1952 in Spain, OSSA is focused in three segments: construction, energy and mining, and has quickly become a reference in underground construction. Since 2008, it has grown in Latin America, with a presence in Chile, Brazil, Colombia, Costa Rica, Nicaragua, Panama and Peru.

## Building of segments 3 and 4 by EIOSSA

Together, EI and OSSA are working on the construction of shafts, galleries and tunnels belonging to segments 3 and 4 of line 6; the building of an inter-station of between 7 km and 65 m<sup>2</sup> of section (4,5 km in segment 3 and 2,7 km in segment 4) as well as four 130 m<sup>2</sup> stations.

Built based on the New Austrian Method, the initial mechanical excavation will be supported with shotcrete, trusses, bolts and mesh.

The project includes five auxiliary construction shafts: Marathon, Crecente Errázuriz and Hernán Cortes in segment 3, together with Mar de Plata and Europa in segment 4. These shafts offer intermediary access to build the interstation tunnels. They have a diameter of between 15 - 20 m, and depth of between 23 - 29 m, and will be built based on mechanical

excavation in three segments of 2.3 m depth each, which will be reinforced with a shotcrete layer of at least 30 cm and mesh.

The gallery and interstation tunnels will be built as circular cross-sections that will allow for greater efficiency and safety, as well as trimming down costs. They will then be supported with primary and secondary shotcrete

layers as well as mesh. The interstation tunnels consist of a 5 cm sealing shotcrete layer, followed by mesh and lattice girder, a 10 cm filler layer and a secondary shotcrete layer of around 15 cm with mesh.

Work on the project, which started in 2013, is currently 98 % complete, according to EIOSSA.

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### Shotcreting with Putzmeister SPM 500 Wetkret and SPM 4210 Wetkret

In total, around 853,390 m<sup>3</sup> of tunnel have been excavated, with some 142,930 m<sup>3</sup> of shotcrete projected. OSSA worked with Putzmeister's mechanised shotcrete equipment SPM 500 Wetkret and SPM 4120 Wetkret.

The SPM 500 Wetkret line has proven its reliability and efficiency in a large number of projects worldwide, such as Chile's Chuquicamata mine project, which will see the transition from open-pit mining to underground operation in one of the most modern,

efficient underground mines in the world.

The SPM 500 Wetkret has an articulated telescopic spraying arm with a maximum vertical reach of 17 m and an output of 30 m<sup>3</sup>/h, making it ideal for medium to large tunnel sections. Its chassis has four wheel hydraulic steering and 'crab mode' for perfect manoeuvrability, ensuring access even to difficult-to-reach areas.

The SPM 4120 Wetkret, which has worked in projects such as Mexico's Fresnillo mine, has an articulated telescopic spraying arm with a maximum vertical reach of 10 m and an output of



20 m<sup>3</sup>/h. Its steel chassis has a four wheel hydraulic articulated steering, with service brakes on axles, which improve its manoeuvrability in difficult terrain.

Both the SPM 500 Wetkret and the SPM 4120 Wetkret have a synchronised additive pump equipped with an automatic dosing device proportional to the concrete flow, thereby assuring spraying accuracy and quality.

The machines deployed in the Santiago metro Project are Dual Drive, and are able to work both in diesel and electric mode, ideal for those sections not yet connected to the electric grid. ■

Technical data	SPM 500	SPM 4120
<b>Max. spraying reach</b>		
vertical	17 m	10 m
horizontal	15 m	8 m
<b>Min. section working</b>		
vertical	3 m	2.5 m
horizontal	2.8 m	2.4 m
<b>Spraying head</b>		
Rotation	360°	360°
Inclination	+/- 120°	+/- 120°
Nutation	8°	10°
<b>Concrete pump</b>	PM 1810	PM 1507
Output*	4 - 30 m <sup>3</sup> /h	4 - 20 m <sup>3</sup> /h
Concrete pressure*	75 bar	65 bar
Delivery cylinder Ø	180 mm	150 mm
Grain size max.	16 mm	16 mm



# Truck mixer number „750“ for ETC Eurotruckcenter GmbH

ETC Eurotruckcenter GmbH (miet-trucks.de), based in Heuchelheim near Giessen in Hesse, rents and sells all types of commercial construction vehicles for the German and international markets. With approximately 300 truck mixers in the 9 m<sup>3</sup> and 10 m<sup>3</sup> classes, ETC miettrucks.de provides the largest pool of concrete truck mixers for rental in Germany.

At bauma 2016, Putzmeister will be displaying the 750th truck mixer built for ETC and delivered via Intermix.

Truck mixer number "750" is a P 9 G UL Ultra Lightweight mixer, built on a Mercedes Benz Arocs chassis.

"The reliability of the Intermix truck mixer and the ease of use of the machines are important points for us, because the operating personnel for these truck mixers often varies," explains Managing Director Christian Jung.





The delivery of the 750th truck mixer during bauma 2016 will underline and strengthen the 12 years of successful collaboration and long-standing partnership between ETC miettrucks.de and Putzmeister.



## Close to your business



Christian Jung,  
Managing Director of ETC  
Eurotruck-center GmbH:

"The reduced weight of the UL truck mixer thanks to the use of Hardox steel plates provides our customers with higher load capacity and also reduces fuel consumption. Customers have the choice between Mercedes Benz and MAN truck mixers with Putzmeister superstructures."



ETC **miettrucks.de** rents out premium truck mixers with top-of-the-range equipment suitable for all applications. ETC **miettrucks.de** is able to respond flexibly to customer enquiries and provide ideal solutions to meet any requirements, from covering peak periods or large orders to replacement vehicles to fill the gap between selling your old truck and buying a new one or following accidents, through to hire purchase or full service vehicles in company colours and long-term rentals. ETC offers a vehicle delivery service and an in-house specialist workshop for trucks.

# Environmentally friendly and extremely powerful: The Mixokret M 760 3B



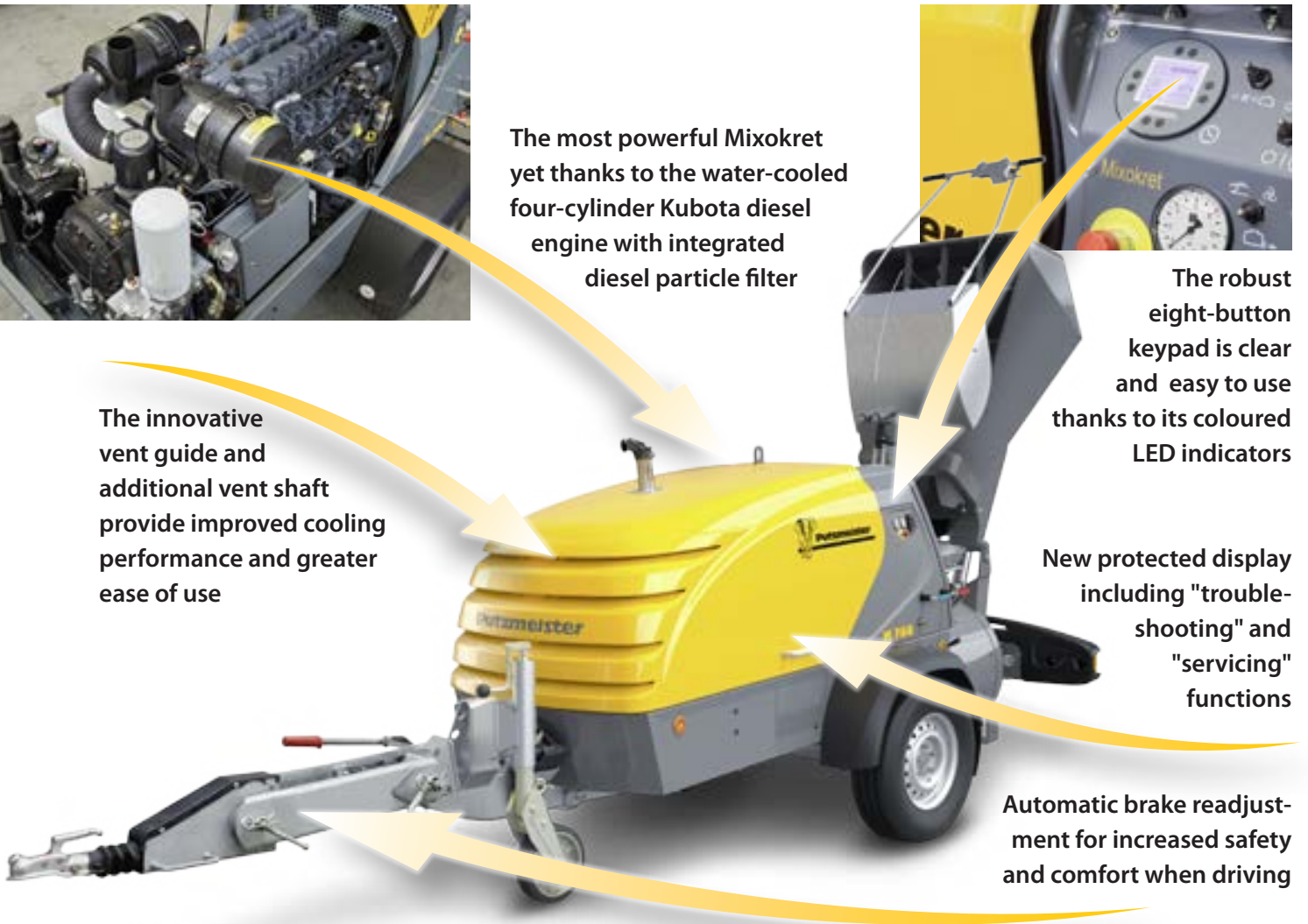
The most powerful Mixokret yet thanks to the water-cooled four-cylinder Kubota diesel engine with integrated diesel particle filter



The robust eight-button keypad is clear and easy to use thanks to its coloured LED indicators

The innovative vent guide and additional vent shaft provide improved cooling performance and greater ease of use

New protected display including "troubleshooting" and "servicing" functions



Automatic brake readjustment for increased safety and comfort when driving

The M 760 3B pumps earth-moist screed distances of up to 200 m horizontally and up to 150 m vertically. It is extremely easy and efficient to operate thanks to the keypad with coloured LED indicators and the innovative displays in the control box. In addition, availability is increased thanks to menus for troubleshooting and carrying out servicing.

The Kubota diesel engine (stage TIER 3B) provides even more power – specifically, 48.5 kW at 2,700 rpm – with a new compressor unit and energy-efficient water cooling. The integrated diesel particle filter cleans the exhaust gases and thereby protects our environment from contamination. This results in more power with reduced fuel consumption, emissions and noise.



## EstrichBoy The Original. Since 1968.



Forty-eight years of experience have gone into the development of the EstrichBoy. It is extremely powerful and robust, and is very popular with screed installers – and of course provides all of the quality expected of German engineering.

The original is only available from us.

- Powerful and environmentally friendly thanks to the engine-compressor unit with reduced fuel consumption or low-emission electric motor
- Large intake and exhaust opening with effective cooling
- Lasting value thanks to the hood made from lightweight, tough, impact-resistant plastic

# bauma 2016 – Welcome to Putzmeister in hall B6



More Putzmeister machines can be found here:

<b>BSF 24-4.16 H</b>	at Mercedes Benz in hall B4
<b>BSF 42-5.16 H LS</b>	at Nagel in the open-air area middle FM.811/B
<b>MX 28-4 Multi</b>	at Peri in the open-air area north FN.719
<b>P9G UL</b>	at ETC in the open-air area south FS.903 A/1

You will find **Sany** in the open-air area north FN.620/9



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