



Putzmeister

Post



**bauma
2013**

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Munich



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Putzmeister – on almost
5000 m² of exhibition space

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Experience bauma 2013 with us – Feel the Elephant

It's been over a year since the Chinese-owned Sany Heavy Industry and Putzmeister joined forces. Putzmeister's headquarters in Aichtal have become the main location for concrete equipment outside China. Sany continues to focus on business in China, where Putzmeister is still being marketed as a separate premium brand.

Both partners are benefiting from this new line-up. The financial power of Sany secures growth prospects for Putzmeister, giving it a significant advantage over the competition. Sany benefits from the expertise of the Putzmeister Group. The business operations of Putzmeister and Sany complement each other to a high degree, particularly with regard to their geographic orientation.

The integration of the Chinese market leader in concrete pumps with the leading supplier in markets outside of China therefore follows a clear, strategic and industrial logic.

This transaction has given birth to by far the world's largest global market leader for concrete pumps.

As before, Putzmeister machines are produced solely at Putzmeister's works. They are all developed in Germany, and constructed on-site at the Group's various works. We are therefore stronger than ever.

This is proven by our next appearance at bauma, with double the exhibition area (around 5000 m²), compared to our appearance at bauma 2010. This is why we are particularly looking forward to presenting you with the results of our innovative capacity, under the slogan „feel the elephant“.

One highlight will be the presentation of the “New generation” machines in Hall 6: our new truck-mounted concrete pumps, models 32-4, 36-4, 38-5, 42-5 and 56-5! A performance awaits you there every hour from 10:30 am. The principal performer is our new 38-5 truck-mounted concrete pump. Finally, with a weight of less than 26 t, it is the most lightweight in its class, thereby providing you with maximum reserves for charging. The new Ergonic® 2.0 control unit, our sustainable Ergonic® blue concept and many other dramatic innovations will also be exhibited.

With the acquisition of Intermix, Putzmeister is expanding its product line by adding a comprehensive range of cement mixer trucks. In addition, low-profile concrete mixing vehicles will be exhibited for the mining sector.

Putzmeister Mörtelmaschinen will be presenting re-engineered, more powerful and environmentally friendly plastering and screed machines with the Brinkmann and Putzmeister brands. In the stationary concrete pump range, we will be exhibiting new models with easy-to-clean GFK hood, an improved hopper and clearer presentation of operating data via the Ergonic® Graphic Display (EGD), and much more.

However, we regard bauma, the largest construction machinery tradefair in the world, not simply as an opportunity to present our products to you. As a globally active company, we provide machines that are ideally suited to the specific requirements of a country or region, whether in Africa, Brazil, India or elsewhere.

At bauma, we hope to engage our customers in in-depth dialogue, which will hopefully bring all of us that little bit closer to success.

With this in mind, here's to an informative and successful time for all of us at the fair!



Norbert Scheuch

Chief Executive Officer
Putzmeister Holding GmbH

The new 38-5: Maximum flexibility with 5-arm boom on 3 axles

the n

Completely new and yet tried and tested – the 38-5: Thanks to our experience of over 50 years, everything that proved itself as reliable in terms of truck-mounted concrete pump design and everything that had yet to be optimized, was able to be taken into consideration during development of the 38-5. We have made your wishes for even more comfort in operation, profitability in daily use and flexibility in working with the machine a reality. Highly thought-of values such as robustness and reliability have remained. What came out of it was one of the most advanced truck-mounted concrete pumps with astoundingly universal capabilities and an astonishingly good price-performance ratio.

All of the advantages in one machine

The new 38-5 is as powerful as our large machines, and as compact as the small ones. On 3 axles, it moves surprisingly easily and with great versatility through the heaviest of traffic and narrow streets to the site of use.

When it reaches the construction site, it then unfolds to its true size. On the smallest support area, it attains a vertical reach of approx. 38 m, of which full use can be made thanks to the 5-arm boom in roll-Z-fold system. This leaves you a lot of room for manoeuvre in your planning. Whether in a low building, under bridges, in underpasses or when building houses with several storeys – the 38-5 adapts and does a good job anywhere.

Thanks to its high weight reserves, it always has its accessories to hand, so that it can arrive at the next job without making a diversion. And it also requires an amazingly low level of maintenance. Easy for the machine operator to use, and enormously low on wear and maintenance.



ew 38-5

Be at a clear advantage with the new 38-5:

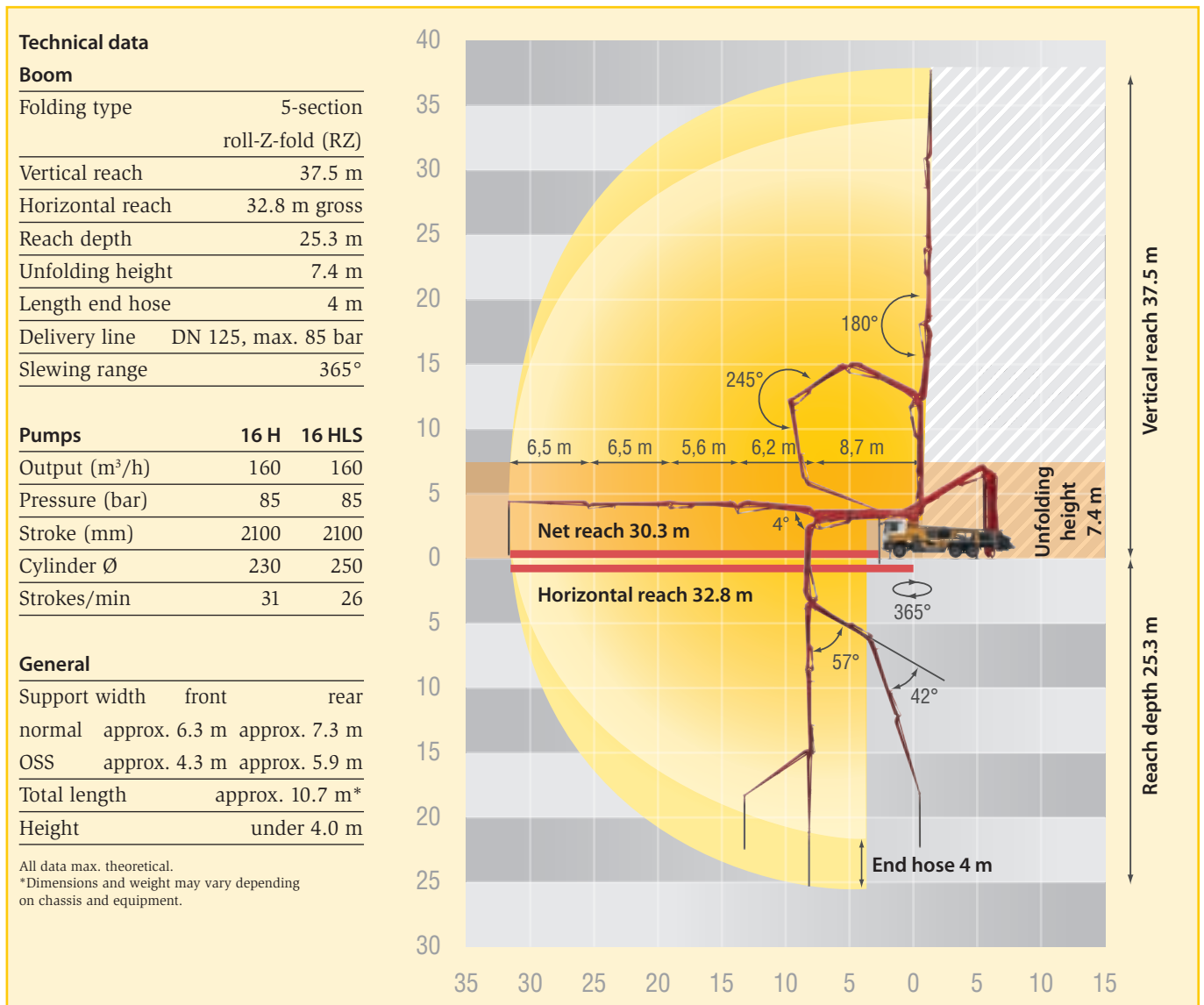
- A gross weight of less than 26 t incl. sufficient reserves for payload and operating materials
- Steady 5-arm placing boom, thanks to the intelligent installation of the delivery line and the harmonious continuity of the steel structure
- Efficient working thanks to consistent ergonomics
- Even better safety thanks to comprehensive consideration of current standards and directives
- Service-friendly as a result of its optimized accessibility and consistent screw concept
- Lower service costs thanks to maintenance-free components, fewer components of different kinds (e.g. only 3 standard types of elbow pipes) and lower volumes of functional fluids





The new boom at a glance

- A vertical reach of around 38 m, now with 5 arms and a roll-Z-fold system
- No dead space, more flexibility
- Boom responds directly to the control commands
- Safety thanks to reduced boom vibration
- EBC (optional) for vibration damping,
- Single-hand control
- Limited working space
- Standard bends 90° and 45° with lengthened collars for a longer service life
- Low unfolding height





Bridging about 38 m with 5 arms

Thanks to the additional hinge in the fifth arm, it is not just flexibility and versatility that increases, but also the actual horizontal reach. For example, when slipping into buildings, the hinge of the fifth arm can be crucial to reaching fully into the building interior. The optimized kinematics also ensure that the physical working area is maximized, and that there is no “dead space”.

The 5-arm placing boom in the roll-Z-fold system is the successful combination of flexibility and compactness that

leaves nothing to be desired. With the minimal unfolding height, optimum slip characteristics and minimum dimensions of the superstructure, you have almost unlimited possible applications. In this way, the benefits of the roll-folding are combined with those of the Z fold system in a fascinating way.

Comfort on 3 axles

The 38-5 cannot be stopped by tough licensing regulations. Its low empty weight even accommodates substantial loads in the form of operating equipment and accessories, for which plen-

ty of space is available thanks to the wide flatbed with anti-slip surface. The driving comfort is also impressive. The distortion properties are better compared with the rigid frame, and provide the same elasticity as the chassis frame. This makes driving a pleasure, and increases the service life of the vehicle. ■

ew **38-5**

On the water and under water – Hong Kong and Macao getting ever closer

Hong Kong/Zhuhai/Macao – Three Chinese cities with special status are to grow together physically and economically thanks to a project which is in a class of its own. Approximately 35 kilometres must be bridged, literally, to connect Hong Kong to Macao via Zhuhai. Between these cities lies the wide stretch of water of the Pearl River estuary. Hong Kong intends to pull off this huge task using a six-lane road bridge – except for the section that cuts across an area of international shipping lanes, which will instead see the construction of the world's longest underwater road tunnel. This will require engineering and planning expertise, as well as high-performance technology from Putzmeister.

The project office of the Hong Kong-Zhuhai-Macao Bridge has an ambitious project to tackle. To facilitate driving from the Hong Kong metropolis to the Chinese mainland along the fastest route, a link is to be created to Macao via Zhuhai. The aim is to reduce the driving time from Hong Kong to Zhuhai down from the current four hours to just one hour. The main part of this expensive project will involve a link bridge, and, where the route crosses the shipping lane, a tunnel at a great depth under water. This is why the project includes two artificial islands, on which the entry and exit portals for the tunnel can be constructed. A stretch of approximately 6 km in a tunnel at a depth of 40 m, i.e. below the shipping channels, will soon be in place. Planners

and contractors contractually agree to ensure that the bridge and tunnel design will be able to withstand forces of nature, such as wind speeds of up to 200 kilometres an hour and earthquakes of up to magnitude 8. Once finished, the tunnel will consist of 33 sections, each of which will be 180 m long. It is estimated that the project will cost around 11 billion US dollars. The foundation stone was laid in May 2010, and the project is due for completion in 2016.

On the safe side with Putzmeister

In order to carry out the project reliably and successfully, the contractor CCC (China Communications Construction Company) has joined forces with experienced partners. Companies such as the international consulting group COWI A/S, Peri and Putzmeister were already successfully involved in the spectacular construction of the technically comparable Öresund Tunnel between Denmark and Sweden. The two projects are similar so that it stood to reason to make use of the expertise and experience of these companies to make a success of this construction project as well.





→ Hong Kong

Hong Kong is situated on China's southern coast, and, since the British handed it back to China in July 1997, is a city with a special status, as are Zhuhai and Macao in fact.

With its seven million inhabitants, this metropolis is the third largest city in China, and lies precisely at the point where the Pearl River empties into the South China Sea. The total territory

of Hong Kong covers the peninsula and a further 262 islands, such as Lantau, Hong Kong Island and Lamma. The financial and business centre of the city is situated in the north of Hong Kong Island.

According to a doctrine developed by Deng Xiaoping, the role of Hong Kong as one of the greatest financial centres in the country would be maintained at least 50 years later. This is because, in addition to the socialist system of the People's Republic of China, the demo-

cratic economic system also remains. The influence of the mainland on internal politics makes itself felt.

The Hong Kong-Zhuhai-Macao link project is also in the political and economic interest of China. The plan is to merge Hong Kong with Macao, with the aim of creating an important economic centre. Guangdong, the province to which Zhuhai belongs, should also benefit from this plan.

As early as the planning phase, close collaboration was going on between Putzmeister and Peri, manufacturer of the two large formworks, which can be opened hydraulically.

"In a mammoth project such as this, it is absolutely imperative to be fully agreed on the details", explains Michael Höss, the Putzmeister engineer responsible for this project. "The plan is to manufacture all 33 sections of tunnel on land. Each tunnel section consists of eight individual segments, 22.5 m long, 40.5 m wide and 11.3 m high. In order to meet the project aims, this calls for expert, professional planning – as much during the formwork placing and positioning phase as during concrete placement".

On the two production lines, each formwork (designed by Peri) consists of one stationary bottom formwork, one anchorless outer casing, three casings inside the tunnel to house two motorway carriageways and one service gallery. For concreting each segment with 3,600 m³ of concrete, there is a window of just 24

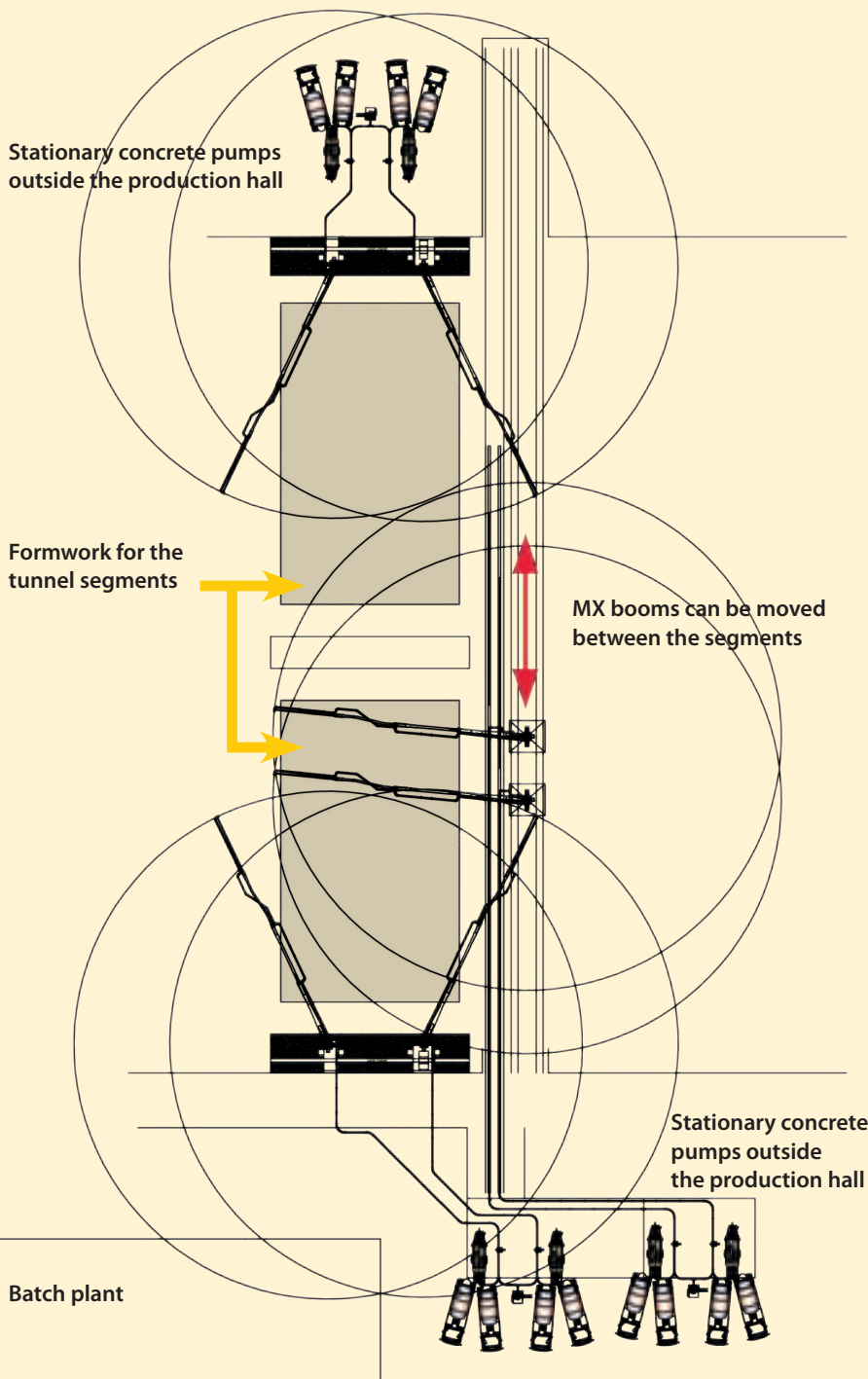
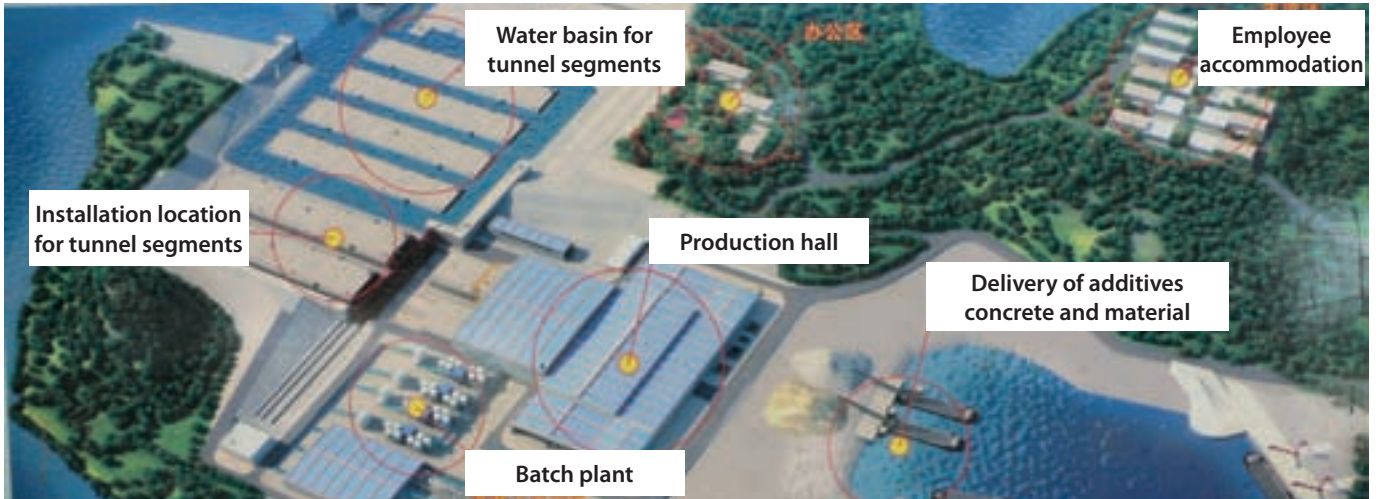
hours. The fully automatic formwork is then stripped, the segment moved forward by 22.5 m and the next segment concreted against it. Then, using an incremental launching facility, the segment is moved out of the production hall and into the flood basin. Once eight segments are ready, they are joined together

◀ Four moveable MXR 32-4 T for concreting the mighty tunnel segments

▶ Four BSA 2109 concrete pumps, working in parallel, are required to pour the enormous quantities of concrete.



Concrete pumps



and sealed. The basin is flooded, and the eight segments are then towed by ship as a complete, 180 m-long tunnel section to the installation position, sunk in a controlled operation and overfilled to secure the section in its position. Until the operation is complete, 890,000 m³ of concrete is processed for the 264 segments.

Harmonized equipment and expertise are the recipe for success

On the island of Guishan, off the coast from Zhuhai, Putzmeister has six BSA 2109 stationary concrete pumps in operation. Four MX 32-4 stationary booms, all of which move on rails, place the concrete. To convey the volume of concrete that has to be placed within 24 hours, the four stationary booms work simultaneously on one segment. For optimum, speedy concrete placement, RV 8 rotary distributors hang from the formwork support structure, above the base plates. The concrete is conveyed from the stationary concrete pumps to the four stationary booms via ZX 125/5 high pressure delivery lines, designed for 130 bar, with an overall length of approx. 120 m.



◀ Each stationary boom is supplied by a separate concrete line. The lines are insulated to protect them from direct sunlight.

▼ The hanging RV 8 rotary distributors ensure speedy concrete placement.

“This set-up ensures that approx. 150 m³ concrete per hour can be poured into the formwork within the time allowed”, affirms Mr Höss.

Work is being taken care of by employees from the Putzmeister branch in Shanghai during the entire production period. They provide maintenance and other services within the quickest of lead times. ■



▼ Floating tunnel segments



KOS 25200 at bauma: Largest piston pump also available in high-pressure version

At bauma 2013 Putzmeister Solid Pumps GmbH will showcase its largest double piston pump KOS 25200. There is a high demand for this high-performance machine primarily in mining and in the area of land reclamation. Here the requirements with regard to conveying pressure are increasing because viscous material has to be conveyed over longer distances.

The hydraulic pump for dense material comprises three elements: the KOS pump unit, the hydraulic drive unit and the electric cabinet with the operating panel. It works without valves and is equipped with a S-transfer tube, which connects the respective delivery cylinder to the delivery line. Its special design enables a nearly constantly free passage for the material to be conveyed thus ensuring linear conveying. The S-transfer tube system has proven itself countless times in the conveying of concrete, the removal of excavated minerals in tunnels, ash transport in coal power stations, as well as in the industrial area when pumping dewatered sludge and hazardous waste. The design of the S-tube of the KOS

pump is particularly well suited to conveying highly viscous sludge and materials with a high coarse matter content.

The KOS 25200 boasts a simple design and has an extremely low number of wear parts, which only have to be replaced a few times a year. The replacement is quick and simple. The pump is very robust, needs very low maintenance and runs with low operating costs. Customers all over the world appreciate its efficient working principle, which is designed for 24-hour operation. The hard chromium-plated delivery cylinder and automatic piston lubrication with every stroke ensure a long service life.

The KOS 25200 is also available in a high-pressure version from the start of 2013. The components of the newly developed high-pressure pump are essentially more robust. With the KOS 25200 HP (High Pressure) plant operators can pump up to 400 m³/h at a maximum pressure of 100 bar. The already existing KOS 25200 with the lower discharge pressure manages 400 – 500 m³/h at a

maximum conveying pressure of 42 bar. Higher conveying pressures are becoming more and more important because the materials to be conveyed may be more viscous and have to be pumped over a larger distance. Concentrated thick matter with a solid content of 70 to 80 percent can thus be conveyed. ■

Technical data KOS 25200

Max. output:	400 m ³ /h
Max. delivery pressure:	42 bar
Length delivery cylinder:	2,500 mm
Diameter delivery cylinder:	560 mm
Volume delivery cylinder:	615 l
Drive:	up to 1,600 kW



The new BSA 1407 D – a class of its own, in design and operation



Outside and in, the BSA 1407 D stationary concrete pump has been completely revamped. Under its visually appealing and cleaning-friendly glass-fibre reinforced hood wait many economic and user-friendly details for the operator: an improved hopper (RS 909), operating data clearly displayed on the Ergonic® Graphic Display (EGD), and the sophisticated electronic fault management system are just some of many practical innovations.

From its wide range, Putzmeister can offer stationary concrete pumps in different performance classes. Depending on the application, the customer can choose between different delivery pressures and outputs, and between electric and diesel power. We provide only products that are extremely robust, reliable, user-friendly, fuel-economic and have a long life.

More stability and durability

The new access cover, made of fibre-glass reinforced plastic, serves not only to increase visual appeal, but stands out most of all because it is extremely robust, weather-resistant, easy to remove and easy to clean. The new, universal frame concept also ensures increased stability.

Easier to operate and service

All essential operating elements of the new BSA 1407 D are easily accessible, making maintenance and servicing work easier. Swing doors, for example, ensure

easy access, and protect the machine operator from rain and sun. Because of its screw-on grille, the new, optimized hopper (RS 909) makes it easier to replace components. Thanks to its improved shape, hardly any concrete residue can settle on it, which speeds up cleaning significantly. And ease of access makes work easier here as well.

More transparency and safety

The machine operator can maintain a complete overview of all operating data on the EGD (Ergonic® Graphic Display). He can view all relevant machine data at all times, and adjust individual parameters. Thanks to a reliable fault management system, the machine is fully operational in the event of a fault, and even in emergency operation. If sensors that are not relevant for safety fail, they can be switched off. The pump can continue working uninterrupted until the job is complete. Up-to-date feedback and system information of the machine appear in real time on the display. ■



Beautiful, lightweight and good for practice: Ergonic 2.0 – the new generation of radio remote controls

During the development phase of the new generation of radio remote controls, the key was to ask those who use them. The experiences and requests of numerous customers, machine operators and Putzmeister employees, and their list of priorities, were all taken into account when designing the new Ergonic 2.0.

- The most important functions are available as buttons on the radio remote control itself.
- The new colour display interface provides further operating options.
- Important functions that are required during pumping can be found in the “PumpActiv” menu.
- Menus for boom operation and pump operation were created according to the priorities of customers, machine operators and Putzmeister employees.
- The weight has been reduced by 30 %.
- If the radio remote control is connected via a cable because radio remote operation is not possible, a CAN cable enables full operation of all functions. At the same time, power is provided to the unit.



- A lamp with pocket torch function lights up the machine operator’s location, which means increased safety on the construction site on dark days.
- The radio remote control can be used for all concrete pumps, regardless of the number of arm segments.

Initial practical tests on construction sites confirm the high level of operability and the uncluttered menu navigation structure. Everything is in its right place. And the remote control also functions without a display.



Reaching the heady heights of the AZ Tower in Brno, Czech Republic with the Mixokret 760 DHB screed pump

The fallout of the economic crisis left its mark on our neighbours in the Czech Republic, even if the volume of trade between Germany and Czech Republic was barely affected and actually increased in many areas.

After zero growth of the gross domestic product in 2012, which was widely anticipated, it is generally expected that the GDP will rise by approx. 1.3 % this year. The worst of the crisis seems to be over, even though additional austerity measures such as another increase in the VAT rate are looming on the horizon.

The construction of the AZ Tower in Brno shows that it has been possible to defy the odds during the crisis. Construction started in April 2011 and completion is scheduled for midway through 2013, which continues to be a realistic deadline.

The 111 m high AZ Tower is currently the tallest building in the Czech Republic. From the outset, the plan was to construct the 30-storey structure with energy-efficient features such as a photovoltaic installation and heat pumps for air conditioning. The top six storeys will consist exclusively of apartments with outdoor swimming pools on floor 28 and 29. The remaining floors are reserved for shops and offices.

Pumping the screed into a building of this height was one of the main challenges during the project. Reliability and the ability to meet tight deadlines also play an all-important role in this kind of building project.

The company awarded the contract for laying cement screed over a total of 10,000 m² was Beton K.R. based in Prachatice. The company has had many years of experience managing major projects in urban centres within the Czech Republic and their good reputation undoubtedly played an important role in securing the contract.



“The quality and efficiency of the Mixokret has impressed me for more than 10 years”, says Karel Resl, Director of Beton K.R., “but this project was a new and exciting prospect for us all.”

Resl already owns a fleet of 740 models but decided to purchase a Mixokret 760 to play it safe. Equipped with powerful 4-cylinder Deutz motor, the Mixokret 760 can easily cope with the most extreme delivery ranges and heights, a fact confirmed by Mr Resl during the meeting. The Mixokret conveys material right up to the top storeys. It was possible to pour the screed on schedule and achieve a more than satisfactory result.

The erection of the AZ Tower should attract more domestic and overseas investors to Brno to undertake similar construction projects. Karel Resl seems quite confident at the prospect. With his M760, he is well equipped for the job. ■



AZ Tower Brno

Height	111 m
Floors	30 + 2 lower floors
Start of construction	April 2010
End of construction	May 2013
Functions	Offices, apartments, retail, restaurants, etc.

➔ www.aztower.cz

Mixkret 4 and SPM 4210 Wetkret working in Aguas Teñidas Mine in Iberian Pyrite Belt in Southern Spain

Aguas Teñidas Mine is located in the northern part of Andalusia in the Spanish Province of Huelva. With its volcanogenic massive sulphide deposits on the northernmost limb of the Iberian Pyrite Belt, the mine holds copper and zinc concentrates as principal products, with additional revenues from lead, gold and silver. The main product being copper, the mine was reopened in 2007 when the copper prices went up.

Iberian Pyrite Belt

The Iberian Pyrite Belt is a vast geographical area with particular geological

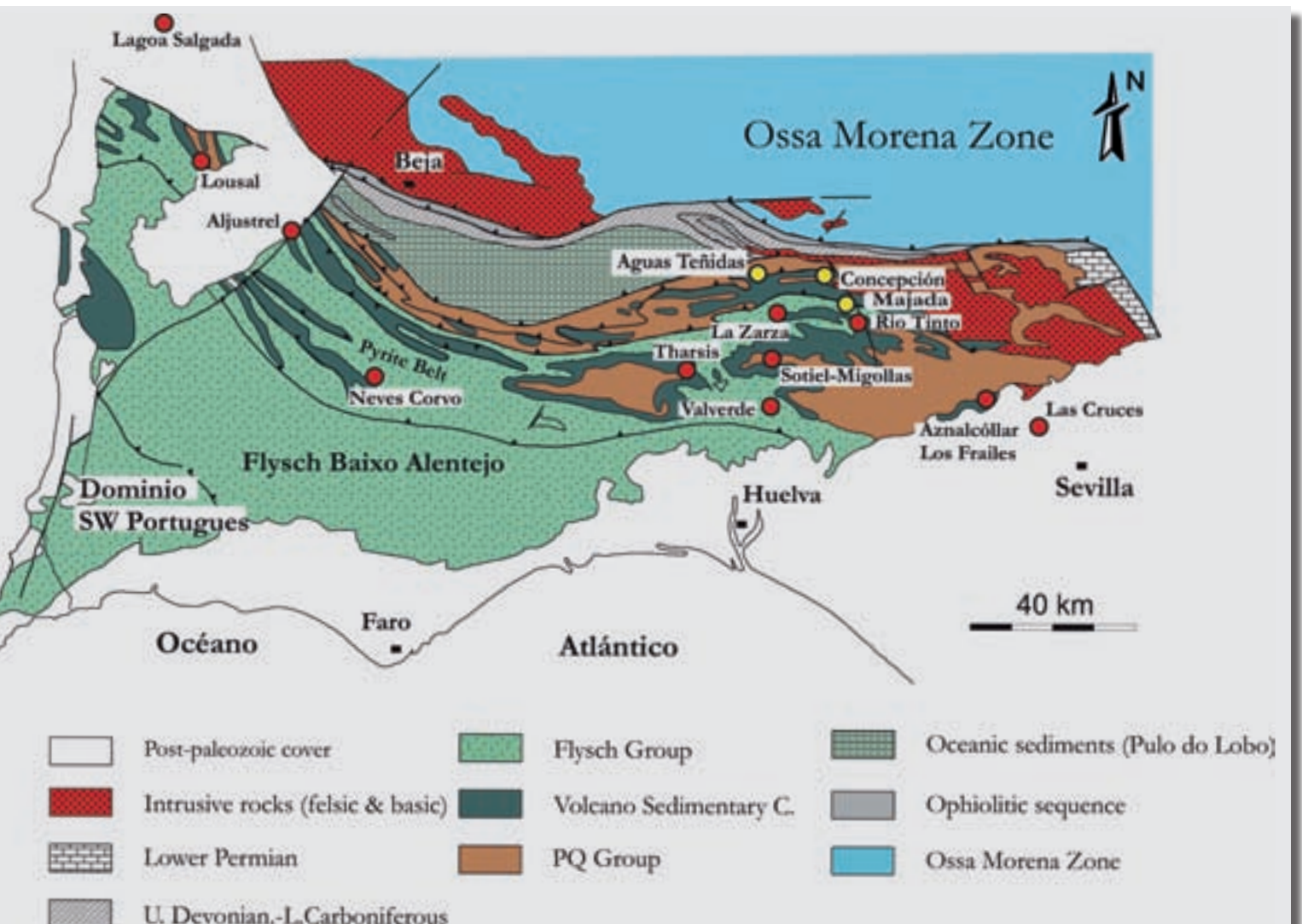
features that stretches along much of the south of the Iberian Peninsula, from Portugal to Spain. It is about 250 km long and 30 – 50 km wide, running northwest to southeast from Alcácer do Sal (Portugal) to Sevilla (Spain). The mining activity in this region goes back thousands of years.

About Aguas Teñidas Mine

The Aguas Teñidas Mine exploits one of an east-west striking chain of volcanogenic massive sulphide (VMS) deposits on the northernmost limb of the Iberian Pyrite Belt. The local mine geology

is comprised primarily of heavily tectonised volcano-sedimentary sequences, with cross-cutting thrust faults and shear zones. The main lithological units at the mine comprise a footwall rhyodacitic unit, massive sulphide mineralisation and a hanging wall volcano-sedimentary unit.

The deposit comprises four main mineralisation types: polymetallic Zn/Pb rock, massive cupriferous, barren pyrite and a cupriferous stockwork. The east-west trending Aguas Teñidas massive sulphide deposit has been demonstrated by drilling to have a strike length of



approximately 3,500 m, the easternmost 1,200 m of this length is represented by the current mineral resource. The deposit is generally 100 – 200 m wide in a north-south direction and has a thickness of up to 120 m. At its eastern extremity, the deposit lies approximately 285 m below surface, and at its western extremity approximately 650 m below surface. The deposit thickness pinches to the south and thickens to the north, resulting in a wedge-like geometry.

Mine Operation

Minas de Aguas Teñidas S.A. U. (“MATSA”) is a wholly owned Spanish subsidiary of Iberian Minerals Corp., a public Swiss company. The Aguas Teñidas Mine is 100 % owned by MATSA. The expected mine life is 11 years, with deposits for exploitation until 2020 and mineral production of 2.2 Mt /year. MATSA processed 2.031.044 tons of ores in 2011, thereof 1.160.978 t copper and 870.066 t polymetallic.

Snapshot Aguas Teñidas Mine

Ownership	MATSA / Iberian Minerals
Mine type	Underground
Status	Production
Mine location	Spain (Andalusia, Huelva province)
Size	297,51 km ² total
Deposit type	Volcanogenic Massive Sulphide (VMS)
End product	Copper, Zinc and Lead Concentrates
Geology	Located in northernmost limb of Iberian Pyrite Belt
Mine life	11 years

The majority of the reserve base comes from a mine plan in which longhole-open-stoping is the primary mining method. The stope layout is dominated by a 20 m-wide transverse panel system that extends over the strike length of the deposit. Levels are established at 30 m vertical intervals, and on each level there is a haulage gallery, spaced at about 50 m

from the ore zones, provides access to a set of perpendicular crosscuts onto each stope panel. After primary stopes are mined out, they are backfilled with cemented pastefill. Secondary stopes later on will be filled with lower strength paste fill or waste rock. The development infrastructure for the mine is dominated by a primary haulage ramp that connects

▼ The concrete mixing drum of Mixkret 4 has a maximum concrete capacity of 4 m³ and an additive tank for discharging concrete to the concrete spraying equipment.



the mine with a portal very close to the processing plant location at the western end of the mine property. A service ramp provides alternative access to the mine at the eastern end.

There are 900 employees working in the mine; 450 of them being MATSA employees and the rest subcontractors like INSERSA. INSERSA is carrying out some of the drilling, earth removal and concrete spraying in various galleries in the Aguas Teñidas Mine. There is another project in planning phase to start in 2013, 35 km away from Aguas Teñidas Mine (Sotiel Project), with an estimated amount of mineral production 1 Mt / year.

Putzmeister equipment working at Aguas Teñidas Mine

INSERSA is the Spanish market leader in the field drilling for mining and has achieved a high degree of diversification in recent years by applying its specialized expertise to a wide range of activities, e.g. special foundation and drilling operations or building construction work. In the Aguas Teñidas Mine, besides the older concrete spraying machines Wetkret WKM 103 and SPM 407, INSERSA is working with an SPM 4210 Wetkret to provide roof support of the excavated sections after blasting, and has recently incorporated Putzmeister's

new low-profile concrete mixer for mining, Mixkret 4.

Mixkret 4 has been designed to complement the concrete spraying process in mining. It provides a concrete capacity of 4 m³ and includes a liquid additive tank for transporting and transferring additives to the shotcrete equipment. The machine is equipped with a 6-cylinder, 130 kW turbo engine, which provides it with high climbing and moving power as well as the possibility to work at high altitudes. The cabin, mounted in machine direction, and the night-vision camera at the rear, facilitate its maneuvering and ensure visibility conditions at all times, increasing safety. Its compact design and state-of-the-art axles, both used for steering and driving (4WD and 4WS), provide excellent mobility and maneuverability in narrow galleries and tunnels. The machine has a hydrostatic transmission with gear motor and electronically controlled continuous variation (ICVD), which ensures an ideal torque/speed ratio. Furthermore, the Mixkret 4 features an automatic speed control system for moving down slopes fully loaded at the maximum secure speed.

The SPM 4210 Wetkret concrete spraying system features a reinforced spraying arm, providing a vertical spraying reach of 10 m. The maximum concrete output of the Putzmeister double-piston pump mounted on the equipment is 20 m³/h.

The proportional remote control, which can be operated both by cable and wireless, allows the easy operation of the spraying arm as well as the regulation of the concrete output and the adjustment of the pre-defined additive dosage. With state-of-the-art axles and a reinforced articulated turning system, the SPM 4210 Wetkret series is designed for the rough working conditions in mining. ■



**Putzmeister Mixkret 4:
Latest low-profile concrete mixer
for mining**

Putzmeister's latest concrete mixer for mining Mixkret 4 was launched last year and is already in use in several mining projects mainly in South America and Asia. In mining, not only Putzmeister customers who use, for example, the SPM 4210 concrete spraying equipment, complete their machine park with the Mixkret 4 in order to complement the concrete spraying process. The machine is optionally available with an additive tank for transporting and transferring additives to the shotcrete equipment, enhancing jobsite logistics.

Mixkret 4 provides a concrete capacity of 4 m³ and is equipped with a 6-cylinder, 130 kW (174 HP) engine, which provides it with a great traction and climbing ability as well as the possibility to work at high altitudes. The cabin, mounted in machine direction, and the night-vision camera at the rear, facilitate its maneuvering and ensure visibility conditions at all times. Its compact design and state-of-the-art axles, both used for steering and driving, provide mobility and maneuverability in narrow galleries and tunnels. The machine has hydrostatic transmission with a stepless variable gear motor, which ensures an ideal torque/speed ratio. Furthermore, the Mixkret 4 features an automatic speed control system for moving down slopes fully loaded at the maximum secure speed.

Technical data Mixkret 4

Concrete drum

Max. Capacity 4 m³

Operation hydraulisch

Performance

Max. speed 20 km/h

Climbing ability 30 % (SAE norm)

Diesel engine

Type Turbo Diesel, 6 cylinders

Power 130 kW at 2,500 rpm

Transmission and axles

Transmission type Hydrostatic with variation (ICVD)

Axle type Heavy-duty directional planetary axles

Other features

Driver cabin FOPS/ROPS certified

Night vision camera rear

Water tank 253 l

Additive tank (optional) 120 l

▼ ► Mixkret 4 is equipped with a 6-cylinder, 130 kW engine with ACERT technology and has a climbing ability of 30 %.



The big boom pump of the new generation with large reach and more flexibility: The new Putzmeister BSF 56-5 is setting standards

The new truck-mounted concrete pump BSF 56-5 is at the latest level related to handling, safety, operating costs and service. The current 56-5 is an innovation which sets standards and is especially qualified on construction sites with high demands on the concrete pump. It is optionally available with 4-axles or 5-axles.

The new concept of this long-reach boom pump is consequently geared to the needs of the operator. Numerous suggestions of customers, operators, suppliers and development experts are involved in the design. Most important components were calculated with the latest methods. Extensive field tests showed the high degree of maturity and the reliable work of the machine.

The placing boom: optimised down to the smallest detail

As a result of its high flexibility, the 5-arm placing boom with roll-Z-folding system can be used in a wide range of applications. Avoiding dead spots and showing excellent slip characteristics, the 56-5 can be used where other machines need to quit. The long reach of the placing boom can be used at difficult concreting tasks due to optimum kinematics.

Operator convenience and safety were the prime aspects for the design of the arm assembly. The boom vibrations are minimized even at large output. This is caused by the intelligent hauling of the delivery line and a harmonic stiffness distribution of the steel structure. Thus, the delivery of concrete becomes more efficient and safe. Due to the weight reduction and the optimized design of the boom control, the placing boom responds directly to the control commands of the operator.





New base structure with intelligent support system

Putzmeister long-reach boom pumps are provided with the reliable and variable-position TRDI support. The extent of supports is 9.3 m at the front and 12.1 m at the rear. On narrow construction sites the flexible assistance system ESC (Ergonomic® Setup Control) for one-side support

comes into operation. Thereby the extent of supports is 5.7 m at the front and 8.3 m at the rear. Telescopic support legs can be extended between obstacles as well.

The open and wide flatbed with slip resistant surface provides enough space for accessories. The concrete pump is well accessible from all sides for maintenance and service. Maintenance-free compon-

▲▼ The new generation fleet of concrete pumps : M56-5, M42-5, M38-5 and M36-4



ents and the consequent avoiding of special parts reduce the costs for operating and service considerably. Down times of the machine are minimized.

Economical and service-friendly pump

The 56-5 works with the 16 H pump or with the low wear and slow operating 16 H LS. The output of both pumps is up to 160 m³/h at a delivery pressure of maximum 85 bar. An oil cooler integrated in the support leg makes for an optimum cooling of the hydraulic fluid, even in ESC operation. With this pump unit the operating and service costs are minimized, with a long durability and numerous maintenance-free components.

EPS –Ergonic® Pump System retains a smooth operation

The Ergonic® Pump System EPS developed by Putzmeister offers essential advantages in the control of the pump: the pumping process runs very calm. The noise emissions and the fuel consumption turn out to be considerably low because of the integrated Ergonic® Output Control EOC. By the use of the full electronic control of the concrete pump, the oscillations of machine and boom were reduced.

Putzmeister pump units comply with the international norms and certification regulations. When it comes to safety all necessary criteria are complied. The use of new technologies like RFID increases safety as well as appointments with an underrun protection plus anti-slip and folding steps.

More than 50 years of experience are found in the development of Putzmeister concrete pumps. New innovations extended the application spectrum of pumping and delivering concrete significantly. Basis is always the reliable and sturdy concrete pumps from Putzmeister which improve constantly and are adapted to the modern demands. ■

Technical data

Boom 56-5

Folding type	5 section roll-Z-fold
Vertical reach	55.1 m
Horizontal reach	49.9 m gross
Reach depth	40.3 m
Unfolding height	12.2 m
Length end hose	3 m
Delivery line	DN 125, max. 85 bar

Pump BSF .16 HLS

Output	160 m ³ /h
Delivery pressure	85 bar
Strokes/min	26
Delivery cylinder	
Ø / stroke	250 /2100 mm

Pump BSF .16 H

Output	160 m ³ /h
Delivery pressure	85 bar
Strokes/min	31
Delivery cylinder	
Ø / stroke	230 /2100 mm



The new RS 909 hopper

Consistent improvement with the modular rear concept

Robust and long-life:

- Conical S transfer tube bearing
- Screw-on, stable grille made of steel
- Hopper made entirely of steel
- Stabler hopper suspension
- Optimized gasket for pressure connection bearing

Safe operation:

- Better climb thanks to agitator motor fitted on one side
- Optionally slewable access steps
- Fastening for the underride protection on the hopper itself; significant reduction in weight. As an option, the underride protection is also available in a folding version
- Substantially reduced dead space in the hopper
- New cleaning platform with significantly increased safety. The bottom step is optionally available in a folding version, which means fewer accidents.

Easier maintenance:

- Improved service accessibility compared with the previous generation
- Centralized lubrication system designed with lubrication tubes





The San Dimas mine lies close to the border between the states of Sinaloa and Durango in central west Mexico, and can be reached by a 45-minute flight or a 10-hour drive.

Tayoltita is the most important conurbation in the region, with around 8000 inhabitants, among them the mining company personnel. Outside this mining town, the region is sparsely populated.

The mountain range in the San Dimas region has summits of up to 2400 m, and the Piaxtla river valley is at a height of 400 m. Pines, cedars and isolated oaks

grow on the higher ridges, and at low altitudes dense scrub, cacti and grasses. Mining, agriculture, livestock farming and the timber industry are dominant in the region.

San Dimas consists of five ore zones or blocks – San Antonio West, Sinaloa Trench, Central Block, Tayoltita and Arana Hanging Wall Block – with a total area of 22,468 hectares. The total mine production is processed in Tayoltita.

The San Dimas gold and silver deposit is one of the most important precious me-

Mexican gold and silver mine receives two new piston pumps from Aichtal

The mining company Primero Mining Corp. ordered two new piston pumps from Putzmeister in 2012 for its San Dimas gold and silver mine in Tayoltita, Mexico. One of the two pumps has already been delivered to the job site, the second one is on its way to Mexico.

With the “Made in Germany” technology Primero is increasing the capacity and efficiency of the mining operations considerably and is replacing four older piston membrane pumps with one new machine. The biggest advantages of the new pumps are the significant lower operational and maintenance costs.

The gold and silver mine of San Dimas is one of the largest precious metal deposits in Mexico and is located in an extensive mining area. In this mountainous region the proportion of gold in the mined ore is particularly high. The Canadian company Primero Mining Corp., owner of the mine in Tayoltita, is expanding its capacities significantly and is planning a throughput of 2,500 tons of conveyed material per day until 2014. This corresponds to an increase of over 20 percent. Therefore Primero is using two new Putzmeister piston pumps, type HSP 25100. These pumps will be used to pump mine dumps, (known worldwide as tailings) to a deposit. At the San Dimas Mine these tailings are fine-grain residues which occur during the extraction of gold and are available in the form of sludge which has to be transported over a distance of 2,500 meters to a tailing pond. The tailings in San Dimas have a dry solid content of roughly 64 percent and require special pump technology. Three years ago Primero changed from piston membrane pumps to an oil-hydraulic high-pressure piston pump which was manufactured by Putzmeister Solid Pumps GmbH in Aichtal. Based on the customer’s high satisfaction with the first HSP 25100 pump system, Primero ordered another two pumps in 2012.



tal deposits in Mexico, and covers a field of 15 km x 15 km. Historical production in San Dimas is estimated at 11 million ounces of gold and 582 million ounces of silver.

Tayoltita is the oldest mine still operating in the San Dimas area. The main access is via a 4.4 km long tunnel, the entrance to which is around three kilometres north-east of the Tayoltita works.

[Source: www.primeromining.com]

➔ www.primeromining.com



Customised technology for Mexico's mining industry

Usually piston pump systems consist of three main units: the hydraulic driven piston pump, the hydraulic power pack and the control cabinet including an operating panel. These pump systems are designed for pumping material with high dry solid content and low water content. The HSP pump system has valves which consist of valve discs and hydraulic valve seats. Maximum conveying pressures up to 150 bar can be achieved through precise sealing of the valves. In San Dimas material is pumped at 60 bar. At this application the HSP 25100 achieves a delivery rate of up to 100 m³/h (Higher output rates are also available at Putzmeister Solid Pumps GmbH).

Over 85 percent saving on spare and wear parts

Putzmeister piston pumps enable quick and safe replacement of spare and wear parts. The service-friendly replacement of the valves and the long lifecycles of all wear parts based on the design are special features of Putzmeister. Valve discs and valve seats are made from extremely high wear-resistant steels and can be used on both sides. The valves can be easily replaced without replacing the delivery line.



▲ Ing. Juan Carlos Martínez G. (Primero Minas), Anna and Victor M. Soublette S. (Primero Minas), Tobias Lutz (PSP), Ing. Humberto Herrera V. (Construmac), Daniel Barbieri (PSP), (f.l.t.r.)

The decision to change from piston membrane pumps to oil-hydraulic piston pumps has helped Primero to reduce its costs for spare and wear parts by over 85 percent. In addition to the lower operational and maintenance costs, Primero benefits from the high availability of the system.

In the last five years a noticeable trend has emerged at Putzmeister Solid Pumps GmbH: There is a growing demand for oil-hydraulic high-pressure piston pumps in Latin America. The over 50 years of experience in the area of concrete pumps has particular advantages with

regard to savings in cement and water: It is always about an optimal water and solid matter ratio that should deliver a good pumpable mixture, which thickens at the right moment and achieves the necessary solidity. Putzmeister consistently implements this knowledge in the pump technology for every application. Another prerequisite is the global service network of Putzmeister and the quick availability of spare parts. Technicians and engineers are constantly on standby to fulfill customers' wishes and provide support to local representatives around the world. ■

Putzmeister provides efficient concrete pumping in the construction of the Lotte World Tower

The tiger is preparing for the high jump

Seoul – By 2016 at the latest the tallest building in the country, the Lotte World Tower, should be complete. The tower is to stretch 555 metres into the sky and according to the plans of the client (Lotte Group) should accommodate hotel rooms and offices on 123 floors. The group is happy to draw on the tried-and-tested technology and know-how and expertise of Putzmeister.

Not only the city, but also the urban district in which the new formidable building is to be created, has long since become well-known across the borders. It is located in the heart of the business district Gangnam, which achieved worldwide fame with the hit from the South Korean rapper Psy. “Gangnam Style” describes the luxurious lifestyle typical of this district and the city of Seoul. The plan of the Lotte Group also fits this framework. The location of the skyscraper



which is currently under construction already satisfies these high demands. Situated not far from the Han River beside the theme park Lotte World Adventure and Magic Island, it offers an unspoilt view of the idyllic Seokchon Lake.

The planning for the skyscraper dates back to 2005. But the initial concreting work for the foundations only began in 2012.

Many good reasons to enter a joint venture with Putzmeister

With the supply of stationary concrete pumps, stationary booms and delivery lines, as well as the technical support provided by Putzmeister Concrete Pumps and the South Korean subsidiary, the construction machine manufacturer is an important partner for the delivery of concrete to dizzying heights. If good relations had not already developed between Putzmeister and the Lotte Group roughly nine years ago, the undisputed leading position in the local concrete pump market and the excellent testimonials would have been convincing arguments for a collaboration. Putzmeister also holds all market shares in the stationary concrete pump business of South Korea for the last 13 years.

The Lotte Group is thus using high-performance technology, which has already been tried and tested in many first-class building projects: In addition to extremely efficient stationary concrete pumps and flexible stationary concrete booms, the unique delivery line and mounting system which already demonstrated its reliability at the Burj Khalifa is used. Maintenance, repair and the supply of spare parts are all effected close to the construction site and are always guaranteed to be competent, fast and uncomplicated thanks to the local Putzmeister representative.

► MX 32-4 concrete boom concreting the building core



Local equipment

- Two concrete pumps, type BSA14000 SHP-D (570 kW), and three concrete placing booms, type MX 32-4, on Putzmeister's own tubular column system (RS 850) for concreting ceilings
- Two concrete pumps, type BSA14000 HP-D (470 kW), for concreting the core of the building
- Delivery lines and accessories: Three delivery lines from series ZX150/6 (11 mm wall thickness), total distance 1.8 km; two delivery lines from series ZX125/5.5 (wall thickness 8.8 mm), each designed for 200 bar (wall thickness 8.8 mm), total distance 1.2 km; three slide

gate valves, pressure-proof up to 250 bar of concrete pressure, and two slide gate valves for 200 bar, three vertical tubular mountings, on which the riser is supported. Possible temperature-related changes in length can be offset without any constraints.

The Lotte World Tower – a building made of steel, glass and concrete

123 floors from the ground floor up gives a total area of around 502,450 m², which is to be used for hotel rooms and offices. The American architecture firm Kohn Pedersen Fox, which has also already realised several skyscrapers in Asia and North America, created the exceptional

design of this building and is responsible for the further planning. The skyscraper has a square floor plan, narrows towards the top and is rounded at the corners. A steel structure with glass panels should stretch 555 metres into the sky.

Stationary concrete pumps from Putzmeister will deliver approximately 86,415 m³ of concrete by the completion date. The compressive strength class of the concrete to be conveyed is between C60 and C90 and decreases towards the top.

The specialists at Putzmeister have gathered sufficient experience in such projects, for example during the construction of, to date, the world's tallest building, the 828-metre high Burj Khalifa in Dubai. ■



Seoul

Around 50 million people live in South Korea. Almost 10 million of these people live in the capital city Seoul. This explains the extremely high population density, which is significantly higher than that of Tokyo for example. In 1988 Seoul was the centre of attention when it played host to the summer Olympic Games. And also with the football World Cup in 2002, which South Korea organized together with Japan, the city with millions of inhabitants portrayed itself as a cosmopolitan and hospitable metropolis.

South Korea is one of Asia's so-called tiger economies. The high economic growth gave the country access to industrial nations in the West. The capital

of the country is a driving force for the constant upward trend of the South Korean economy. The most important economic sectors – technology products and the automotive industry – are dominated by groups such as LG, Samsung, the Hyundai Motor Company and the Lotte Group. And all these companies have their head office in Seoul. The Asian crisis in the 1990s also left its mark here, and painfully revealed the weak points of the South Korean economy. The country was able to recover quickly, however, and today is one of the most important economies in the world and one of the G-20 nations.

About the Lotte Group

The South Korean Lotte Group is a multinational group. The company was founded in Tokyo in 1948 by Korean Shin Kyuk-ho.

After Japan and South Korea rebuilt diplomatic relations in 1965, Lotte Confectionery Co., Ltd. was founded in Seoul in 1967. The company gradually grew from a chewing gum manufacturer to a multinational conglomerate with roughly 56,000 employees in South Korea and around 4,000 employees in Japan.

Incidentally, the name "Lotte" is of German origin, and not Japanese or Korean. Shin Kyuk-Ho was an admirer of the works of Johann Wolfgang von Goethe, in particular "The Sorrows of Young Werther". He called his company after the protagonist Charlotte ("Lotte" for short), who also played an important role in the real life of Goethe.





▲ A total of four BSA 14000 high pressure concrete pumps are in use – two HP-D and two SHP-D.



► The design for the Lotte World Mall with the Lotte World Tower by the American architecture firm Kohn Pedersen Fox

Higher output and greater ease of operation – plastering machines and screed conveyors

bauma 2013 will see the début of the thoroughly revised plastering machines, screed conveyors and fine concrete pumps – full of technical innovations, and with tangible improvements in quality.

Screed conveyors – Mixokret pneumatic conveyors

The Mixokret is a pneumatic conveyor that is easy to operate and service. The machine is suitable for mixing and conveying screed, sand, gravel and even fine grained concrete.

Putzmeister is presenting M 740 DBS and M 760 DH series models, with some innovations. The function, design and weight of the Mixokret and many details such as optimized scrapers and loaders, a reinforced hot-dip galvanized feeder container and a redesigned chassis are now more user-friendly and low-maintenance. The machine is available with a passenger car or truck trailer towing ring and the new elegant mudguards function as effective spray guards. Improvements have also been made in terms of work safety. The safety equipment on the mixer is now fitted with a spring instead of a stop lever.

A further highlight is the M 740 concept, a prototype for subsequent generations. In addition to the changes already mentioned above, this machine also features the new compressor unit developed by Putzmeister.

The disruptive influence of heat is a central topic relating to screed conveyors. With the M 740 Concept, an additional exhaust air shaft and repositioned silen-

cer reduce heat exposure of the targa and mixer. The control cabinet is also positioned away from the operating element to avoid overheating. The operating element itself appears in the new layout. Putzmeister has reduced the number of switches and displays required for machine operation to create a user-friendly, ergonomic operating concept. Modern targa design – the new shape and more rigid, dimensionally stable plastic components are both visually attractive and practical. The same applies for the working light on the new version.

Plastering machines – worm pumps

The SP 11 LMR is an ingeniously designed new product from the SP 11 series for mixing and conveying mortar and plaster using a simple, robust and convenient operating concept. The machines are suitable for internal and external rendering, coloured mortar, limestone mortar, base plaster, light wall mortar, ornamental plaster, filling and grouting work.

The new SP 11 LMR offers even more. Better performance: the mixer capacity has been increased from 150 to 180 l, the mixing apparatus has new, more effect-

ive mixing paddles and operates even more efficiently, the lifting cylinder has been positioned centrally and the motor generates 16.3 kW of power instead of 15 kW. Furthermore, an ideal storage hopper volume and optimized hydraulic system ensure that the pump operates with 60 additional rpm and increases the delivery rate by 10 l/min compared to the previous model.

Furthermore, the SP 11 LMR is easier to operate, maintain and service. Putzmeister has integrated the water dosing sprinkler into the protective grille, mounted the water meter under the control cabinet, lowered the filling height by incorporating a standard lifting mixer and reduced the drawbar load to less than 40 kg. Improved weight distribution makes the machine much easier to handle and manoeuvre, and an optional support wheel provides additional comfort.

Cleaning and maintenance have also been optimized. Good accessibility to all





components, especially the engine, and optimized high-pressure cleaners, make cleaning and servicing work much easier. With good roadholding and a maximum weight of less than 750 kg, the SP 11 LMR is uncomplicated to transport and EC type approval simplifies the approval procedure. The machine is also more attractive. The newly redesigned, hard-wearing hood lends the product an even better appearance.

The S 5 EVTm is considerably more user-friendly and safe. The plate mixer version of the universal worm pump is more suited to dry mix and wet mortar used to apply base and insulating plaster, clay plaster, pebbledash and removable plaster, sprayed and structural plaster, rough finish plaster, adhesive bridges and much more. On the latest model of the S 5 EVTm, Putzmeister has moved the outlet of the plate mixer so that the mortar falls down

As a company of the Putzmeister Group, **Putzmeister Mörtelmaschinen GmbH** develops, produces and supplies one of the world's most extensive ranges of powerful, site-optimized plastering machines, screed conveyors and fine concrete pumps, as well as providing proven Putzmeister service. The company concentrates primarily on the continuous further development and redevelopment of pneumatic conveyors, mixer pumps, piston pumps and worm pumps, as well as optimizing its products with the focus on performance and user-friendliness.

a grille-free shaft into the hopper. An effective guard on the protective grille prevents potential accidents while the enhanced kinematics of the mixer lid ensure an extended life and better handling. A simple plug-in connection to the rotor makes it easier to perform maintenance and replace pump parts. Two alternative hose connections (ID50 and ID35) offer the machine operator greater operating flexibility.

Plastering machines – mixer pumps

The MP 25 mixer pump is equipped with a large reservoir for all pumpable ready-mix dry mortars as well as internal plaster (gypsum/gypsum-lime plaster), external plaster (lime plaster and limestone mortar), self levelling floor screed, cementitious adhesive and reinforcement mortar, for example. The optional insulating plaster attachment is perfect for processing insulating plaster. Putzmeister has also developed a simpler directional changeover system to make the work of the machine operator easier.

Fine grained concrete and liquid screed pumps – piston pumps

The robust P 13 is suitable for the most difficult site-made mixes and almost any type of pumpable sand. Above all, this machine is intended for construction sites where really harsh conditions prevail. It is therefore robust and reliable in equal measure and many electronic components have been deliberately omitted. It is suitable for internal and external plaster, bentonite slurries, co-

loured mortar, cement plaster, limestone mortar, light wall mortar, self levelling floor screed and homogeneous mixes with a particle distribution of 16 mm for filling work.

The new optimized P 13 has computer-designed cam discs with a machined contact surface for steady pumping. The lighting integrated in the hood offers practical benefits for the machine operator. The shorter overall length was reduced to less than 2300 mm to allow lateral loading into the container and to save space required for other equipment on the construction site. Putzmeister has created a host of useful features for its customers, such as EC type approval for a simpler approval procedure and an ignition lock for the compact control cabinet on the diesel version.

The P 715 and P 718 are compact, light and powerful fine concrete trailer pumps for pumping anhydrite, cement and cementite self levelling floor screed and fine concrete (up to 16 mm). They are also ideal for shotcreting and pressure pointing mortar. The P 718 piston pump offers all of the advantages of its little sister the P 715 and in addition to its traditional use for fine concrete with a particle size of up to 32 mm, it is also ideal for pumping self levelling floor screed. Putzmeister now offers an optional vibrating screen with separating function for the P 715 piston pump. The output regulation for the electric version of the P 718 is integrated in the cable remote control, which is also available as an optional extra. Both machines have EC type approval for a simplified approval procedure. ■

Tried and tested just got better – Estrich Boy and the Trans Mix system

Machine operators working in screed laying will be treated to practical and economical innovations at bauma 2013. The Estrich Boy and Trans Mix system have carved out a reputation for themselves on the market over many decades. The innovations presented at the trade fair clearly demonstrate why Brinkmann is such a reputable brand. Visitors can feel and experience Brinkmann products at stand 1107/6 in the open-air area of the trade fair.

Leader of the pack for so long, but now even better – the Estrich Boy

Available on the market for about 45 years, the robust screed conveyor is especially popular and well-known for its extensive configuration options. The Estrich Boy is available with different actuators, outlet variants and a silo connection on request – the range of models and accessories on offer is very impressive. The corrosion-resistant electrophoretic deposition coating with powder finish is highly rated by customers and has proven a great success.

All the Estrich Boy models have been redesigned: the powerful pneumatic conveyor DC 550 BS, the environmentally friendly EC 450 BS with electric motor, the leading European DC 450 BS model with economic motor compressor unit and the DC 450 Bluepower with turbo function for a momentary boost in performance.

The most obvious indication of the further development is the redesigned hood made from an innovative material manufactured in a special process, which is more lightweight, hard-wearing and impact-resistant than conventional materials. Higher quality materials were used for the valve flap on the Estrich Boy and the shape and function have been improved. The enlarged suction and air discharge opening have enhanced the cooling effect on the drive unit. One advantage of the new centralized lubrication system with manual actuation function is that the machine operator can actuate the lubrication system independently if required. Moreover, the speed of the mixer unit on the Estrich Boy DC 450 Bluepower has been increased.

Completely redesigned and further refined – the Trans Mix range

The Trans Mix is a fully automatic transport, mixing and delivery system for processing screed. Advantages of this processing method include the time-saving and convenient placement and processing of the material. The complete model range has been rethought and redesigned in many areas and all further developments have been consistently implemented.

The chamber designs and versions of all models have been standardized and the components are assembled according to a modular system. The hydraulic and electrical systems satisfy current Putzmeister standards. For greater application flexibility, eight recipes can be stored and processed automatically and up to four additive metering pumps can be configured via an integral programming system.

The control with CAN Bus has a modular design. The semi-permeable display and microcontroller with high degree



of protection (IP67) are designed for a wide range of ambient conditions. The display offers an additional advantage: integral background lighting ensures a good view of all displays in sunlight and poor lighting conditions or in darkness. The control cabinet is integrated in a sturdy stainless steel housing.

Great importance has been attached to user-friendliness. Pipes have replaced many hydraulic hoses, and the radio remote control has a manual frequency change function as well as a longer reach. Pumping and operating hours can be logged in the new system and the new water meter allows easier servicing, while the new, more powerful glass fibre cutting system is even more effective. A dry run protection device prevents any damage to the high-pressure cleaner. The standard series equipment of the new models includes a hydraulic rear support. A vibrator for aggregate is available, as is a bracket for the smoothing machine on the Trans Mix 5500. ■

Brinkmann is a company in the Putzmeister Group, and a European leader in the screed conveyor segment. For more than 40 years, the company has manufactured well-engineered products that are safe and easy to operate and represent exceptional functional design and outstanding environmental compatibility. When optimizing the already legendary Estrich Boy and efficient Trans Mix system, the engineers focused on making the machines even more powerful, user-friendly and economical.



Intermix truck mixers – the ideal addition to the Putzmeister concrete conveying range



Enlarged platform with ergonomically shaped railing
Easy and safe cleaning
Closed lower grille for protecting knees against spray

New, optimized drum geometry
Increased dimensions for water, safety reserve for liquid concrete
Low centre of gravity for safe driving
Low construction height for easy driving of the mixing plant

Large manhole
Diameter 680 mm
Easy inspection and cleaning of the drum

Closed mixer frame made of S500 steel
Improved stability of the whole superstructure

Underride protection with step
Ergonomic working

Intermix GmbH specializes in truck mixers for ready-mixed concrete and transport technologies in tunnel construction. The company is based in Heimertingen (near Memmingen/Germany) where the following departments and services can be found: technical consultation, after-sales

care, truck mixer construction on all standard chassis, central spare parts supply, service and training.

Since 2012, Intermix has been a company of the Putzmeister Group, perfectly supplementing the concrete conveying and placing product range.



Double drip-down ring with cleaning chain

Significantly less contamination of the outlet cone

Discharge chute

Length 1.45 m
Ease of access to the pump and crane bucket

Closed rear as far as the truck chassis

Less contamination, easy to clean

Intermix truck mixers at bauma 2013

Intermix stand

Outdoor area F9 – 905A/2:

Truck mixer IMI 9.1 UL Lightweight

Nominal capacity:	9 m ³
Water:	10,46 m ³
Mixer drum:	Hardox steel from SSAB
Mudguard:	Al
Sleivable chute, hydr.:	raise/lower
Working light:	at the rear
Control system:	mechanical using emergency/off
Telescopic ladder:	Aluminium

Semitrailer mixer

IMI 10.1 UL Lightweight

Nominal capacity:	10 m ³
Water:	11,2 m ³
Mixer drum:	Hardox steel from SSAB
Working light:	at the rear
Control system:	MC1 control
Underride protection hydr.:	raise/lower
Chassis:	2-axle semitrailer, axle load 1.81

Putzmeister stand

Outdoor area F6 – 612/1:

Truck mixer IMI 12.1

Nominal capacity:	12 m ³
Water:	13,1 m ³
Mixer drum:	Steel, ThyssenKrupp
Control system:	mechanical driver's cab control

Truck mixer IMI 9.1 UL Lightweight

Nominal capacity:	9 m ³
Water:	10,46 m ³
Mixer drum:	Hardox steel from SSAB
Mudguard:	Al
Working light:	at the rear
Control system:	mechanical using emergency/off
Telescopic ladder:	Aluminium



Suhua Highway upgrade project in Taiwan: 12 units of SPM 500 Wetkret concrete spraying systems on site

The Suhua Highway, located in the north-eastern part of Taiwan, is said to be one of the most dangerous highways worldwide. Due to the weak geology in this tropical area, heavy rain and typhoons during the rainy season cause a lot of landslides and interruptions, and the curved road located right between the precipitous mountain and the seaside provokes a lot of accidents.

In order to increase security and boost tourism in this area, especially from China, the Ministry of Transportation and Communications (MOTC) is building 38.4 km of tunnels and bridges to replace the

three most dangerous sectors of the highway. The Project started 2011 and is expected to be completed in 2018.

MOTC has compared geological data from 275 drillings during the past 30 years and 27 recent drillings to make sure the soil and water conditions are adequate to support the construction.

The building company Kung Sing Engineering Corp., based in Taipei, which is one of the biggest construction companies in Taiwan, was assigned to plan the Suhua Highway Improvement Project. With its experience and expert know-

ledge of more than 50 years it plays a significant role in the important field of public works in Taiwan and the mainland.

**12 machines on site,
complete service on-the-spot**

Putzmeister was commissioned by Kung Sing Engineering Corp. to provide them with 12 units of SPM 500 Wetkret concrete spraying systems for structural support in the roadway heading of the Kuan-yin (B2 section) and Ku-feng tunnel (B3 section). The equipment was sold to Kung Sing Engineering Corp. through

Putzmeisters Taipei-based distributor in Taiwan, Antung Group, which placed a repair shop on the jobsite, providing full service for the machines in use, including technical support, maintenance and spare parts. Antung's Sales Engineer, Jon Lai, is always on-site and in charge of the operators' training for the correct use of the machines.

NATM method is first choice

The two tunnels have an overall length of approximately 13 km, with the construction works being 7.94.km and 4.66 km each and the corresponding costs for the 2 tunnels being NT\$ 7,2 and NT\$9.208 billion.

The tunnels are being built by the New Austrian Tunnelling Method (NATM), with excavation by drill and blast. The top-heading-and-bench method is being used, whereby a smaller tunnel (top heading) is excavated first. Once it has advanced some distance into the rock, workers begin excavating immediately below the floor of the top heading creating a bench. One advantage of this method is that engineers can use the heading tunnel to gauge the stability of the rock before moving forward with the project.



▲ The Putzmeister workshop at the Antung Group ensures quick support on-site

Efficient construction works in the tunnel due to seven working points

The construction works attack the tunnels not only from both sides. In addition to the two parallel tunnels being built there is another, smaller tunnel which has existed since 1980 and runs parallel to the two tunnels under construction. It is used for building ramps which con-

▼ A SPM 500 Wetkret on one of the tunnel portals





▲ One of the twelve SPM 500 Wetkret inside the tunnel

nect the tunnels. Once the ramp reaches the location where the tunnel will be built, a cavern is excavated. From there the workers start with the construction work in both directions. The cavern is also used for storage. 5 ramps are planned to be built, so with the 2 tunnel ends there are 7 construction areas in total, which is a very efficient way of operation. A few hundred workers are employed which operate in 12 hour shifts 24 hours, 7 days a week, with the construction company being close to the jobsite.

“We are proud that our equipment meets the requirements of Kung Sing Engineering Group for concrete spraying in tunnel construction” said Max Eckstein, International Sales Manager of the Putzmeister Underground Division.

The SPM 500 Wetkret series has been used in a large number of tunnelling projects all over the world. With a vertical spraying reach of 17 m and a concrete flow of 30 m³/h, the machine is suitable for both medium and large section tunnels, galleries and slopes. ■

▼ Employees of Antung with the sales director of PUC, Max Eckstein (r.)



Technical data SPM 500 Wetkret

Putzmeister telescopic spraying arm	
Max. vertical reach	17 m
Max. horizontal reach	15 m

Putzmeister concrete pump	
Type	Double piston, hydraulically driven
Output (max. theor.)	30 m ³ /h., variable
Pressure (max. theor.)	75 bar

Additive pump	
Output	30 – 700 l/h, synchronized with concrete flow

Off-Road vehicle	
Max. speed	20 km/h
Climbing ability	35 %

Compressor	
Max. airflow	11 m ³ /min
Max. working pressure	7.5 bar



A long journey to a safe road: The history of the Suhua Highway

Suhua Highway is the name of a 118 km section of Provincial Highway No. 9 between Su-ao Township and Hualien City in Taiwan.

From 1874 to 1876, the Chinese government had laid a footpath there to reinforce their claim to power over the east of Taiwan, among other things. The path was narrow, due to the steepness of the coast. Its military importance was substantially greater than its economic advantage, and later, the stretch was abandoned and

rebuilt several times over. The Japanese colonial powers extended the route using 9 bridges, 14 tunnels and a gravel surface, so that it could be opened to vehicles in 1932.

In spite of all this, its narrow width of 3.56 m in its northern section meant that it could only accommodate a single lane of traffic. Vehicles had to travel in convoy, and there were only six passing points along the route.

As there were no guard rails, and with the constant risk of rockfalls, the highway along this steep coast was considered one of the most dangerous in the world. Nevertheless, it was the main transport

route between south and north Taiwan until 1980, when the North-Link Line railway was completed. In the same year, the two-lane expansion of the northern section of the highway was begun, and completed in 1990.

The section of the highway between Su-ao and Dong-ao collapsed in October 2010. Following on from this, it was decided, as part of the project to improve the Suhua Highway, to replace the coast road with tunnels further inland.



The route along the extremely steep coast that towers above the Pacific is very dangerous, but offers picturesque viewpoints, such as the famous tourist stop, the Chingshui Cliffs.

Clear as day: The mobile partial flow filter for clean hydraulic fluid

Clean, sensible and quick to assemble – the partial flow filter

It is a useful accompaniment to our truck-mounted concrete pumps – the mobile partial flow filter. It is an additional, extremely effective microfilter with integrated water separation, which removes the tiniest of dust and abrasion particles from the fluid that has already passed through the full-flow filter.

Since it works independently of the main current, only one small part of the fluid (approx. five to ten per cent) flows through the filter. This means that the tiny pores can also hold back the smallest of particles (from 1 µm). Special filter elements also ensure that water carried along with the fluid is absorbed. Full fluid change required less often, less wear, prevention of malfunctions in the hydraulic system and a higher level of

machine availability are unbeatable arguments for this investment, which not only pays for itself in no time, but can also be set up. As a separate unit that is independent of the machine and especially designed for applications involving rotation, it can be fitted very quickly and easily to practically any point on the machine.

Longer full fluid change intervals reduce costs

The purchase of a partial flow filter pays for itself as early as the first full fluid change.

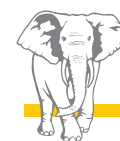
Recommended full fluid change intervals

without partial flow filter	after 500 operating hours	
with partial flow filter	BSF 36-5.16 H	approx. 800 hours*
	BSF 42-5.16 H	approx. 900 hours*
	BSF 52-5.16 H	approx. 1.000 hours*

* Full fluid change intervals from practical experience

The partial flow filter – an investment that saves in the long run:

- Fewer full fluid changes and less used fluid
- Minimized wear of the hydraulic components
- Absorbs water
- Prevents malfunctions
- Reduces maintenance and staff costs
- Without additional engines or pump
- Quick and easy to assemble
- Designed for rotating use
- Reduces machine outage times
- Compactly constructed
- Pays for itself in no time



Putzmeister

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