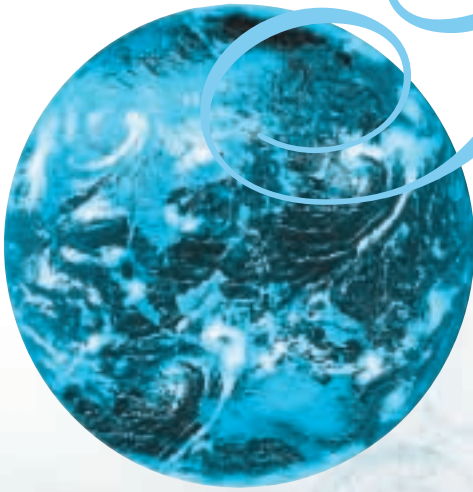


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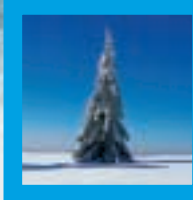
Quarterly News Magazine for Construction Equipment Users — Volume 3 N°4

Snow removal  
**For biathlon**

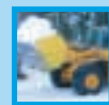
Excavation for urban  
**Underground parking**

Quarrying for  
**Cobblestones**

New wheel loader sets  
**Top benchmarks**



# IN THIS ISSUE



## SNOW REMOVAL FOR BIATHLON

Komatsu wheel loader assists biathlon world cup competition ..... **page 4**



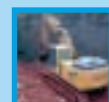
## NEW KOMATSU TRADEMARK

The new GALEO trademark distinguishes Komatsu's leading-edge technologies ..... **page 5**



## QUARRYING GREYWACKE

Hard stone extraction with modern Komatsu quarrying machines ..... **page 6**



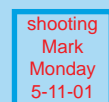
## TOUGH URBAN EXCAVATION WORKS

Komatsu hydraulic excavators cut underground parking from solid rock ..... **page 8**



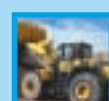
## QUARRYING FOR COBBLESTONES

Mining 'melaphyre' with a massive Komatsu machine ..... **page 10**



## EXPERTISE FOR CUSTOMER PARTS SUPPORT

Practical tips for machine operators - part 2 ..... **page 13**



## NEW GENERATION WHEEL LOADER

Komatsu raises the benchmarks for wheel loader design ..... **page 14**

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*As the new year begins, I wish to take this opportunity to wish you a year of good health and growing prosperity.*

*2002 marks Komatsu Times' fourth year of publication. The magazine has grown steadily in its popularity and distribution, and our plan is to continue with this expansion. Your interest and participation have been the driving forces behind its success.*

*The new year also marks the beginning of the euro as the common currency across the vast majority of our European markets. While it's certain that we will all have to adjust to it over the coming months, the potential benefits by far outweigh temporary inconveniences. The euro is yet another step in the strengthening of Europe as a unified and major player in world markets.*

*The beginning of a new year also provides us with a measure of the progress that we have made over the past year. Last year, we introduced significant new models, plus upgrades to several existing models. 2001 saw the introduction of comprehensive new approaches to improved design for operating economies, environmental compatibility and operator comfort. These developments are seen in the new "dash-5" skid-steer loaders and wheel loaders. Research, development and prototype testing from last year will be the foundation of further significant and continuing innovations scheduled for release this year.*

*Please join me in making 2002 a year in which we all work together to build a bright future for generations of Europeans to come.*



Dirk Stukkens - General Manager Marketing Development

## [Komatsu wheel loader assists biathlon world cup]

# Biathlon

— by Uwe Herber —

Parking lots for VIPs and sponsors must be cleared of snow 24 hrs a day. The 3m wide bucket does this with ease.



Ready, set, go! The WA380 carries snow in the 6 m<sup>3</sup> bucket to prepare the runs for the 5th biathlon world cup.



Mounting the snow chains only takes a few minutes.



Last winter, a Komatsu WA380-3 active plus wheel loader helped maintain cross-country ski runs and parking areas for the 5th biathlon world cup in Ruhpolding, Bavaria, Germany. State-of-the-art equipment is needed to enable the champions to give their best. This includes radios, snow smoothers and the WA380 eighteen-tonne wheel loader with a massive 6m<sup>3</sup> snow-carrying bucket.

Hans Niederbichler, owner of the construction company Wagnerberger & Niederbichler KG, is pleased with the performance of the WA380 wheel loader. This machine, with its 141 kW Komatsu engine operates, spring through fall, with a standard 3.4m<sup>3</sup> bucket. During the winter months, additional edges and a road-protecting cutting edge are added.

"Keeping our mobile equipment operating throughout the entire year, clearing roads of snow and preparing ski runs are important jobs for us" says Hans Niederbichler.

The community's 12.5 km long biathlon ski runs require permanent maintenance, and parking lots and surrounding streets must be cleared of snow. "70 cm of snow in just a few hours is normal here" adds Hans Niederbichler. Preparing the ski runs and clearing the parking lots are the most important jobs, but the WA380 is also used for towing away heavy trucks. Special snow-chains are used on the WA380's 23,5R25 XHA tyres. And when there's no snow? The wheel loader loads gravel (with a load meter) or does road maintenance work.

An attractive factor is the machine's compliance with German road regulations, allowing it to travel on its own wheels between various job locations. When clearing snow from public roads, the compact dimensions are especially advantageous. And the machine's robust performance is essential, because it's hard work for a wheel loader to clear snow on steep mountain roads, and to load gravel (material density 1.8 ton/m<sup>3</sup>) with the 3.4 m<sup>3</sup> bucket.

The WA380 is known to be a significant competitor in the European market. Therefore, supporting competitive winter sports is truly fitting for this popular champion of productivity.

## GALEO

### [The new GALEO trademark distinguishes Komatsu's leading-edge technologies]



— by Anne Marie Van Ransbeeck —

At ceremonies that marked Komatsu's 80th Anniversary celebration in Japan, Komatsu Ltd. announced the worldwide launch of its new "GALEO" trademark. GALEO is an acronym for "Genuine Answers for Land & Equipment Optimisation".

The GALEO logo is exclusively found on Komatsu's latest-model construction, mining and utility machines. Before receiving the prestigious GALEO distinction, a new model machine must meet rigorous design and performance criteria, achieving the very highest standards in four key areas: optimal customer solutions based on information technology, the most friendly levels of environmental impact, ultra-safe operating conditions, and highest overall quality with exceptional power.

The name GALEO is associated with three words: "Galea", the Latin word for the 'helmet' worn by Minerva, the mythological Roman goddess of wisdom and art; "Geo", the Greek word for 'earth', and "Leo", the Latin word for 'lion'.

The GALEO trademark will complement the existing Komatsu brand, and distinguish Komatsu's 21st century mission to make the most safe, productive and friendly machines in the world. So when you see a machine that displays the GALEO logo, you'll know that it's the most advanced design available. And above all else, it's Komatsu-designed, Komatsu-made, and Komatsu-supported.

Quarry power: The WA600-3 loads blasted greywacke into a crusher.



The HD325-6 transports chippings in its 24-tonne body



Retarder brakes: Lower operating costs with the wear-reducing retarder system

# Hard stone

## [Hard stone extraction with modern Komatsu quarrying]

— by Uwe Pausch —

**G**reywacke is a dark, coarse-grained (2.35 tonne/m<sup>3</sup>) sandstone with a clay content that exceeds fifteen per cent. It's found in large amounts around the German city of Drolshagen. The Albus quarry has been in operation here since 1950. Its main products are crushed stone, chippings and natural stones.

Since last year, the quarry has been operated by the company Dohrmann-Gruppe. After the takeover, the new owners outfitted the quarry with up-to-date Komatsu equipment. The Cologne-based company Gebrüder Finger provided them with two WA470-3 active plus wheel loaders, a WA600-6 wheel loader and a HD325-6 dump truck.

At this quarry, rock blasting is done twice weekly. The WA600-3 wheel loader, with an operating weight of 44 tonnes, engine horsepower of 328 kW and 6.4 m<sup>3</sup> rock bucket, loads and carries the blasted

material. It feeds a mobile crusher at the quarry's edge. Every day, the WA600-3 has to drive up a steep ramp to the crusher, again and again, dumping about 15 tonnes of material into the crusher's feeder.

The 37-tonne Komatsu HD325-6 dump truck with its 24-tonne body is used to load a stationary crusher for chipping, about 400 metres away. The dump truck's low, high-tensile steel body is easy to load. It has a sturdy chassis, 379 kW low-emission engine, and a seven-gear K-Atomics transmission with a hydraulic retarder for reduced brake wear.

The two WA470-3 wheel loaders, equipped with 5 m<sup>3</sup> standard buckets, are used to load crushed material. Built at Komatsu's manufacturing facility in Hanover, Germany, they're perfect for all load-and-carry operations. They feature: Z-kinematics, high breakout forces and

fast hydraulic cycle times. The APS system controls the speed and power of their hydraulics. They're equipped with optional ALS load stabilisers which are activated in carrying operations at 5 km/h and faster, reducing material spillage.

The WA600-3 with its 23.5 l, 6 cylinder low-emission engine features a three-stage torque converter, a four-gear powershift transmission, and maintenance-free, fully-hydraulic-operated wet disc brakes. CEO Eberhard Korn said "High productivity and low fuel consumption were attractive arguments for the WA600". With its substantial capacity, it fills the HD325-5 dump truck in just four loading cycles.

For the quarry to achieve optimal efficiency, the individual as well as overall loading capacities of the dump trucks, wheel loaders and crushers must all integrate and match, for optimal efficiency.

The machines are operated by skilled drivers, who have been trained by Gebrüder Finger, the company that sold the machines. Machine owner Eberhard Korn said; "We operate our machines about 1,500 to 1,700 hours per year and can't afford downtime. It's essential to

have a reliable supplier who can deliver all required spare parts ASAP, plus mechanics who are experienced with large machines". Reliability is supported by the fact that all operators and service personnel are constantly informed of the condition of the machines by their on-board Komatsu EDIMOS II maintenance systems.

Unquestionably, these quarrying operations are tough and demanding. This team of Komatsu machines is set to meet

the challenge, day-after-day. And this way, they 'carry the load' two ways; moving materials, and meeting productivity expectations.



## [Komatsu hydraulic excavators cut underground parking from solid rock]



— by Uwe Pausch —

# Underground parking

A PC95 using a rock cutter – perfect for areas with a dense population



Due to the adjustable swing boom, the PC95 can operate in confined spaces



About 500, five to seven metres long concrete pegs were placed in the 15m deep ditch



The head office of August Dohrmann GmbH Bauunternehmung is located in Remscheid, Germany. A complex of buildings, including underground parking, was built here recently. Dohrmann is responsible for all civil and underground engineering works, using their own equipment for all sorts of jobs including; excavating, air-placed concrete works, and placing girders or concrete pegs.

Dohrmann used three of their fleet of twenty Komatsu crawler excavators for this job: a PC95, a PC210 and a PC290. Together, they excavated a total of 30,000 tons of rock out of this 15m deep construction site. Most of the rock could be cracked and excavated. Because the job site was located in the heart of the city, the harder rock had to be removed using ripper teeth, hydraulic hammers and rock cutters. One of the key tools was a rock cutter, equipped with a quick change device to fit the Komatsu excavators. Air-placed concrete and concrete pegs were used for this technically-demanding work. The concrete pegs were placed using a drilling machine that was designed by Dohrmann and mounted on the excavators' quick couplers. The rock drills placed about 500 concrete pegs, up to 7.5 m long, in the fissured rock.

The PC95 was perfect for this job site. It has an operating weight 10 tonnes, with a net engine power of 62 kW, a digging depth about 4 m, and it's equipped with a 0.35 m<sup>3</sup> bucket. The PC95 can operate efficiently in confined areas, thanks to its swing boom. Its powerful hydraulic system allows the mounting of small rock cutters.

The bigger machines on this job site were the 22-tonne PC210 active and the 29-tonne PC290. Bucket volumes of up to 2.1 m<sup>3</sup> were used for excavating work. Some of the bigger machines, such as the PC290, have two-piece booms, making them well-suited for heavy lifting operations.

Bio-hydraulic oil is a standard at Dohrmann. Their excavators are equipped with bio-hydraulic oil circuits. A wise decision, because during the works in Remscheid, groundwater flooding appeared through the fissured rock. The water forced a change of plans for the groundwater packing. "We would have been in trouble if a hydraulic hose with conventional oil would have burst in here" said Dohrmann's project manager, Mr Baier.

Spare parts were supplied via the Komatsu-Power-Line. The local supplier is Fa. Gebrüder Finger, of Cologne. All parts

ordered up to 17:00 hr were delivered to the job site or the workshop the next morning. Small repair jobs were done by Dohrmann's mechanics from their repair vehicle, while larger repairs were done by Gebrüder Finger's mechanics. If special equipment such as rock drills had to be fitted, the specialists of Gebrüder Finger assisted the Dohrmann mechanics.

Dohrmann (with 280 employees) uses Komatsu machines around the region of their head office, as well as near their branches (with 65 employees), including a concrete factory. Dohrmann has selected Komatsu excavators and wheel loaders because of their quality, fuel economy and reliability, plus the comprehensive support received from Gebrüder Finger.

Komatsu's versatility in these hard underground conditions shows that machine agility, muscle and operations know-how make a strong foundation for excavating operations that goes well-beyond the ordinary.

# Melaphyre

— Mining for 'melaphyre' cobble stones with  
a massive Komatsu machine

— by Carlheinz Michel —

The city of Kusel-Ehweiler, Germany is a popular place for town planners and gardening professionals to buy beautiful cobble stones. For over 100 years, melaphyre for cobble stones has been quarried here. Melaphyre is an extremely hard volcanic stone with a material density of 2.7 tonnes/m<sup>3</sup>. The name "melaphyre" is derived from the Greek words: mélas = dark, and phiro = to mix.

The melaphyre quarry is operated by the company Ehweiler GmbH, a branch of Persch-Holding, located in St. Wendel-Hoof. According to manager Andreas Persch, there is no blasting during the quarrying, "because this would cause hairline cracks and reduce the quality of the cobble stones". A PC1100 excavator,



Not usually seen in this large class of machine, the PC1100-6 has a hydraulic quick coupler. This is important on this site, because the ripper tooth and the 4.7 m<sup>3</sup> bucket have to be changed a few times each hour.

The PC1100-6 operates side-by-side with a 21-tonne Komatsu PC210-6 excavator, which cuts the large blocks of rock for

equipped with a ripper, is used instead of blasting.

As of September of 2001, they began using a Komatsu PC1100 to do the excavations. After a long period of testing and evaluation, working together with the local company FasiTec, two old excavators (50 and 70 tonnes) were replaced by the new, 105-tonne Komatsu PC1100-6.

transportation. The hourly production of these two machines is impressive: up to 1000 m<sup>3</sup> melaphyre is processed. That's about 2,500 tonnes of material! The PC1100 can load up to 120 articulated dump trucks in nine hours, each carrying 35 tonnes.

Komatsu excavator team at the quarry's face: The PC210 reduces the stone size, the PC1100 loads an articulated dump truck.



1,000 m<sup>3</sup> a day: the 105-tonne PC1100 SP-6 with its 4.7 m<sup>3</sup> bucket.

The PC1100SP-6 was built by Komatsu Mining in Düsseldorf. (SP stands for Special Performance, which is the heavy-duty version). The excavator's weight is 105 tonnes and the powerful engine is rated at 463 kW. The work equipment consists of a 7.7 m mono-piece boom and a 3.4 m arm. The bucket cylinders are well protected by a telescopic guard system. At the heart of the excavator is the three-stage load sensing hydraulic system for a sensitive hydraulic control, with three axial piston pumps for the work equipment and swing motor.

Special equipment for this hard application include central lubrication, ROPS/FOPS cab and security glass. Special Hardox 700 steel from Komatsu K VX is used for the 4.7 m<sup>3</sup> bucket, as well for the 1.8 m, 3-tonne ripper tooth (a

K VX M80 system). The bucket is equipped with K VX teeth M68 and M48, perfectly sized for loading large materials.

It's hard work in this 20-acre quarry. A team of about twenty people produces cobble, gravel, recycled rubble and more. Komatsu machines can be seen everywhere: wheel loaders WA270, WA470, WA500 and excavators PC240, PC340 and PC400. Each machine is well maintained and driven up to 15,000 hours. In case of repairs, a workshop is available, or specialists from Fasiotec are available to assist. Fasiotec stores all required spare parts, and the customer only has to inventory filters and hoses.

So the next time that you see cobble stones of exceptional visual quality, they just might be the result of the efforts of the massive PC1100-6 and other Komatsu machines at the Ehweiler GmbH quarry, backed by hardworking Komatsu personnel and parts.

The special bucket: Hardox 700 HB wear edges and Komatsu K VX teeth size M68 and M48.



The ripper tooth – interchangeable with the bucket – breaks up the stone. Blasting would damage the stone.





Henri Dion - Service Manager  
at Doornbos Belgium

# part 2 Practical for machine operators Tips

— by Henri Dion —

Continuing from the previous edition of *Komatsu Times*, here are more easily-done, practical tips that are guaranteed to lower your service costs and help keep your machine running better, with less problems.

**Tip 1** Your operator's manual is a part of your machine. It's not an office document. It belongs inside the machine where it can be used for reference at any time. Keep it in the machine where you can use it.

**Tip 2** Never start the engine without making the specified pre-checks.

**Tip 3** Don't use full throttle or full power immediately after start-up. Give the engine a chance to warm up before you take it through its paces.

**Tip 4** Never turn the engine off when it is at a high level of RPMs. Throttle down to idle for a few moments before you turn it off.

**Tip 5** Don't let the engine idle for long periods when you're not using the machine.

**Tip 6** If you expect that the temperature could go below freezing overnight, don't park the machine in water or mud that could freeze and trap it.

**Tip 7** When you're shutting down your machine at the end of the day, protect your hydraulic cylinders by positioning the pistons inside.

**Tip 8** Manage the hydraulic fluid and engine oil levels properly. Don't 'top them up' each day. Ensure that the level is always between maximum and minimum, and only refill to the maximum level when it reaches the minimum. And be sure to respect the correct number of litres when refilling - don't overfill.

**Tip 9** Only measure the oil and fluid levels when the machine is cold - never when it's warm.

**Tip 10** Refuel and clean the fuel filler filter at the end of the day and don't be in a hurry. Never remove the fuel filter to speed fuel input. In

the long run, it's faster and cheaper to clean the gas of debris with the filter, than it is to clean the engine of the debris because it's causing problems.

Henri Dijon is After Sales Manager at Doornbos Belgium.

Shooting Mark  
Monday 5-11-'01

## [EXPERTISE FOR CUSTOMER PARTS SUPPORT]

# Parts

— by Steve Quintijn —

Product knowledge is key to ensuring that customers get top value when they purchase and use Komatsu parts. Factory-based expert knowledge with professional field assistance adds real value. Supporting this need, Komatsu Europe's Parts Business Unit has deployed a training programme for parts specialists. Twice each year, these Komatsu parts people participate in parts training sessions across Europe's regions.

Brussels, Vienna, Copenhagen and Madrid were host cities for the training in the spring of 2001. The participants - forty-eight people attending from nineteen European countries - gained greater knowledge about Reman (rebuilt

engines and other large components), K VX (ground-engaging tools), Hensley (buckets, teeth, adapters) and filters.

The last session (fall 2001) was comprised of special training about undercarriage and lubricants. In cooperation with industry experts, forty-two participants from seventeen countries attended.

Providing the training in strategically-positioned cities is an important part of this programme. This is done to keep the training sessions as interactive as possible, with optimal personal involvement and greater individual attention. The aim is to train groups of no more than fifteen participants, preferably with common

linguistic and business backgrounds. Another goal is to connect participants in a way that they're able to work together and share their knowledge.

This programme will ensure that customers have expert Komatsu resources at their disposal whenever they consider the purchase of genuine Komatsu parts. It's a key part of the total package that makes Komatsu the supplier-of-choice for expert, ongoing productivity support.

[Komatsu raises the benchmarks for wheel loader design]

# Benchmarks

— by Uwe Herber —

**K**omatsu has significantly raised the industry's benchmarks for wheel loader design by introducing the first in its new series of "Dash 5" machines.

The new model WA470-5 is built in the Komatsu factory in Hanover, Germany. Its new design achievements are found in the areas of environmentally-friendly operations, economy of operations, servicing simplicity, and added operator comfort.

Optimal functionality for operator comfort was one of the prime considerations in the design process. This began with the new Komatsu SPACECAB™ driver's cabin. It has 25% more inner space, contributing to substantially-improved comfort levels. The ergonomically-designed air-sprung driver's seat and new, practical storage compartments are designed to make the driver's work easier. The spacious ROPS-cabin with its telescopic, adjustable-height steering column offers comfortable handling for every size driver. This new machine is Euro 2 norm compliant with a reduced interior noise level of just 71dB(A), which is currently the lowest noise emission level for a machine in this class.

Outstanding tractive effort, with fuel consumption of up to 75% less than some competitor models represents an outstanding design achievement. Using electronic fuel control and an automatic gearbox with four operating ranges,

top economy is guaranteed in every operating mode. The new common-rail direct injection engine has an output of 195 kW and complies with worldwide TIER 2 regulations. Lower engine speed is combined with a larger converter, improving the transfer of engine power to the transmission. A lock-up torque converter is optionally available. This direct drive improves the efficiency of the converter and contributes to peak output with minimum fuel consumption.

New levels of serviceability have been achieved. This starts with the easiest possible access to all daily service check points. Maintenance times are substantially reduced by easier access via large wing-doors at the rear of the machine. New 500-hour intervals (previously 250 hours) between engine oil and filter changes also help reduce maintenance costs. Daily radiator cleaning is made easier for the driver thanks to the reversible fan and an electrically-controlled, moveable air-to-air cooler. The integral monitor panel has a self-diagnostic function to assist and speed up service work, at the same time reducing down time. A display of various fault codes assists in quick remote fault diagnosis, also helping to facilitate immediate orders for replacement parts.

The new WA470-5 has a low engine speed and a reduced-noise low-emission engine. The exterior noise level has been reduced to just

105dB(A) – 60% less noise exposure for the driver – compared with certain competitors. Electronic fuel injection makes the motor quieter, and the variable fan drive also helps minimise noise. Better sound insulation helps to reduce external engine noise.

This new machine has a 'world first' with the introduction of the semi-automatic "dig" function. Pre-programmed bucket-filling operations can be done, determined by electronic pre-selection. This means that, when approaching the stock pile, manual bucket operations aren't needed, making the work far easier and more accurate.

So be sure to watch for Komatsu's new "Dash 5" wheel loaders. They'll elevate the industry's expectations for productivity and comfort. And they'll reduce operations costs without compromise to daily output. These are the ways that the industry's benchmarks have now been raised.

## New - New - New - New - New - New



**WA470-5 highlights at a glance**

Operating weight.....	23,200 kg
Bucket volume.....	3.8 - 6.0 m <sup>3</sup>
Engine.....	195kW / 261HP
Exterior noise level (lowest in its class)	.....only 105 dB(A)
Interior noise level (lowest in its class)	.....only 71 dB(A)
Cabin space.....	.....25% more
Fuel consumption compared to some competitors.....	.....up to 75% less
Engine oil and air filter replacement intervals (formerly 250 hrs).....	.....now 500 hrs
Semi-automatic dig function.....	.....new and exclusive



## The new 5-Star Loaders

The new series 5 wheel loaders: the perfect combination of performance, comfort and economy in operation. With a level of driver comfort in the spacious cab never before experienced, tremendous traction and extremely low fuel consumption. On top of all this, it's quiet as a whisper in operation, absolutely easy to maintain and incredibly productive, with semi-automatic loading function. The expression "wheel loader" needs redefining for the Komatsu 5-star loaders!

The new WA470-5, the first series 5 model, is available for you immediately.  
Speak to your Komatsu dealer right now!

The **5** Star Loaders

**KOMATSU**  
[www.KomatsuEurope.com](http://www.KomatsuEurope.com)