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High Pressure for the Metals Industry





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Sustainably profitable solutions for the highest quality requirements

KAMAT Hydraulics - The Beating Heart of Productivity

KAMAT has for many years been developing and producing plunger pumps and hydraulics solutions of the highest standard for the global metals industry.

Part of the KAMAT philosophy is only to supply solutions that fulfil the triad of top quality, comprehensive service-friendliness, and sustainable cost control.



The qualitative basic equipment of every KAMAT hydraulics solution includes the fact that the plunger pumps can be installed either horizontally or vertically, that the crankshaft guarantees particularly smooth running, and that every pump has systems for monitoring oil temperature and oil pressure. In addition to this, KAMAT pumps have a single-piece pumphead manufactured from high-tensile stainless steel, and can be operated in the speed range 1:10 without external oil lubrication. KAMAT pumps are available with a choice of electrically or pneumatically actuated circulation valves, or even with suction valve lifting.

Service-friendliness means minimal downtime. This is why KAMAT pumps have integrated gear reductions allowing simple servicing. Double helical-gear, self-centring gear reductions guarantee not only maximum force transmission with minimal noise, but also remove the necessity for time-consuming and cost-intensive calibration. Since horizontal KAMAT pumps are serviced from above, no additional floor space is required for maintenance work. The replacement of worn-out seals never takes longer than one hour.

KAMAT gear boxes are serviced without the need for draining the oil. The oil lubrication system can be serviced without even opening the gear unit. In addition to this, altering the pressure and litre parameters or changing the packing and plungers is possible within one hour without removing the pump head or gear box. The suction and pressure valves of the pumps up to 1,000 bar can not only be dismantled individually, but are interchangeable.

For KAMAT, sustainable cost control means energy-efficient gear boxes with efficiencies > 90%, a gravity fed suction-side, the use of non-wearing ceramic plungers and soft-sealing valves for fluids with a particle size of up to 350 μm . KAMAT pumps also use a very high proportion of identical parts in order to minimise wearing part stocks.

The ever-increasing demand for safety and reliability is met at KAMAT amongst other things by pumps built (upon request) to ATEX standard, and through the consistent use of full-lift safety valves.

Benefits

- decades of experience with pressures ranging up to 3,500 bar
- minimal demands on the service personnel due to the lowest possible pump complexity
- the highest possible use of identical parts, e.g. only two different oil seals in use
- sustainable cost control through energy efficiency, low space requirements, and low demands placed on the fluids available



**Descaling with
KAMAT High Pressure –
Steel of the Highest
Purity**

**KAMAT Technology
for Morgoil® Bearings –
Guarantees Smooth
Production Processes**



KAMAT supplies pumps in all performance classes required for rolling mill hydraulic systems, up to 1,200 kW, up to 3,500 bar and up to 3,939 l/min volume flow rate per pump for high-performance, quality-assured descaling. Performance characteristics that supply the highest quality descaled products from every slab.

In addition, KAMAT has long been able to provide high volume flow rates of 640 l/min per pump, without the use of booster pumps. The advantages are obvious: fewer parts, fewer electrical connections, fewer components at risk of failure, and fewer shear effects on emulsion.

Integrated gear reductions with force-fed oil lubrication, parts in fluid contact made from stainless steel and solid ceramic plungers make the KAMAT pump technology robust and compact, and guarantee a low failure rate, high performance and long service life.

KAMAT pumps function perfectly well without drinking water. Poor water quality with high particle sizes of up to 350 µm, often encountered in descaling recycling, is perfectly sufficient for KAMAT pumps.

One of the greatest challenges in the provision of continuous and uniformly high pressures is posed by Morgoil® bearings.

Providing oil pressures of 1,500 bar for a super-fine film of oil inside a slide bearing, in order to reliably prevent metal contact between roller pins and bearings in an environment of high temperatures, considerable dirt, scale and roller coolants, demands valve technology that not many pump manufacturers are able to supply.

KAMAT has many years of experience in this field, and is a reliable partner in the provision of pressure for these requirements.

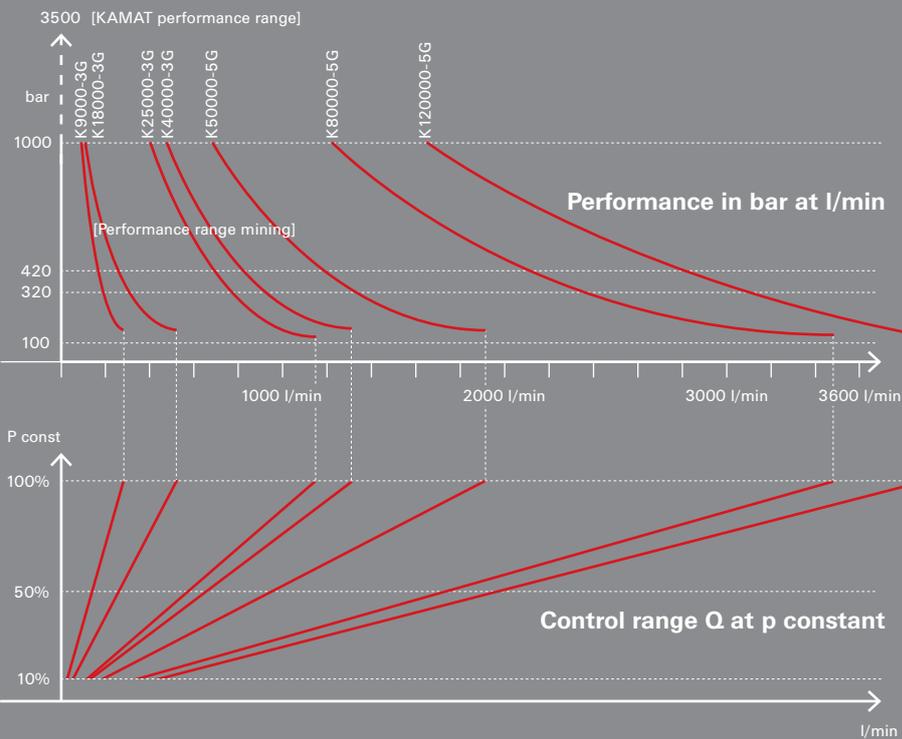
Benefits

- high-performance pumps for the highest quality descaling
- often no booster pumps are required
- robust and compact design
- integrated gear reduction with force-fed oil lubrication
- plungers made from solid ceramics
- specialist at providing pressure for Morgoil® bearings in unfavourable environments





Pump Systems – High Performance Series



KAMAT pump systems, frequently with many hundreds of kW installed power rating (already 8.8 MW built) guarantee production processes around the world in rolling mills, forges and presses.

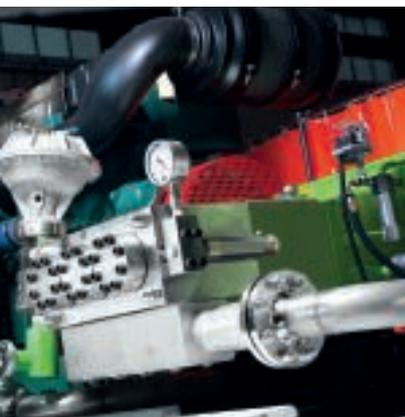
Our systems have been in use around the world since 1960. These systems work particularly gently on pumps, hoses and pipelines, and always maintain the precise nominal pressure required.

Operating even large speed-regulated KAMAT systems only requires a single frequency converter. As a result of the astonishingly wide adjustment range for the input speed of the KAMAT pumps, any value between 10 and 100% of the nominal volume flow rate can be freely selected.

KAMAT systems can naturally also be fitted upon request with electronic control systems, data transmission systems and remote control systems also for online emulsion/HFA quality monitoring and fully automated dosing of concentrates.

Benefit

- only one frequency converter per system required
- nominal volume flow rate adjustable between 10 and 100%
- electronic control system, remote control system, remote data transmission
- unmanned operation
- fully automatic emulsion measurement and dosing system



KAMAT – Engineering for Engineers

High power with precise effects

High-Pressure Pumps – Compact and High-Performance



With integrated gear reduction and compact dimensions, KAMAT high-pressure pumps are the ideal tool for numerous applications. Simple operation and maintenance are defining features of KAMAT plunger pumps, as are high modularity and flexibility in regard to delivery rates, pressure settings and fluids. For operating pressures from 0 to 3,500 bar, the input power ranges from 45 to 1,200 kW.

KAMAT Hydraulics – Energy for Force and Movement

Based on KAMAT high-performance pumps, KAMAT supplies sophisticated hydraulic systems utilising many years of know-how, but designed entirely according to the customers' wishes.

KAMAT specialises in the development of water-hydraulic systems – of vital importance in the metals industry.

In order to ensure the performance and reliability of the water-hydraulic systems, KAMAT's highly specialised engineers develop all the components required for these systems. The engineering and quality that make KAMAT a leader in the water hydraulics industry all come from KAMAT's own manufacturing facilities. The corporate philosophy maintains that this is the only way to be certain of reliably fulfilling the special design requirements of water hydraulics.

High-Pressure Pump Systems

Upon request, KAMAT supplies individually adapted complete pump systems, containing all components from the drive units, through the control systems, all the way up to the travel mechanisms. The KAMAT engineers also develop customer-specific solutions for special fluids and unusual high pressure pump system utilisation areas.

KAMAT Accessories – Without Compromise

High-performance high-pressure valves are a prerequisite for the reliable continuous operation of plunger pumps. In addition to this, KAMAT offers a wide range of electrically and mechanically controlled high-pressure tools with precision rotation nozzles, reliable tools for high-pressure cleaning.





KAMAT International

Professional partners in 54 countries

One hundred percent of KAMAT high-pressure technology is manufactured in Witten, but eighty percent of it is used internationally. In every country where KAMAT technology is used, KAMAT's intensively trained representatives provide comprehensive advice and customer services, as well as a quick spare parts service.

This ensures that the quality standard inherent in all KAMAT products is consistently maintained.



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