

# KOMATSU

## Hydraulic mining excavators



**Powerful performance.  
Innovative features.  
Sustainable productivity.**



## Hydraulic mining excavators



**Harnessing the power of industrial technology  
to support a sustainable, prosperous future for all.**

### **You move the minerals. We make the machines.**

The essential minerals you produce power modern technology, facilitate community growth and move society forward. But these minerals are hard to find and tough to mine.

Your customers trust you to deliver these resources, so you need an equipment, service and technology provider you can rely on to help keep your operation productive and efficient. Together we can focus on operating safely, productively and responsibly.



# Setting the standard for state-of-the-art mining equipment

## Safety

Komatsu continues to develop its business with the safety of its customers, suppliers, residents of local communities, employees and their families as its top priority.

Our mining HEXs are designed with the highest safety standards, which include multiple cameras to provide clear and unobstructed views of the machine, three emergency exits and wide walkways, among others.

## Reliability

With machines reaching up to 175,000 hours, reliability is an essential requirement in the design. A robust steel structure capable of exceeding its lifetime far beyond 60,000 operating hours, reducing component wear, and reducing downtime are some of the characteristics of the product portfolio. Mining HEXs are effective in all operation types, including tropical or arctic conditions, high altitude, and soft or hard rock. An extended undercarriage life provides flexibility for long travels/movements, improving mobility and optimizing the cost per ton.

## Productivity

Top-of-class digging forces are Komatsu's key to effortless digging — combined with the heavy lifting capacities and state-of-the-art hydraulic systems, Komatsu mining HEXs are a perfect fit for any mining application.

Hydraulic mining excavators are available in front shovel and backhoe configuration, and meet all requirements to mine efficiently — customize your machine to meet the required bucket size and wear package, such as drive configuration, travel gear protection, track pad variations and more.



## Creating value together

# Technology solutions for productivity improvements



### Simplified electric system

The simplified electric system brings a new controller generation with a lean electrical harness. Machines with this technology use a redundancy CAN bus for high reliability that exceeds industry standards with redundancy control lines. The simplified electric system features embedded components designed to minimize electrical downtime and keep your operation running.

### Machine guidance

The optional ProVision Machine Guidance System helps to increase the total tons moved by the loading machines, improves the accuracy of material movement and decreases costs associated with working outside the mine plan. This system offers:

- A continuous feedback loop to the mine planning system to achieve better synergy between the mine departments
- Immediate communications to the equipment operators about changes to the mine plan
- Intuitive operator elevation controls to increase accuracy and minimize rework

### Komtrax Plus upgrade

Komtrax Plus is a monitoring system for large machines, capable of remotely monitoring the health and operation status via satellite or direct PC communication. The new version is capable of detailed high-resolution data collection with GPS information every second.

### Payload monitoring (PLM) system

The optional Argus PLM system helps manage operations efficiently, particularly in managing haul cycles so that more material is moved in less time, optimizing the whole value chain. The PLM provides insight that helps:

- Optimize the efficiency of the load and haul fleet
- Guide the operator to increase the bucket fill factor in line with the truck's capacity
- Provide real-time feedback to the operator to understand the remaining payload on the dump truck



### Hydraulic mining excavator sustainability approach

Komatsu strives to be a valued partner across the globe, supporting sustainable efforts that reach far beyond Komatsu. Building from core commitments to ethics and safe conduct, our corporate social responsibility (CSR) priorities are enhancing people's quality of life, developing future generations and growing with society. To enhance sustainable actions, we focus on CO<sub>2</sub> reduction, renewable energy use, water conservation and waste reduction.

#### CO<sub>2</sub> reduction

Komatsu hydraulic mining excavators are built following the latest emission regulations such as Tier 4 Final and Euro Stage V standards. Alternatively, an electric drive is available for the whole product range enabling zero-emission loading. An automatic cable drum can be used to optimize the cable management during operation.

#### Biodegradable lubricants and operating fluids

Toward an environmentally friendly operation, Komatsu has qualified and tested various biodegradable oils and greases that can be used in hydraulic mining excavators.



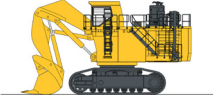




#### Did you know?

Electric drives have been part of the Komatsu portfolio for over 40 years, demonstrating its effectiveness and providing benefits to customers and the environment, such as higher reliability, a reduction in cost per ton (approximately 40%), zero-emission loading and a reduction in maintenance requirements, all while keeping the same productivity as a conventional diesel drive.



## Meet the hydraulic mining excavators that will make your life easier

### Model

		Payload	Weight Front shovel (Backhoe)	Engine
PC3000-11		21 yd <sup>3</sup> (16 m <sup>3</sup> )	250 t (252 t)	1,260 HP (940 kW)
PC4000-11		29 yd <sup>3</sup> (22 m <sup>3</sup> )	398 t (404 t)	1,880 HP (1,400 kW)
PC5500-11		38 yd <sup>3</sup> (29 m <sup>3</sup> )	537 t (542 t)	2,520 HP (1,880 kW)
PC7000-11		50 yd <sup>3</sup> (38 m <sup>3</sup> )	682 t (690 t)	3,350 HP (2,500 kW)
PC8000-11		55 yd <sup>3</sup> (42 m <sup>3</sup> )	759 t (768 t)	4,050 HP (2,980 kW)

### Front shovel attachment

This type of attachment is suitable for loading blasted rocks where bigger boulders are present and digging force is required. When digging flat surfaces, the top-of-class digging forces can show their advantages. This configuration also allows double-side loading, which is the optimum use of haul and loading equipment, reducing the truck spotting time and achieving higher productivity.



### Backhoe attachment

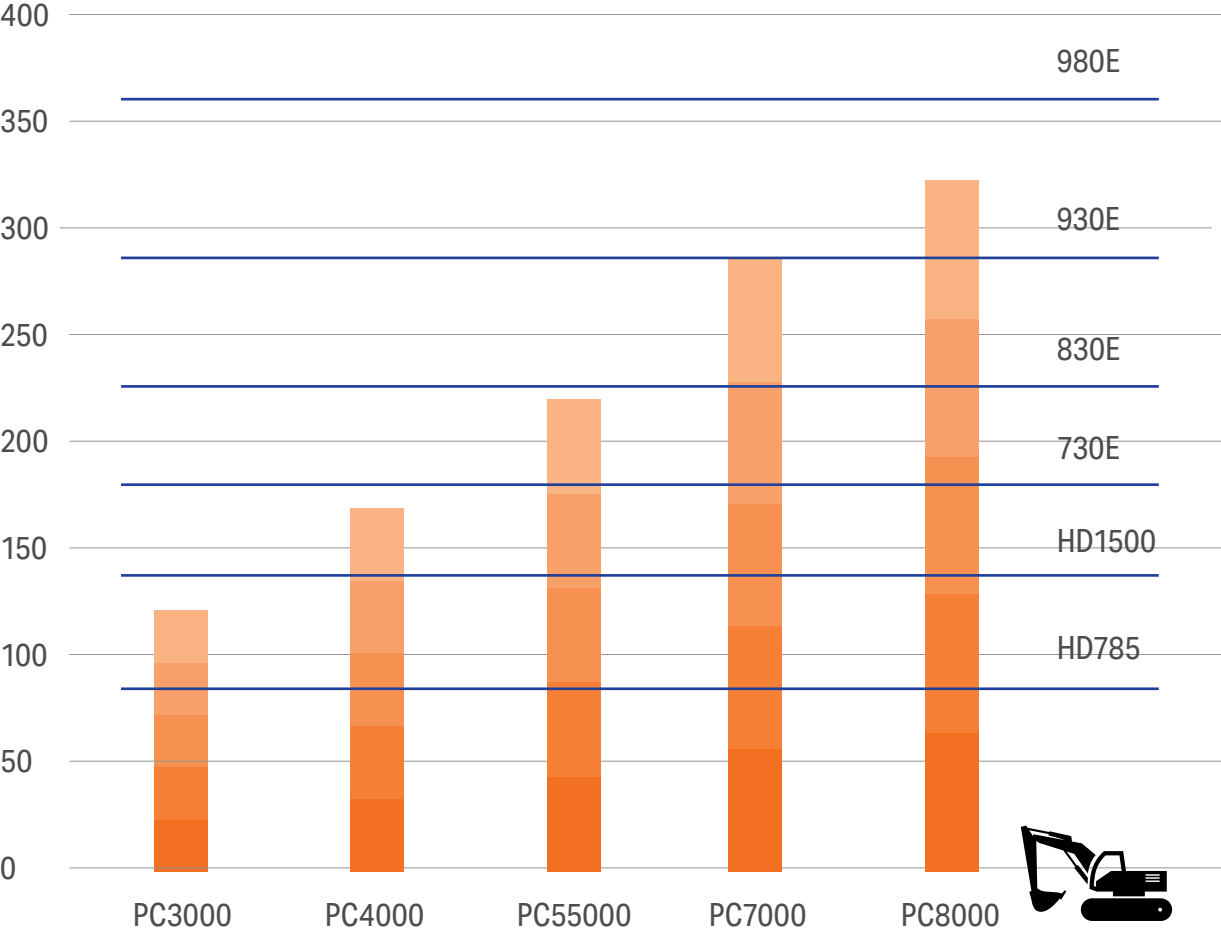
An all-around attachment for digging and loading, this configuration allows the machine to work on a different bench from the dump truck. If the material is unstable, you can work on a shorter bench, decreasing the risk factor of sliding. This effective application has a short cycle time, thanks to the reduced lift and swing time.

Komatsu mining HEXs can perform in split-bench operation, offering fast cycle times and excellent bucket control.





### Mining HEX and truck match



Calculations were done with the standard bucket capacity, 85% of bucket fill factor and 1.8 ton/m<sup>3</sup> density.

### Diesel versus electric production

The hydraulic mining excavators are designed to offer the same productivity for the different kinds of drives, no matter if it's diesel or electric, this piece of equipment will perform in the same way, allowing customers to have a heterogeneous fleet and yet receive the same behavior.





## Good to know



## Remote operation and autonomous systems

### Safety perks while eliminating live work

Eliminating live work in dangerous sites is not just about hauling processes. Loading areas tend to be in unstable, risk-exposed areas at open pit mines. For this reason, automation or remote control of the mining hydraulic excavators is part of the scalable, sustainable solutions that prioritize safety while optimizing the entire mining operation by relocating the operator from harm's way into a safe working environment. Technology such as the remote Komatsu valve adjustment device (KVAD) supports the maintenance staff in performing their work from a safe distance.

For on-site maintenance, wide walkways to regular service points, platforms equipped with handrails and kickboards, and easy access to all service points promote zero harm and make maintenance easier. With simplified maintenance, the focus is on accessibility and safety during servicing. The workspace design in the machinery house focuses on moving around comfortably.

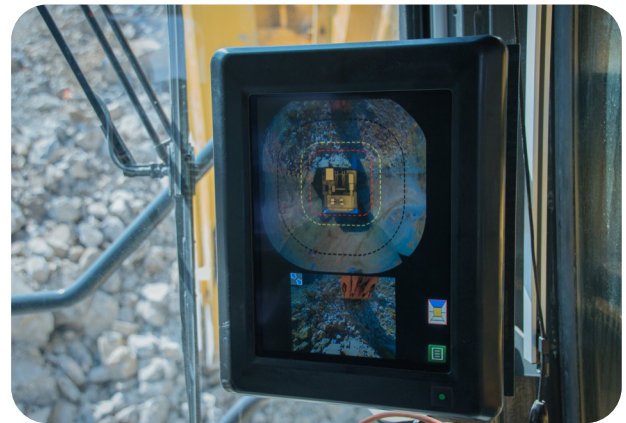
### Operational benefits

Long-distance teleoperation is assisted with semi-auto functions for swing, dump and swingback, helping the operator to identify the AHS truck position and do the cycles even under poor visibility due to dust, fog, or poor illumination during night time. Teleoperations promote a safe workplace by eliminating workers from dangerous areas and helping to reach productivity goals.

## Remote control

Operators will master the entire user experience with Komatsu's realistic virtual training simulators before they start up a real-world machine. Learning the controls quickly and safely leads to less downtime, accident prevention and a more productive operation.

In addition, your maintenance staff can learn how to perform standard tasks using our specially-designed maintenance simulator. We're committed to providing resources that contribute to the safety and efficiency of your entire team.



## Enabling data-driven operations with Komtrax Plus

With this remote monitoring system installed on Komatsu mining equipment, it enables:

- Increased asset performance visibility to help you determine when to intervene and minimize corrective action costs
- Valuable risk management tools to help reduce troubleshooting time and meantime to recovery
- Benchmarking key performance indicators to make performance gaps more visible and set in motion corrective measures to maximize productivity
- Operating practices analysis to allow for review and correction

## Operational data at your fingertips

The advanced Argus Payload Monitoring System helps operators improve machine performance with real-time feedback, peer benchmarking and in-seat coaching. The system measures every bucket in real time without stopping operations and calculating the load before dumping it into the trucks. Argus helps optimize:

- Payload accuracy
- Truck payload compliance
- Material management
- Mine plan compliance
- Operator performance

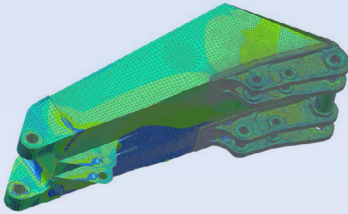


## Every detail matters

Komatsu seeks to deliver the best match of a machine to mine — and with our comprehensive line of earth-moving equipment, that is what you'll get. Komatsu equipment provides multiple choices, increased payloads and high versatility to help you achieve your productivity goals. Designed to optimize operating hours, you can count on our robust structural design and high-quality components to meet your everyday needs. More important, you can feel confident knowing your Komatsu hydraulic mining excavators include globally recognized safety features.

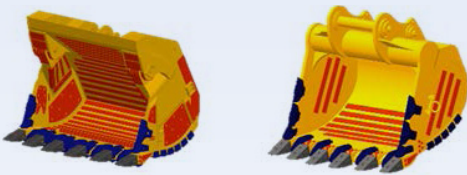
### Metal structures

Komatsu steel structures are made in-house with deep expertise and field experience to help ensure quality products that can capably last beyond the indicated 60,000 hours.



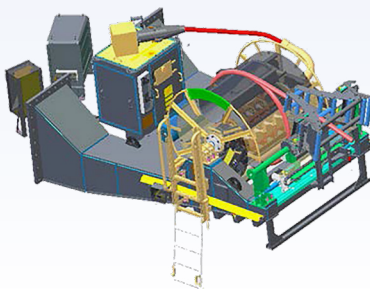
### Buckets

All Komatsu buckets are SAE rated and can provide full payload in accordance with SAE standards. Wide variety of buckets and ground engagement tools are available to meet customer needs for all demands, from soft rock to hard rock applications.



### Cable drum

Increase the cable life and operational safety with the auto-retracting cable drum, capable of detecting side tension and stopping the machine's movement to avoid driving over the cable.



### Track pads

Designed to evenly distribute the load over the contact areas and have low pressure on the running path, Komatsu track pads and rollers meet the most demanding mining ground conditions. Extending the lifetime of components and reducing the maintenance, Komatsu track pads can help you reduce TCO.



### Electric motor

With different electric frequencies or voltage inputs, all of our hydraulic mining excavators can operate worldwide without sacrificing performance.



### Training

We offer a series of tailored training options designed to fulfill your requirements. These options are available over the machine's lifetime, so you can train the operating and maintenance departments when you get a new model or to increase their knowledge.



# Equipping the world to empower a sustainable future together

Although we've been historically known for our mining equipment, we also provide comprehensive service solutions and fleet management technology. Committed to enhancing your entire ownership experience, we leverage the intelligence of data to deliver actionable insights and provide the technology needed to make sure you have the service, technology, tools and parts you need to help minimize downtime.

### Komatsu is leading the way forward

Tomorrow's mining will demand ever-evolving technology in order to lower costs, raise productivity and drive zero harm. With virtual work sites throughout the world, we're able to develop and deploy the right technology at the right time. We are Komatsu. We are your global partner.







## Watch your TCO drop

When you need to see your productivity rise and your costs go down, learn how Komatsu hydraulic mining excavators can help reduce fuel consumption, maintenance needs and replacement costs.

Contact your local Komatsu account representative today.



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