2300XPC
Electric Mining Shovel – AC Drive
Product Overview
P&H 2300XPC AC Shovel building on proven success

Mine operations and maintenance managers demand the best from their loading tools. For this reason, Komatsu Mining has been the electric mining shovel market share leader and preferred equipment supplier to the world’s toughest mining environments for over 100 years.

Komatsu is proud to offer the P&H 2300XPC AC electric mining shovel. The P&H shovel line is combining its solid reputation of reliability with the proven Centurion electrical control system, industry leading IGBT AC technology, rugged structures and the industry’s leading direct field service and support network to set the industry standard for electric mining shovels.

Increases in availability and productivity ultimately lead to the lowest cost per ton and the most efficient ultra-class loading tool available in the industry today. P&H shovels dig deeper into the realms of productivity, safety and reliability with greater control, comfort and consistency.

Proven performance

P&H electric shovels have been exceeding customer requirements and expectations since 1920:
- Up to 3% faster cycle times
- Up to 2.5% increase in availability
- Up to 5% increase in productivity

Providing our customers:
- Low total cost of ownership
- High productivity
- Excellent machine reliability and durability

We set the industry standard for electric mining shovels

A closer look
The P&H 2300XPC AC features:
- IGBT AC technology
- Dual planetary propel
- Proven steel structures

The P&H performance edge

Attachment of choice for the world’s toughest applications
- Twin-leg dipper handle – Stable dipper trajectory, faster cycle times, higher productivity
- Rack and pinion crowd – Less maintenance, all weather performer
- Optima dippers – Mine-matched dippers with optimized pitch braces for precise rake angles

Technology
- Centurion electrical control system – Superior performance, monitoring and data integration capabilities
- Universal shovel interface – Send and receive data with any mine management system
- PreVail remote health management – Real time machine health and performance management

Operator cab
Performance and comfort have been optimized with:
- Smart ergonomics
- Clear sight lines
- Easy access to command and control functions
- Access to key data on machine health and performance provided by Centurion electrical control system

Smart Solutions
Our smart connected products and systems, advanced analytics and direct services are integrated together and customized to solve our customers’ toughest challenges:
- Service products and consumables
- Machine assembly and rebuild
- Component exchange programs
- Life cycle management
- Genuine OEM parts
- Prognostics and remote health management

Komatsu Mining is the worldwide leader in electric mining shovels. The P&H 2300XPC AC sets the standard in performance and productivity.

- Designed for severe-duty digging and loading
- Years of experience in building rugged, reliable equipment
- Extensive collaboration with customers and our partner ABB during development

We are driven by achieving the lowest total cost of ownership for our customers:
- Quality components
- Focus on machine availability and productivity
- Heavy-duty structures
- Komatsu Mining field support
**P&H 2300XPC Electric Mining Shovel – AC Drive**

**General Specifications**

<table>
<thead>
<tr>
<th>Metric</th>
<th>40 st</th>
<th>50 st</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height of cut</td>
<td>13.8 m</td>
<td>18.3 m</td>
</tr>
<tr>
<td>Radius of cut</td>
<td>20.9 m</td>
<td>24.0 m</td>
</tr>
<tr>
<td>Optimum truck size</td>
<td>29 ft 7 in</td>
<td>36.3 ft</td>
</tr>
<tr>
<td>Operator eye level</td>
<td>26 ft 1 in</td>
<td>32 ft 10 in</td>
</tr>
<tr>
<td>Tail swing radius</td>
<td>10.0 ft</td>
<td>12.4 ft</td>
</tr>
<tr>
<td>Floor level radius</td>
<td>9.0 ft</td>
<td>10.0 ft</td>
</tr>
<tr>
<td>Rated suspended load</td>
<td>81.6 ft</td>
<td>90.7 ft</td>
</tr>
<tr>
<td>Nominal payload</td>
<td>36.3 m</td>
<td>45.4 m</td>
</tr>
<tr>
<td>Nominal dipper capacity</td>
<td>18.12-22.5 m³</td>
<td>19.2-24.5 m³</td>
</tr>
<tr>
<td>Rated</td>
<td>18.3-25.6 m³</td>
<td>20.2-27.9 m³</td>
</tr>
<tr>
<td>Capacity</td>
<td>17.8-24.5 m³</td>
<td>20.3-27.9 m³</td>
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**Power requirements**

- **Supply voltage**: 480V or 720V, 3-phase, 60 Hz, 3,300, 5,000, 6,000 or 6,600 V, 3-phase, 50 Hz
- **Supply transformer**: Minimum 2,000 kVA minimum
- **Minimum short circuit VA available at shovel**: 16 MVA

**Dipper and dipper trip**

Optima dippers combine consistent productivity with high durability and maintainability. Dippers are configured to mine specific conditions and capacity requirements from a variety of combinations of body and lip designs, as well as other unique Komatsu technologies. Specific wear packages and GET styles can be cooperatively specified.

Adjustable-torque electric motor with geared drive unit for reliable trip and slack take-up operation.

**Electrical control**

Centurion supervisory controller provides direct integrated communication with motor drives giving precise motor control and fast cycle times. Real-time multi-tasking capability allows for optimal machine logic sequencing, monitoring and control.

Centurion I/O system uses ‘Profibus’ communication protocol for seamless integration of all shovel subsystems and future expandability. Low-voltage 24V DC I/O drop points feature open and short circuit detection for improved diagnostics and troubleshooting.

Centurion information system’s enhanced Graphical User Interface (GUI) features intuitive, icon-based screens to display vital information such as shovel status, troubleshooting information, and optional production monitoring data and operator feedback.

P&H digital AC drive provides precise, reliable, solid state power to the main motion motors.

**Electrical control systems**

The electrical drive system is comprised of a multi drive platform, sharing a common DC bus between the IGBT Supply Unit (ISU) and the motor drive Invincible Units (INU). The fully regenerative ISU controls the power flow to and from the shovel, maintaining a unity power factor with extremely low harmonic content. The fully regenerative INU controls the power flow to and from the individual AC motors.

- **Propel motor**: Two modular planetary gear cases and a single piece forged swing-gear transmit torque for fast cycle times.
- **Power requirements**: Spring-set air release disc brakes – one per motor.
- **Crowd**: Dual propel arrangement. Two planetary gear cases independently transmit torque to the drive sprockets, producing the tractive effort required for fast, efficient propel and positioning operations.
- **P&H drive system with heavy duty cast crawler shoes**: Spring-set air release disc brakes – one per motor.

**Hoist**

Powerful 6” diameter hoist drum for extended rope bending life. Ferrule becket system and dual electric tuggers are standard for efficient rope change. Spring-set air release disc brake.

**Cable data**

- **Hoist (wire rope)**: 57 mm, 2.25 in dia
- **Suspension (bridge strand)**: 83 mm, 3.25 in dia
- **Dipper trip (wire rope)**: 16 mm, 0.63 in dia

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<tr>
<td>Motor output</td>
<td>507 kW / 680 hp</td>
<td>684 kW / 918 hp</td>
</tr>
<tr>
<td>Peak developed power</td>
<td>557 kW / 747 hp</td>
<td>684 kW / 918 hp</td>
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<tr>
<td>Total motor output</td>
<td>1,450 kW / 1,944 hp</td>
<td>1,772 kW / 2,365 hp</td>
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### Overall dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>55&quot; shoes / 1,397 mm</th>
<th>70&quot; shoes / 1,778 mm</th>
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<tbody>
<tr>
<td>Width of crawlers</td>
<td>8.8 m</td>
<td>9.8 m</td>
</tr>
<tr>
<td>Height over gantry</td>
<td>11.8 m</td>
<td>12.8 m</td>
</tr>
<tr>
<td>Length of crawlers</td>
<td>14.2 m</td>
<td>15.2 m</td>
</tr>
<tr>
<td>Width of crawler shoes</td>
<td>1,397 mm</td>
<td>1,778 mm</td>
</tr>
<tr>
<td>Ground clearance</td>
<td>0.8 m</td>
<td>0.8 m</td>
</tr>
<tr>
<td>Height — ground to bottom of counterweight slabs</td>
<td>2.4 m</td>
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### Ground pressure and weight

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<th>Bearing area — ground pressure</th>
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<td>Crawler bearing pressure 55&quot; shoes / 1,397 mm</td>
<td>344.7 kPa</td>
<td>350.7 kPa</td>
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<tr>
<td>Crawler bearing area 55&quot; shoes / 1,397 mm</td>
<td>21.3 m²</td>
<td>33,000 m²</td>
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<tr>
<td>Crawler bearing pressure 70&quot; shoes / 1,778 mm</td>
<td>271.7 kPa</td>
<td>278.5 kPa</td>
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<td>Crawler bearing area 70&quot; shoes / 1,778 mm</td>
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### Features and customization

The P&H 2300XPC is built with several features to enhance safety, reliability, and productivity over the lifecycle of the operation.

- Automatic lubrication and compressed air systems with advanced diagnostic and control
- Automatic boom soft setdown system (ABSS) and boom profile protection envelope to help prevent excessive loading to the attachment during operation
- Anti-swing-in-bank system to reduce excessive side loading on handle and attachment
- Remote hoist control pendant and hoist rope winch to assist in safe and efficient rope changeouts
- AirScrubPro cartridge-based air filtration and pressurization system removes particles as small as 0.2 microns: clean, properly ventilated, and pressurized air enhances machine performance

The shovel has multiple options for local and mine site specific conditions in the following areas:

- **Climate control**
- **Technology and software**
- **Maintenance systems**

Contact a Komatsu Mining service representative for more information on the P&H 2300XPC electric mining shovel or visit [https://mining.komatsu](https://mining.komatsu)