

JOYGLOBAL

P&H

4800XPC

Electric Mining Shovel
Product Overview



JOYGLOBAL
Service Leader



Delivering world-class mine performance

At the core of our commitment to customers is providing world-class solutions through our unique direct service network. This allows us to **collaborate with customers**, developing innovative parts, products, consumables and systems that lower their total cost of ownership while safely maximizing production.



Our commitment to quality and reliability is supported by our focus on Operational Excellence. We use Joy OpEx principles to eliminate waste, simplify the process, automate and remove people from harm's way.



Hour after productive hour, P&H shovels were inspired by you

You manage a large production landscape focused on the most efficient possible production of a valuable commodity like copper, coal, iron ore, petroleum or gold.

Your mine plan changes daily or perhaps hourly as complex factors interplay.

You require highly reliable and productive equipment to help ensure your ability to obtain sustained throughput rates – and optimized production costs.

You look across your production landscape and see that you have invested in the best available mix of capital equipment – including your P&H electric shovels – to help realize your operations management objectives.

You helped inspire Joy Global to design, build and support these exceptionally tough, smart loading machines. Joy Global has transformed your ideas and your insights into best-in-class P&H electric mining shovels for the cost and safety-focused mining industry.



4800XPC: breakthrough design

Driven by the need to meet increasing production demands, mine owners have introduced ultra-class haul trucks to their operations. Meeting those production goals has remained a challenge due to the lack of an electric mining shovel on the market that can efficiently load large 400sT trucks — until now.

Joy Global has been the electric mining shovel market share leader and a preferred equipment supplier to the world's toughest mining environments for over 100 years. We have taken that mining application knowledge along with our engineering expertise and applied it to the development of a breakthrough design.

Built upon the proven performance of the P&H 4100XPC AC, the 4800XPC leverages new Adaptive Controls technology (patents pending) with optimized machine structures to enable its larger payload and increase efficiencies. The 4800XPC is designed to deliver:

- 135 sT payload
- 3 pass load 400 sT ultra-class haul trucks
- Up to 20% production increase over 4100XPC AC
- Up to a 10% decrease in cost per ton

Complete structural optimization

The P&H 4800XPC features robust machine structures and systems to improve **performance, maintainability** and **reliability**: a powerful combination designed to deliver **ultra-class productivity**:



Dipper

- Higher payload to weight ratio
- Improved fill factor, reduced wear and reduced dig energy per ton
- Improved latch system for reduced maintenance and improved performance



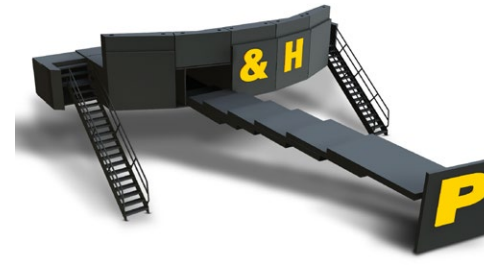
New bail and equalizer

- Provides for proper combination of digging height, cutting force, dumping height and rope life



Direct drive crowd with integral fleeting sheave

- Reduces maintenance costs
- Helps to eliminate boom jacking



Modular counterweight and boarding stairs

- Enhances safety and access
- Faster assembly/disassembly



Enhanced ring gear

- Resists fatigue
- Accommodates increased payload



Optimized boom design with stabilized handle geometry

- Dipper maneuverability
- Improved maintenance access

Advanced technology

Adaptive Controls

A series of control functions that optimize shovel power usage in different phases of the dig cycle, these features have been field tested to demonstrate improved shovel performance while lessening the effect of operating impacts on the machine:



- Smart control and application of power
- Improves shovel production without sacrificing life
- Reduces boom jacking



Smart Crowd

- Improves bank penetration
- Improves operator efficiency
- Reduces boom jacking



Opti Toe

- Improves cutting force and productivity
- "Rewards" operator for digging close



Smart Retract

- Smoother disengagement from the bank
- Reduces structural loading



Active Load Compensation

- Optimizes machine torques and speeds
- Active when RSL is exceeded

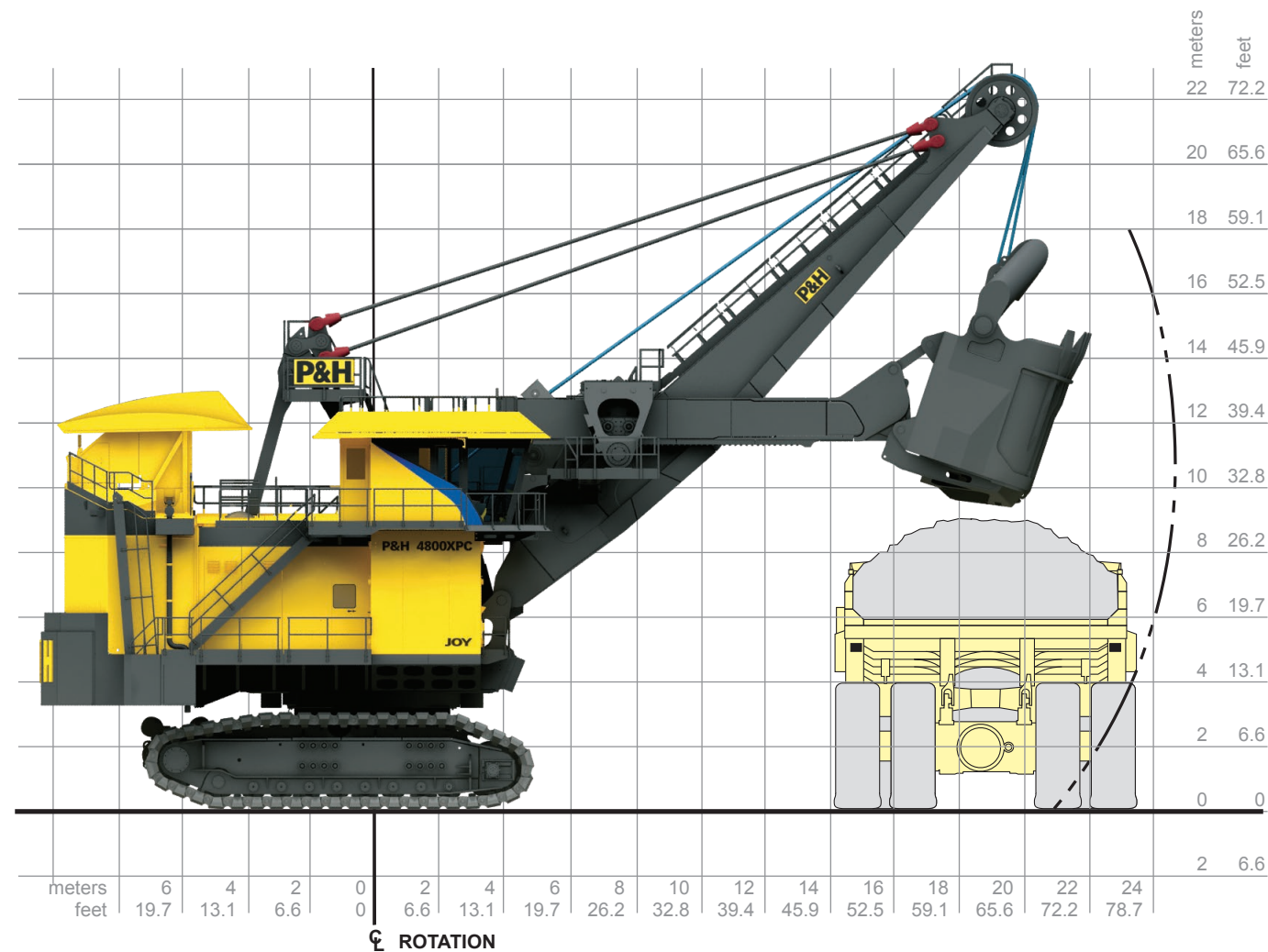


Extended Reach

- Improves dump reach

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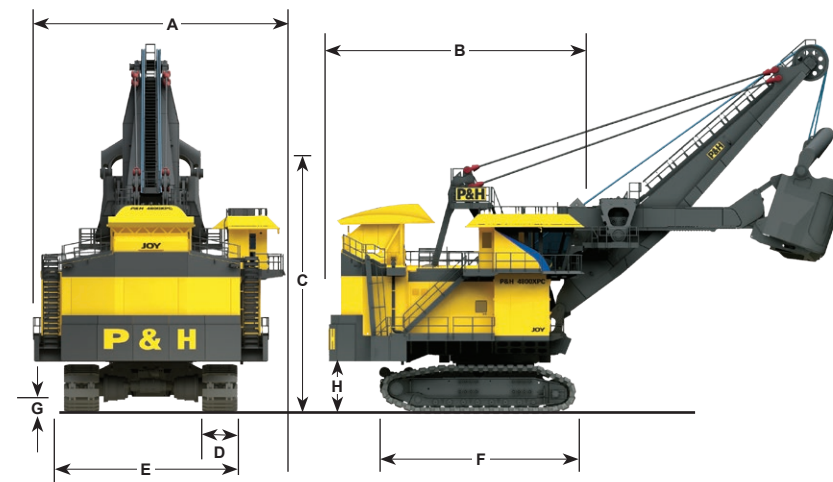
General Specifications



Working ranges		
Height of cut	18.0 m	59 ft. 0 in.
Radius of cut	24.3 m	79 ft. 9 in.
Max dump reach	24.8 m	81 ft. 3 in.
Dumping height (door open)	9.4 m	30 ft. 10 in.
Floor level radius	16.2 m	53 ft. 1 in.
Tail swing radius	9.8 m	32 ft. 3 in.
Operator eye level	10.1 m	33 ft. 1 in.

Capacity		
Nominal payload*	122.7 mt	135 st
Nominal dipper capacity		
SAE struck	65.7-70.3 m ³	86-92 yd ³
SAE 2:1	72.5-77.6 m ³	92.7-99.1 yd ³
Rated suspended load	209 mt	230 st
Optimum truck size (400 st truck shown)	363 mt	400 st

*Payload and dipper capacity are dependent on many factors. Contact Joy Global for an analysis of your specific application.



Overall dimensions		
A Width	14.4 m	47 ft. 1 in.
B Length	15.0 m	49 ft. 4 in.
C Height over gantry	14.7 m	48 ft. 3 in.
D Width of crawler shoes	1930 mm	76 in.
	2210 mm	87 in.
	2540 mm	100 in.
E Width of crawlers (76")	10.5 m	34 ft. 5 in.
F Length of crawlers	11.7 m	38 ft. 6 in.
G Ground clearance	0.7 m	2 ft. 2 in.
H Height – ground to bottom of counterweight slabs	3.2 m	10 ft. 6 in.

Power requirements		
Supply voltage*	7200 or 13800V 3 phase, 60 Hz	6000, 6600, 7200 or 11000 3 phase, 50 Hz
Supply transformer	(minimum) 3750 kVA	
Minimum short circuit VA available at shovel	30 MVA	

*Voltage per customer requirements

- ### Adaptive controls technology
- Smart control and application of power
 - Improves shovel production without sacrificing life
 - Reduces boom jacking

- ### Swing
- Three modular P&H planetary gear cases of proven design and a single piece forged swing gear transmit torque for fast cycle times.
 - Spring-set air release disc brakes – one per motor.
 - Splash lube filtration system.

- ### Propel
- Propel on demand provides rapid transfer to propel mode. Rapid transfers allow frequent positioning of the shovel to the bank resulting in faster cycle times and more efficient digging.

- Two rugged P&H planetary gear cases of proven design independently transmit torque to the drive sprockets, producing the tractive effort required for fast, efficient propel and positioning operations.
- P&H DELTA™ Drive low tension sprocket drive system with heavy duty cast crawler shoes.
- Spring-set air release disc brakes – one per motor.

- ### Crowd
- Twin low inertia AC motors minimize shock loading and boom jacking.
 - Direct drive crowd eliminates belt maintenance for improved responsiveness.
 - Modular crowd motors with integral pinions provide simplified plug n' play replacement.
 - Two input pinions share load for extended life.
 - Dual spring-set air release brakes for reliable redundant operation.

- ### Hoist
- All gearing housed in single enclosed gear case with filtered and cooled oil fed to all bearings in addition to splash lubrication for reliable operation and ease of maintenance.
 - Large 68" 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 brakes – one per motor.
 - Hoist rope fleeting sheave protects rope from excessive oscillation.



Through the application of innovative engineering and advanced technologies, Joy Global has designed the 4800XPC to be the industry's most productive electric mining shovel.

Contact a Joy Global service representative for more information on the P&H 4800XPC or visit www.joyglobal.com



Joy Global worldwide locations

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