

JOYGLOBAL

P&H

Draglines

Product Overview



JOYGLOBAL
Service Leader



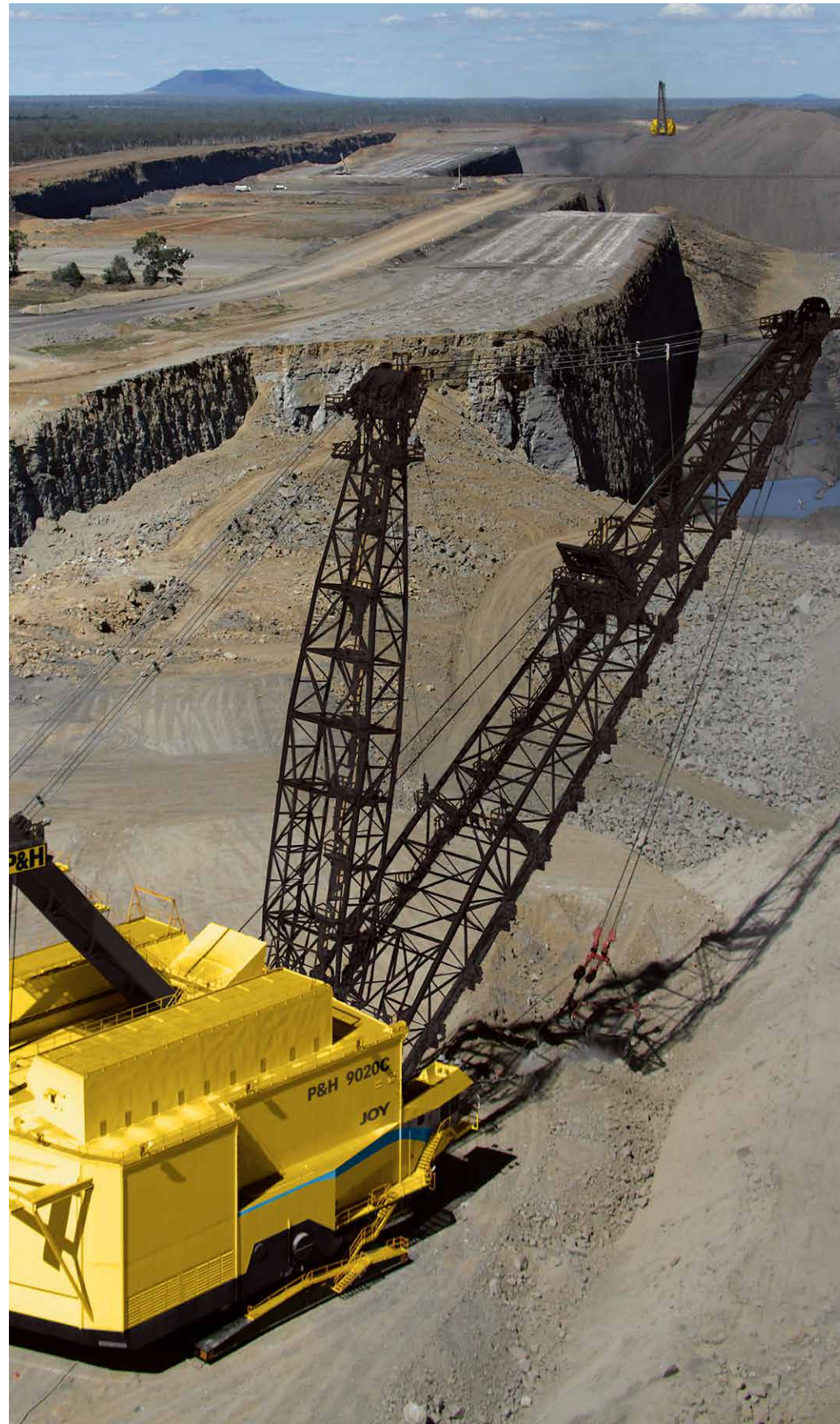
Delivering world-class mine performance

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.

JOY Operational Excellence
Taking us to the next level



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.



P&H draglines build upon the solid reputation and proven performance of the 9020 dragline, with boom lengths and bucket capacities available to meet your specific requirements.

Proven dragline performance

Based on the proven performance of the P&H 9020, P&H draglines raise the standard for large capacity draglines. They are built with customer inspired innovations that help optimize rugged, reliable and safe performance.

The advanced P&H brand Centurion electrical control system is standard on the P&H draglines. This system, which is the platform for nearly all P&H shovels, drills and draglines, enables long-term reduced operating costs through the maintenance and performance optimizing systems it supports. Powerful health monitoring tools are also available.

Furthermore, outstanding reliability, the hallmark of all P&H equipment, is built into the P&H dragline. Advanced structural analysis, CAD solids modeling and high-tech gearing software have been utilized to design a dragline that delivers consistent long-term productivity.



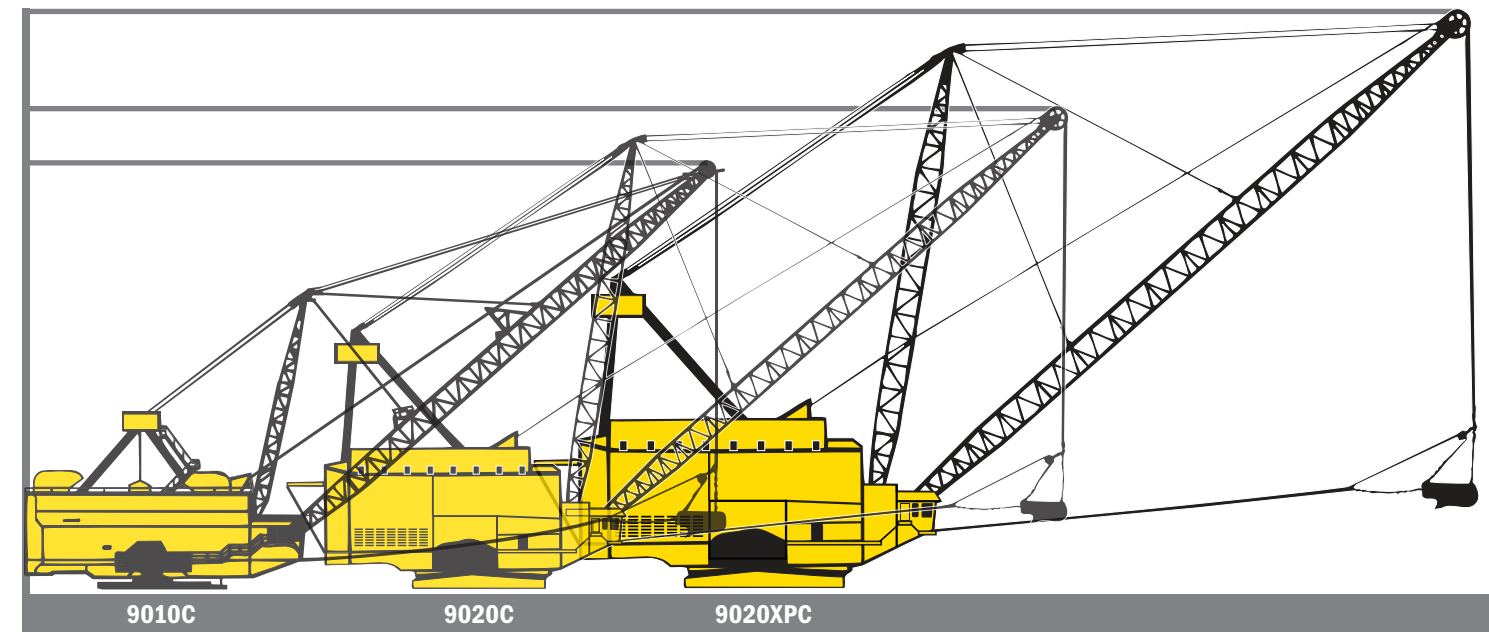
P&H draglines are designed with maintainability in mind.

Joy Global and ABB:

Two leaders combine to deliver breakthrough productivity and performance

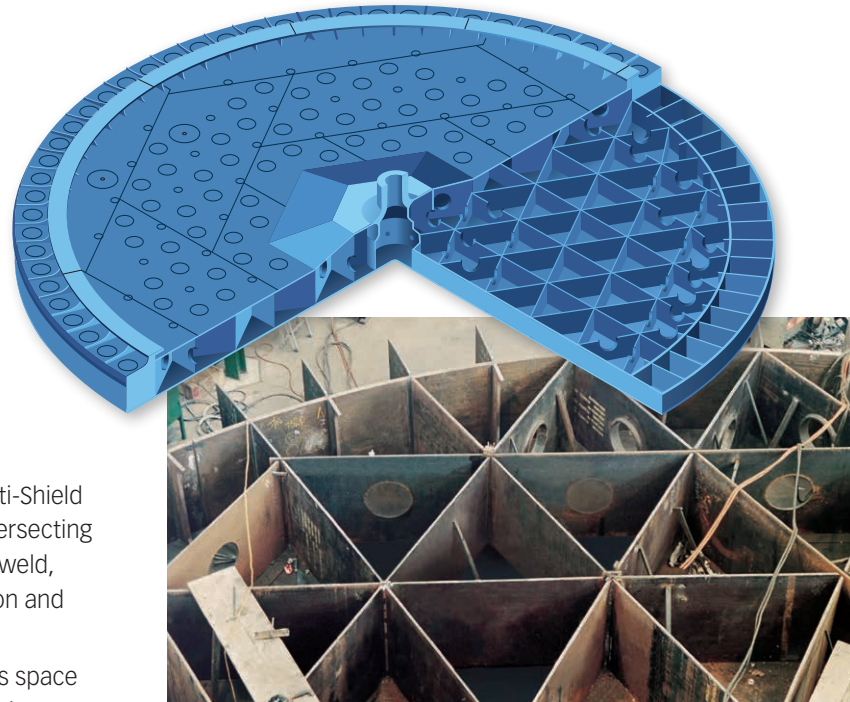
ABB is the global leader in drives with 40+ years of experience.

- ABB's Direct Torque Control has the best dynamic performance in the industry
- Our AC drives are compact and modular
- Maintenance-friendly modules are easy-to-replace
- Motors designed and manufactured by Joy Global specifically for draglines



The P&H brand Gradial tub

- A greater strength-to-weight ratio handles multi-directional loads, allowing increased reach and load capacity
- A gradial design provides multiple load paths for ground induced forces, eliminating weak points and extending the life of the tub
- An innovative, patented Verti-Shield welding process joins all intersecting plates with one continuous weld, resulting in minimal distortion and residual stresses
- A triangular pattern provides space for maintenance and inspection



The unique design of the P&H brand Gradial tub promotes long tub life.

Large diameter roller circle and raised roller path

- Large diameter roller circle provides low loading in the rail pad support structure and increases reliability of tub and deck structures
- Specially processed forged steel for long roller and rail life
- A raised roller path provides a larger space for inspection and maintenance of components
- Internal gear design of swing rack provides better load sharing between teeth
- Large diameter rack reduces gear and pinion loads



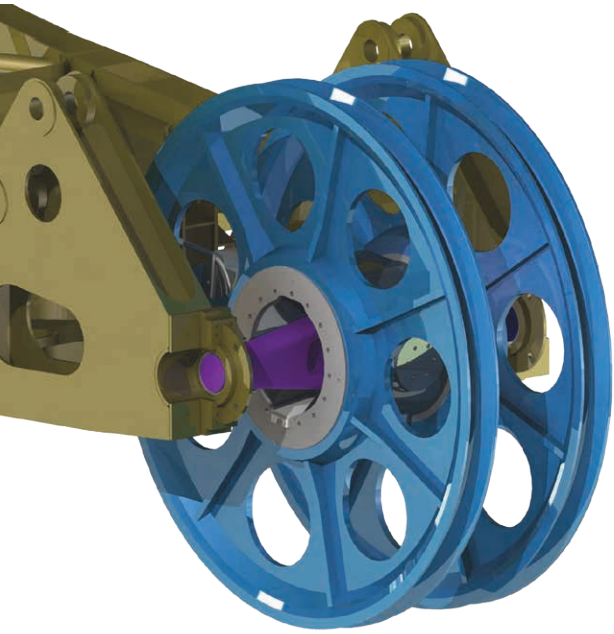
The raised roller path of P&H draglines provides ample space for inspection and component changeouts.



The rail pad and roller path are built for longest component life.



P&H draglines are known for their outstanding reliability, working 24/7 in some of the toughest environments around the world.



Saddle mounted boom point sheaves increase allowable swing speed.

Boom and A-frame

- Wide flange chords allow for full penetration weld joints and ease of inspection from boom walkways
- Four chord design provides more stability
- A patented design with flatter bottom of boom improves visibility of boom point sheaves and balances axial working loads
- Saddle mounted boom point sheaves allow 16.5° of swivel to follow the pendulum lag of the hoist rope, increasing allowable swing speed
- The A-frame is optimized to reduce load forces and provide maximum rated suspended load

Electrical systems at a glance

- The Centurion electrical control system utilizes standard industry protocols and provides a platform that is scalable for future advancements
- Intelligent sensors and I/O devices to monitor and control the dragline enable machine health and reporting and performance enhancement systems
- Advanced communication and monitoring links to mine management and the maintenance crew reduce downtime
- A Centurion-based Graphical User Interface (GUI) in the operator cab and machinery house provide continuous feedback on all operating systems, empowering dragline operators to get peak performance from their machines
- The Centurion electrical control system utilizes finger-safe 24VDC for maximized safety
- Distributed I/O drops and fiber-optic cable linking drives, in addition to a supervisory controller, reduce wiring, resulting in reduced potential points of failure and simplified troubleshooting

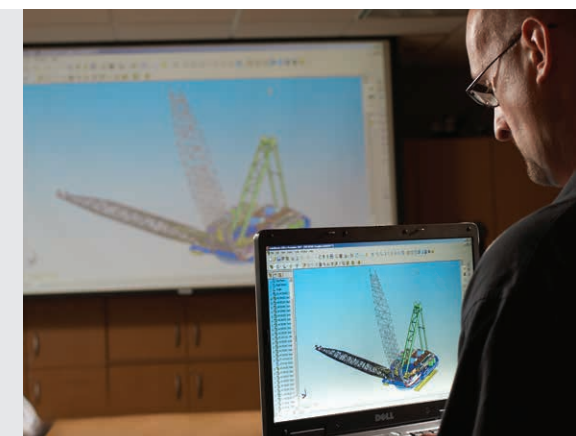


P&H draglines are available in three models with boom length and capacity ranges configured to customers' specific needs.

Model	Boom length range (m/ft)	Bucket capacity range (m ³ /yd ³)
9010C	80-105 / 300-405	42-60 / 55-80
9020C	90-125 / 300-405	55-90 / 75-117
9020XPC	100-130 / 325-425	85-122 / 110-160

Understanding our customers' needs

P&H draglines benefit from a team of engineers and service personnel who understand your needs. Whether it is making advances in safety and on-time delivery for each dragline assembly, or engineering designs that better facilitate day-to-day maintenance and inspection, our goal is to deliver a product that is your best solution for increased production, reduced downtime and lowest cost-per-ton.





Joy Global worldwide locations

JOYGLOBAL



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EN-DRAG01-0816-V1