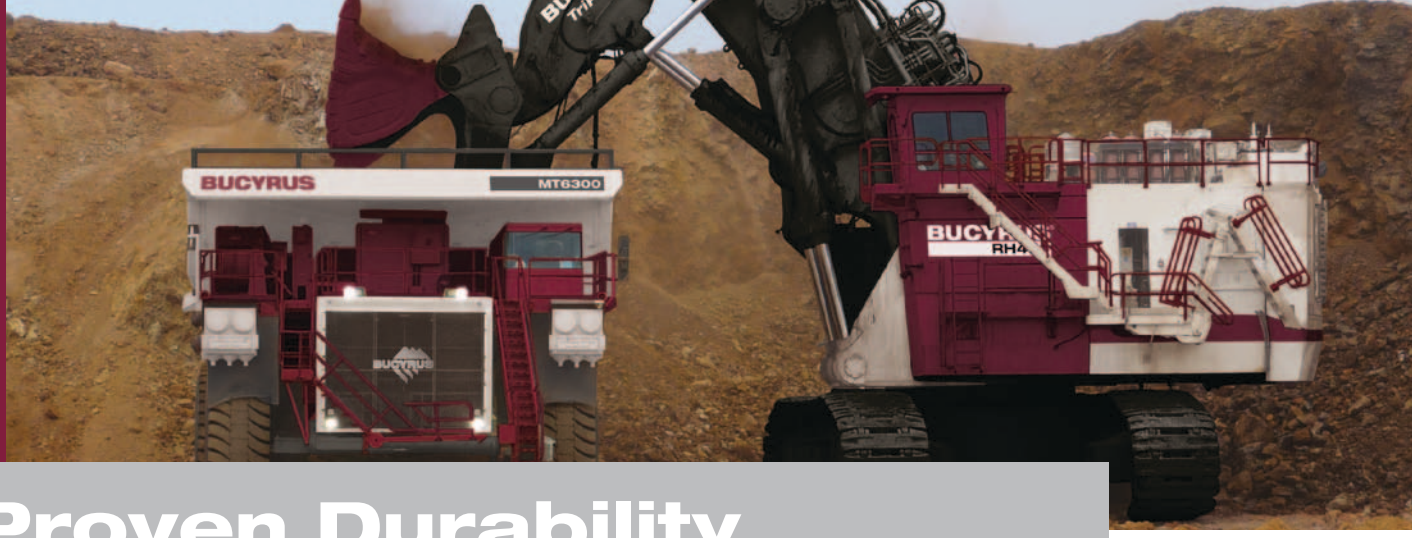
Reliability at work

BUCYRUS

Proven Durability

Hydraulic Mining Excavators



Proven Durability

Proven success in nearly every surface mining application across the globe substantiates the durability of Bucyrus hydraulic excavators. Our equipment is engineered to endure the most difficult digging environments, in the harshest conditions, to afford our customers the greatest productivity. Simply stated, Bucyrus hydraulic excavators are built to last!

Hydraulic Mining Excavators

Bucyrus hydraulic mining excavators are versatile machines used to load overburden and ore into haul trucks during the mining process in surface mines of all types across the globe. Utilizing proven Bucyrus technology, each hydraulic excavator model is designed to provide superior digging forces and optimal cycle times, while withstanding the rigors of any digging environment encountered. Our substantial global installed base validates our experience and expertise in the hydraulic mining excavator market, and reaffirms our commitment to it. With the widest payload range in the industry, Bucyrus is well-equipped to fulfill any hydraulic excavator need that global mining customers may have.

Machine Service & Support

Bucyrus factory-trained service engineers are available throughout the world to provide our customers with the support necessary for meeting their production requirements. Our service engineers have the knowledge and experience to bring a successful result to the most demanding projects. In addition, they are backed by Bucyrus' team of engineers who have the design-based knowledge not available from other sources.

TriPower

Bucyrus uses a unique boom design that employs rotatable triangular-shaped rockers to generate superior mechanical leverage and control. This unique Bucyrus design results in:

- Increased effective lifting force
- Constant boom momentum
- Automatic constant bucket angle position in horizontal and vertical direction
- Automatic roll-back limiter

Further, the ***TriPower*** system enables Bucyrus face shovels to use smaller-diameter boom cylinders. This benefit results in fast lifting speeds to outperform the competition.

TriPower

Diesel engine drive systems

Electric drive systems

Efficient Drive Systems

Bucyrus hydraulic excavators are equipped with one or two diesel engines or an electric drive option. On models equipped with two engines, the hydraulic excavator remains operational with only a single engine running, maintaining full availability. The electric drive is used on mainly stationary operated machines and offers superior availability because it doesn't require time to refuel, and servicing the motor is minimized.

Pump Managing System

The pump managing system continuously evaluates actual engine and hydraulic operating values against set values and adjusts pump output for optimal performance. This results in an efficient use of the engine for greater productivity.

Superior Oil Cooling System

The cooling system utilizes dedicated pumps to provide cooling capacity as needed whether the engine is idling or under load, whereas competitor machines only provide cooling when the engine is under load and the excavator is working. Consequently, on Bucyrus hydraulic excavators, the hydraulic oil circulates through the cooling system even when the excavator is waiting for the next truck. This system provides a more efficient means of cooling, particularly in demanding applications. Further, the radiator fan speed is thermostatically or electronically controlled for greater efficiency.

Closed-Loop Swing Circuit

The Bucyrus closed-loop swing circuit results in fast boom lift motions during swing. The kinetic energy of the swing motion is used during deceleration to support driving the main and auxiliary pumps. Compared to open circuits, the Bucyrus closed-loop swing circuit is more energy-efficient, generates less heat and delivers faster speeds.

Simple & Efficient Hydraulic System

The main hydraulic valve block is located on top of the boom. This design of the excavator reduces the total number of hoses that are needed and ensures they're neatly organized for safe operation, easy inspection and fast service.

By using float valves to lower the boom instead of engaging pumps, the boom moves faster and other operating functions can occur simultaneously, such as bucket curl and stick in/out. This results in faster cycle times.

Main hydraulic valve block

Sturdy Undercarriage

Bucyrus undercarriages are tough and long-lasting. Engineered with extensive use of finite element analysis, the steel structure is optimized, travel motors are well-protected by strong cover plates and hinged door covers, and a unique robust track chain incorporates a combined pad/link design on most models. A state-of-the-art track tensioning system automatically adapts the tensioning of the tracks depending on operating conditions, extending the track life even further.

Sturdy undercarriage

Monitoring and Diagnostic System

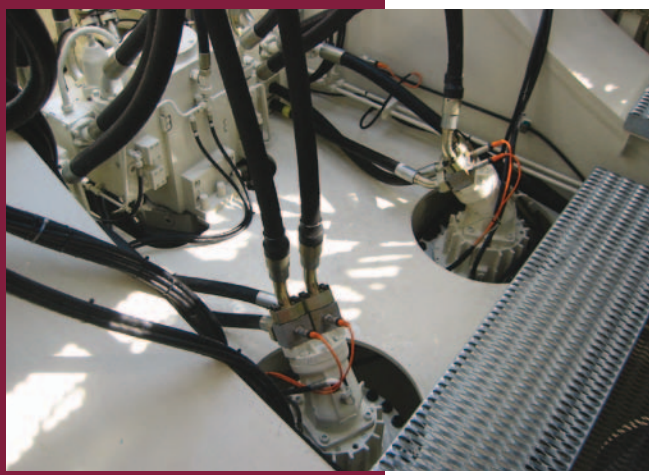
Enhancing diagnostic capabilities and providing detailed troubleshooting functions, the Board Control System (BCS) uses sensors throughout the machine to monitor operating data, record faults and notify the operator audibly and visually. This promotes the earliest possible detection of faults and allows for timely maintenance planning and assistance for speedy repair.

Electronic-Hydraulic Control System

All larger model Bucyrus hydraulic excavators use an electro-hydraulic control system that electronically relays actuating signals from hand levers. Simplified troubleshooting and advanced diagnostic routines lead to increased uptime. The design delivers fast and precise machine reactions which reduce operator fatigue and increase efficiency. For greater comfort, joystick preferences are operator-adjustable. And since no hydraulic lines are inside or underneath the cab, it's a more comfortable and clean work environment.

Board Control System

Accessibility



By locating the main valve block on top of the boom, the superstructure is more spacious.

Machine Accessibility

Systems throughout Bucyrus hydraulic excavators are designed for easy access, enhancing serviceability.

- Hydraulic Valve Block—The valve block is located on the boom where it's cleanly laid out and easily accessed by walkways on both sides. This reduces the number of hoses leading from the superstructure.
- Superstructure—Exceptional accessibility is provided to systems like the swing motor, swing gearbox and rotary distributor in the well-organized superstructure. The engine is accessible from three sides on most models.

Bucyrus hydraulic excavators are equipped with retractable access ladders. A less steep 45° folding stairway is available as an option. An exit harness kit or a kick-down type, cage-equipped ladder allows for safe degress in case of emergency.

Safe, Comfortable Cab Design

Bucyrus hydraulic excavator cabs have a falling object protection system (FOPS) and meet DIN ISO 3449 standards. They are equipped with comfortable multi-adjustable chairs, ample legroom, excellent visibility, temperature control, sound abatement and ergonomically designed controls.

- Windows: Safety glass is used for all windows and armored glass for the windshield.
- Seating: The pneumatically cushioned, multi-adjustable seat enhances operator productivity and includes a safety switch in the cushion that automatically neutralizes the hydraulic controls when the operator leaves the seat.
- Display: A large, transflective color screen displays monitoring and diagnostic data for convenient troubleshooting and service assistance. Five languages can be selected, including English, French, German, Spanish and Russian.

Safe Bucket Control

The TriPower roll-back limiter prevents the bucket from being curled back too far and minimizes the potential for material to spill onto the attachment or the cab. Lifting the bucket automatically in constant-angle position requires just a single lever actuation.

Emergency Shut-Offs

An easily accessible, standard shut-off switch located in the cab shuts down the electrical system in case of emergencies. Additional shut-off switches are located on the machine (e.g., in the machine house), or are accessible from the ground with pull ropes.

Safe, comfortable cab design

RH400

- 90 tonne (99 ton) payload capacity—largest hydraulic excavator in the market
- Operating weight: 980 tonnes (1,080 tons)
- Engine output: 3,360 kW (4,500 hp)
- Standard bucket size: 50 m^3 (65 yd^3)
- 3-pass load—Bucyrus MT4400AC Mining Truck: 218 tonnes (240 tons)
- 4-pass load—Bucyrus MT5500AC Mining Truck: 290 tonnes (360 tons)
- 4-pass load—Bucyrus MT6300AC Mining Truck: 363 tonnes (400 tons)
- Available in electric or diesel drive
- 5-circuit hydraulic system
- Closed-loop swing circuit with torque control
- All major components are stress relieved after welding to minimize internal stresses
- Automatic central lubrication system
- Rugged, high-stability undercarriage
- Spacious cab with ergonomically designed controls for added operator comfort

RH340B

- 61 tonne (67 ton) payload capacity
- Operating weight: 567 tonnes (625 tons)
- Engine output: 2,240 kW (3,000 hp)
- Standard bucket size: 34 m^3 (44.5 yd^3)
- 3-pass load—Bucyrus MT3700AC Mining Truck: 186 tonnes (205 tons)
- 4-pass load—Bucyrus MT4400AC Mining Truck: 218 tonnes (240 tons)
- 5-pass load—Bucyrus MT5500AC Mining Truck: 290 tonnes (360 tons)
- Available in diesel drive
- 5-circuit hydraulic system
- Closed-loop swing circuit with torque control
- All major components are stress relieved after welding to minimize internal stresses
- Automatic central lubrication system
- Spacious cab with ergonomically designed controls for added operator comfort
- Rugged, high-stability undercarriage, added operator comfort

RH200

- 45 tonne (50 ton) payload capacity
- Operating weight: 525 tonnes (579 tons)
- Engine output: 1,880 kW (2,520 hp)
- Standard bucket size: 26 m^3 (34 yd^3)
- 4-pass load—Bucyrus MT3700AC Mining Truck: 186 tonnes (205 tons)
- 5-pass load—Bucyrus MT4400AC Mining Truck: 218 tonnes (240 tons)
- Available in electric or diesel drive
- 5-circuit hydraulic system
- Closed-loop swing circuit with torque control
- All major components are stress relieved after welding to minimize internal stresses
- Automatic central lubrication system
- Spacious cab with ergonomically designed controls for added operator comfort
- Rugged, high-stability undercarriage

RH170B

- 40 tonne (44 ton) payload capacity
- Operating weight: 397 tonnes (438 tons)
- Engine output: 1,516 kW (2032 hp) /1,492 kW (2,000 hp)
- Standard bucket size: 22 m^3 (28.8 yd^3)
- 4-pass load—Bucyrus MT3300AC Mining Truck: 136 tonnes (150 tons)
- Available in electric or diesel drive
- 5-circuit hydraulic system
- Closed-loop swing circuit with torque control
- All major components are stress relieved after welding to minimize internal stresses
- Automatic central lubrication system
- Spacious cab with ergonomically designed controls for added operator comfort
- Rugged, high-stability undercarriage

RH120E

- 30 tonne (34 ton) payload capacity
- Operating weight: 287 tonnes (316 tons)
- Engine output: 1,140 kW (1,530 hp) /1,008 kW (1,350 hp)
- Standard bucket size: 17 m^3 (22.2 yd^3)
- 5-pass load—Bucyrus MT3300AC Mining Truck: 136 tonnes (150 tons)
- Available in electric or diesel drive.
- 5-circuit hydraulic system
- Closed-loop swing circuit with torque control
- All major components are stress relieved after welding to minimize internal stresses
- Automatic central lubrication system
- Spacious cab with ergonomically designed controls for added operator comfort
- Rugged, high-stability undercarriage

RH90C

- 18 tonne (20 ton) payload capacity
- Operating weight: 172 tonnes (190 tons)
- Engine output: 858 kW (1,150 hp)
- Standard bucket size: 10 m^3 (13.1 yd^3)
- Available in electric or diesel drive
- 3-circuit hydraulic system
- Closed-loop swing circuit with torque control
- All major components are stress relieved after welding to minimize internal stresses
- Automatic central lubrication system
- Spacious cab with ergonomically designed controls for added operator comfort
- Rugged, high-stability undercarriage

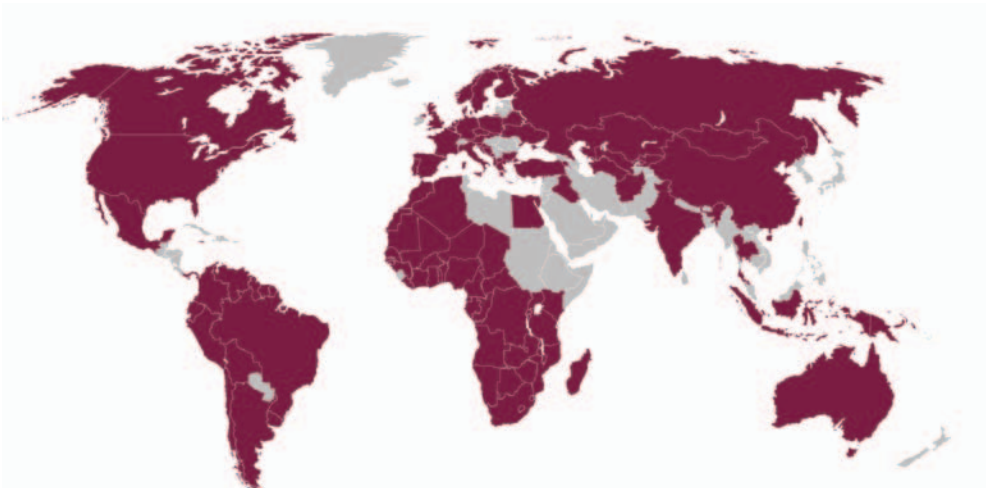
RH40E

- 12.6 tonne (13.8 ton) payload capacity
- Operating weight: 105 tonnes (116 tons)
- Engine output: 522 kW (700 hp) /477 kW (640 hp)
- Standard bucket size: 7 m^3 (9.2 yd^3)
- Utilized in both quarry and mine site applications
- 3-circuit hydraulic system
- Triple-race swing roller bearing
- Closed-loop swing circuit with torque control
- Automatic central lubrication system
- Spacious cab with ergonomically designed controls for added operator comfort
- Rugged, high-stability undercarriage

Optimized Mining

Bucyrus provides an effective mining package with a comprehensive selection of hydraulic excavators and mining trucks that are matched to offer a productive solution for digging and hauling. Cost-efficiency can be realized when applying these Bucyrus product families at your worksite.

Excavator									
PRODUCT	OPERATING WEIGHT	SHOVEL	BACKHOE	OUTPUT	MT3300AC	MT3700AC	MT4400AC	MT5500AC	MT6300AC
RH40E	105 t (116 ton)	7.0 m^3 (9.2 yd^3)	6.0/7.0 m^3 (7.8-9.2 yd^3)	477-522 kW (640-700 hp)					
RH90C	172-175 t (190-193 ton)	10.0 m^3 (13.1 yd^3)	10.0 m^3 (13.1 yd^3)	858 kW (1,150 hp)	7-8 passes				
RH120E	284-287 t (313-316 ton)	16.5 m^3 (21.6 yd^3)	17.0 m^3 (22.2 yd^3)	1,008-1,144 kW (1,350-1,530 hp)	4-5 passes	6 passes			
RH170B	397 t (434 ton)	22.0 m^3 (28.8 yd^3)	22.0 m^3 (28.8 yd^3)	1,492-1,516 kW (2,000-2,032 hp)	4 passes	5 passes	5-6 passes		
RH200	525-534 t (579-589 ton)	26.0 m^3 (34 yd^3)	28.0 m^3 (36.6 yd^3)	1,880 kW (2,520 hp)	3 passes	4 passes	4-5 passes	6-7 passes	7-8 passes
RH340B	568 t (626 ton)	34.0 m^3 (45.5 yd^3)	34.0 m^3 (45.5 yd^3)	2,240 kW (3,000 hp)		3 passes	3-4 passes	5 passes	6 passes
RH400	980 t (1,080 ton)	50.0 m^3 (65.4 yd^3)		3,360 kW (4,500 hp)			3 passes	3-4 passes	4 passes



Bucyrus is committed to improving environmental and safety performance through minimizing air and water emissions and reducing waste. We will control and eliminate, where possible, any source of hazards, hazardous materials and emissions involved in manufacturing and support processes.

BUCYRUS®

Reliability at work

www.bucyrus.com/excavators

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