

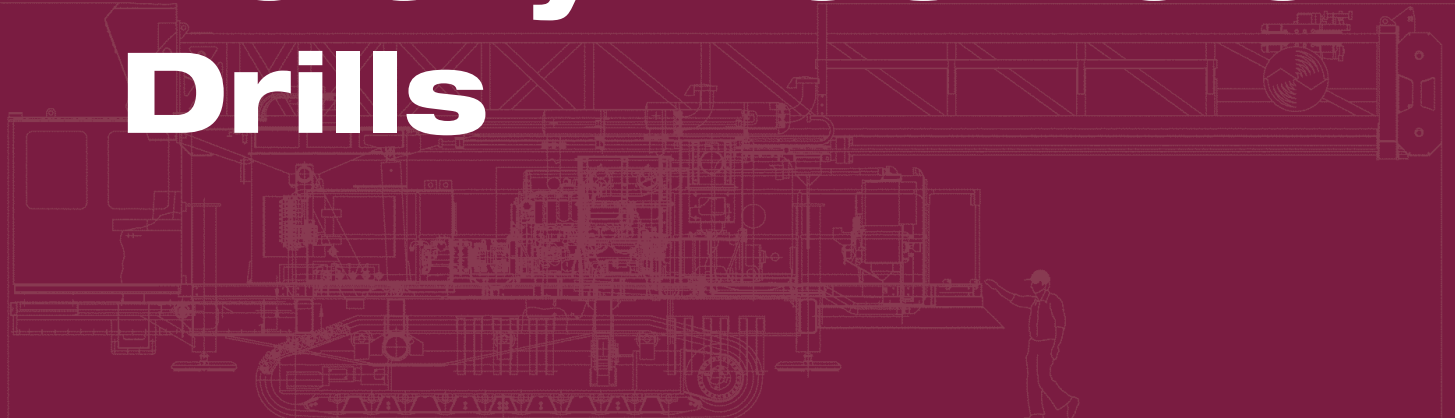
Reliability at work



Integrity



# Rotary Blasthole Drills



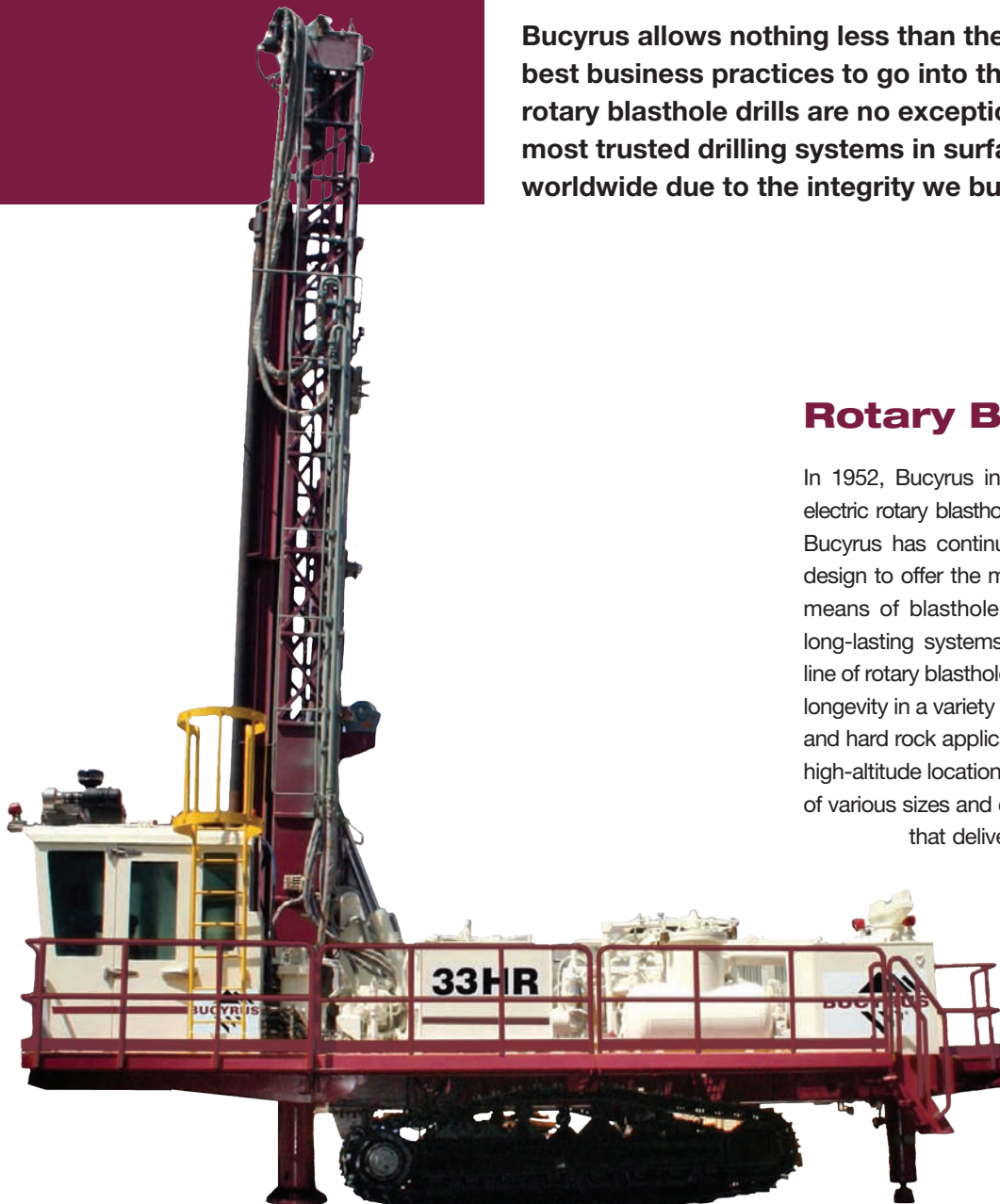


# Integrity

Bucyrus allows nothing less than the finest workmanship and the best business practices to go into the products we make. Our rotary blasthole drills are no exception. Today, they are one of the most trusted drilling systems in surface mining operations worldwide due to the integrity we build right in.

## Rotary Blasthole Drills

In 1952, Bucyrus introduced the first commercially accepted electric rotary blasthole drill, changing mining productivity forever. Bucyrus has continued to improve upon the technology and design to offer the most reliable, productive, and cost-effective means of blasthole drilling. A synergy of robust structures, long-lasting systems, and innovative technology, the Bucyrus line of rotary blasthole drills have proven their effectiveness and longevity in a variety of mining environments, including both soft and hard rock applications, as well as extreme temperature and high-altitude locations. Equipped to supply rotary blasthole drills of various sizes and configurations, Bucyrus has the drilling tool that delivers the correct amount of pull-down, rotary torque, and on board air to ensure your targeted penetration rates.



## A World Leader

Bucyrus has earned its reputation as the world leader in blasthole drills on its ability to introduce new products with leading-edge technology. Today, Bucyrus drills represent more than half of the large blasthole drill population around the world.

Bucyrus has been designing and manufacturing high-quality blasthole drills and OEM support parts for well over 50 years. The customized drill designs have a proven ability to withstand the elements and rigors of any mining application while providing increased productivity and decreased maintenance.



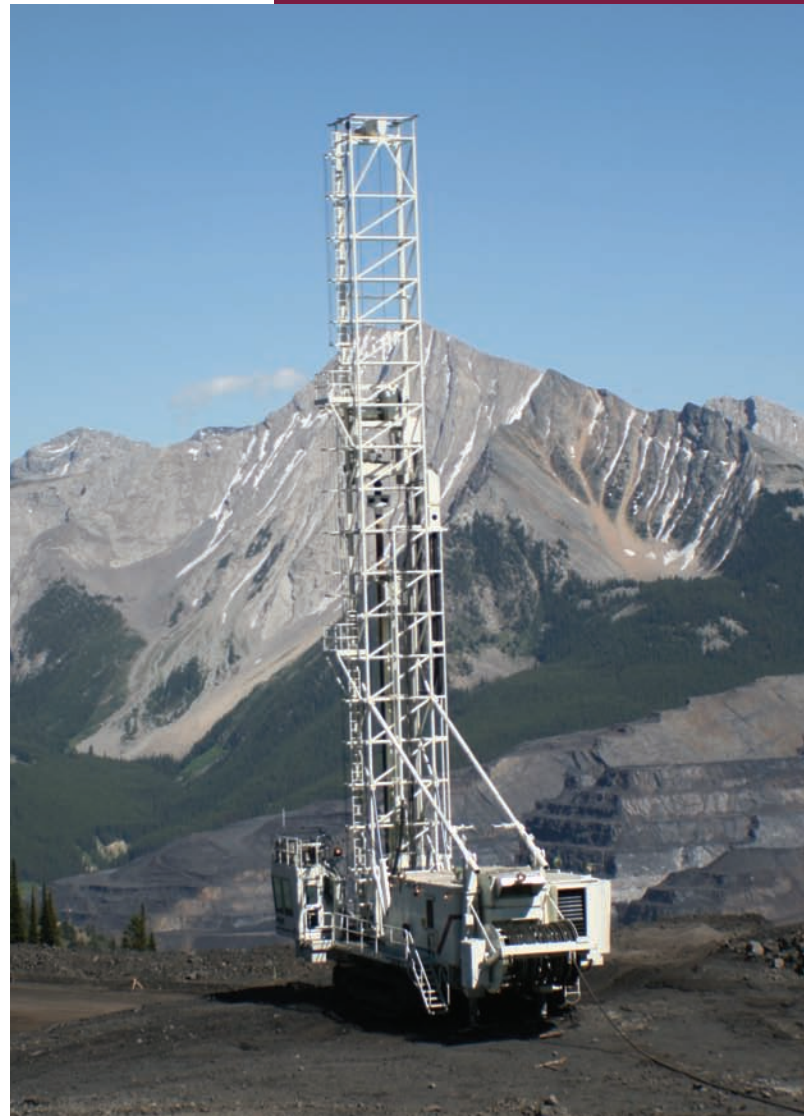
## Machine Service & Support

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.

## Specialized Training

Bucyrus product specialists have years of experience with hands-on and classroom training. We have the skills to support, advise, and train your people on all aspects of operation, machine management and maintenance.

At the mine site, or at the Bucyrus Technical Training Center in South Milwaukee, we have the capabilities to provide total training solutions and support





## 59 Series

- Minimized vibration by the use of proven programmed drill control option with the optional cushioned centralizer and shock sub.
- Rack and pinion system for constant bit pressure and rotary drive system with increased torque.
- Quick drill pipe changes with a drillstring changeout system.
- Range of mast sizes.
- Angle hole drilling to 25° in 5° increments.
- Efficient and comfortable cab for maximum operator productivity.
- Easy access to components.
- Mainframe, crawler frame and mast structures designed for maximum longevity.
- Gear trains including mast machinery engineered for strength and durability.
- Hydraulic system designed for easy access with lines and valves marked for quick identification.
- Reliable electrical system that performs in all weather conditions.
- Proven diagnostic system.

## Options

- Standard 18.3 m (60 ft) Mast  
(Optional 16.8 m (55 ft) or 19.8 m (65 ft) Masts)
  - Angle Hole Drilling
  - Automatic Fire Suppression Systems
  - Cold Weather Options
  - Dry Dust or Water Injection Dust Control Systems
  - Dust Curtains, Static or Hydraulically Raised
  - Front Tow Bar
  - Global Positioning System (GPS)
  - Hydraulic Breakout Wrench (controlled from operator's control console)
  - Hydraulic Drive Cable Reels
  - Operator Controllable Compressor with Variable Volume Control
  - Programmed Drill Control
  - Quick-Fill System for Oils and Lubricants
  - Rotary Air Union
  - Remote Propel
  - Wide Track Links
- (Additional options to meet customer needs)



# 49 Series

- Easy access to components.
- Mainframe, crawler frame and mast structures are designed for maximum longevity.
- Gear trains, including mast machinery, are engineered for strength and durability.
- Hydraulic system is designed for easy access with lines and valves marked for quick identification.
- Reliable electrical system that performs in all weather conditions.
- Proven diagnostic system.
- Vibration is minimized by the use of proven Programmed Drill Control option.
- Rack and pinion system for constant bit pressure and rotary drive system with increased torque.
- Quick drill pipe changes with a drillstring changeout system.
- Wide range of mast sizes.
- Angle hole drilling to 25°.
- Efficient and comfortable ergonomic cab for maximum operator productivity.

## Options

- Standard 19.8 m (65 ft) Mast  
(Optional 18.3 m (60 ft) or 21.3 m (70 ft) Masts)
- Automatic Fire Suppression Systems
- Cold Weather Options
- Cushion-Foam-Centralizer™ Bushing Assembly
- Dry Dust or Water Injection Dust Control Systems
- Dust Curtains, Static or Hydraulically Raised
- Front Tow Bar
- Global Positioning System (GPS)
- Hydraulic Breakout Wrench (controlled from operator's control console)
- Hydraulic Drive Cable Reels
- Operator Controllable Compressor with Variable Volume Control
- Programmed Drill Control
- Quick-Fill System for Oils and Lubricants
- Rotary Air Union
- Remote Propel
- Wide Track Links
- AccessDirect™  
(Additional options to meet customer needs)



# SKL Series

- Single, double-acting cylinder, cable pull-down system produces 49,895 kg (110,000 lb) pull-down force and 39,009 kg (86,000 lb) hoist force.
- Pull-down/Hoist system cylinder rod is fixed on both ends with a moving barrel, providing high-efficiency and reducing feed system wear and maintenance.
- Bucyrus one-touch auto-drill system optimizes the drilling process so drilling is efficient and excessive equipment wear is prevented.
- Auto cable tensioning, powered by two hydraulic cylinders, maintains constant force on pull-down and hoist ropes for efficient energy transfer and accurate head alignment.
- Fast set-up angle drilling in five degree increments up to 30-degrees (standard).
- Unique, three-stage twin hydraulic mast-raise cylinders positioned away from mast pivot, minimizing loads on the mast and main frame.
- Advanced frame design with sculpted box section main frame, constructed of ASTM Grade 50 steel which varies the steel depth from 50.8 cm to 108 cm (20 in to 42.5 in) for a strong and efficient frame for long life.
- 101.9 m<sup>3</sup>/min (3,600 cfm) single-stage rotary screw compressor provides ample air for large-hole and high-altitude drilling.
- Four standard jacks help ensure drill stability and more even load distribution.
- Bucyrus one-touch auto-level feature for improved drill hole quality and consistency.
- Rapid pipe changing achieved with Bucyrus hydraulically operated break-out wrench (HOBOW) and highly effective deck wrench – both are industry firsts.
- Drill carousel has fewer moving parts, lowering maintenance requirements and increasing drill uptime.
- Mast designed with pulldown and hoist cables instead of chains for more predictable wear profile and greater reliability.

## Options

- Dust Collection: A dry dust collector with pre-cleaner and a water injection system for dust suppression are available
- Cold-Weather Package: For operation to -40° C/F; fluid heaters; insulated cab floors, tank floors and compressor controls; cab thermoglass and floor heater; dead-end Arctic hoses at pivots.
- High Pressure for DTH Drilling Applications: A dual-stage high-pressure compressor and air system allow high-pressure DTH drilling at 500 psi (34.4 bar), 350 psi (24.1 bar), or rotary drilling at 150 psi (10.33 bar).
- Bucyrus Hammer-Tricone Pipe Rack: Reduces change time when switching from tricone drilling to DTH drilling, and ensures operator safety because the conversion is performed from inside the cab.

(Additional options to meet customer needs)



# 39 Series

- Tri-structure mast provides a stable drill platform that is key for high speed rotary drilling in both vertical and angle hole drilling operations.
- Efficient angle hole drilling between  $-15^{\circ}$  and  $+30^{\circ}$  allows for optimum blast control and highwall stability.
- Ability to drill under itself at a  $-15^{\circ}$  slope allows for additional machine flexibility.
- Pulldown and hoist are hydraulically driven, eliminating traditional chains and cables for improved efficiency and ease of maintenance.
- Capable of raising/lowering mast with head in upper position, allowing pattern-to-pattern movement. (Not available with 65 ft (19.8 m) mast option)
- Counter-rotation allows easy maneuverability within tight drill patterns.
- Available with a diesel or electric drive system.
- Ergonomically designed, FOPS certified operator's cab provides excellent visibility and operator comfort.
- Field tests have proven the unique carousel arrangement increases the speed of drill-pipe management.
- Programmable Logic Controls provide real-time reporting.



## Options

- Standard 10.7 m (35 ft) Mast  
Optional 13.7 m (45 ft) or 19.8 m (65 ft) Masts)
  - Automatic Fire Suppression Systems
  - Alternate Compressor Sizes
  - Compressor with Variable Volume Control
  - Foam Injection
  - Dry Dust or Water Injection Dust Control System
  - Dust Curtains, Static or Hydraulically Raised
  - Bit Lubricator
  - Thread Lubricator
  - Chip Deflector Cone
  - High-Intensity (HID) Ground Lighting System
  - Jump Start Receptacle
  - Radio Remote
  - Wiggins Fast Fill System
  - Retractable Stairs
  - Window Wipers
- (Additional options to meet customer needs)



## 33/35/37 Series

- Pulldown and hoist are hydraulically driven, eliminating the need for power cable.
- Capable of raising/lowering mast with head in upper position, allowing pattern-to-pattern movement.
- Counter-rotation allows easy maneuverability within tight drill patterns.
- Enhanced, ergonomically designed operator's cab provides excellent visibility and operator comfort.
- Field tests have proven the unique carousel arrangement increases the speed of drill-pipe management.

### Options

- DTH (down the hole) or rotary drilling
  - 33/35 - CAT C18 Diesel with 1,150 icfm (32.56 m<sup>3</sup>/min) at 350 psi compressor
  - 37 - CAT C27 Diesel with 1,500 icfm (42.47 m<sup>3</sup>/min) at 350 psi compressor
  - Hole Depth - Single Pass Options:
    - 33/35 Standard 30 ft (9.1 m)
    - 37 Standard 35 ft (10.6 m)
    - 37 Optional 55 ft (16.8 m)
  - Automatic Fire Suppression System
  - Automatic Power Breakout System
  - Dry Dust or Water Injection Dust Control Systems
  - Centralized Lubrication System
  - Rotary Deck Bushing
  - Shocksab for Rotary Head
  - Electronic Depth Counter and Logger
  - Wiggins Fast Fill System
- (Additional options to meet customer needs)





# SKS Series

- Closed-loop cable pull-down system produces 39,009 kg (86,000 lb) of pull-down and hoist force.
- Pull-down/Hoist system cylinder rod is fixed on both ends with a moving barrel, providing high-efficiency and reducing feed system wear and maintenance.
- Fast set-up angle drilling in five degree increments up to 30-degrees (standard).
- Heavy-duty frame comprised of ASTM A500 Grade B steel and 203 mm x 406 mm x 12.7 mm (8 in x 16 in x ½ in) rectangular steel tubing, and is heavily cross-braced and reinforced in higher-stress areas.
- The A-frame has no pinned connections, providing a strong, maintenance-free design.
- Four standard jacks help ensure drill stability and more even load distribution.
- Rapid pipe changing achieved with Bucyrus hydraulically operated break-out wrench (HOBO) and highly effective deck wrench – both are industry firsts.
- Drill carousel has fewer moving parts, lowering maintenance requirements and increasing drill uptime.
- Heavy-duty, reliable drill heads that include a 140 mm (5.5 in) bull-shaft connection to the drill string.
- Rotary head carriage includes adjustable steel guides with replaceable Nylatron® pads for even travel on the main chords.
- Mast designed with pulldown and hoist cables instead of chains for more predictable wear profile and greater reliability.
- Auto cable tensioning, powered by two hydraulic cylinders, maintains constant force on pull-down and hoist ropes for efficient energy transfer and accurate head alignment – available on select models.

## Options

- Available with 13 meter, 16 meter, or 35 foot masts
- Dust Collection: A dry dust collector with pre-cleaner and a water injection system for dust suppression are available
- Cold-Weather Package: For operation to -40° C/F; fluid heaters; insulated cab floors, tank floors and compressor controls; cab thermoglass and floor heater; dead-end Arctic hoses at pivots.
- High Pressure for DTH Drilling Applications: A dual-stage high-pressure compressor and air system allow high-pressure DTH drilling at 500 psi (34.4 bar), 350 psi (24.1 bar), or rotary drilling at 150 psi (10.33 bar).
- Bucyrus Hammer-Tricone Pipe Rack: Reduces change time when switching from tricone drilling to DTH drilling, and ensures operator safety because the conversion is performed from inside the cab.

(Additional options to meet customer needs)





## SKFX Series

- Closed-loop cable pull-down system produces 22,680 kg (50,000 lb) of pull-down and hoist force.
- Pull-down/Hoist cylinder rod is fixed on both ends with a moving barrel, providing high-efficiency and reducing feed system wear and maintenance.
- Fast set-up angle drilling in five degree increments up to 25-degrees (standard).
- Heavy-duty frame comprised of ASTM A500 Grade B steel and 203 mm x 406 mm x 12.7 mm (8 in x 16 in x ½ in) rectangular steel tubing, and is heavily cross-braced and reinforced in higher-stress areas.
- Four standard jacks help ensure drill stability and more even load distribution.
- Rapid pipe changing achieved with Bucyrus hydraulically operated break-out wrench (HOBOWRENCH) and highly effective deck wrench – both are industry firsts.
- Drill carousel has fewer moving parts, lowering maintenance requirements and increasing drill uptime.
- Heavy-duty, reliable drill heads that include a 140 mm (5.5 in) bull-shaft connection to the drill string.
- Rotary head carriage includes adjustable steel guides with replaceable Nylatron® pads for even travel on the main chords.
- Mast designed with pulldown and hoist cables instead of chains for more predictable wear profile and greater reliability.
- Ergonomically designed, temperature- and pressure-controlled operator's cab.
- Auto cable tensioning, powered by two hydraulic cylinders, maintains constant force on pull-down and hoist ropes for efficient energy transfer and accurate head alignment.

## Options

- Dust Collection: A dry dust collector with pre-cleaner and a water injection system for dust suppression are available
- Cold-Weather Package: For operation to -40° C/F; fluid heaters; insulated cab floors, tank floors and compressor controls; cab thermoglass and floor heater; dead-end Arctic hoses at pivots.
- High Pressure for DTH Drilling Applications: A dual-stage high-pressure compressor and air system allow high-pressure DTH drilling at 500 psi (34.4 bar), 350 psi (24.1 bar), or rotary drilling at 150 psi (10.33 bar).
- Bucyrus Hammer-Tricone Pipe Rack: Reduces change time when switching from tricone drilling to DTH drilling, and ensures operator safety because the conversion is performed from inside the cab.

(Additional options to meet customer needs)

# SKF Series

- Fast set-up angle drilling in five degree increments up to 25-degrees (standard).
- Heavy-duty frame comprised of ASTM A500 Grade B steel and 203 mm x 406 mm x 12.7 mm (8 in x 16 in x ½ in) rectangular steel tubing, and is heavily cross-braced and reinforced in higher-stress areas.
- Four standard jacks help ensure drill stability and more even load distribution.
- Rapid pipe changing achieved with Bucyrus hydraulically operated break-out wrench (HOBO) and highly effective deck wrench – both are industry firsts.
- Drill carousel has fewer moving parts, lowering maintenance requirements and increasing drill uptime.
- Mesabi coolers feature open passages that allow dirt and debris to blow through field-replaceable cores, facilitating easy maintenance of the cooling system.
- Heavy-duty, reliable drill heads that include a 140 mm (5.5 in) bull-shaft connection to the drill string.
- Rotary head carriage includes adjustable steel guides with replaceable Nylatron® pads for even travel on the main chords.
- Mast designed with pulldown and hoist cables instead of chains for more predictable wear profile and greater reliability.

## Options

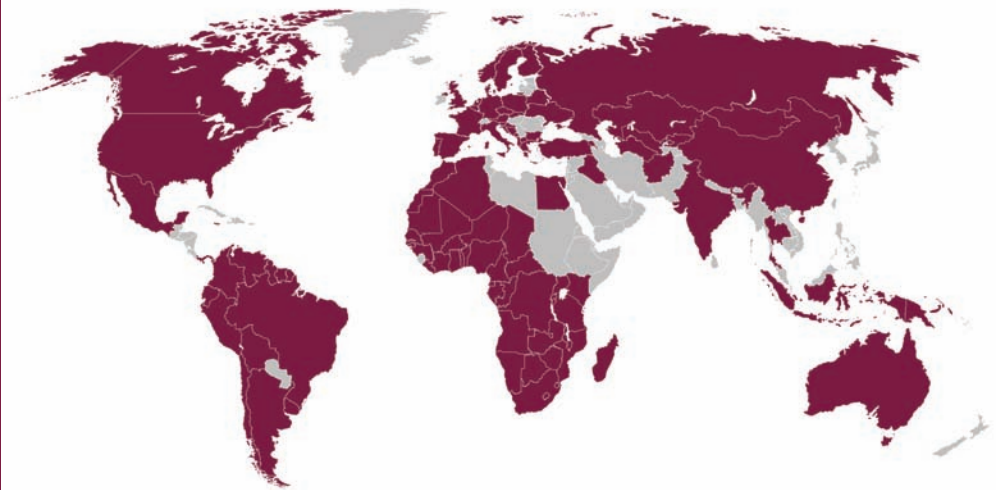
- Dust Collection: A dry dust collector with pre-cleaner and a water injection system for dust suppression are available
- Cold-Weather Package: For operation to -40° C/F; fluid heaters; insulated cab floors, tank floors and compressor controls; cab thermoglass and floor heater; dead-end Arctic hoses at pivots.
- High Pressure for DTH Drilling Applications: A dual-stage high-pressure compressor and air system allow high-pressure DTH drilling at 500 psi (34.4 bar), 350 psi (24.1 bar), or rotary drilling at 150 psi (10.33 bar).
- Bucyrus Hammer-Tricone Pipe Rack: Reduces change time when switching from tricone drilling to DTH drilling, and ensures operator safety because the conversion is performed from inside the cab.

(Additional options to meet customer needs)



Model	Maximum Bit Loading	Standard Hole Depth (Single Pass)	Maximum Hole Size	Working Weight
<b>59HR</b>	74,830 kg (165,000 lb)	273 - 444 mm (10.75 - 17.5 in)	18.29 m (60 ft)	183,673 kg (405,000 lb)
<b>49HR</b>	63,975 kg (141,000 lb)	251 - 406 mm (9.625 - 16 in)	19.81 m (69 ft)	154,224 kg (340,000 lb)
<b>SKL</b>	49,895 kg (110,000 lb)	229 - 381 mm (9 - 15 in)	16.5 - 20.0 m (54.0 - 65.6 ft)	131,088 kg (289,000 lb)
<b>39HR</b>	59,421 kg (131,000 lb)	228 - 311 mm (9 - 13.75 in)	10.7 m (35 ft)	136,078 kg (300,000 lb)
<b>SKS</b>	39,000 kg (86,000 lb)	229 - 311 mm (10 - 12.25 in)	10.3 - 16.5 m (33.8 - 54.0 ft)	95,579 kg (201,780 lb)
<b>37HR</b>	34,019 kg (75,000 lb)	228 - 279 mm (9 - 11 in)	10.7 m (35 ft)	68,039 kg (150,000 lb)
<b>SKF</b>	27,215 kg (60,000 lb)	152 - 270 mm (6 - 10.625 in)	8.6 - 11.0 m (28.2 - 36.1 ft)	54,585 kg (120,350 lb)
<b>SKFX</b>	22,679 kg (50,000 lb)	152 - 270 mm (6 - 10.625 in)	12.8 - 15.8 m (42.0 - 51.8 ft)	62,736 kg (138,310 lb)
<b>35HR</b>	27,215 kg (60,000 lb)	165 - 229 mm (6.5 - 9 in)	9.1 m (30 ft)	49,895 kg (110,000 lb)
<b>33HR</b>	22,679 kg (50,000 lb)	152 - 203 mm (6 - 8 in)	9.1 m (30 ft)	40,823 kg (90,000 lb)

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.



**Reliability at work**

[www.bucyrus.com/drills](http://www.bucyrus.com/drills)