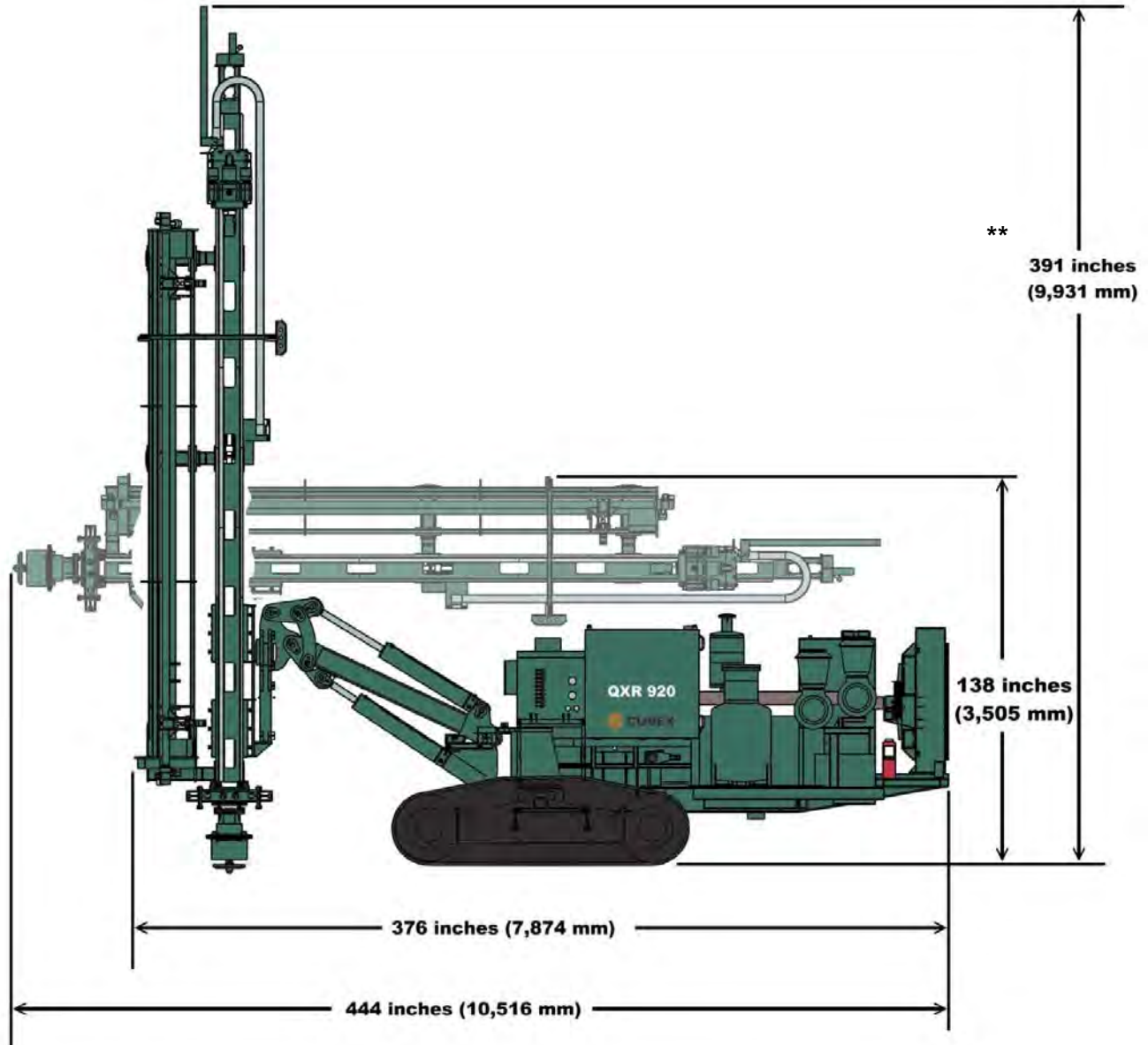


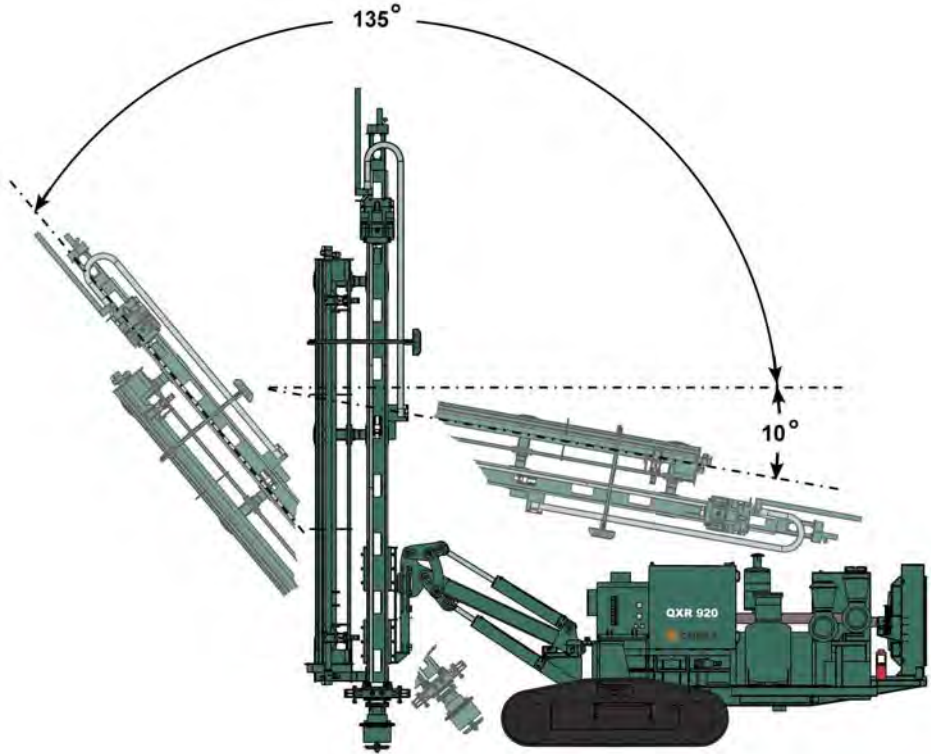


QXR 920

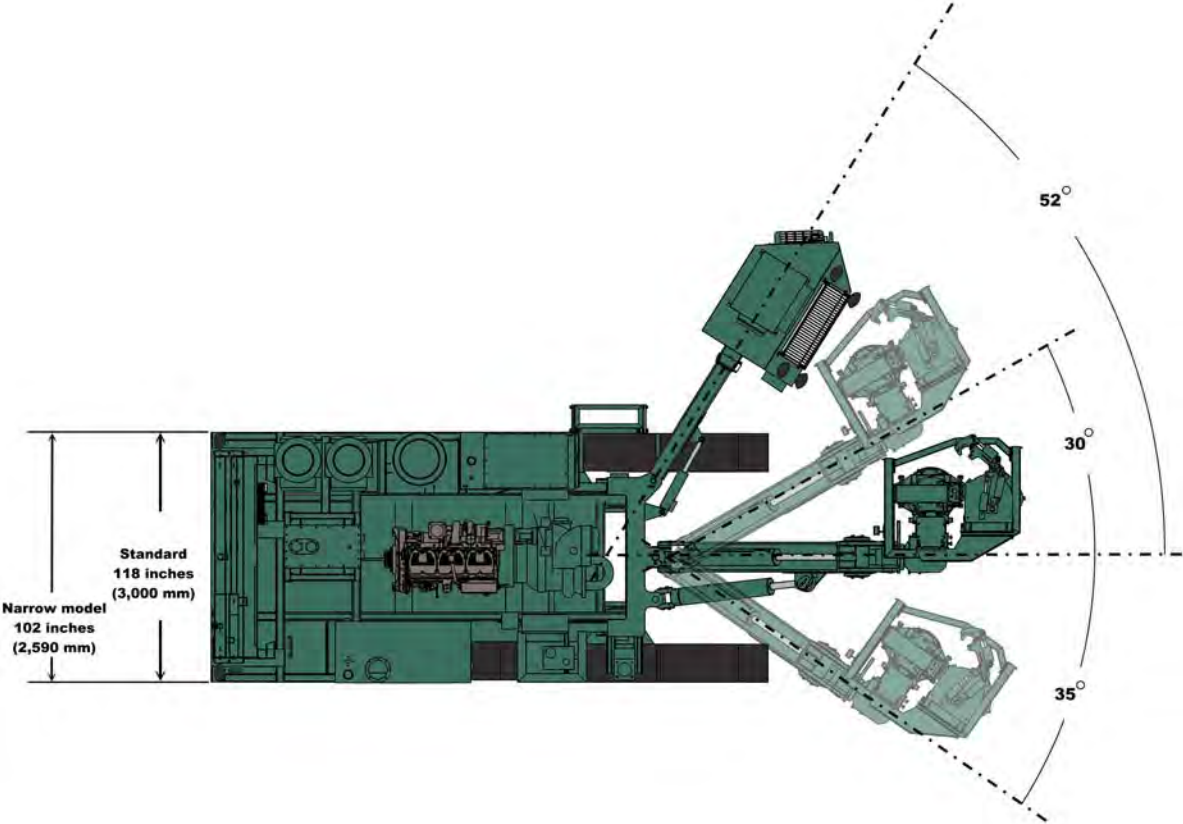
The QXR 920 is a track drill with a boom-mounted feed system that drills with a pneumatic DTH hammer.



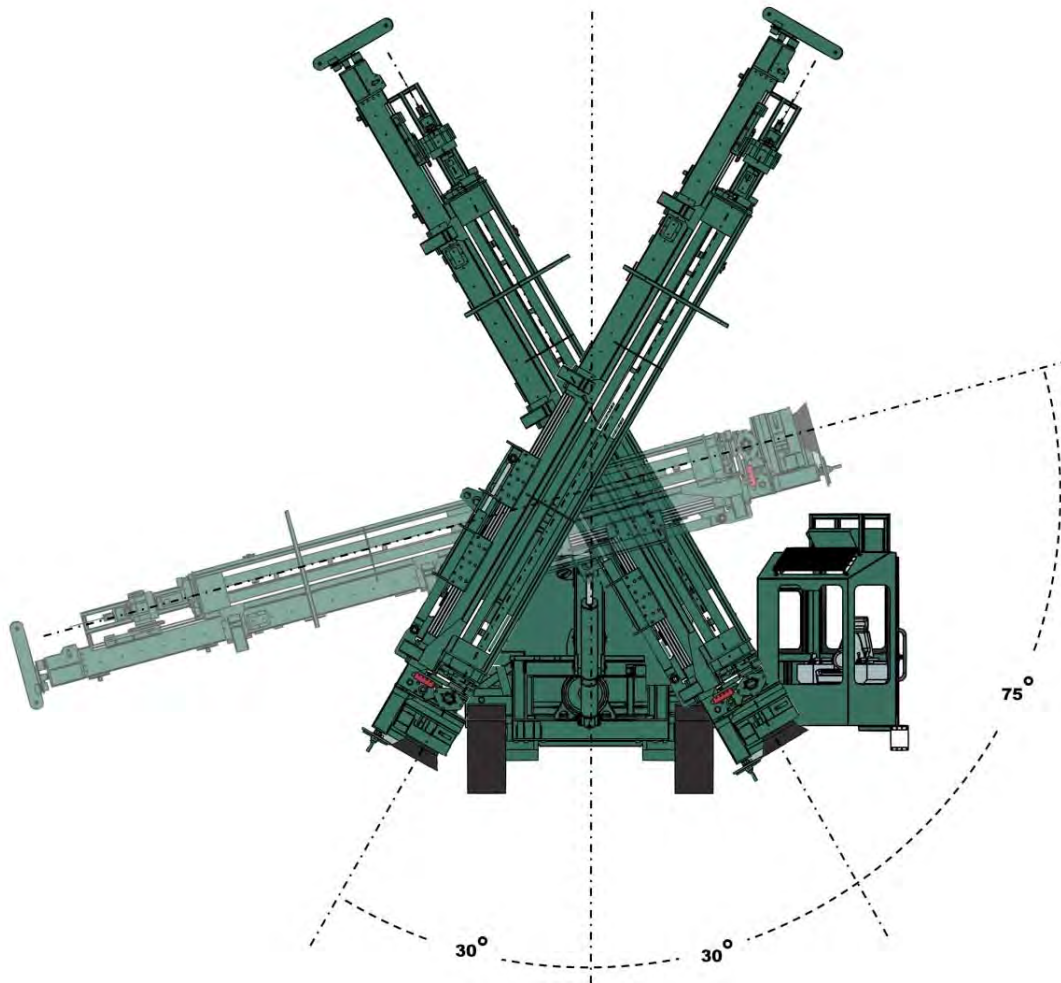
Vertical Drilling Angle



Boom and Cab Swing Angles

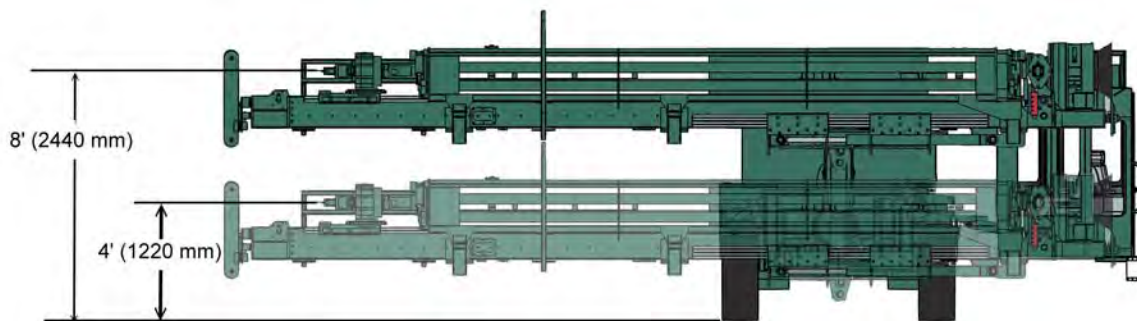


Mast Swing Angle: Pivot – 2 Positions Left or Right 30° . Left 15° Above Horizontal



Horizontal Drilling Elevations

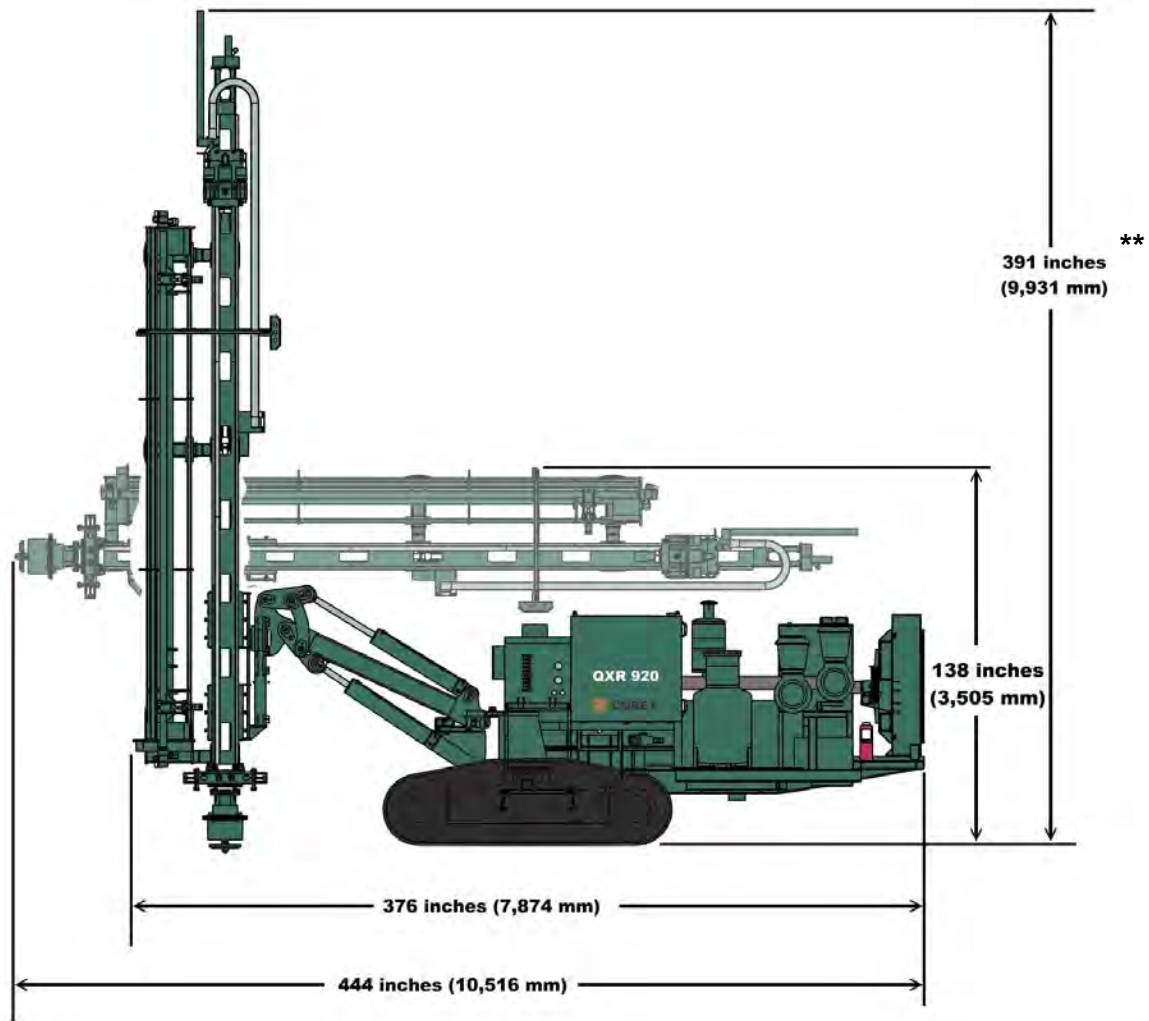
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QXR 920

The QXR 920 is a track drill with a boom-mounted feed system that drills with a pneumatic DTH hammer.



PERFORMANCE: The QXR 920 drills at sea level with a 4 in. to 5 in. DTH Hammer to a depth of 140 ft. (42.7 m) without reloading the carousel and to greater depth with reloading. The QXR is designed to flexibly switch between Production, Pre-Split or Drainhole drilling and (with options) Reverse Circulation sample drilling.



Standard Features:

Undercarriage

- Hydraulic powered track uses Caterpillar® components with 19.7 inch (500 mm) wide, triple grouser shoes.
- Brakes are spring applied/hydraulic released (SAHR).
- Gradability is 36°
- Ground clearance 16 inch (406 mm).
- Independent track oscillation is +/-10°.
- Undercarriage (upper) frame and chassis joint design by Caterpillar® and Cubex specifically for drilling application.
- Track (lower undercarriage) frame designed and manufactured by Caterpillar®.
- 2-speed tram motors.

Centralizer

- Hydraulic centralizers (with replaceable jaws) have a maximum opening of 8 3/4 in. (222 mm).
- A hydraulically actuated slip plate is sized to hammer and drill pipe used.

Air System

- Diesel engine at 1800 rpm drives a Sullair compressor producing 900 cfm (425 l/s) at 500 psi (34.5 bar).
- At 2100 rpm air delivery is 1050 cfm (496 l/s) @ 350 psi (24.1 bar).
- Air filtration
 - Independent of engine air.
 - Extreme duty – 2-stage
- Complete with failsafe shutdown systems.

Positioning

- The feed is mounted on a 9 ft. (2.7m) boom
- Boom swing of 35° to the right and 30° to the left.
- Boom cylinder lifts the boom from 10° below horizontal to 45° above.
- Feed dump cylinder dumps feed from horizontal to 45° past vertical (135° total relative to boom).
- Feed swing (Position #1) swings 30° to the left or right of the boom.
- Feed swing (Position #2) repositions the mast to be moved 15° above horizontal to 60° below horizontal from 4 ft. (1220 mm) to 12.5 ft (3810 mm) above grade.
- Feed extension cylinder extends mast into contact with rock. It has 54 inch (1371 mm) of travel.
- All pins and bushings are hardened and ground.
- All boom cylinders are integral load checked to maintain boom position while drilling.
- Equipped with a 90° x 90° indicator for mast setups.

Feed Assembly

- Mast overall length is 32 ft. 7 in. (8865 mm) and 24 ft. (7315 mm) head travel.
- Feed system hoisting and pulldown power is provided by a leaf-chain that uses a powerful hydraulic cylinder.
- Idler rollers are harden and ground.
- Sealed and permanently lubricated bearings
- Hoisting force is 10,600 lbs (47 kN)
- Pulldown force is 10,600 lbs (47 kN).
- Controlled hydraulically for accurate thrust on the drill bit.
- Top drive mounting plate has long wearing urethane sliders for positive control of top drive movement up and down the mast. V-notched sliders run on steel guide bars.
- Cable chain is used for all drilling hose management and protection.
- Feed tube is protected by removable stainless steel sleeve.
- Adjustable cuttings diverter moves drill cuttings away from the collar.

Carousel

- Standard carousel holds six (6) rods.
- 20 ft. long and a minimum of 3-1/4 in. (82 mm) in diameter.
- Maximum 5 in. (127 mm) diameter.
- All functions are hydraulically operated.
- Pipe handling is hydraulically sequenced.
- Gate for loading pipe in horizontal position

6230 Top Drive

- Hydraulically driven by two (2) high torque motors, top drive is set with a torque capacity of 4225 ft-lbs (5730 Nm) at 3000 psi (207bar).
- Speed is infinitely variable from 0 to 80 rpm.
- Incorporated in top drive is patented splined piston breakout system that eliminates need for wrenches to breakout drill rods.
- 6230 Top Drive torque of 6,280 ft-lbs (8517 Nm) is obtained by a change of Torque Drive motors.

Hammer Lubrication

- Positive metering of either:
 - grease lubricant - type 000NLG1
 - rock drill oil
- Total metering capacity:
 - Max. 1500cc/hr (1.5 liter)
 - Min. 60 cc/hr
- Two metering adjustments - manual stop on injector and cycle timer
- Fully automatic
- Five (5) gallon (20 litre) lubricant reservoir
- Warning light for low lubricant level in container and injection fault

Controls

- All the hydraulic control functions are electric/hydraulic controlled through the Programmable Logic Controller (PLC).
- Reduced hosing through the use of satellite hydraulic valves
- Located at tram station at side of drill are for tramming and set-up.
- On the mast for carousel, centralizer slips and cuttings diverter control.
- All the valves can be manually operated from these locations.
- Warning buzzer will sound when the tramming circuit is engaged and a warning light is lit when the engine is running.

Power

- Caterpillar® C15 turbo charged-after cooled diesel engine, 525 HP "IND C" continuous set at 1800 rpm.
- The engine comes complete with 330 gal (1250 litre) fuel tank, Caterpillar® air filters and controls.
- Mesabi radiator and coolers with:
 - Individual cooling tubes with rubber stress absorbing seals
 - Field repairable without pulling cooler from equipment
 - Clog-resistant arrangement of tubes to compliment high pressure air or water cleaning.
- Complete with low oil, low coolant & high temperature safety shutdown systems.
- Maximum ambient cooling capacity of 125°F (52°C).

Electrical

- 24 Volts DC



Hydraulics

- At the heart of the open loop hydraulic systems are two (2) variable displacement, load sensing, pressure compensated pumps.
- Two (2) main pumps are 71 cc/rev.
- Third pump is a 45 cc/rev pump dedicated to running cooler fans.
- Main pumps system pressure is 4000 psi (275 bar)
- Oil is stored and cooled in the 110 gal (416 litre) tank.
- Oil filtration is done three (3) times,
 - First - a 10 micron fill filter
 - Second - two (2) 5 micron high pressure filters
 - Third - two (2) 10 micron return filters.

FOPS Cab

- Two (2) man cab with
 - Vibration isolated seat (w/ seat belt)
 - Trainer's fold-down seat
 - Sound insulation providing an operating environment less than 85 dBA.
- FOPS Cab built to SAE standard, certified
- Cab is boom mounted providing:
 - Lateral swing cylinder to allow more feed boom swing giving greater hole collaring range.
 - Leveling hydraulic cylinder.
- All functions of drill are controlled from cab.
 - PanelView® Touchscreen
 - Displays all pressures
 - Displays shutdown alarms
 - Displays all active controls
 - Hour meter
 - Input settings
 - Maintenance
 - Drill controls
- Full 360° visibility with glass in all walls, door and roof.
- Seven (7) - 24 volt working lights for extended operating hours.
 - 4 on cab
 - Two (2) HID on cab roof
 - Two (2) ??? on bottom of cab
 - 1 in engine compartment
 - 2 on rear of drill
- Complete with upper and lower wiper for windows.
- Joystick controls located in armrests of the seat.
- Control lockout switch
- Selector control for
 - Tramming circuit
 - Drilling circuit
 - Setup circuit

Equipment Options

Mast / Carousel

- **Mast to Suit 30' pipe for 30' single pass (No Carousel)**
- **Forward facing feed mounting plate**
 - This changes the direction from the side of the mast position to the front in alignment of the forward movement of the drill.
- **Petol Chain Wrench, for DTH hammer breakout**
- **Hydraulic Centralizers, Triple Stack (Upgrade)**
 - Maximum opening of 7 in. (178 mm) with replaceable jaws sized to the drill tools used.
 - All self-centering jaws are operated hydraulically.
 - Top rotating jaws with 15° rotation for breakout. Jaws have replaceable heat treated "jeweled" dies for maximum tool gripping.
 - Middle fixed jaws for holding the lower drill tool.
 - Lower jaws for centralization c/w extended wear wipers for sealing around drill tools.

Dust Collection / Suppression

- **Tipton Dust Collector 3B**
Filter/Clone model 3SB
 - DC electronic sequencer that controls up to 9 impulse valves for back flushing filters.
 - Adjustable cycle timer from 0.5 to 5.0 seconds
 - LED indicators of station operation
 - Transient voltage protection
 - Flow control bypass to allow free wheeling of blower when hydraulic flow is shut off
 - Operation in temperatures from 0° to 70° C
 - With blower BT-205 at 3000 rpm produces 3000 cfm air flow
 - Suction hose velocity of 8600 ft/min
 - 4 filters, 10 in dia. By 26 in tall 140 sq ft each
 - Filtration level for 18 to 20 micron
 - Filter life ranges from 4 weeks to 6 months depending on drilling environment
 - Collector is lined with 3/16 in Linatex® rubber for excellent abrasion resistance
- **Water Injection**
 - The dust suppression system includes a CAT PUMPS® tri-plex pump and water holding tank.
 - The tank will hold up to 300 gal (1135 l.) of water.
 - The hydraulically operated pump will supply from 0 to 12 gpm (0 to 45 lpm) at a pressure up to 700 psi.
 - The check valve arrangement with the needle valve adjustment allows precise setting of the injected volume of water to match the drilling conditions and hammer size.
 - The system is equipped with controls to insure water is injected only while drilling.
- **Rotary Head RPM Gauge, digital**

Reverse Circulation Drilling

- **Reverse Circulation Cyclone, rear mount**
- **Reverse Circulation top drive upgrade with discharge hose & ceramic elbow**

Fluids

- **Wiggins fuel only**
- **Wash Wand for cleaning machine**
- **Wiggins Full Service Center - All Systems**
 - The service center is mounted at an easy access location on the side of the drill. his service center contains quick fill service connections for hydraulic fluid, coolant, diesel fuel, and engine oil.
- **Centralized manual lubrication system**
- **Auto lubrication system (Lincoln 29 pt)**
- **Drill stem thread remote lubrication**
 - Drill pipe threads are greased using an air driven pump system. This system pumps the grease to a nozzle located on the feed. Controls for this system are found in the cab.
- **Grease Assembly**
 - If optional Auto-greaser with cable reel is purchased, the thread greaser will be mounted on the front beside the left track.
 - Optional Greaser with cable reel for greasing pins and bushings on body of QXR. It is mounted on front of the drill beside the right track.

Protection / Safety

- **Semi-auto fire suppression (Ansul)** – manual activation
 - Ansul fire suppression with 10 nozzles.
 - Two (2) manual actuators.
 - Two (2) dry chemical tanks.
 - One (1) nitrogen bottle.
- **Automatic "Check Fire " fire suppression (Ansul)**
- **Portable fire suppression**
- **Ground level engine start/stop at tram step**
- **Battery disconnect switch**

Cold Weather Aids

- **Tier I 52°C to -15°C**
- **Tier II 52°C to -40°C includes Tier I**
- **Tier III 52°C to -65°C includes Tier II**
- **Hydraulic hose upgraded to Aeroquip Matchmate ICE[®] brand hosing**

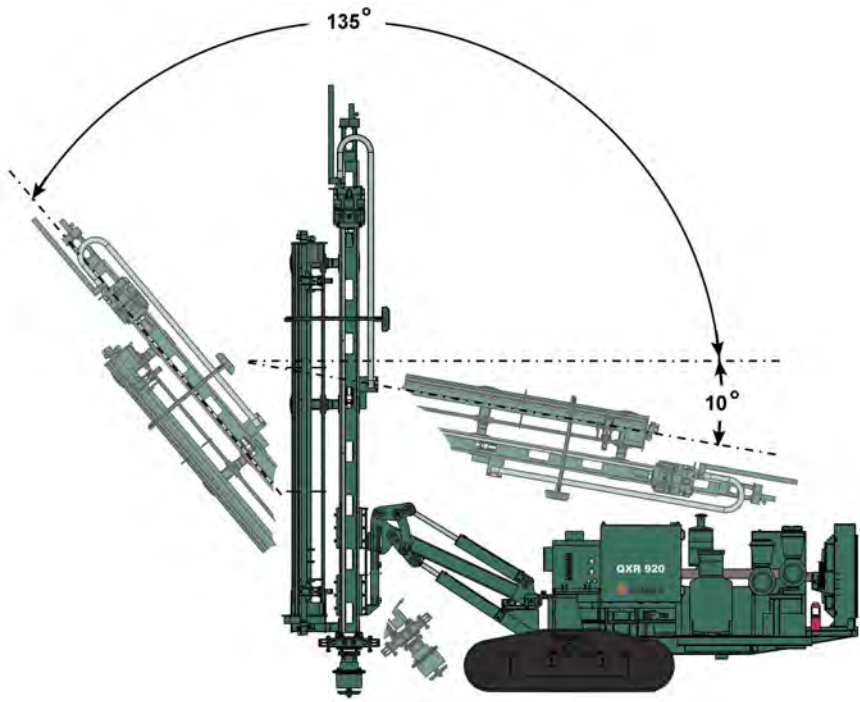
Miscellaneous

- **QC Drill control system**
- **Air conditioner/heater/pressurizer**
 - Air conditioner protected by mounting on top of the cab
 - Positive pressure power ventilation of the cab at 50 cfm.
 - Heating (28,800 btu)
 - Cooling (14,400 btu) with 250 cfm recirculation
 - Air exchange ventilation.
- **Cab floor heater**
 - Forced Air space heater 5,000 btu/hr
- **Radio AM/FM cassette tape**
- **Radio CB with antenna**
- **Winch 1,500 lb. capacity with hydraulic swing boom**
 - The winch has single line pull of 1500 lbs (680 kg) and comes with 150 ft of 1/4 inch steel cable. Boom has hydraulic swing to 39° to the right from centerline.
- **Angle Indicators**
 - A computerized processor.
 - Constant display of both inclination and side angle.
 - Accurate to +/- 0.3° in temperature range of -20° to +50° C.
 - Measures +/- 30° for side angle and inclination angle.
 - Enclosed in splash proof housing.
- **Remote Control Wired**
 - This remote tripod stand is attached to the control box and placed where drilling operations maybe maximized.
 - This remote operation is limited to use of fifty (50) ft. connection extension control cable(s) without adding a signal booster.
- **Tram interlock indicator (pipe in hole)**
- **Warranty extension 24 months**
 - 5000 Hours (total 24 months). This extension is applicable to the prime components including Cat[®] Engine, Sullair screw, track frame and drives, top drive and hydraulic pumps. The warranty covers defective material and workmanship. This option will only be effective with a factory acceptance agreement unique to that specific machine

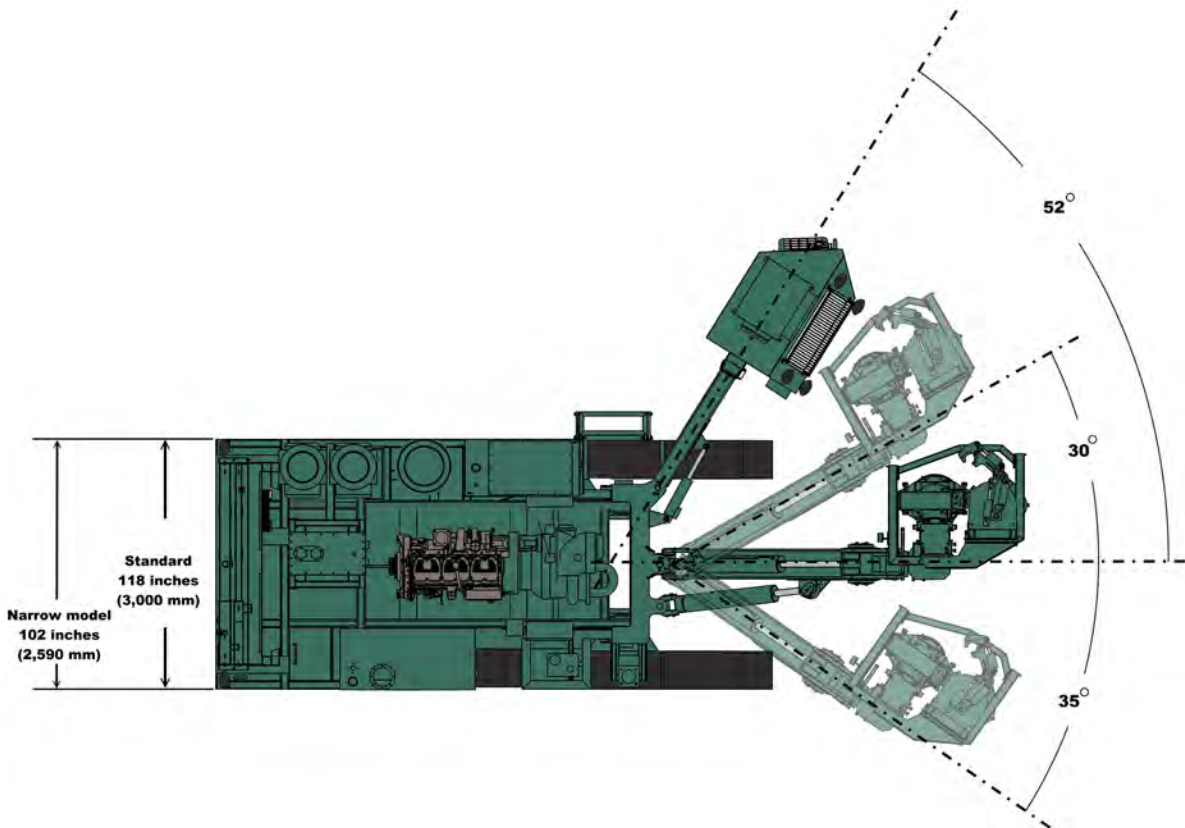
Dimensions – Standard Configuration

| | | | |
|------------------------|-----------------------------------|-------------------|--------------------|
| Width: | | 118 in. | (3,000 mm) |
| Optional Width: | | 102 in. | (2,590 mm) |
| Height: | mast laying down, tramming | 138 in. | (3,505 mm) |
| | mast standing up, drilling | 391 in. | (9,931 mm) |
| Length | mast laying down, tramming | 444 in. | (10,516 mm) |
| | mast standing up, drilling | 376 in. | (7,874 mm) |
| Weight (dry) | | 62,000 lbs | (28,123 kg) |
| Tramming Speed | mast down | | 7 km/hr |

Vertical Drilling Angle

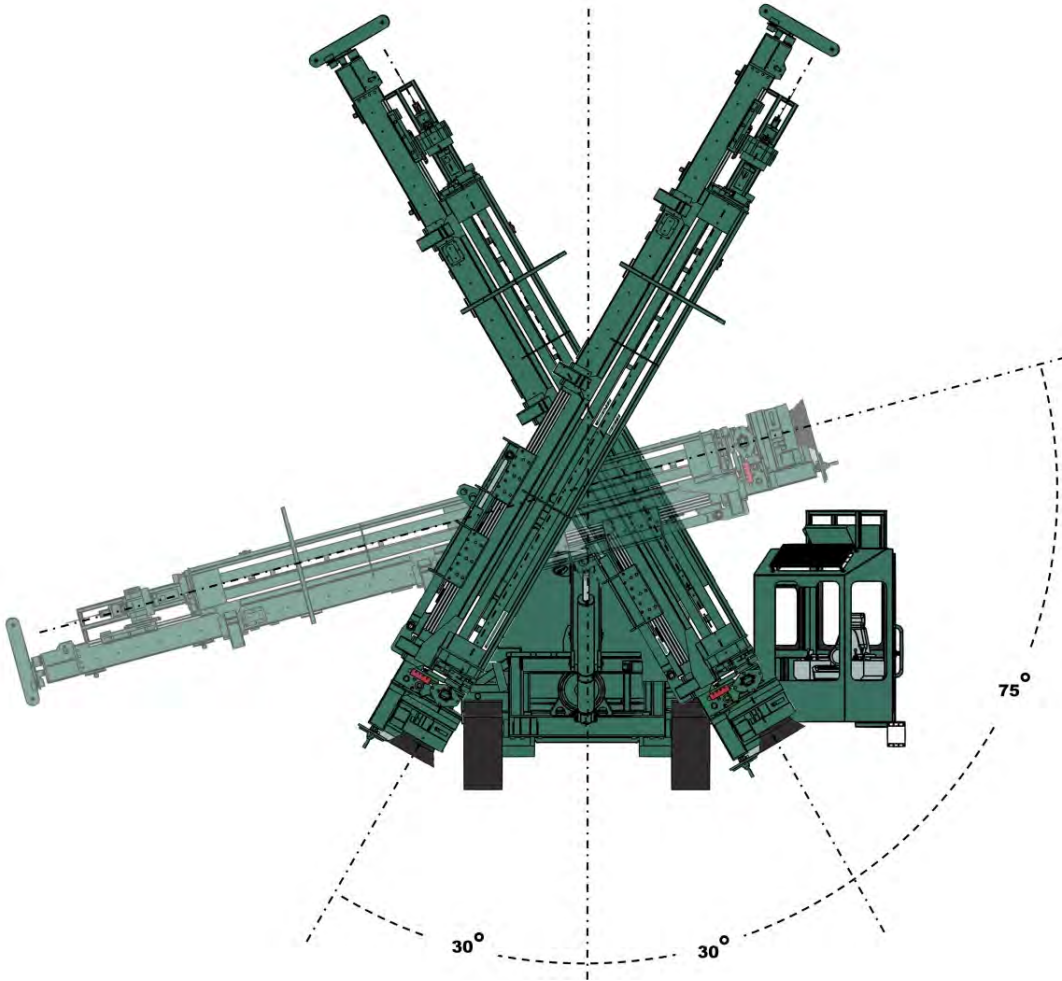


Boom and Cab Swing Angles



Pit Dewatering

Mast Swing Angle: Pivot – 2 Positions Left or Right 30° . Left 15° Above Horizontal



Horizontal Drilling Elevations

