



Cat[®] MD6290

Rotary Blasthole Drills

Specifications

Rated Capacity

Bit/hole diameter	152-270 mm (6-10.625 in)
Depth single-pass (8 m mast)	Up to 8.6 m (28 ft 2 in)
Depth multi-pass	Up to 45.1 m (148 ft)
Depth single-pass (10 m mast)	Up to 10.1 m (33 ft 2 in)
Depth multi-pass	Up to 52.7 m (173 ft)
Depth single-pass (11 m mast)	Up to 11.0 m (36 ft)
Depth multi-pass	Up to 32.3 m (106 ft)

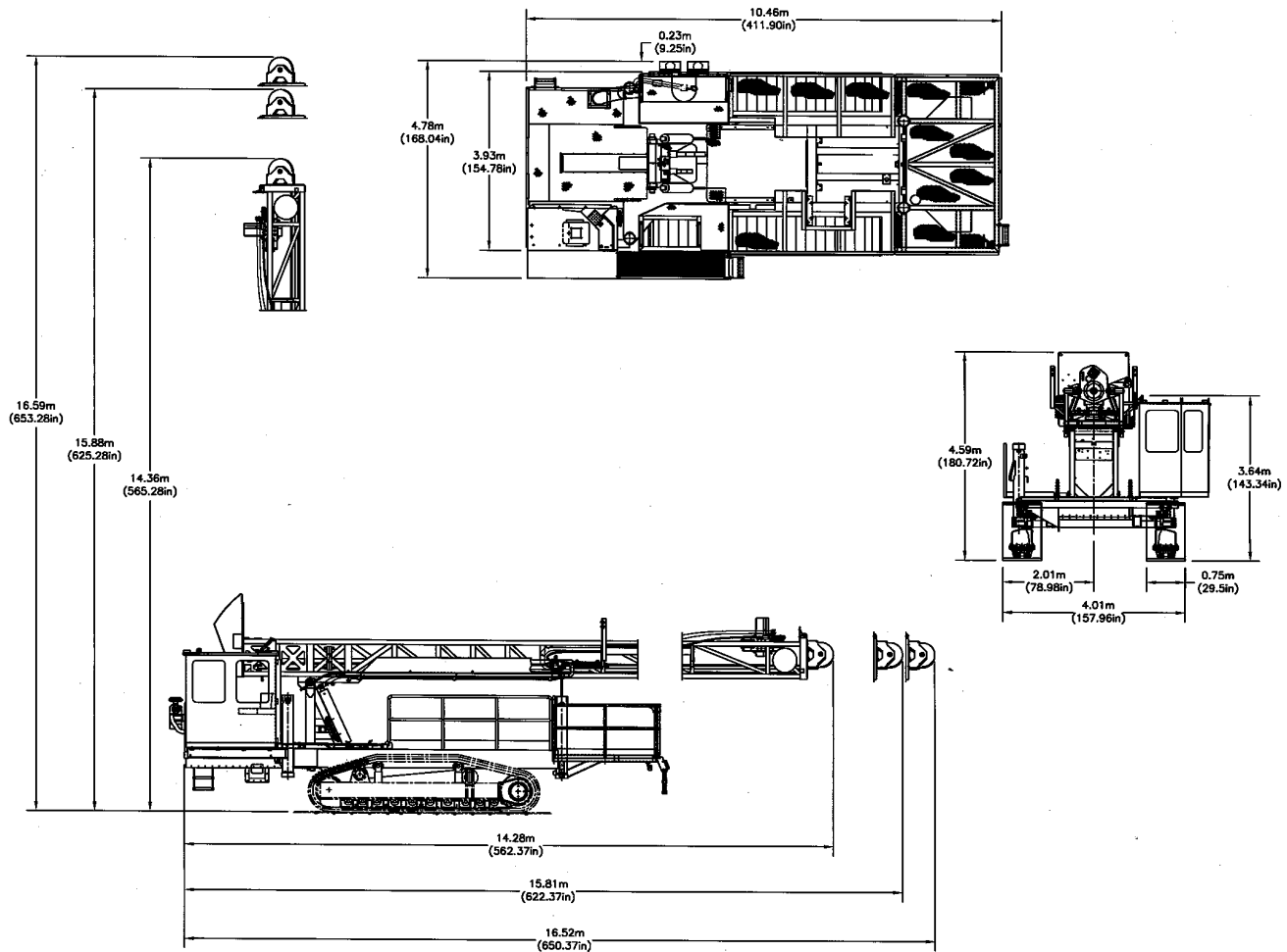
Operating Temperature

Min. ambient rating (standard)	-28°C (-20°F)
Cold weather option	-40°C (-40°F)
Max. ambient rating (standard)	52°C (125°F)
Altitude	Up to 4 572 m (15,000 ft)

Pull-down/Hoisting Capacity

Rated pull-down capacity	Up to 267 kN (60,000 lbf)
Rated hoist capacity	Up to 210 kN (47,100 lbf)
Feed rate	0-42.9 m/min (0-141 fpm)
Retract rate	0-44.8 m/min (0-147 fpm)
Type	Open-loop, hydraulic (stationary barrel, moving rod)
Number of cylinders	1
Pull-down cylinder stroke (8 m mast)	5.1 m (202 in)
Head travel (8 m mast)	10.26 m (404 in)
Pull-down cylinder stroke (10 m mast)	5.89 m (232 in)
Head travel (10 m mast)	11.79 m (464 in)
Pull-down cylinder stroke (11 m mast)	6.25 m (246 in)
Head travel (11 m mast)	12.50 m (492 in)
Cylinder bore	178 mm diameter (7 in)
Cylinder rod	127 mm diameter (5 in)
Cable type	25 mm (1 in) DYFORM 8
Cable sheaves (cylinder)	406 mm OD (16 in)
Cable sheaves (top & bottom)	559 mm OD (22 in)
Sheave guards	Standard at bottom plate
Adjustable head guide shoes	Steel with replaceable Nylatron™

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Rotary Drive System

Rotation speed	0-220 rpm
Torque	0-12 880 Nm (0-9,500 ft-lb)
Horsepower capacity	139 kW (186 hp)
Gearbox	Casting design
Main thrust bearing	Taper roller
Lubrication	Oil flooded
Gearing	Straight spur
Ratio	16:1
Drive motor	See Hydraulic System

Cooler Assembly

Radiator-CAC-Oil Cooler Assembly for Cat® C15

(Tier III) 403 kN (540 hp), single, front-end mounted

Air-finned, three-core, radiator/aftercooling/hydraulic side-by-side compressor, CAC-stacked

Cooler height	1 397 mm (55 in)
Cooler width	2 692 mm (106 in)
Fan	1 219 mm (48 in) diameter; 10 blades
Fan speed	1,525 rpm
Fan guard	Welded

Engine radiator

Top tank	Sealed top tank, pressure cap, overflow tube and sight glass
Coolant connections	64 mm (2.5 in) top tank; 89 mm (3.5 in) bottom tank

Compressor oil core hose connection

64 mm (2.5 in) O-ring boss

Hydraulic oil cooler

Hose connections	41 mm (1.625 in) O-ring boss
Air-to-air cooler	114 mm (4.5 in) O.D.
Standard ambient rating	52° C (125° F)

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Cooler Assembly (continued)

Radiator-CAC-Oil Cooler Assembly for Cat® C27

(Tier II) 597 kW (800 hp), single, front-end mounted

Air-finned, four-core, radiator/hydraulic side-by-side compressor, CAC-stacked

Cooler width 2896 mm (114 in) dual fan

Cooler height 1651 mm (65 in) dual fan

Fan 1168 mm (46 in) diameter, two fans, 16 blades

Fan speed 1,700 rpm

Fan guard Welded

Engine radiator

Top tank Sealed deaeration tank, pressure cap, overflow tube and sight glass

Standard ambient rating 52° C (125° F)

Radiator-CAC-Oil Cooler Assembly for Cummins QXR-15

Tier III; 362 kW or 399 kW (485 hp or 535 hp), single, front-end mounted

Air-finned, three-core, radiator/aftercooling/hydraulic side-by-side compressor, CAC-stacked

Cooler height 1 397 mm (55 in)

Cooler width 2 692 mm (106 in)

Fan 1 219 mm (48 in) diameter; 10 blades

Fan speed 1,525 rpm

Fan guard Welded

Engine radiator

Top tank Sealed-top tank, pressure cap, overflow tube and sight glass

Coolant connections 64 mm (2.5 in) top tank; 90 mm (3.5 in) bottom tank

Compressor oil core hose connection 64 mm O-ring boss (2.5 in)

Hydraulic oil cooler

Hose connections 41 mm O-ring boss (1.625 in)

Air-to-air cooler 1 144 mm (4.5 in) O.D.

Standard ambient rating 52° C (125° F)

Radiator-Coolant-Oil Cooler Assembly for Cummins QSK-19

Tier I; 559 kW (750 hp), single, front-end mounted

Air-finned, three-core, radiator/hydraulic side-by-side compressor-stacked

Cooler width 2 581 mm (101.625 in) single fan

Cooler height 1 549 mm (61 in) single fan

Fan 1 219 mm (48 in) diam, 10 blades

Fan speed 1,525 rpm

Fan guard Welded

Engine radiator

Top tank Sealed deaeration tank, pressure cap, overflow tube and sight glass

Standard ambient rating 52° C (125° F)

Cooler Assembly (continued)

Radiator-CAC-Oil Cooler Assembly for Cummins QSK-19

Tier II; 567 kW (760 hp), single, front-end mounted

Air-finned, four-core, radiator/hydraulic side-by-side compressor, CAC-stacked

Cooler width 2 896 mm (114 in) dual fan

Cooler height 1 651 mm (65 in) dual fan

Fan 1 168 mm (46 in) diameter, two fans, 16 blades

Fan speed 1,700 rpm

Fan guard Welded

Engine radiator

Top tank Sealed deaeration tank, pressure cap, overflow tube and sight glass

Standard ambient rating 52° C (125° F)

Compressor

Compressor (Standard)

Type Oil-flooded, single-stage screw

Discharge air flow (sea level) 30 m³/min (1,050 cfm)

Max operating pressure 8.6 bar (125 psi)

Air cleaner

Type Dry-type with safety element/STG 16

Oil cooling Air-to-oil cooler, thermostatically controlled

Oil separation Vertical barrier element, pre-separation in 136 l (36 gal) (T-tank)

Oil filtration 12 micron replaceable element

Drive Direct coupled to engine flywheel

Controls Automatic with safety shut-down

Air shut-off Hydraulic cylinder—operated from operator's seat

Compressor (Optional)

Type Oil-flooded, single-stage screw

Discharge air flow (sea level) 35 m³/min (1,250 cfm)

Max operating pressure 8.6 bar (125 psi)

Air cleaner

Type Dry type with safety element/STG 16

Compressor (Optional)

Type Oil-flooded, single-stage screw

Discharge air flow (sea level) 48 m³/min (1,700 cfm)

Max operating pressure 6.9 bar (100 psi)

Air cleaner

Type Dry-type with safety element/SRG 20

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Compressor (continued)

Compressor (Optional)

Type (high-pressure)	Oil-flooded, two-stage screw
Discharge air flow (sea level)	33 m³/min (1,150 cfm) 38 m³/min (1,350 cfm) 43 m³/min (1,500 cfm)
Max operating pressure	10.3/24.1 bar (150/350 psi)
Air cleaner	
Type	Dry-type with safety element/SRG 20

Engine

Engine (Standard)

Manufacturer	Caterpillar
Model	C15 (Tier III)
Rated horsepower	403 kW (540 hp)
Full load	2,100 rpm
Starting system	24 V DC
Safety shut-down system	Energized to run
Air cleaner	
Type	Dry-type with safety element
Model	STG 16
Batteries	Two (2) 8-D
Muffler	127 mm (5.0 in) inlet and outlet
Muffler guard	10 ga. for personal protection
Jacket water cooling/CAC	Radiator
Fuel tank	1 382 l (365 gal) (optional tank) 1 071 l (283 gal)
Turbo & manifold covers	Blankets and/or exhaust wrap

Engine (Optional)

Manufacturer	Caterpillar
Model	C27 (Tier II)
Rated horsepower	597 kW (800 hp)
Full load	2,100 rpm
Starting system	24 V DC
Safety shut-down system	Energized to run
Air cleaner	
Type	Dry-type with safety element
Model	SRG 20
Batteries	Four (4) 8-D
Muffler	127 mm (5.0 in) inlet and outlet
Muffler guard	10 ga. for personal protection
Jacket water cooling/CAC	Radiator
Fuel tank	1 382 l (365 gal) (optional tank) 1 071 l (283 gal)
Turbo & manifold covers	Blankets and/or exhaust wrap

Engine (continued)

Engine (Optional)

Manufacturer	Caterpillar
Model	C27 (Tier II)
Rated horsepower	652 kW (875 hp)
Full load	2,100 rpm
Starting system	24 V DC
Safety shut-down system	Energized to run
Air cleaner	
Type	Dry-type with safety element
Model	SRG 20
Batteries	Four (4) 8-D
Muffler	127 mm (5.0 in) inlet and outlet
Muffler guard	10 ga. For personal protection
Jacket water cooling/CAC	Radiator
Fuel tank	1 382 l (365 gal) (optional tank) 1 071 l (283 gal)
Turbo & manifold covers	blankets and/or exhaust wrap

Engine (Optional)

Manufacturer	Cummins
Model	QSK-19 (Non-cert)
Rated horsepower	559 kW (750 hp)
Full load	2,100 rpm
Starting system	24 V DC
Safety shut-down system	Energized to run
Air cleaner	
Type	Dry-type with safety element
Model	SRG 20
Batteries	Four (4) 8-D
Muffler	127 mm (5.0 in) inlet and outlet
Muffler guard	10 ga. For personal protection
Jacket water cooling	Radiator
Fuel tank	1 382 l (365 gal) (optional tank) 1 071 l (283 gal)
Turbo & manifold covers	Blankets and/or exhaust wrap

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Engine (continued)

Engine (Optional)

Manufacturer	Cummins
Model	QSK-19 (Tier II)
Rated horsepower	566 kW (760 hp)
Full load	2,100 rpm
Starting system	24 V DC
Safety shut-down system	Energized to run
Air cleaner	
Type	Dry-type with safety element
Model	SRG 20
Batteries	Four (4) 8-D
Muffler	127 mm (5 in) inlet and outlet
Muffler guard	10 ga. for personal protection
Jacket water cooling/CAC	Radiator
Fuel tank	1 382 l (365 gal) optional tank 1 071 l (283 gal)
Turbo & manifold covers	Blankets and/or exhaust wrap

Mast

Construction	ASTM 500 grade B rectangular tubing, welded
Main chord size	Front 203 mm (8 in) x 102 mm (4 in) x 6 mm (0.25 in); Rear 102 mm (4 in) x 102 mm (4 in) x 13 mm (0.5 in)
Pivot and raising area	Rectangular tubing A frame; reinforced in high-stress areas
Hydraulic lines	Pressure-rated steel hydraulic tubing
Hose rack	Sheet steel trough for moving hoses
Table hole diameter	279 mm (11.0 in) diameter deck hole for guide bushing

Mast-Elevating Cylinders

Number of cylinders	2
Cylinder bore	178 mm (7.0 in) diameter
Cylinder rod	89 mm (3.5 in) diameter
Cylinder stroke	965 mm (38 in)
Lift capacity each cylinder	471 kN (105,800 lbf)
Cylinder connection pins	45 mm (1.75 in) diameter

Operator's Cab

Location	To the right from the mast if facing rear deck from the rear end
Type	Shock-mounted; two-man, integrated FOPS certified
Length at floor	1 981 mm (78 in)
Width at floor	1 518 mm (59.75 in)
Floor area	3 m ² (32.40 ft ²)
Height inside	1 943 mm (76.50 in)

Operator's Cab (continued)

Construction	12 ga. steel welded to formed 12 ga. channel and angle supports
Windows	6 mm (0.25 in) tinted safety glass in rubber mounting
Number of windows	10
Number of doors	2 with windows (included in above)
Left door to work deck	Swing-type, HD hinge
Right door	Swing-type, HD hinge
Operator's seat	One swivel-type with armrests, headrest and retractable seatbelt
Helper's seat	Fixed folding jump seat
Insulation, wall and ceiling	25 mm (1 in) thermal
Insulation, floor	10 mm (0.375) in closed-cell foam with 3 mm (0.125 in) pyramid vinyl surface
Door latches	Heavy-duty latches with lockable handles
Sound levels	80 dB(A) or less
Climate Control	Wall mounted, AC/heating/pressurizing unit
Other	Window Wipers and Washers

Operator's Controls

Location	Console at front and side cab wall, placed 45° to the deck
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Standard Engine Controls

Coolant temperature/high temperature shut-off
Oil pressure (low pressure shut-off)
Auto shut-down bypass
Start button
Stop button
Tachometer
Throttle control
Engine hourmeter
Fuel level
Voltmeter

Standard Compressor Controls

Compressor temperature
Air pressure gauge
Air shut-off control (electric) (high air temperature)

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Operator's Controls (continued)

Standard drilling controls

Leveling jack controls (hydraulic)
HOB0/Break-out wrench control (electric)
Mast elevation control (hydraulic)
Pull-down control (electric over hydraulic)
Pull-down pressure control (pilot hydraulic)
Rotation control (electric over hydraulic)
Propel controls (electric over hydraulic)
Carousel in/out control (electric)
Carousel indexing control (electric)
Carousel indexing (electric)
Mast lock (electric)
Dust/water injection (electric)
Dust curtain (electric)
Deck wrench control (electric)
Level indicator (bubble)
On/off light switch (electric)
Drill hourmeter (gauge)
Wiper/washer controls (electric)

Optional

Filter indicators for engine and compressor intake, filter indicators for hydraulic fluid system, indicator lights for interlocks, rotary head rpm gauge and heating systems control

Undercarriage

Type	Excavator type
Pad width	750 mm (29.5 in)
Pad type	Triple grouser
Rollers	Sealed, oil-flooded
Number of rollers on each side	10
Upper track chain support	Two (2) carrier rollers
Rock guards/chain guides	Standard full-length guards
Overall length	5 080 mm (200 in) (variable with adjustment)
Width over tracks	3 912 mm (154 in)
Final drive	Independent hydrostatic, 2-speed motors
Drive horsepower per track	Maximum 152 kW (204 hp)
Brakes	Spring set, hydraulic release
Brake release	Automatic
Tram speed max	3.14 km/h (1.95 mph)
Gradeability mast down	66%
Rear axle	203 mm (8 in) solid
Front	Three-point oscillating type
Track adjustment means	Hydraulic with grease gun
Track drive disconnect	Standard (Manual)

Mainframe

Main rails	203 mm x 406 mm x 13 mm (8 in x 16 in x 0.5 mm) ASTM 500 grade B Rectangular tubing heavily cross-braced and reinforced at high-stress areas
Construction	Electric welded
Jacks, mast pivot and deck	Welded integrally to mainframe
Toolbox	Lockable door, below front deck
Machine deck	Access both sides
Hand rails	48 mm (1.9 in) diameter x 1 219 mm (48 in) high
Tow hooks	Welded, two (2) front

Leveling Jacks

Number	4
Location	2 front; 2 rear
Cylinder bore	140 mm (5.5 in)
Cylinder rod diameter	76 mm (3 in)
Cylinder stroke	1 219 mm (48 in) 1 524 mm (60 in) optional front
Lift capacity	290 kN (65,300 lbf) each
Pad connection	Link pad
Pad diameter	610 mm (24 in)
Counterbalance valves	Internal at each cylinder
Inner extension boot	219 mm (8.625 in) OD, 8 mm (.322 in) wall

Drill Table & Work Deck

Table height off ground	1 321 mm (52 in)
Deck floor material	Non-skid sheet metal
Drill deck length	2 661 mm (104.75 in)
Drill deck width	2 578 mm (101.5 in)
Drill deck area	6.86 m ² (73.8 ft ²)
Hand rails	48 mm (1.9 in) diameter x 1 219 mm (48 in) high

Dust Curtain

(Optional Hydraulic Lifters, Front and Rear)

Material	6 mm (0.25 in) rubber nylon reinforced
Enclosed area	4.2 m ² (45.14 ft ²)
Split for excess	Front and rear with 305 mm (12 in) overlap
Dust deflector	Natural rubber seal, 13 mm (0.5 in) thick, 356 mm (14 in) diameter
Location	Directly below table bushing

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Hydraulic System

Left Track/Rotation Pump (Closed-loop)

Type	Axial piston, variable volume
Max flow	283 l/min (75 gpm)
Pressure rating	400 bar (5,800 psi)

Right Track Pump (Closed-loop)

Type	Axial piston, variable volume
Max flow	283 l/min (75 gpm)
Pressure rating	400 bar (5,800 psi)

Accessory Circuit/Feed Pump (Open-loop)

Type	Axial piston, variable volume
Max flow	283 l/min (75 gpm)
Pressure rating	345 bar (5,000 psi)

Fan Circuit Pump

Type	Gear
Max flow	216 l/min (57 gpm) single fan; 246 l/min (65 gpm) dual fan
Pressure rating	207 bar (3,000 psi)

Track Drive Motors

(2)–Two-speed 107/125 cc

Type	Bent axis fixed volume
Pressure rating	414 bar (6,000 psi)

Rotation Drive Motor

Type	Axial piston variable volume
Pressure rating	345 bar (5,000 psi)

Fan Drive Motor(s)

Single fan: 1	Dual fan: 2
Type	Piston
Pressure rating	414 bar continuous (6,000 psi)

Pump Drive Gearbox

Type	3 pad
Drive	Rubber coupler/drive shaft to front of engine

Filtration (All filters have indicators and bypass)

Loop	12 micron, 2 per loop (optional)
Charge	3 micron, 1 per loop
Main return	12 micron absolute
Case return	12 micron absolute

Oil-Cooling System (Hydraulic Tank)

Reservoir	644 l (170 gal) with sight and temperature gauge
Reservoir pressure	Atmospheric, filtered breather

Lubrication

Centralized manual (optional auto-lubrication)

Accessories, Tools & Handling Equipment

Note: 4-pod carousel for 8 m (30 ft) and 10 m mast, 2-pod carousel for 11 m mast

Drill Pipe (optional)

Diameter	Customer specification, 114-178 mm (4.5 in-7.0 in)		
Wall thickness	19 mm (0.75 in)		
Length	9.14 m (30 ft); Optional 10.67 m (35 ft)		
Diameter	Wall thickness	Thread	Pipe Length
114 mm (4.5 in)	19 mm (0.75 in)	3 Beco	9.14 m (30 ft)
114 mm (4.5 in)	19 mm (0.75 in)	3 Beco	10.67 m (35 ft)
127 mm (5 in)	19 mm (0.75 in)	3.5 Beco	9.14 m (30 ft)
127 mm (5 in)	19 mm (0.75 in)	3.5 Beco	10.67 m (35 ft)
140 mm (5.5 in)	19 mm (0.75 in)	4 Beco	9.14 m (30 ft)
140 mm (5.5 in)	19 mm (0.75 in)	4 Beco	10.67 m (35 ft)
152 mm (6 in)	19 mm (0.75 in)	4.5 Beco	9.14 m (30 ft)
152 mm (6 in)	19 mm (0.75 in)	4.5 Beco	10.67 m (35 ft)
165 mm (6.5 in)	19 mm (0.75 in)	4.5 Beco	9.14 m (30 ft)
165 mm (6.5 in)	19 mm (0.75 in)	4.5 Beco	10.67 m (35 ft)
178 mm (7 in)	19 mm (0.75 in)	4.5 Beco	9.14 m (30 ft)
178 mm (7 in)	19 mm (0.75 in)	4.5 Beco	10.67 m (35 ft)

Top Adapter Sub

Diameter	Depends on pipe diameter
Length	711 mm (28 in)
Top thread	140 mm (5.5 in) API Reg.
Bottom thread	Depends on pipe diameter

Bit Sub

Diameter	Depends on pipe diameter
Length	762 mm (30 in) for 8- and 10-ft mast, 1 524 mm (60 in) for 11-m mast
Top thread	Depends on pipe diameter
Bottom thread	Depends on pipe diameter
Table bushing	One (1) piece insert standard, Optional: roller bushing or two-piece

Deck Wrench

Location	Drill deck
Wrench plate	76 mm (3 in) T1- Steel
Wrench positioning	Hydraulic cylinder
Impact means	Stationary jaw

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Accessories, Tools and Handling Equipment (continued)

HOB0 Break-Out Wrench

Location	Outside mast, under pipe rack
Support	Pivot
Wrench type	Patented HOB0 (Hydraulically Operated Break-Out)
Power	Hydraulic Cylinders

Accessories, Tools and Handling Equipment (continued)

Pipe Rack (outside the mast)

Type	Carousel, with stationary breaker plates
Size of drill pipe/capacity	114 mm to 178 mm (4.5 in to 7 in)/ 8 m and 10 m mast, 4 pipes
Size of drill pipe/capacity	114 mm to 178 mm (4.5 in to 7 in)/ 11 m mast, 2 pipes
Length of drill pipe	9.14 m (30 ft); optional 10.67 m (35 ft)
Pipe rack swing	Hydraulic cylinders (2)
Pipe rack index	Hydraulic motor through chain drive
Location	Outside mast

Winch—Mounted on the mast

Rating	3 629 kg (8,000 lb)
Cable size	13 mm (0.5 in)
Safety hook	Swivel-type positive lock

Basic Shipping Weights and Dimensions

Quantity	Description of Goods	Approximate Dimensions
Truck one (1)	Model MD6290 Rotary Blasthole drill c/w 1 each Owner/Operator manual and warranty packet stowed within cab	10.82 m (35 ft 5 in) L x 4.06 m (13 ft 3 in) W x 3.96 m (13 ft) H 41 050 kg (90,500 lb)
Truck two (2)	Mast assembly for Model MD6290 Rotary Blasthole drill (mast for 35 ft pipe)	14.81 m (48 ft 7 in) L x 1.91 m (6 ft 3 in) W x 1.91 m (6 ft 3 in) H 14 514.96 kg (32,000 lb)
Truck one (1)	Cab half for Model MD6290 Rotary Blasthole drill c/w 1 ea. Ship out filter kit, 2 ea. tubes superflex, 2 ea. brackets, 1 ea. bag of nuts & bolts, 2 ea. mast bushings, 1 ea. horseshoe bushing, 1 ea. bit basket & 1 ea. lifting bale	2.286 m (7 ft 5 in) L x 0.81 m (2 ft 8 in) W x 2.51 m (8 ft 3 in) H 635 kg (1,400 lb)
Truck two (2)	Walkway for Model MD6290 Rotary Blasthole drill c/w toolbox stowed within	2.74 m (9 ft) L x 0.86 m (2 ft 9 in) W x 1.30 m (4 ft 3 in) H 589.7 kg (1,300 lb)

Note: Final dimensions, GVW and corresponding load-out vary based on options selected and final configuration.

Performance ratings are based on 100% efficiency, and on engineering specifications and calculations in accordance with accepted industry standards. These capacities will vary with drilling conditions. All specifications are subject to change without notice.

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