MD6420C Rotary Blasthole Drill Autonomous Ready

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Hole diameter	Up to 311 mm	Up to 12.25 in
16 m/50 ft mast		
Depth single pass	16.46 m	54 ft
Multi-pass	Up to 46.9 m	Up to 154 ft
13 m/40 ft mast		
Depth single pass	13.4 m	44 ft
Multi-pass	Up to 74.4 m	Up to 244 ft
10 m/35 ft mast		
Depth single pass	10.29 m	33 ft 9 in
Multi-pass	Up to 63.4 m	Up to 208 ft
Angle drilling	30° (in 5° incre	ments)
Operating Environment	t	
Minimum ambient rating (standard)	−1° C	30° F

(standard)	-1°C	30° F
Maximum ambient rating (standard)	52° C	125° F
Altitude	Up to 4572 m	Up to 15,000 ft

• Optional cold weather packages available

Pull-down/Hoisting Capacity

Up to	Up to
41 346 kg	91,152 lb
Up to 383 kN	Up to 86,000 lbf
Up to 311 kN	Up to 70,000 lbf
0-33.5 m/min	0-110 ft/min
0-33.5 m/min	0-110 ft/min
18.29 m	720 in
15.24 m	600 in
12.19 m	480 in
DYFORM 8	
	41 346 kg Up to 383 kN Up to 311 kN 0-33.5 m/min 0-33.5 m/min 18.29 m 15.24 m 12.19 m

Rotary Drive System

Torque, dual motors	0-17 313 N·m	0-12,769 lbf-ft
Rotation speed	0-137 rpm	



MD6420C Rotary Blasthole Drill Specifications

Compressor (Standard)		
Туре	Poppit inlet, fi	xed displacement
Discharge air flow (sea level)	56.6 m³/min	2,000 ft³/min
Maximum operating pressure	6.9 bar	100 psi
Compressor (Optional)		
Туре 1	Butterfly inlet,	, adjustable from

		lacement
Discharge air flow (sea level)	73.56 m³/min	2,600 ft³/min
Maximum operating pressure	6.9 bar	100 psi

Type 2	Poppit inlet, fixed displacement	
Discharge air flow (sea level)	42.5 m³/min	1,500 ft³/min
Maximum operating pressure	10.3/24.1/ 34.4 bar	150/350/ 500 psi
Hi/low pressure switch, bit oil injection system	114 L	30 gal

Engine – C32 ACERT* (Standard)

Model	C32 ACERT	
Rated horsepower	680 kW	912 hp
Fuel tank	1514 L plus, 1703 L	400 gal plus, 450 gal

* The C32 ACERT engine meets U.S. EPA Tier 2/EU Stage II equivalent emission standards

Engine – C32 ACERT* (Optional)

Model	C32 ACERT	
Rated horsepower	775 kW	1,039 hp
Fuel tank	1514 L plus, 1703 L	400 gal plus, 450 gal

* The C32 ACERT engine meets Tier 2/Stage II equivalent emission standards

Operator's Cab

Location	To the right from the mast if	
	facing rear decl	k from the rear end
Туре	Shock-mounted; two-man, integrated FOPS certified	
Floor area	4.85 m ²	52.22 ft ²
Height inside	2146 mm	84.50 in
Windows (tinted safety glass laminated in rubber mounting)	14 mm	0.56 in
Number of windows	12	
Number of doors	Two (2) with windows (included in above)	
Climate control	Roof-mounted, AC/heating/ pressurizing unit	
Other	Window wipers and washers	

Controls

- Operations/maintenance manuals and all schematics are stored in drill monitor
- English control system display text ex-factory. May be changed to other languages by dealer.
- Basic engine shut down timer
- Drill performance and monitoring/diagnostics system
- Electronic compressor control
- Electronic control
- Monitoring
- Diagnostic system
- Filter indicators
- · High/low tram speed select (high only when mast is down) interlock
- HMI touch screen control
- Mast lock indicator
- ECM (Electronic Control Module) provides fast and reliable control of all drill functions
- Pump drive gearbox temperature sensor
- Rotary head RPM gauge digital
- Tram interlock, machine outside stability limits
- Tram interlock, pipe in hole
- · Tram interlock, mast up and locked or down and parked
- Jack/tram interlock
- Cab environment control (AC, filter indicator, heat, fan speeds)
- Pipe positioner sensor
- Drill depth meter
- Drill function interlock, mast up and locked
- Rotary torque control
- · Head clear interlock, rotary drive clear of carousel
- Winch interlock
- Jack pressure sensor
- Virtual rotary head travel stop
- Wiring for terrain interface provided

Undercarriage

Number of rollers on each side	Total of 16: (13) lower rollers, (3) upper/carrier rollers	
Rock guards/chain guards	Standard full-length guards	
Maximum drive horsepower per track	216 kW 290 hp	
Brakes	Spring set, hydraulic release	
Brake release	Automatic	
Tram speed maximum	2.27 km/h 1.41 mph	
Gradeability mast down		
CDH (cab down hill)	25%	
CUH (cab up hill)	13%	
Front	Three-point oscillating type	
Track adjustment means	Hydraulic with grease gun	
Track drive disconnect	Standard (manual)	

Mainframe, Decks and Walkways

Jacks, mast pivot and deck Machine deck Welded integrally to mainframe

fachine deck

Access both sides

Base Machine

- Fuel tanks isolation valves
- Hydraulic tank with isolation valves and interlocks
- Slip resistant decks and walkways
- 3217 L (850 gal) fuel, (two tanks mounted under engine/compressor) with manual and remote fill
- Bolt-on hand rails with kick plates
- Cat[®] maintenance free batteries
- Stainless battery box, sliding drawer type
- Remote jump start terminals
- Tow hooks (front end)
- Lift lugs (for base machine minus mast)
- Walkways around the drill, 360 degrees
- Swing up steps, access/egress
- Self-closing gates
- Two stage mast raise cylinders
- Fixed dust curtains four sides

Leveling Jacks

Number	4	
Lift capacity – each	511 kN	114,877 lbf
Pad diameter		
Non-drill end	762 mm	30 in
Drill end	914 mm	36 in
Stroke on non-drill end	152 cm	60 in
Stroke on drill end	122 cm	48 in

57 in

Drill Table and Work Deck

Table height off ground

- ound 1448 mm
- Pipe loading guide rollerStationary rear deck
- Left rear swing gated handrail (dual gate design)
- Rear deck bit storage box with aluminum cover
- Hydraulically operated viewing hatch with LED hatch viewing spot light

Accessories, Tools and Handling Equipment

Shock Sub (DTH Application)

• Thread – API reg. 140 mm (5.5 in)

Top Adapter Sub

- Diameter depends on pipe diameter
- Top thread API reg. 140 mm (5.5 in)
- Bottom thread depends on pipe diameter

Bit Sub (Rotary Application)

- Top thread depends on pipe diameter
- Bottom thread API reg. 168 mm (6.625 in)
- Table bushing roller-type or two-piece with replaceable liner

Pipe Rack (Inside the Mast)

· Carousel with stationary pods and breaker plates

16 m Configuration

- 7.62 m (25 ft) \times 2 as starter and four pieces of 7.62 m (25 ft) in carousel
- Outside diameter 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in)

13 m Configuration

- 12.19 m (40 ft) starter and five pieces of 12.19 m (40 ft) in carousel
- Outside diameter 194 mm (75/8 in) or 219 mm (85/8 in)

10 m Configuration

- 10.66 m (35 ft) starter and five pieces of 10.66 m (35 ft) in carousel
- Outside diameter 194 mm (75/8 in) or 219 mm (85/8 in)
- Length of drill 10.67 m (35 ft)

Winch System

- Rating 3629 kg (8,000 lb) with 1588 kg (3,500 lb) lift capacity
- Cable size 13 mm (0.5 in)

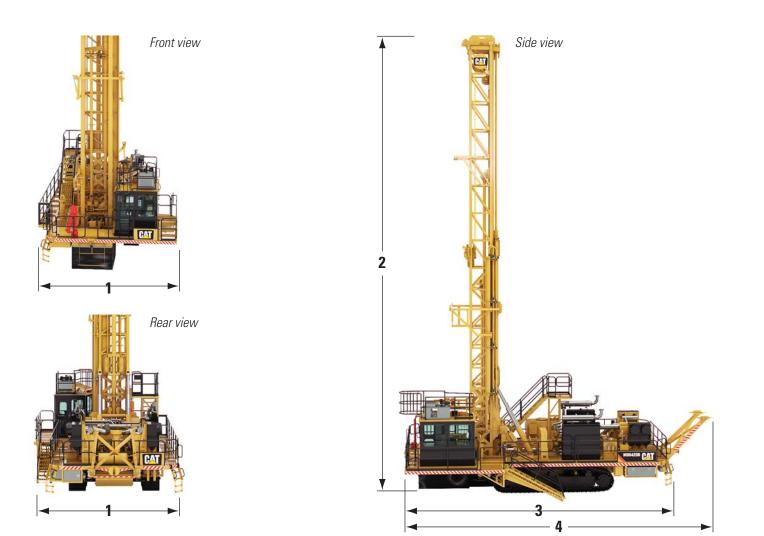
Pipe Handling

- · Sliding deck wrench
- Fixed cable pipe catcher or optional hydraulic safety arm/pipe catcher with drill function interlock, when pipe catcher is not closed
- · Manually removable or optional hydraulically operated bit basket
- · Lifting bail-drill pipe/bit sub

MD6420C Rotary Blasthole Drill Specifications

Dimensions

All dimensions are approximate.



10 m Mast		13 m Mast		16 m Mast		
1	6.82 m	22.4 ft	6.82 m	22.4 ft	6.82 m	22.4 ft
2	13.4 m	44 ft	15.8 m	52 ft	18.9 m	62 ft
3	12.9 m	42.5 ft	12.9 m	42.5 ft	12.9 m	42.5 ft
4	14.8 m	48.5 ft	14.8 m	48.5 ft	14.8 m	48.5 ft

Standard Equipment

Standard equipment may vary. Consult your Cat dealer for details.

POWER TRAIN

- Engine, Cat C32 ACERT, Tier 2/Stage II equivalent, 1,800 rpm
- Manifold covers, turbo and exhaust
- Engine fire frame
- Fire wall, engine and hydraulic drive
- Exhaust pipe blankets

MAST

- Hole diameter, up to 311 mm $(12^{1/4} \text{ in})$
- Rated capacity, up to 383 kN (86,000 lbf)
- Pulldown/hoist system, single cylinder
- Rotary drive, dual motors
- 0-137 rpm, 0-17 313 N·m (0-12,769 lbf-ft) maximum torque
- Angle drilling, up to 30 degrees
- Mast locks and indicator in cab
- Auto cable tensioning system
- Hydraulic Operated Break-Out wrench (HOBO)
- Shear bolt deck wrench cover
- Dust hood with hinged quick change dust seal
- Remote thread lube system
- Mast lanyard mounting plates

OPERATOR ENVIRONMENT

- Cab, shock mounted, insulated
- Two-man extra-large FOPS
- Cat operator seat with air suspension
- Trainer's seat
- Operator's console: split with stainless steel panels
- Electric controls for drilling, tramming, leveling and auxiliary functions
- Dome lights, overhead interior
- Dash light
- Two (2) hinged doors, heavy duty latching
- Twelve (12) windows
- Full front drill window
- Roof window with protective cage
- Windshield wipers, washer tank kit
- Air conditioning/heating/pressurizing roof mounted, hydraulic driven
- Cab ladder, roof platform and railing
- Electric horn
- Slope indicators
- CD stereo kit with speakers

- 24V to 12V converter
- English control system display text may be changed to other languages
- Electronic Control Module (ECM)
- HMI touch screen control
- Drill performance monitoring and diagnostics system
- Drill depth meter
- Travel stop, virtual rotary head
- Jack/tram interlock
- Tram interlock, pipe in hole
- Tram interlock: mast up and locked or down and parked
- Mast lock indicator
- Tram speed select interlock: high only when mast is down
- Tram interlock: machine outside stability limits
- Drill function interlock mast up and locked
- Head clear interlock: rotary drive clear of carousel
- Winch interlock
- Pipe positioner sensor
- Jack pressure sensor
- Rotary head RPM gauge, digital
- Rotary torque control
- Electronic compressor control
- Filter indicators
- Pump drive gearbox temperature sensor
- Basic engine shut down timer
- Cab environment control: AC, filter indicator, heat, fan speeds
- Wiring for terrain interface

SAFETY AND SECURITY

- Air hose safety sleeves (whip socks)
- · Hinged protective cage: for drill view window
- Battery and starter disconnects with lock-outs
- Eight (8) engine shut down buttons
- Tram alarm
- Strobe beacon on:
- Cab and front left side of drill
- -Clearance light, mast crown
- Twenty (20) lights for night drilling
- Two (2) closed circuit cameras (front and left side) with monitor in cab

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COOLING

- Shutdown switch, low coolant level
- Cooler fans, variable speed, ECM

FRAMES

- Four (4) leveling jacks:
- -Two (2) × 121.9 cm (48 in) rear
- -Two (2) × 152.4 cm (60 in) front
- Tow hooks, front end
- Lift lugs, for base machine without mast
- Mast raise cylinders, two stage
- Walkways, around the drill, 360 degrees
- Decks and walkways, slip resistant
- Hand rails, bolt-on with kick plates
- Swing up steps, access/egress
- Self-closing gates
- Stationary, rear deck
- Hydraulic viewing hatch with LED hatch viewing spot light
- Fixed dust curtains, four sides
- Rear deck bit storage box with aluminum cover
- Pipe loading guide roller

-3217 L (850 gal) fuel

- Isolation valves

and interlocks

and motors

- Manual and remote fill

• Fuel tanks:

• Left rear swing gated handrail, dual gate

- Two (2) tanks mounted below deck

• Hydraulic tank with isolation valves

• Battery box, stainless, sliding drawer

• Loop filters between hydraulic pumps

· Auto lubrication system, centralized

· Feed traveling sheave lube provision

• Hydraulic pressure test points

• Cat maintenance free batteries

• Cat remote jump start terminals

OTHER STANDARD EQUIPMENT

• Standard Caterpillar colors

• Foam injection connection

• Return filters, hydraulic

Mandatory Attachments

POWER TRAIN

Engine and Compressor

- Low horsepower package
- Engine: Tier 2/Stage II equivalent, 680 kW (912 hp), 1,800 rpm
- Compressor: 56.6 m³/min (2,000 ft³/min)
 @ 6.9 bar (100 psi), 1,800 rpm, poppit inlet
- Fixed displacement
- High horsepower package
- Engine: Tier 2/Stage II equivalent, 775 kW (1,039 hp), 1,800 rpm
- Compressor: 42.5 m³/min (1,500 ft³/min)
 @ 10.3/24.1/34.5 bar (150/350/500 psi),
 1,800 rpm, poppit inlet
- Hi/low pressure switch, bit oil injection system, 114 L (30 gal) for DTH
- -Fixed displacement
- High horsepower package
- Engine, Tier 2/Stage II equivalent, 775 kW (1,039 hp), 1,800 rpm
- Compressor: 73.6 m³/min (2,600 ft³/min)
 @ 6.9 bar (100 psi), 1,800 rpm, butterfly inlet
- -Adjustable from half to full displacement

MAST

Mast, Pipe Carousel, 10 m

- 10 meter mast, five (5) pipe carousel
- Mast:
- Up to 10.29 m (33 ft 9 in) single pass hole depth
- Drill on tracks, changing bit above deck
- Single pass hole using one (1) each 10.67 m (35 ft) length drill pipe
- With bit sub 76 cm (30 in)
- Carousel:
- Five (5) pipe capacity allowing 63.39 m
 (208 ft) total hole depth
- Pipe diameter 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in)
- 10.67 m (35 ft) length drill pipe (drill pipe not included)
- Bit load with one pipe up to 41 346 kg (91,152 lb)
- Winch 3629 kg (8,000 lb) with 1588 kg (3,500 lb) lift capacity

Mast, Pipe Carousel, 13 m

- 13 meter mast, five (5) pipe carousel with additional mast rest
- Mast:
- -Up to 13.4 m (44 ft) single pass hole depth
- Drill on tracks, changing bit above deck
 Single pass hole using one (1) each
 12.19 m (40 ft) length drill pipe with
- bit sub 229 cm (90 in) • Carousel:
- Five (5) pipe capacity allowing 74.37 m (244 ft) total hole depth
- Pipe diameter 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in)
- 12.19 m (40 ft) length drill pipe (drill pipe not included)
- Bit load with one pipe up to 41 563 kg (91,630 lb)
- Winch 3629 kg (8,000 lb) with 1588 kg (3,500 lb) lift capacity

Mast, Pipe Carousel, 16 m

- 16 meter mast, four (4) pipe carousel with additional mast rest
- Upper roller pipe catcher arm with drill function interlock when pipe catcher is not closed
- Mast:
- Up to 16.46 m (54 ft) single pass hole depth
- Drill on tracks, changing bit above deck
- Single pass hole using two (2) each 7.62 m (25 ft) length drill pipe
- -With bit sub 228.6 cm (90 in)
- Carousel:
- Four (4) pipe capacity allowing 46.93 m (154 ft) total hole depth
- Pipe diameter 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in)
- -7.62 m (25 ft) length drill pipe (drill pipe not included)
- Bit load with two pipes up to 42 000 kg (92,594 lb)
- Winch 3629 kg (8,000 lb) with 1588 kg (3,500 lb) lift capacity

Rotary Application

- Mast, 10 m diameter, 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in)
- Tooling 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in) diameter
- -Roller bushing
- Bit sub 76.2 cm (30 in) long
- Five (5) pipe retainer
- Mast, 13 m diameter, 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in)
- Tooling 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in) diameter
- -Roller bushing
- Bit sub 228.6 cm (90 in)
- Five (5) pipe retainer
- Mast, 16 m diameter, 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in)
- Tooling 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in) diameter
- -Roller bushing
- -Bit sub 228.6 cm (90 in)
- -Four (4) pipe retainer

DTH Application

- Mast, 10 m diameter, 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in)
- Tooling 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in) diameter
- -Split bushing
- -Customer supplied bit sub
- Five (5) pipe retainer
- Mast, 13 m diameter, 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in)
- Tooling 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in) diameter
- -Split bushing
- -Customer supplied bit sub
- Five (5) pipe retainer
- Mast, 16 m diameter, 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in)
- Tooling 194 mm (7⁵/₈ in) or 219 mm (8⁵/₈ in) diameter
- -Split bushing
- -Customer supplied bit sub
- -Four (4) pipe retainer

Mandatory Attachments

Top Sub/Shock Sub

- Top sub, rotary application
- Standard for rotary application, DTH cannot use top sub
- Shock sub, dual application
- DTH has to use shock sub, optional for rotary application
- Shock sub with crossover sub, rotary or DTH

Deck Wrench

- · Sliding deck wrench with standard bit basket
- Sliding deck wrench with hydraulically operated bit basket

Drill Pipe Catcher

- Pipe catcher, fixed cable
- Pipe catcher, hydraulic drill function interlock

UNDERCARRIAGE

- Undercarriage, 750 mm (29.53 in)
- Undercarriage with full length rock guards and tram distance meter
- -750 mm (29.53 in) triple grousers
- -Used for soft ground application
- Undercarriage, 600 mm (23.62 in)
- Undercarriage with full length rock guards and tram distance meter
- -600 mm (23.62 in) triple grousers
- Used for hard ground application

OPERATOR ENVIRONMENT

Control Group

- Standard (includes all parts listed under standard equipment)
- Deluxe (includes standard machine control group features) plus:
- -Auto leveling and retract
- -Automation/operator assist auto angle
- Ultra (includes deluxe control group features) plus:
- Auto drilling, excluding pipe change
- One-touch drilling is only applicable when using single pass drilling

SERVICE STATION

- · Fast fill, full service, rotary
- Full service center, fill and evacuation fuel, compressor, coolant, engine oil, hydraulic and gear box
- 500 hours engine oil reserve system

COOLING

- Climate, standard climate range
- Ambient temperature range: –1° C (30° F) to 48° C (118° F)
- -Cab cooling to 19° C (66° F)
- -Safety laminated tinted glass
- Hot climate
- Ambient temperature range: –1° C (30° F) to 52° C (125° F)
- -Cab cooling to 19° C (66° F)
- -Safety laminated tinted glass
- -Window shades
- -High temp hydraulic oil
- -High temp compressor oil

DUST SUPPRESSION

- Water injection, 2324 L (614 gal)
- -One (1) tank with 1378 L (364 gal)
- -Two (2) tanks with 473 L (125 gal) each
- Fast fill water system
- -Stainless steel plumbing
- ECM control of water injection pump interlock
- Water flow meter/current control and tank level

STAIRS

- Frame, Standard
 - Includes basic mainframe and deck features plus:
 - Fixed stairs to main deck cab area, on cab side of frame
- Frame, Ultra
- Includes basic mainframe and deck features plus:
- Cascading, self-leveling stairs to main deck cab area
- Stairs on cab side of the frame
- Switched walkway lighting at ground and deck levels
- Tram interlock if stairs are down

Optional Attachments

Optional attachments may vary. Consult your Cat dealer for details.

MAST ACCESS LADDER

- · Ladder to access mast, grating for maintenance inside mast
- · Posts only for lanyard attachment to use with cable for traveling hook and harness

OPERATOR ENVIRONMENT

- · Window Shades
- Included in hot climate package
- -Optional for other climate packages

ATTACHMENTS

- Dust suppression
- · Hydraulic dust curtains
- -Fixed curtains on left and right sides
- Auto raise hydraulic lifted curtains for rear and front
- Includes ECM control tram interlock if dust curtains are not up
- Drill pipe
- -Drill pipe, 194 mm \times 7.62 m $(7^{5}/_{8} \text{ in } \times 25 \text{ ft})$
- 194 mm (7⁵/₈ in) diameter, 7.62 m (25 ft) long, 152 mm (6 in) BECO threads
- For use with 16 m mast
- Drill pipe, 194 mm \times 7.62 m $(7^{5}/_{8} \text{ in} \times 25 \text{ ft})$
- 219 mm (8⁵/₈ in) diameter, 7.62 m (25 ft) long, 152 mm (6 in) BECO threads
- For use with 16 m mast

- -Drill pipe, 194 mm \times 9.14 m $(7^{5}/_{8} in \times 30 ft)$
- 194 mm (7⁵/₈ in) diameter, 9.14 m (30 ft) long, 152 mm (6 in) BECO threads
- Recommended for 13 m mast DTH starter steel
- -Drill pipe, 194 mm × 9.14 m $(7^{5}/_{8} in \times 30 ft)$
 - 219 mm (85/8 in) diameter, 9.14 m (30 ft) long, 152 mm (6 in) BECO threads
 - Recommended for 13 m mast DTH starter steel
- -Drill pipe, 194 mm × 10.67 m $(7^{5}/_{8} in \times 35 ft)$
- 194 mm (7⁵/₈ in) diameter, 10.67 m (35 ft) long, 152 mm (6 in) BECO threads
- For use with 10 m mast
- -Drill pipe, 194 mm × 10.67 m
- $(7^{5/8} in \times 35 ft)$
- 219 mm (8⁵/₈ in) diameter, 10.67 m (35 ft) Start up commissioning long, 152 mm (6 in) BECO threads
- For use with 10 m mast
- -Drill pipe, 194 mm × 12.19 m $(7^{5}/_{8} in \times 40 ft)$
- 194 mm (7⁵/₈ in) diameter, 12.19 m (40 ft) long, 152 mm (6 in) BECO threads
- For use with 13 m mast
- Drill pipe, 194 mm \times 12.19 m
- $(7^{5}/_{8} \text{ in } \times 40 \text{ ft})$
- 219 mm (8⁵/₈ in) diameter, 12.19 m (40 ft) long, 152 mm (6 in) BECO threads
- For use with 13 m mast

- Clean
 - Blow down hose with nozzle
- · Clean with air
- Dust control
 - Spray water on dirt when tramming starts
 - For use with water injection
- Winch control
- -Winch control, remote
- · Remote pendant winch control
- Platform
- Tank platform, fire suppression
- Holds up to three (3) of 113 kg (250 lb) tanks
- JIB crane
- -JIB crane, pedestal control
- Mounted on drill deck
- -JIB crane, remote control
- · Radio remote control
- Factory service engineer on site for 12 working days to direct start-up and commissioning, and provide hands-on maintenance and operation training

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at www.cat.com

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