

MD6420B

Rotary Blasthole Drill



10-, 13- or 16-Meter Mast Configuration

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

Operating Temperature

Minimum ambient rating (standard)	-28° C	-20° F
Maximum ambient rating (standard)	52° C	125° F
Altitude	Up to 4572 m	Up to 15,000 ft

Pull-down/Hoisting Capacity

Pull-down capacity	Up to 383 kN	Up to 86,000 lbf
Hoist capacity	Up to 311 kN	Up to 70,000 lbf
Drilling feed rate	0-33.5 m/min	0-110 ft/min
Retract rate	0-33.5 m/min	0-110 ft/min
Head travel (16 m/50 ft mast)	18.29 m	720 in
Head travel (13 m/40 ft mast)	15.24 m	600 in
Head travel (10 m/35 ft mast)	12.2 m	480 in
Cable type – 29 mm (1.125 in)	DYFORM 8	

Rotary Drive System

Torque	0-15 185 N·m	0-11,200 lbf-ft
Horsepower capacity	216 kW	290 hp

MD6420B Rotary Blasthole Drill Specifications

Compressor (Standard)

Type	Oil-flooded, single-stage screw	
Discharge air flow (sea level)	56.6 m ³ /min	2,000 ft ³ /min
Maximum operating pressure	6.9 bar	100 psi

Compressor (Optional)

Type	Oil-flooded, single-stage screw	
Discharge air flow (sea level)	67.9 m ³ /min	2,400 ft ³ /min
Maximum operating pressure	6.9 bar	100 psi

Type	Oil-flooded, dual-stage screw	
Discharge air flow (sea level)	42.5 m ³ /min	1,500 ft ³ /min
Maximum operating pressure	10.3/24.1/ 34.4 bar	150/350/ 500 psi

Engine (Optional) – QST30C (Non-Cert with Cense)

Model	QST30C (Non-Cert with Cense)	
Rated horsepower	786 kW	1,050 hp
Fuel tank	1514 L plus, 1703 L	400 gal plus, 450 gal

Engine (Standard) – QST-30 Tier 2

Model	QST-30 Tier 2	
Rated horsepower	627 kW	850 hp
Fuel tank	1514 L plus, 1703 L	400 gal plus, 450 gal

Engine (Optional) – QST30C (Non-Cert with Cense)

Model	QST30C (Non-Cert with Cense)	
Rated horsepower	783 kW	1,050 hp
Full load	2,100 rpm	
Fuel tank	1514 L plus, 1703 L	400 gal plus, 450 gal

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	
Floor area	4.85 m ²	52.22 ft ²
Height inside	2146 mm	84.50 in
Windows (tinted safety glass XIR 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	

Undercarriage

Number of rollers on each side	13	
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	Welded integrally to mainframe	
Machine deck	Access both sides	

MD6420B Rotary Blasthole Drill Specifications

Leveling Jacks

Number	4	
Lift capacity – each	428 kN	96,163 lbf
Pad diameter		
Non-drill end	762 mm	30 in
Drill end	914 mm	36 in

Drill Table and Work Deck

Table height off ground	1448 mm	57 in
Viewing hatch	In the rear deck; hydraulically operated from the cab	

Accessories, Tools and Handling Equipment

Drill Pipe (optional) – 16 m mast

Diameter	194 mm	7.625 in
	219 mm	8.625 in
Wall thickness	25.4 mm	1 in
Length (standard for 16 m/50 ft configuration) – two pipes coupled together plus bit sub	7.62 m	25 ft
Threads	6 in Beco	

Drill Pipe (optional) – 10 m mast

Diameter	194 mm	7.625 in
	219 mm	8.625 in
Wall thickness	25 mm	1 in
Length	10.67 m	35 ft
Threads	6 in Beco	

Drill Pipe (optional) – 13 m mast

Diameter	194 mm	7.625 in
	219 mm	8.625 in
Wall thickness	25 mm	1 in
Length	12.19 m	40 ft
Threads	6 in Beco	

Accessories, Tools and Handling Equipment (cont'd)

Top Adapter Sub

Diameter	Depends on pipe diameter	
Length	914 mm	36 in
Top thread – API reg.	140 mm	5.5 in
Bottom thread	6 Beco	

Bit Sub

Top thread	6 Beco	
Bottom thread	6 5/8 api reg	
Table bushing	Roller-type or two-piece with replaceable liner	

Drill Deck Bit Storage Box
with Aluminum Covers

Pipe Rack (Inside the Mast)

Carousel with stationary pods and breaker plates		
16 m configuration	7.62 m (25 ft) × 2 as starter and 4 pieces 7.62 m (25 ft) in carousel	
Outside diameter	194 mm	7.625 in
13 m configuration	12.2 m (40 ft) starter and 5 pieces of 12.2 m (40 ft) in carousel	
Outside diameter	219 mm	8.625 in
10 m configuration	10.66 m (35 ft) starter and 5 pieces of 10.66 m (35 ft) in carousel	
Outside diameter	219 mm	8.625 in
Length of drill	10.67 m	35 ft

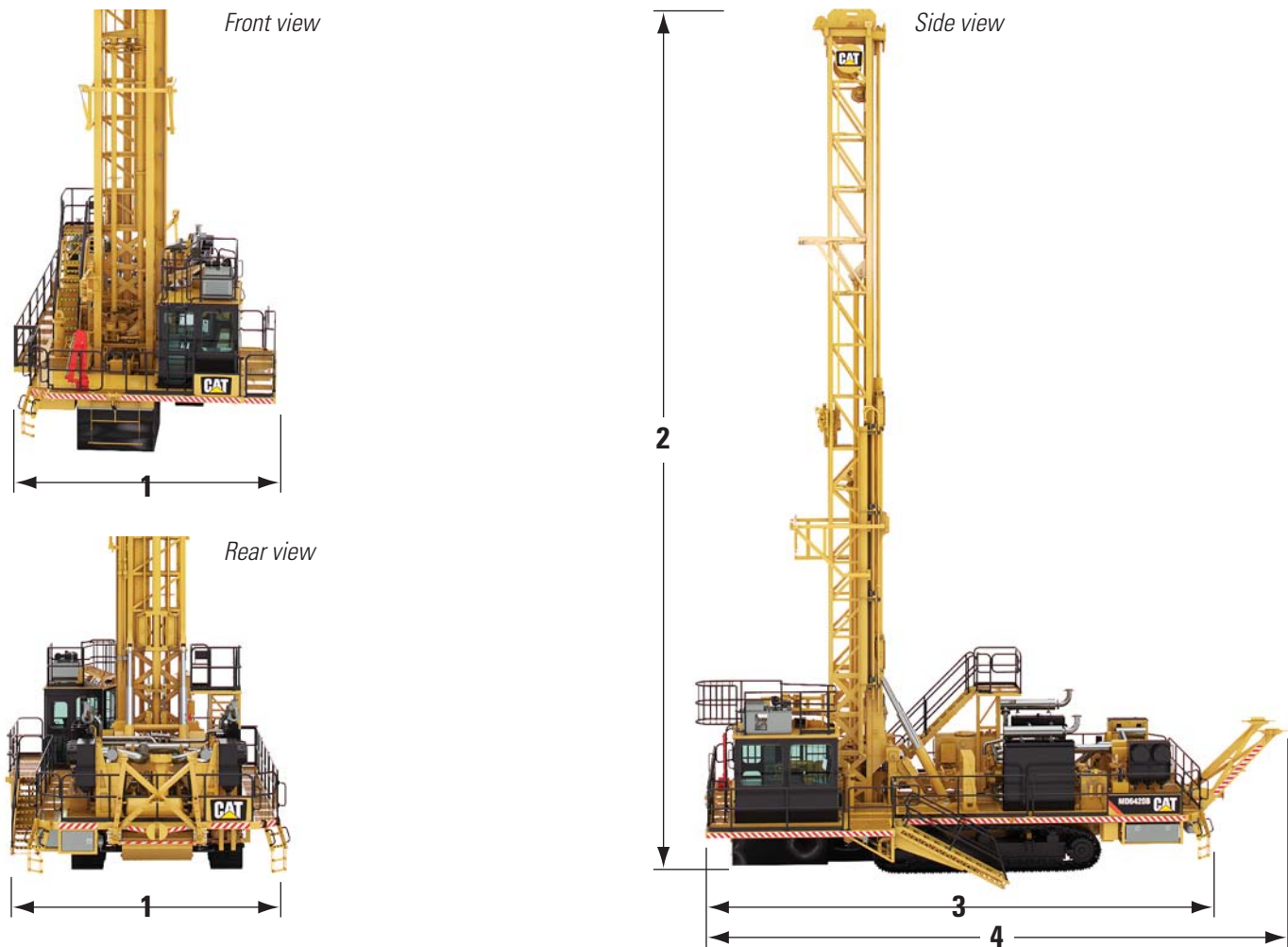
Winch System

Rating	1588 kg	3,500 lb
Cable size	13 mm	0.5 in

MD6420B 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

MD6420B Rotary Blasthole Drill Standard Equipment

Standard Equipment

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

The MD6420B crawler-mounted blasthole drills are designed to drill up to 311 mm (12.25 in) diameter holes with rated pulldown and hoist capacity up to 39 009 kg (86,000 lb).

ENGINE

- Remote jump start terminals
- Exhaust blankets
- Engine pre-lube
- Additional fuel filtration
- Coolant conditioner

MAST

- Up to 311 mm (12 1/4 in) hole diameter
- Up to 39 009 kg (86,000 lb) rated capacity single cylinder pulldown/hoist system
- HOBO (Hydraulically Operated Break Out) wrench operated from the cab
- Up to 30 degree angle drilling package and mast locks and indicator in cab
- Winch system 1588 kg (3,500 lb) capacity
- Auto cable tensioning system
- Two stage mast raise cylinders
- Pipe guide roller assembly
- Removable mast lock bushings
- Wide hinged seal dust hood
- Mast lanyard tapped mounting plates
- Sheave/feed rope guards
- Roller pipe catcher arm (upper) (ONLY 13 m or 16 m mast)
- Hydraulic safety arm/rod catcher
- Additional mast rests mounted on non-drill end (ONLY 13 m or 16 m mast)
- Mast grating
- Winch rope guide for drill pipe loading

TOP DRIVE

- Two (2) motors
- Torque up to 15 185 N·m (11,200 lbf-ft)

OPERATOR'S CAB

- Large cab with 4.9 m² (52.2 ft²) floor space and walkway with railing
- Integrated FOPS
- Totally enclosed and insulated extra large two-man cab
- Full front drill deck window with protective cage
- dB(A) rating of 72 or less
- Two (2) hinged doors with heavy duty door latching system
- Twelve (12) windows – safety glass with window tint and window shades on four (4) windows
- Roof window with protective cage
- Ergonomic operator's console with split control panel and full instrumentation
- Operator's console with stainless steel panels and back-lit gauges
- Ergonomic operator's seat with retractable seat belt
- All electric controls for drilling, tramming, leveling plus auxiliary functions
- Auxiliary functions operated by fingertip switches
- Roof mounted air conditioning/heating/pressurizing unit; hydraulic driven
- Windshield wipers and washer kit
- CD stereo kit complete with speakers
- Cab ladder and roof platform plus railing
- Drill performance and monitoring/diagnostics system complete with full interlock system
- Auto leveling
- Rotary torque control
- Basic engine shut down timer
- Slope indicator mounted in cab to indicate forward and lateral angle
- 24V to 12V DC converter
- Aluminum kick plates
- Luncheonette fridge and microwave (power only)

DIGSY CONTROL – MONITORING – DIAGNOSTIC SYSTEM (CANbus based)

- ECM (Electronic Control Module) provides fast and reliable control of all drill functions
- ECM configuration is de-centralized – with short wire-runs
- Drill multi-monitor integrated with the control system to monitor drill operation and health, allowing quick and accurate diagnostics. An operator can gather all the necessary data assuring safe, ergonomic and efficient operation and production

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MD6420B Rotary Blasthole Drill Standard Equipment

Standard Equipment (continued)

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

INTERLOCK SYSTEMS

- Tram interlock, jacks (FL, FR, RL, RR)
- Tram interlock, pipe in hole
- Tram interlock, ladder down
- Tram interlock (mast not up and locked or down and parked)
- Tram interlock, machine outside stability limits
- Tram interlock, dust skirt not up
- Filter indicators
- Drill function interlock, carousel not parked
- Drill function interlock, carousel in load position
- Head clear
- Drill function interlock, mast up and locked
- Drill function interlock, pipe safety bar not closed
- Water injection pump interlock
- Pipe support interlock
- Winch up interlock
- High/low speed select (high only when mast is down)

UNDERCARRIAGE

- Crawler mounted, excavator type Cat 349E L
- 750 mm (29.5 in) triple grousers
- Full length rock guards
- Tram distance meter

MAINFRAME, DECKS AND WALKWAYS

- Stationary rear deck
- Sliding viewing hatch in the rear deck; hydraulically operated from the cab
- Walk-around front deck
- Four (4) hydraulic leveling jacks, 122 cm (48 in)
- Total 3217 L (850 gal) fuel tanks with isolation valves
- Drill deck bit storage box with aluminum covers
- 4 × 8D maintenance free batteries
- Stainless battery box pull-out tray
- Spring loaded swing gates
- Hose restraint on air hoses
- Low coolant level switch
- Exane wiring
- Stainless junction boxes
- EMS lap top harness/terminal mounted in main junction box
- Additional loop filters between pumps and motors
- Eight (8) engine shutdowns
- Hydraulic rear dust curtain
- 500-hour engine oil reserve system
- Air hose safety sleeves (whip socks)
- Firewall between engine and pump drive
- Mast access ladder
- Air cleaner vacuator valves

CAROUSEL

- Hydraulically operated from the cab
- Semi-automatic indexing
- Nylon pipe rack pivot bearings

COOLING (SPLIT COOLERS)

- Maximum ambient cooling capacity of 52° C (125° F) (replaceable cores)
- Variable speed fan arrangement for coolers
- Radiator caps pressure release system

HYDRAULIC SYSTEM

- Two (2) variable displacement axial piston pumps, in closed loop system, that operate the drill rotation, pulldown/hoist and tram functions
- One (1) variable displacement axial piston pump, in closed loop system on demand, that operates auxiliary functions
- Two (2) gear pumps with proportional speed control that operate the cooling fans
- Dual filtration; return/drain
- Hydraulic pressure test points
- Hydraulic tank isolation valves with interlocks
- Electronic pressure control with feedback on all auxiliary functions
- Pump drive gearbox temperature sensor

DRILL ACCESSORIES (TRICONE/ROTARY)

- Top sub adapter
- Roller deck bushing
- Bit sub
- Horseshoe bushing
- Bit basket
- Auto tool wrench
- Lifting bail

DUST SYSTEM

- See below based on DCA ordered

PAINT

- Standard Caterpillar colors

MISCELLANEOUS

- Tram alarm
- Filter kit for 50-hour preventive maintenance
- Twenty (20) LED lights for night drilling
- Handrails with side boarding ladders
- Lift kit
- Heavy duty tow hooks (front end)
- Battery disconnect (2 pole)

MD6420B Rotary Blasthole Drill Configuration Choices

Configuration Choices 1-3

MD6420B ROTARY BLASTHOLE DRILL BASE MACHINE DCA – 1

- MD6420B Rotary Blasthole Drill Base Machine
- MD6420NP-9 – Cummins QST-30C Electronic Diesel Engine (non-cert with CENSE) 783 kW (1,050 hp) @ 1,800 rpm with two stage Sullair compressor 42.5 m³/min @ 10.3/34.4 bar (1,500 ft³/min @ 150/500 psi) (outside U.S.A., Canada, EU)
- MD6420NP-17 – Mast: For up to 16.46 m (54 ft) single pass hole depth, drill on tracks, changing bit above deck
 - Single pass hole using (2) each 7.62 m (25 ft) length S-S drill pipes with 231 cm (91 in) bit sub
 - Carousel with four (4) pipe capacity allowing 46.93 m (154 ft) total hole depth
 - 194 mm (7-5/8 in) diameter, 7.62 m (25 ft) length S-S drill pipes (drill pipe not included)
 - Up to 42,000 kg (92,594 lb) bit load with one pipe in the drill string
- MD6420NP-26 – Water injection system for dust suppression with 1378 L (364 gal) tank, mounted below front deck
 - Stainless water plumbing tubes and fittings are standard with optional water injection
- MD6420NP-29A – Top drive rotation speed 0-137 rpm
- MD6420NP-32 – Single-pass auto drill function/processing
- MD6420NP-36 – Full service center (fuel, hydraulic oil, coolant, engine oil)
- MD6420NP-37 – Automatic lubrication system
- MD6420NP-38 – Drilling pipe thread lube system, activated from inside the cab
- MD6420NP-39 – Strobe beacons (one on cab roof, one on mast access ladder)
- MD6420NP-44 – Cascading (self leveling) hydraulically operated stairs at cab
- MD6420NP-46 – Water tank – 568 L (150 gal), [two seventy-five (75) gallon tanks] on the deck
- MD6420NP-48 – Hydraulic front dust curtain
- MD6420NP-52 – XIR cab glass upgrade
- MD6420NP-54 – Electric horn activated by push button in the cab
- MD6420NP-55 – Lanyard attachment – cable with traveling hook on mast, and harness for personnel – posts only
- MD6420NP-56 – Closed circuit camera system with two cameras for front and rear mounting and monitor in cab
- MD6420NP-57 – Winch remote control (pendant/cable) for operation of winch while on rear deck
- MD6420NP-60 – Jib crane with pedestal control mounted on rear deck
- MD6420NP-61 – Deck wrench with HOBB – Hydraulically Operated Bit Basket
- MD6420NP-62 – Wash-down pump, diesel with hose reel

MD6420B ROTARY BLASTHOLE DRILL BASE MACHINE DCA – 2

- MD6420NP-2 – Cummins QST-30 Electronic Diesel Engine (Tier 2), 634 kW (850 hp) @ 1,800 rpm with single stage Sullair compressor 56.6 m³/min @ 6.9 bar (2,000 ft³/min @ 100 psi)
- MD6420NP-12 – Mast: For up to 10.29 m (33 ft 9 in) single pass hole depth, drill on tracks, changing bit above deck
 - Single pass hole using (1) each 10.67 m (35 ft) length S-S drill pipe and with 76 cm (30 in) bit sub
 - Carousel with five (5) pipe capacity allowing 63.39 m (208 ft) total hole depth
 - 219 mm (8-5/8 in) diameter, 10.67 m (35 ft) length S-S drill pipe (drill pipe not included)
 - Up to 41 347 kg (91,152 lb) bit load with one pipe in the drill string
- MD6420NP-26 – Water injection system for dust suppression with 1378 L (364 gal) tank, mounted below front deck
 - Stainless water plumbing tubes and fittings are standard with optional water injection
- MD6420NP-28 – Tram spray system (requires optional water injection system)
- MD6420NP-29 – Top drive rotation speed 0-173 rpm
- MD6420NP-32 – Single-pass auto drill function/processing
- MD6420NP-36 – Full service center (fuel, hydraulic oil, coolant, engine oil)
- MD6420NP-37 – Automatic lubrication system
- MD6420NP-38 – Drilling pipe thread lube system, activated from inside the cab
- MD6420NP-39 – Strobe beacons (one on cab roof, one on mast access ladder)
- MD6420NP-44 – Cascading (self leveling) hydraulically operated stairs at cab
- MD6420NP-45 – Water tank 1514 L (400 gal), mounted on deck
- MD6420NP-48 – Hydraulic front dust curtain
- MD6420NP-52 – XIR cab glass upgrade
- MD6420NP-54 – Electric horn activated by push button in the cab
- MD6420NP-55 – Lanyard attachment – cable with traveling hook on mast – posts only
- MD6420NP-56 – Closed circuit camera system with two cameras for front and rear mounting and monitor in cab
- MD6420NP-59 – 152 cm (60 in) leveling jacks (front end only)
- MD6420NP-60 – Jib crane with pedestal control mounted on rear deck
- MD6420NP-61 – Deck wrench with HOBB – Hydraulically Operated Bit Basket
- MD6420NP-62 – Wash-down pump, diesel with hose reel

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MD6420B Rotary Blasthole Drill

Configuration Choices 1-3 (continued)

MD6420B ROTARY BLASTHOLE DRILL BASE MACHINE DCA – 3

- MD6420NP-7 – Cummins QST-30C Electronic Diesel Engine (non-cert with CENSE) 783 kW (1,050 hp) @ 2,100 rpm with single stage Sullair compressor 67.9 m³/min @ 6.9 bar (2,400 ft³/min @ 100 psi)
- MD6420NP-15 – Mast: For up to 13.4 m (44 ft) single pass hole depth, drill on tracks, changing bit above deck
 - Single pass hole using (1) each 12.19 m (40 ft) length S-S drill pipe with 229 cm (90 in) bit sub
 - Carousel with five (5) pipe capacity allowing 74.37 m (244 ft) total hole depth
 - 219 mm (8-5/8 in) diameter, 12.19 m (40 ft) length S-S drill pipe (drill pipe not included)
 - Up to 41 563 kg (91,630 lb) bit load with one pipe in the drill string
- MD6420NP-26 – Water injection system for dust suppression with 1378 L (364 gal) tank, mounted below front deck
- Stainless water plumbing tubes and fittings are standard with optional water injection
- MD6420NP-28 – Tram nest spray system (requires optional water injection system)
- MD6420NP-29 – Top drive rotation speed 0-173 rpm
- MD6420NP-32 – Single-pass auto drill function/processing
- MD6420NP-36 – Full service center (fuel, hydraulic oil, coolant, engine oil)
- MD6420NP-37 – Automatic lubrication system
- MD6420NP-38 – Drilling pipe thread lube system, activated from inside the cab
- MD6420NP-39 – Strobe beacons (one on cab roof, one on mast access ladder)
- MD6420NP-44 – Cascading (self leveling) hydraulically operated stairs at cab
- MD6420NP-45 – Water tank 1514 L (400 gal), mounted on deck
- MD6420NP-48 – Hydraulic front dust curtain
- MD6420NP-52 – XIR cab glass upgrade
- MD6420NP-54 – Electric horn activated by push button in the cab
- MD6420NP-55 – Lanyard attachment – cable with traveling hook on mast, and harness for personnel – posts only
- MD6420NP-56 – Closed circuit camera system with two cameras for front and rear mounting and monitor in cab
- MD6420NP-59 – 152 cm (60 in) leveling jacks (front end only)
- MD6420NP-60 – Jib crane with pedestal control mounted on rear deck
- MD6420NP-61 – Deck wrench with HOBB – Hydraulically Operated Bit Basket
- MD6420NP-62 – Wash-down pump, diesel with hose reel

Materials and specifications are subject to change without notice.

Featured machines in photos may include additional equipment.

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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Product ID: MD6420B

AEHQ7133-01
Replaces AEHQ7133

January 2015

