

MD6420

Rotary Blasthole Drill



13- or 16-Meter Mast Configuration

| | | |
|---|--------------|----------------|
| Hole diameter | Up to 311 mm | Up to 12.25 in |
| Depth single pass (16 m/50 ft configuration) | 16.46 m | 54 ft |
| Depth multi-pass (16 m/50 ft configuration) | Up to 46.9 m | Up to 154 ft |
| Depth single pass (13 m/40 ft configuration) | 13.4 m | 44 ft |
| Depth multi-pass (13 m/40 ft configuration) | Up to 75.3 m | Up to 247 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 19 843 kg | Up to 43,745 lbf |
| Drilling feed rate | 0-19 m/min | 0-61 ft/min |
| Retract rate | 0-33.5 m/min | 0-110 ft/min |
| Head travel (16 m/50 ft configuration) | 18.29 m | 720 in |
| Head travel (13 m/40 ft configuration) | 15.24 m | 600 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 |

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 |
| 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 |

MD6420 Rotary Blasthole Drill Specifications

Engine (Standard)

| | | |
|------------------|-------------|---------|
| Manufacturer | Caterpillar | |
| Model | C27 Tier 2 | |
| Rated horsepower | 597 kW | 800 hp |
| Full load | 2,100 rpm | |
| Fuel tank | 1514 L | 400 gal |
| Optional | 1703 L | 450 gal |

Engine (Optional)

| | | |
|------------------|-------------------|---------------------|
| Manufacturer | Cummins | |
| Model | QST-30 | |
| Rated horsepower | | |
| Non-cert | 634 and 783 kW | 850 and 1,050 hp |
| Tier 2 | 783 kW 1,050 hp | |
| Full load | 2,100 rpm | |
| Fuel tank | 1514 L | 400 gal |
| Optional | 1703 L | 450 gal |

Engine (Optional)

| | | |
|------------------|-------------|---------|
| Manufacturer | Caterpillar | |
| Model | C27 Tier 2 | |
| Rated horsepower | 652 kW | 875 hp |
| Full load | 2,100 rpm | |
| Fuel tank | 1514 L | 400 gal |
| Optional | 1703 L | 450 gal |

Operator's Cab

| | | |
|--|---|-----------------------|
| Type | Shock-mounted; two-man, integrated FOPS certified | |
| Floor area | 3 m ² | 32.40 ft ² |
| Height inside | 1943 mm | 76.50 in |
| Windows (tinted safety glass in rubber mounting) | 6 mm | 0.25 in |
| Number of windows | 10 | |
| Number of doors | Two with windows (included in above) | |
| Operator's seat | One swivel-type with armrests, headrest and retractable seat belt | |
| Helper's seat | Fixed folding jump seat | |
| Climate control | Wall-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 | 17% | |
| 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 | |
| Tool box | Lockable door, below front deck | |
| Machine deck | Access both sides | |
| Tow hooks | Welded, two (2) front | |

Leveling Jacks

| | | |
|---------------|---------------------|-------|
| Number | 4 | |
| Location | Two front, two rear | |
| 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 |
| Wide walkways | Around the drill deck | |
| Viewing hatch | In the rear deck; hydraulically operated from the cab | |

Dust Curtain (Optional Hydraulic Lifters, Front and Rear)

MD6420 Rotary Blasthole Drill Specifications

Accessories, Tools and Handling Equipment

Drill Pipe (optional) – 16 m

| | | |
|--|----------------------------------|----------|
| Diameter | 178 mm | 7.0 in |
| | 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 | Depends on pipe outside diameter | |

Drill Pipe (optional) – 13 m

| | | |
|----------------|-----------------------------------|----------|
| Diameter | 178 mm | 7.0 in |
| | 194 mm | 7.625 in |
| | 219 mm | 8.625 in |
| Wall thickness | 25 mm | 1 in |
| Length | 12.19 m | 40 ft |
| Threads | Varies with outside pipe diameter | |

| Diameter | Wall Thickness | Thread | Pipe Length |
|-------------------|----------------|----------|-----------------|
| 178 mm (7.0 in) | 25 mm (1 in) | 4.5 Beco | 7.62 m (25 ft) |
| 178 mm (7.0 in) | 25 mm (1 in) | 4.5 Beco | 12.19 m (40 ft) |
| 194 mm (7.625 in) | 25 mm (1 in) | 6 Beco | 7.62 m (25 ft) |
| 194 mm (7.625 in) | 25 mm (1 in) | 6 Beco | 12.19 m (40 ft) |
| 219 mm (8.625 in) | 25 mm (1 in) | 6 Beco | 7.62 m (25 ft) |
| 219 mm (8.625 in) | 25 mm (1 in) | 6 Beco | 12.19 m (40 ft) |

Top Adaptor Sub

| | | |
|-----------------------|--------------------------|--------|
| Diameter | Depends on pipe diameter | |
| Wall thickness | 25 mm | 1 in |
| Length | 914 mm | 36 in |
| Top thread – API reg. | 140 mm | 5.5 in |
| Bottom thread | Depends on pipe diameter | |

Bit Sub

| | | |
|----------------|---|-------------|
| Diameter | Depends on pipe diameter | |
| Wall thickness | 25 mm | 1 in |
| Length | Up to 2286 m | Up to 90 in |
| Top thread | Depends on pipe diameter | |
| Bottom thread | Depends on bit diameter | |
| Table bushing | Roller-type or two-piece with replaceable liner | |

Accessories, Tools and Handling Equipment (cont'd)

Pipe Rack (Inside the Mast)

| | | |
|--|-------------------------------------|----------|
| Carousel with stationary pods and breaker plates | | |
| 16 m/50 ft configuration | standard | |
| 4 pipes: 7.62 m (25 ft) pipe | 178 mm | 7.0 in |
| | 194 mm | 7.625 in |
| | 219 mm | 8.625 in |
| 13 m/40 ft configuration | standard | |
| 4 pipes: 12.19 m (40 ft) pipe | 178 mm | 7.0 in |
| | 194 mm | 7.625 in |
| | 219 mm | 8.625 in |
| 13 m/40 ft configuration | optional deep hole package | |
| 5 pipes: 12.19 m (40 ft) pipe – outside diameter | 178 mm | 7.0 in |
| | 194 mm | 7.625 in |
| | 219 mm | 8.625 in |
| Pipe rack swing | Hydraulic cylinders (2) | |
| Pipe rack index | Hydraulic cylinder with locking pin | |

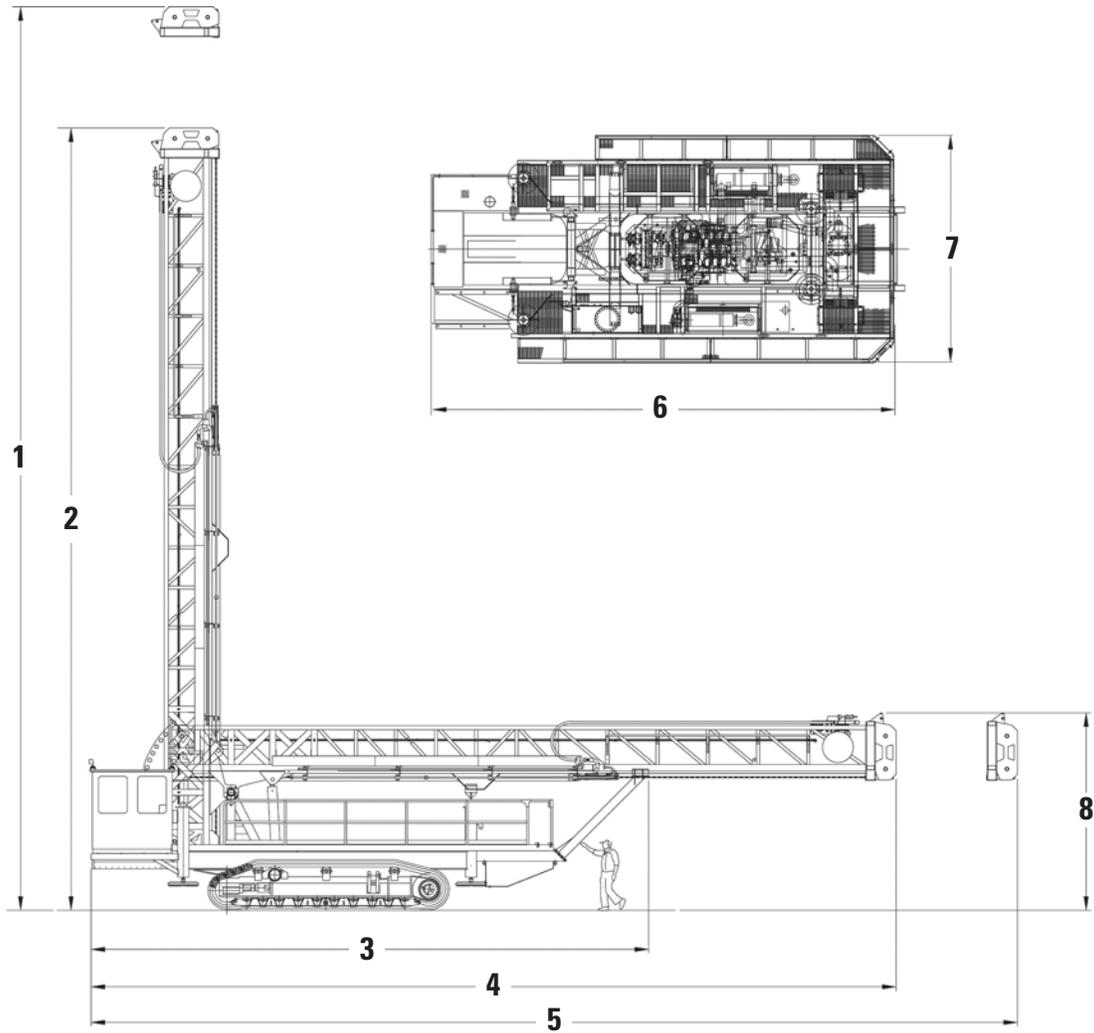
Winch System

| | | |
|------------|---------|----------|
| Rating | 1587 kg | 3,500 lb |
| Cable size | 13 mm | 0.5 in |

MD6420 Rotary Blasthole Drill Specifications

Dimensions

All dimensions are approximate.



| | | | | | |
|----------|---------|----------|----------|---------|----------|
| 1 | 22.42 m | 883 in | 5 | 22.97 m | 904.5 in |
| 2 | 19.38 m | 763 in | 6 | 11.73 m | 461.8 in |
| 3 | 13.78 m | 542.5 in | 7 | 5.63 m | 221.6 in |
| 4 | 19.93 m | 785 in | 8 | 4.89 m | 192.5 in |

MD6420 Rotary Blasthole Drill Standard Equipment

Standard Equipment

The MD6420 with 13 or 16 meter mast arrangement, crawler-mounted blasthole drills are designed to drill up to 311 mm (12¼ in) diameter holes with rated pulldown capacity up to 39 009 kg (86,000 lb).

ENGINE

- Metal turbo and exhaust manifold covers
- Engine pre-lube
- Additional filtration
- Coolant conditioner

MAST

- Up to 311 mm (12¼ in) hole diameter
- Up to 39 009 kg (86,000 lb) rated capacity single cylinder pulldown/hoist system
- Up to 41 347 kg (91,152 lb) bit load with one pipe in the drill string
- Patented HOBLO (Hydraulically Operated Break Out) wrench operated from the cab
- Auto cable tensioning system
- 30 degree angle drilling package and mast locks and lock/unlock indicator in cab
- Winch system 1587 kg (3,500 lb) capacity

TOP DRIVE

- Two (2) motors
- Rotation speed 0-137 rpm
- Torque up to 15 185 N·m (11,200 lbf-ft)

OPERATOR'S CAB

- Integrated FOPS
- Totally enclosed, insulated, two-man cab
- Two (2) hinged doors with heavy duty freezer type door latch system
- Ten (10) windows (safety glass, tinted)
- Windshield wiper and washer kit
- Ergonomic operator's console with full instrumentation
- Ergonomic operator's seat with head and arm rests, retractable seat belt, air suspension mount
- Electric over hydraulic drill functions
- Auxiliary functions operated by fingertip toggle switches
- More than 3 m² (32.4 ft²) of floor space
- Excellent visibility
- dB(A) rating of 80 or less
- Wall mounted air conditioner/heater/pressurizer, belt driven
- Rubber shock-mounts to absorb vibration
- Electric horn operated by push button in the cab

UNDERCARRIAGE

- Crawler mounted, excavator type
- 750 mm (29.5 in) triple grousers
- Full length chain guides/rock guards

MAINFRAME, DECKS AND WALKWAYS

- Rear deck is stationary during both angle and vertical drilling modes
- Viewing hatch in rear deck, hydraulically operated from cab to help with spotting holes
- Walkways around cab
- Wide access ladder at the cab with platform in front and at the back of the cab
- Four (4) hydraulic leveling jacks (122 cm/48 in)
- Centralized lubrication system
- Total 3217 L (850 gal) fuel tanks with isolation valves
- Additional mast rests mounted on non-drill end
- 4 × 8D maintenance free batteries

CAROUSEL

- Hydraulically operated from the cab
- No moveable parts
- Automatic indexing

COOLING (SINGLE, FRONT-END MOUNTED)

- Maximum ambient cooling capacity of 52° C (125° F)

HYDRAULIC SYSTEM

- Two (2) variable displacement axial piston pumps, in closed loop system, that operate the drill rotation and tram functions
- One (1) variable displacement axial piston pump, in open loop system on demand, that operates pulldown/hoist and all auxiliary functions
- Double pump drive
- Fan circuit pump
- Dual filtration

DRILL ACCESSORIES (TRICONE/ROTARY)

- Top sub adaptor
- Roller deck bushing
- Bit sub (229 cm/ 90 in S-S)
- Horseshoe bushing
- Bit basket
- Lifting bail
- Auto tool wrench (deck wrench)

DUST SYSTEM

- See Optional Equipment and select the required system

PAINT

- Standard Caterpillar colors

MISCELLANEOUS

- Backup alarm
- Filter kit for 50-hour preventive maintenance.
- Seven (7) 60-watt LED lights for night drilling
- Side walkways and handrails with side boarding ladder
- Outside cab platform for easy access
- Tool box, mounted under walkway (tools not included)
- Lift lugs
- Towing hooks (front end)
- Battery disconnect

MD6420 Rotary Blasthole Drill Mandatory Attachments

Mandatory Attachments (Installed at Factory)

Select one from each group. Mandatory attachments may vary. Consult your Cat® dealer for specifics.

ENGINE/COMPRESSOR (must select one)

- Cat electronic diesel engine C27, Tier 2, 597 kW (800 hp) @ 2,100 rpm with single stage Sullair compressor 56.6 m³/min @ 6.9 bar (2,000 ft³/min @ 100 psi)
- Cat electronic diesel engine model C27, Tier 2, 652 kW (875 hp) @ 2,100 rpm with two stage Sullair compressor 42.5 m³/min @ 10.3/24.1 bar (1,500 ft³/min @ 150/350 psi)
 - Front end coolers
- Cummins QST-30C electronic diesel engine (water jacket), 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)
 - Split coolers
- Cummins QST-30 electronic diesel engine Tier 2 (air-to-air), 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)
 - Split coolers
- Cummins QST-30C electronic diesel engine (water jacket), 783 kW (1,050 hp) @ 2,100 rpm with two stage Sullair compressor 42.5 m³/min @ 10.3/34.4 bar (1,500 ft³/min @ 150/500 psi)
 - Split coolers (outside U.S.A., Canada, EU)
- Cummins QST-30 electronic diesel engine Tier 2 (air-to-air), 783 kW (1,050 hp) @ 2,100 rpm with two stage Sullair compressor 42.5 m³/min @ 10.3/34.4 bar (1,500 ft³/min @ 150/500 psi)
 - Split coolers

MAST/CAROUSEL GROUP (must select one)

- Mast: Up to 13.4 m (44 ft) single pass hole depth, drill on tracks, changing bit above deck
 - Up to 39 009/19 843 kg (86,000/43,745 lb) rated capacity, two (2) cylinder pulldown/hoist system
 - Single pass hole using one (1) each 12.19 m (40 ft) drill pipe with 229 cm (90 in) long sub bit for up to hole depth up to 13.4 m (44 ft)
 - Four (4) pipe capacity carousel allowing 62.18 m (204 ft) total hole depth
 - 178 mm (7 in) diameter, 12.19 m (40 ft) length S-S pipe (drill pipe not included)
- Mast: Up to 13.4 m (44 ft) single pass hole depth, drill on tracks, changing bit above deck
 - Up to 39 009/19 843 kg (86,000/43,745 lb) rated capacity, two (2) cylinder pulldown/hoist system
 - Single pass hole using one (1) each 12.19 m (40 ft) drill pipe with 229 cm (90 in) long sub bit for up to hole depth up to 13.4 m (44 ft)
 - Four (4) pipe capacity carousel allowing 62.18 m (204 ft) total hole depth
 - 194 mm (7⁵/₈ in) diameter, 12.19 m (40 ft) length S-S pipe (drill pipe not included)

MAST/CAROUSEL GROUP (must select one) (cont'd)

- Mast: 13.4 m (44 ft) single pass hole depth, drill on tracks, changing bit above deck
 - Up to 39 009/19 843 kg (86,000/43,745 lb) rated capacity, two (2) cylinder pulldown/hoist system
 - Single pass hole using one (1) each 12.19 m (40 ft) drill pipe with 229 cm (90 in) long sub bit for up to hole depth up to 13.4 m (44 ft)
 - Four (4) pipe capacity carousel allowing 62.18 m (204 ft) total hole depth
 - 219 mm (8⁵/₈ in) diameter, 12.19 m (40 ft) length S-S pipe (drill pipe not included)
- Mast: Up to 16.46 m (54 ft) single pass hole depth, drill on tracks, changing bit above deck
 - Up to 39 009/19 843 kg (86,000/43,745 lb) rated capacity two (2) cylinder pulldown/hoist system
 - Single pass hole using two (2) each × 7.62 m (25 ft) drill pipes with a 231 cm (90 in) long bit sub for up to hole depth up to 16.46 m (54 ft)
 - Four (4) pipe capacity carousel allowing 46.93 m (154 ft) total hole depth
 - 178 mm (7 in) diameter, 7.62 m (25 ft) length S-S pipe (drill pipe not included)
- Mast: Up to 16.46 m (54 ft) single pass hole depth, drill on tracks, changing bit above deck
 - Up to 39 009/19 843 kg (86,000/43,745 lb) rated capacity two (2) cylinder pulldown/hoist system
 - Single pass hole using two (2) each × 7.62 m (25 ft) drill pipes with a 231 cm (90 in) long bit sub for up to hole depth up to 16.46 m (54 ft)
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- Mast: Up to 16.46 m (54 ft) single pass hole depth, drill on tracks, changing bit above deck
 - Up to 39 009/19 843 kg (86,000/43,745 lb) rated capacity two (2) cylinder pulldown/hoist system
 - Single pass hole using two (2) each × 7.62 m (25 ft) drill pipes with a 231 cm (90 in) long bit sub for up to hole depth up to 16.46 m (54 ft)
 - Four (4) pipe capacity carousel allowing 46.93 m (154 ft) total hole depth
 - 219 mm (8⁵/₈ in) diameter, 7.62 m (25 ft) length S-S pipe (drill pipe not included)

MD6420 Rotary Blasthole Drill Optional Attachments

Optional Attachments (Installed at Factory)

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

DEEP HOLE PACKAGE

- Five (5) pipe capacity carousel, 12.19 m (40 ft) long drill pipe coupled to 244 cm (96 in) long bit sub for up to 75.3 m (247 ft) hole depth
 - 194 mm (7⁵/₈ in) diameter, 12.19 m (40 ft) length S-S pipes, drill pipe not included
 - Single pass 14.3 m (47 ft) hole depth
- Five (5) pipe capacity carousel, 12.19 m (40 ft) long drill pipe coupled to 244 cm (96 in) long bit sub for up to 75.3 m (247 ft) hole depth
 - 219 mm (8⁵/₈ in) diameter, 12.19 m (40 ft) length S-S pipes, drill pipe not included
 - Single pass 14.3 m (47 ft) hole depth

DRILLING ACCESSORIES KIT FOR HAMMER DRILLING (in lieu of rotary drill accessories)

- Heavy duty shock sub and adaptor, bit sub, two-piece table bushing, horseshoe bushing, lifting ball, bit basket, 113.5 L (30 gal) hammer oil injection system

DUST COLLECTION OPTIONS

- Dust Collector 4500 Series
- Water injection system for dust suppression with 1374 L (363 gal) tank mounted below front deck
- Water injection system with 2271 L (600 gal) tank mounted on the top-deck (mounted in place of Dry Dust Collector)

Note: Dry Dust Collector and Water Injection on the same drill can be selected only with below deck tanks.

DRILLING

- Drill pipe (see Drill Pipe Price List)
- Two-piece split bushing
- Rotary head RPM gauge, digital
- Rotary torque control
- Rotation speed 0-173 rpm
- Rotary/hammer shock sub
- Rock oiler injection system (for Tricone); 113.56 L (30 gal)
- Pipe guide roller assembly mounted on drill deck (rear deck)
- Dual purpose carousel (hammer – Tricone pipe rack/4-pod only)

FLUIDS

- Fast fill fuel only
- Fast fill full service center (fuel, hydraulic oil, coolant, engine oil)
- Automatic lubrication system
- Drilling pipe thread lube system, activated from inside the cab

SYSTEM PROTECTION

- Additional loop filters between pumps and motors
- Hydraulic diagnostic test station
- Engine mounted stop
- Ground level engine shutdown
- Rotating beacons (one on mast crown, one on cab, one on front-end)

COLD WEATHER AIDS

- Diesel fired heating system (self-contained heater for engine coolant, water, hydraulic oil, fuel) – runs during engine operation
- Cab floor heater (electric fan with heater core utilizing engine coolant)

INDICATOR SYSTEMS

- Jack retract indicators
- Tram interlock, jacks (includes indicator)
- Tram interlock, head-position
- Pipe rack interlock
- Filter indicators, centrally mounted in cab (hydraulic, compressor, air intake)

MISCELLANEOUS

- Additional fuel tank 1374 liter (363 gal), under front end
- 24 to 12 volt converter
- Extra lighting package (five additional 60 watt LED lights)
- Blowdown hose with nozzle
- Hydraulic rear dust curtain lifting system
- Hydraulic front dust curtain lifting system
- Closed circuit camera system with two cameras for front and rear mounting and a monitor in cab
- Radio AM/FM, CD player and USB port for iPod
- Radio CB with antenna
- XIR cab glass upgrade
- Thermal double-pane glass upgrade
- Cab window shades
- Remote jump start terminals
- Main drill window cage
- Lanyard attachment – cable with traveling hook on mast, and personnel harness
- Tram remote control (pendant/cable) for operation of tram controls from ground
- Winch remote control (pendant/cable) for operation of winch while on rear deck
- 24V to 110V or 220V AC inverter
- 152 cm (60 in) leveling jacks (front end only)
- Jib crane with pedestal control mounted on rear deck
- Mechanical tool kit (reference TV014590)
- Three-point harness kit for operator's seat
- Water injection flow meter
- Cab manometer
- Extreme hot weather lubricant upgrade (compressor oil)
- Extreme hot weather lubricant upgrade (hydraulic oil)
- Basic engine shut down timer
- Cat EMS panel with Engine Data Link Connector
- Mirror kit (includes three bolt-on mirrors)
- Slope indicator mounted in cab to indicate forward and lateral angle
- Hydraulic oil temperature gauge mounted in dash
- Document holder mounted inside the cab

MD6420 Rotary Blasthole Drill

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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Replaces AEHQ6541-01

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