MD6540 Rotary Blasthole Drill



Rated Capacity		
Hole diameter	229-381 mm	9-15 in
16 Meter Configuration		
Depth single-pass	Up to 16.15 m	Up to 53 ft
Depth multi-pass	Up to 84.73 m	Up to 278 ft
20 Meter Configuration		
Depth single-pass	Up to 19.86 m	Up to 65 ft 2 in
Depth multi-pass	Up to 65.58 m	Up to 215 ft 2 in
Operating Temperature		
Minimum ambient rating – standard unit	–28° C	–20° F
Cold weather option	-40° C	-40° F
Maximum ambient rating – standard unit	52° C	125° F
Altitude	4572 m	over 15,000 ft
Pull-down/Hoisting Cap	acity	
Pull-down capacity	Up to 489 kN	Up to 110,000 lbf
Hoist capacity	Up to 383 kN	Up to 86,000 lbf
Drilling feed/retract rate	0-37.5 m/min	0-123 ft/min
Туре	Closed-loop hy (stationary roc	ydraulic l, moving barrel)
Number of cylinders	1	
Cylinder bore – diameter	222 mm	8.75 in
Cylinder rod – diameter	121 mm	4.75 in
Cable type – DYFORM 8	29 mm	1.125 in
Cable sheaves (cylinder) – PD	559 mm	22 in
Cable sheaves (top and bottom) – PD	610 mm	24 in
Sheave guards	Standard at bo	ottom plate
Adjustable head guide shoes	Steel with repl Nylatron [™]	aceable

Rotary Drive System

Rotation speed	0-150 rpm HSI 0-124 rpm LSF	LT (standard) IT option
Torque		
Standard HSLT	0-17 219 N·m	12,700 lbf-ft
LSHT option	0-20 880 N·m	15,400 lbf-ft
Rotation power	271 kW	363 hp
Gearbox	Casting design	
Main thrust bearing	Taper roller	
Lubrication	Oil flooded	
Gearing	Straight spur	
Ratio	16:1	
Drive motor	See Hydraulic	System

Cooler Assemblies

Engine Radiator/Cooler	
Туре	Jacket water and secondary loop, stacked
Size	2540 mm wide 100 in wide \times 2057 mm tall \times 81 in tall
Top tank	Sealed deaeriation tank, pressure cap, overflow tube and sight glass
Oil Cooler	
Туре	Separate cores, stacked
Compressor section size	2540 mm wide 100 in wide × 1778 mm tall × 70 in tall
Hydraulic section size	1778 mm 70 in

Fan (common to each unit) 2 per cooler – 1067 mm diameter (42 in); 6 blades, 1 per motor

Fan speed	2-speed fan 1,600 rpm	ns – high speed
Fan guard	Welded	
Maximum ambient rating	52° C	125° F



Compressor (Standard)		
Туре	Oil-flooded, s	single-stage screw
Discharge air flow (sea level)	102 m³/min	3,600 ft³/min
Maximum operating pressure	6.9 bar	100 psi
Discharge flow maximum setting (sea level)	102 m³/min	3,600 ft³/min
Discharge flow minimum setting (sea level)	Adjustable down to 51 m ³ /min	Adjustable down to 1,800 ft ³ /min
Air cleaner		
Туре	Dry-type with	h safety element
Model	SSG 20 (two e	each)
Oil cooling	Air-to-oil coc thermostatica	oler, ally controlled
Oil separation	Vertical barri pre-separatio sump, vertica	er element, n in 189 L (50 gal) l tank
Oil filtration	12 micron rep	laceable element
Drive	Direct couple	d to engine flywheel
Controls	Automatic wi	th safety shut-down
Air shut-off	Hydraulic cyl from operator	inder-operated r's seat

Mast		
Construction	ASTM 500 gr rectangular tu	ade B ıbing
Main chord size		
Front	203 mm × 102 mm	8 in × 4 in
Rear	127 mm × 127 mm	5 in × 5 in
Pivot and raising area	Rectangular t reinforced in with 127 mm strength plate	ubing A frame, high-stress areas, (5 in) high-
Hydraulic lines	Pressure-rate hydraulic tub	d steel ing
Hose tray	Bolt-on fabric aluminum up	cations, steel lower, per
Pipe rack		
Outside diameter – 5 each	194 mm through 235 mm	7.625 in through 9.25 in
Outside diameter – 4 each	254 mm and 273 mm	10 in and 10.75 in
Feed cable tensioner	Automatic	

Engine (Standard)

Manufacturer	Detroit Diese	1	
Model	Series 2000 16V Tier 2		
Rated horsepower	899 kW (1,205 hp)		
Full load RPM	1,800	1,800	
Starting system	24V DC, dual	starters	
Safety shut-down system	Energized to	run	
Air cleaner			
Туре	Dry-type with	n safety element	
Model	55G 20		
Batteries	Four (4) each	8-D	
Muffler			
Inlet – two	127 mm	5 in	
Outlet – two	152 mm	6 in	
Fuel tank	2055 L +	543 gal +	
	1234 L;	326 gal;	
	total 3289 L	total 869 gal	
Turbo and manifold covers	Blankets, cust	tom-fitted	

Mast Elevating Cylinders

Number of cylinders	2	
Cylinder bore diameters	216 mm;	8.50 in;
	184 mm;	7.25 in;
	152 mm	6 in
Cylinder rod	203 mm;	8 in;
	171 mm;	6.75 in;
	114 mm	4.5 in
Cylinder stroke	4110 mm	161.8 in
Lift capacity each cylinder	671 kN	150,800 lbf

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Location	Adjacent to the drill deck
Туре	One piece, three man; shock- mounted; integrated FOPS certified, fully electrical/electronic
Length at floor	2581 mm 102 in
Width at floor	1822 mm 71.75 in
Floor area	4.4 m ² 47.3 ft ²
Height inside	2121 mm 83.5 in
Construction	12-gauge steel welded to 51 mm (2 in) steel tube
Windows	Tinted thermopane glass in rubber mounting
Number of windows	12
Number of doors	Two with 2 (each) windows (included in above)
Left door to drill deck	Swing-type HD hinge
Right door	Swing-type HD hinge
Operator's seat	One swivel-type with armrests, headrest and retractable seat belt
Helper's seat	Full-cushion type, collapsible, stow-away and removable
Insulation, floor	3 mm (0.125 in) pyramid vinyl surface
Door latches	Large heavy-duty latches with lockable handles
Sound levels	72 db(A)
Climate control	Roof-mounted, AC/heating/ pressurizing unit
Roof	Roof viewing hatch with window (protected with FOPS-certified cage)

Operator's Cab

Operator's Controls/Gauges

Location	Split console at front and side
	cab wall, placed so controls in
	operator's reach while arms
	resting on seat armrests
Chandend Fasine Cont	
Standard Engine Cont	rols/Indicators

Water temperature	
High water temperature shut-down	
Oil pressure (electric)	
Low-pressure shut-down	
Electric voltmeter	
Auto shut-down bypass	
Start button	
Stop button	
Fuel primer	
Tachometer	
Throttle control	
On/off light switch	
Hourmeter	
Drill hour	
Fuel level	
Diagnostic connection	
Diagnostic fault and indicator lights	

Compressor discharge temperature

Air pressure gauge

Compressor start/run control

High compressor discharge temperature, engine shut-down

Low compressor oil pressure, engine shut-down

Full/minimum displacement switch

Operator's Controls/Gauges (cont'd)

Standard Drilling Controls: All Electric/Electronic		
Leveling jacks controls	Dust/water injection	
HOBO wrench control	Dust curtain	
Mast elevation control	Deck wrench control	
Pull-down control	Level indicator	
Pull-down pressure control	Winch control	
Rotation control	Rod catcher control	
Propel controls	Viewing hatch door control	
Pipe rack in/out control	Compressor controls	
Mast lock		

Drill Monitor System

Split console controls are configured with touch-screen interface to display drill health and performance

One-touch auto-leveling; one-touch single-pass drilling functions included

Drill performance and monitoring includes a downloadable memory function

The Auto-drill System is fully configurable with any GPS/tracking or fleet management/optimization system with one point of plug-in

Undercarriage

Туре	Excavator type	
Pad width	900 mm	35.4 in
Pad type	Triple grouser	
Rollers	Sealed, oil-flooded	
Number of rollers on each side	11	
Upper track chain support	Three (3) carrie	er rollers
Rock guards	Standard full-length guards	
Overall length (variable with adjustment)	6706 mm	264 in
Final drive	Independent hydrostatic motors	
Maximum drive horsepower per track	268 kW	360 hp
Brakes	Spring set, hydraulic release	
Brake release	Automatic	
Tram speed maximum	2.09 km/h	1.3 mph
Gradeability mast down	66%	
Rear axle	356 mm	14 in
Front	Three-point oscillating type	
Track adjustment means	Hydraulic with grease gun	
Track drive disconnect	Standard (manual)	

Mainframe, Decks and Walkways

Main rails	Box section construction comprised of top, bottom and vertical plates, and internal stiffeners – made of ASTM Grade 50	
Construction	Electric-welded plate box design, sculpted to reduce stress	
Jacks, mast pivot and deck	Welded integrally to mainframe	
Tools and battery box	In-board extra-large toolbox (sunk in drilling deck)	
Machine deck	Access all sides	
Hand rails – steel tube		
Diameter	48 mm	1.9 in
Height	3759 mm	48 in
Tow eyes	Welded, two front	

Leveling Jacks

Number	4		
Location	2 front, 2 rear		
Cylinder bore diameter			
Drilling end	203 mm	8 in	
Non-drilling end	178 mm	7 in	
Cylinder rod diameter			
Drilling end	127 mm	5 in	
Non-drilling end	102 mm	4 in	
Cylinder stroke			
Drilling end	1219 mm	48 in	
Non-drilling end	1524 mm	60 in	
Lift capacity			
Each drilling end	671 kN	150,796 lbf	
Each non-drilling end	513 kN	115,423 lbf	
Pad connection	Ball and socket		
Pad diameter	1067 mm	42 in	
Safety check valves	CBVs internal at each cylinder		

Drill	Table	and	Work	Deck	

Table height off ground – drill on tracks	1854 mm	73 in
Deck floor material	Ry-grip non-slip floor plate	
Drill deck length – work deck	5664 mm	223 in
Drill deck width	6147 mm	242 in
Hand rails – steel tube		
Diameter	48 mm	1.9 in
Height	1219 mm	48 in
Wide walkways		
Viewing hatch operated from the cab	In the drill decl	k; hydraulically
Dust curtain		
Material – rubber nylon reinforced	6 mm	0.25 in
Length	5893 mm	232 in
Width	2896 mm	114 in
Dust reflector	Directly below table bushing	
Material	Natural rubber seal	
Thickness	23 mm	0.9 in
Diameter with hinged retainer	559 mm	22 in

Hydraulic System

Left Track/Rotation Pump (Closed-Loop)

Туре	Axial piston, variable volume	
Maximum flow	473 L/min	125 gal/min
Pressure rating	400 bar	5,800 psi

Right Track/Feed Pump (Closed-Loop)

Туре	Axial piston, variable volume	
Maximum flow	473 L/min	125 gal/min
Pressure rating	310 bar	4,495 psi

Accessory Circuit Pump (Open-Loop)

Туре	Axial piston, variable volume	
Maximum flow	189 L/min	50 gal/min
Pressure rating	400 bar	5,800 psi

Fan Circuit Pumps for Split Coolers (2)

Туре	Double gear	
Maximum flow – dual fan	264 L/min	65 gal/min
Pressure rating	241 bar	3,500 psi

Hydraulic System (con	ťd)	
Track Drive Motors (2)		
Туре	Axial, pisto	n
Operating pressure	414 bar	6,000 psi
Rotation Drive Motors (2)		
Туре	Axial, pisto	n
Pressure rating	345 bar	5,000 psi
Fan Drive Motors for Split Cool	ers (2)	
Туре	Piston	
Pressure rating	414 bar	6,000 psi
Pump Drive Gearbox		
Туре	4 pad	
Drive	Rubber coupler/drive shaft to front of engine	
Filtration (All filters have indic	ators and bypas	s)
Loop	12 micron 2	e per loop
Charge	3 micron 1	per loop
Main return (2 each)	12 micron	
Case return	12 micron	
Oil Cooling System (Hy	draulic Tank	()
Reservoir – with sight and temperature gauge	1363 L	360 gal
Reservoir breather	Atmospher 10 micron	ic, filtered breather

Lubrication System

• Automatic lubrication system

Accessories, Tools and Handling Equipment

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Drill Pipe (optional)		
Diameter – customer	194 mm,	7.625 in,
specifications	273 mm	10.75 in
Wall thickness	25 mm	1 in
Length – for 16 m mast	13.7 m	45 ft
Length – for 20 m mast (2 each on starter string)	9.1 m	30 ft
Threads	Depends on	pipe size
Adapter Sub		
Diameter	Depends on	pipe diameter
Wall thickness	25 mm	1 in
Length	927 mm	36.5 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
Top thread	Depends on pipe diameter	
Bottom thread	Depends on pipe diameter	
able Bushing		
Roller deck bushing		
)eck Wrench		
Location	Drill deck	
Wrench plate – T1-steel	76 mm	3 in
Wrench positioning	Hydraulic c	ylinder
Impact means	Stationary jaw, flats at 15° off axis	
10B0 Wrench		
Location	Lower left, o	outside mast
Support	Mast-mount	ted
Wrench type	Patented HO	OBO (Hydraulic
	Operated Bi	eak Out)
Power	Hydraulic c	ylinders (3)
Pipe rack (inside the mast)		
Typical configuration	5-pod pipe c to 235 mm (9 diameter	earousel for up 9.25 in) outside

Typical configuration

Accessories, Tools and Handling Equipment (cont'd)

Winch			
Location	Front of ma	st in mast pivot area	
Rating			
Rated winch	3629 kg	8,000 lb	
Optional	5443 kg	12,000 lb	
Cable size	16 mm	0.625 in	
Safety hook	Swivel-type	positive lock	
Brakes	Automatic		
Auto shut-off	Located in o shuts off wit is seated	Located in crown, automatically shuts off winch when ball weight is seated	

Options

Dust Collection

Designed for high-capacity air systems, the Dry Dust Suppression System uses a fan-wheel arrangement with aggressively pitched fins/vanes that provide 173 m³/min (6,100 ft³/min) air flow and can develop up to 508 mm (20 in) water vacuum at the deck inlet.

Water Injection

Hydraulic pump and motor arrangement with below-deck tanks 2922 L (772 gal) capacity.

Cold Weather Package

Temperatures to:	-40° C	-40° F	

Heating and Circulation

Drainage for water-injection	-40° C	-40° F
system temperatures to:		

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

4-pod pipe carousel for 273 mm (10.75 in) outside diameter

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.

Dimensions

All dimensions are approximate.



1	26.84 m	88'1"	5	7.31 m	24'0"
2	23.24 m	76'3"	6	14.73 m	48'4"
3	25.55 m	83'10"	7	5.73 m	18'10"
4	29.15 m	95'8"			

MD6540 Rotary Blasthole Drill

Materials and specifications are subject to change without notice.

Featured machines in photos may include additional equipment.

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