Atlas Copco Production drilling rigs

Simba M6 C

Technical specification

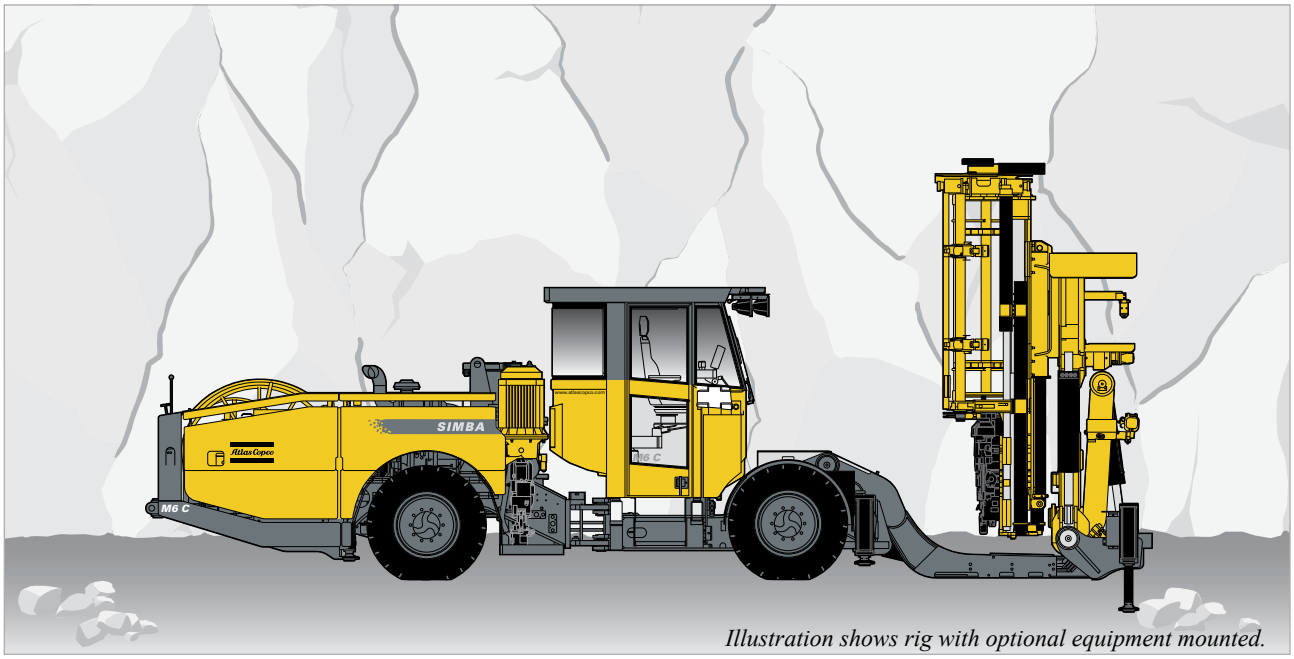


Illustration shows rig with optional equipment mounted.

Production/ long hole drilling rig with tophammer rock drill. The Rig Control System (RCS) provides efficient and high precision long hole drilling, and also ensures an ergonomic working environment and longer consumable life. Ring drilling with parallel holes upwards/downwards up to 3 m apart. Hole diameter 51–127 mm.

Standard features

» Rock drill

- Atlas Copco COP 1838ME
- Dual-damping system for shock wave absorption and continuous rock contact for high penetration
- Lubricated and pressurized mating surfaces giving long service intervals
- Shank adapters suitable for the given hole range

» Drilling unit

- Drill steel support for guidance during collaring and as support during rod handling
- Feed with hydraulic two-stage cylinder
- Front- and rear-mounted stingers
- Mechnized rod handling system

» Positioning unit

- Accurate, smooth and proportional positioning
- Mine-adapted, sturdy components
- Drilling unit facing canopy/cabin
- Tilt, rotation and pendulum arm

» Control system

- Rig Control System (RCS)
- Automation level: ABC Basic
- Angle reading instrument
- Rotation Pressure Controlled feed (RPCF)
- Dampening Pressure Controlled Impact (DPCI)
- Pre-set parameters for different drilling conditions

» Carrier

- Mine-adapted carrier with articulated steering and four-wheel drive
- Low-emission, turbo-charged diesel engine

» General

- Operator panel mounted under canopy
- Working lights on protective roof
- FOPS-approved protective roof
- Electrical cable reel

Atlas Copco

Specifications

STANDARD ROCK DRILL

	COP 1838ME
Shank adapter	R32, TC 35, T38, T45, TDS64
Hole diameter	51–89 (102) mm
Impact power	18 kW
Impact rate	54 Hz
Hydraulic pressure, max.	250 bar
Rotation motors	07/09
Rotation speed	0–210/0–140 rpm
Lub. air consumption	8 l/s (at 3 bar)
Water consumption	100–250 l/min
Weight	171 kg

FEED

BMH 200-series	BMH 214	BMH 215	BMH 216
Total length	3 160 mm	3 465 mm	3 770 mm
Drill rod length	1 220 mm	1 525 mm	1 830 mm
Total length with extractor	3 365 mm	3 670 mm	3 975 mm
Total length with extractor (COP4050)	3 590 mm	3 995 mm	3 975 mm

» Drilling unit

- Std. Rod Handling System, RHS 17 ..... 17+1 rods
- Adaptable to 4′, 5′ and 6′ rods
- Adaptable to R32, TC 35, T38, T45, TDS 64, TDS 78 and TDS 87 drill rods
- Mechanized drilling up to 32 m

» Positioning system

- Feed extension (with 4′ drill steel) ..... 900 mm
- Feed extension (with 5′and 6′ drill steel) ..... 1 200 mm
- Rotary Acurator BHR 60–2 for 360º ring drilling
- I-frame with pendulum arm ..... ± 1.5 m
- Stinger backward on feed ..... BSJ 8-200
- Stinger forward on feed ..... BSJ 8-115
- Feed dump, drilling ..... +45º forward and -30º backward

» Control system

- Rig Control System (RCS) – versatile and upgradeable to a higher degree of automation
- USB-stick for transfer of data and storage of drill parameters
- Exposed components are designed and tested acc. to IP 65
- Drill settings for up to five different drill bits
- Control panel with colour display
- Integrated diagnostic system
- Angle reading instrument

» Power pack

- Hydraulic pump for rotation, positioning, feed
- Hydraulic pump for percussion
- Pumps unloaded at start
- System pressure, max ..... 250 bar
- Hydraulic oil tank, volume max/min ..... 250/200 l
- Oil temperature gauge on oil tank, electronically supervised
- Low oil level indicator and shut-down
- Smart oil leakage shut-down system
- Electric oil filling pump
- Filtration, absolute ..... 16 µm
- Water cooled oil cooler in stainless steel
- Mineral hydraulic oil
- Oil filter indicator

» Electrical system

- Total installed power ..... 118 kW (158 kW*)
- Main motors ..... 2x55 kW (2x75 kW*)
- Voltage ..... 400–1 000 V (400–690 V*)
- Frequency ..... 50–60 Hz
- Starting method ..... star/delta (400–690 V)
- Electronic overload protection for electric motors
- Digital volt/amperage meter in electric cabinet
- Phase sequence indicator
- Earth fault indicator
- Battery charger
- Transformer ..... 8 kVA
- Working lights ..... Working lights 4 x 80W LED 24V DC
- Cable reel

**Equipped with COP4050*

» Air system

- Screw-compressor ..... Atlas Copco GA 5
- Capacity at 5400 rpm and 7 bar ..... 20 l/s
- Air pressure gauge
- Hydraulic driven axial piston motor ..... 10 cc
- Adjustable flow/pressure

» Water system

- Water booster pump
- Capacity at 15 bar boost ..... max 250 l/min
- Minimum water inlet pressure ..... 2 bar
- Hydraulic drive, axial piston motor ..... 10 cc
- Water pressure gauge
- Water flow guard

» Carrier

- Engine
  - Deutz TCD 4-cylinder 4.1 L04 (Stage III B/EPA Tier 4i) 115 kW/609 Nm*
  - Deutz TCD 4-cylinder 2013 L04 2 V (Stage III A/EPA Tier 3) 120 kW/572 Nm**

**Within CE/USA **Outside CE/USA*

- Articulated steering ..... ±41° steering angle
- Fixed seat for tramming, including safety belt
- Hydrostatic power steering system
- FOPS-approved protective roof
- Four-wheel drive
- Hydrodynamic ..... Clark 24000 transmission
- Front axle ..... DANA Spicer 123/90
- Rear axle ..... DANA Spicer 123/90, ±8º oscillation
- Automatic differential lock on front axle, limited slip
- Tyres ..... 12.00 R24 XZM
- Clearence outside axles 15º
- Hydraulic jacks, front ..... 2 extendable
- Hydraulic jacks, rear 2
- Service brakes 2 separate circuits (hydraulically applied, fully enclosed wet disc brakes)
- Emergency and parking brakes ..... SAHR
- Fuel tank, volume ..... 100 l
- Electric system ..... 24 V
- Batteries ..... 2 x 125 Ah
- Tramming lights ..... 6 x 40 LED, 2 x 70 W Halogen
- Gradeability at max load on drive wheels 1:4
- Tramming speed on flat ground ..... >15 km/h
- Tramming speed on incline 1:8 ..... >5 km/h
- Beacon warning lamp, horn, reverse alarm
- Illuminated stairs for platform
- Central lubrication system
- Fire extinguisher
- Spirit levels
- Catalyser
- Silencer

Specifications

DRILL STEEL

Rock drill	Hole diameter, mm	Drill rod	Shank adapter	Guide tubes
COP 1838ME	51–64	R32 Speedrod	R32	TDS 45
COP 1838ME	51–64	TC 35	TC 35	N/A
COP 1838ME	64–76	T38 Speedrod	T38	TDS 56
COP 1838HE	76–89	T45 Speedrod	T45	TDS 64
COP 2550UX	89–102	T51	T51	TDS 76
COP 2550UX	89–102	TDS 76	ST58	N/A
COP 4050MUX	89–127	TDS 76	ST 58	N/A
COP 4050MUX	89–127	TDS 87	ST 68	N/A

Optional equipment

» Drilling system

- Water mist flushing, water oil cooler, external air supply
- Water mist flushing, air oil cooler, external air supply
- Rock drill lubrication surveillance system
- Hole blowing kit
- Dry drilling system
- COP 1838MUX/COP 1838HE/COP 1838HUX, COP 2550UX, COP 3060MUX/COP 4050MUX

» Positioning system

- Rig alignment laser RAL 650
- Additional stinger forward on feed, BSJ 8-115 (stroke length 1,150 mm)
- Additional stinger backward on feed, BSJ 8-200 (stroke length 2,000 mm)
- Automatic lubrication for positioning/drilling system
- Central lubrication for positioning/drilling system
- Rod handling system RHS 27 (up to 51 m)
- Thread lubrication kit
- Stinger extension pieces

» Automation

- Remote Cradle Control/Remote Feed Control
- Simba ABC Regular without bit changer
- Simba ABC Total without bit changer
- Simba ABC Regular with bit changer
- Simba ABC Total with bit changer
- Breakthrough Automatic Stop
- Single Tele Remote Control
- Full Drill Data Handling
- Total Station Navigation
- Text Message System
- Drill Plan Handling
- Rig Remote Access
- Mine Navigation
- Void Detection

» Water system

- Water hose reel
- Water hose on reel

» Power packs

- Air-oil cooler kit
- Heater kit

» Electrical system

- Soft start for 400–700 V
- Electrical cable on reel, H07RN-F
- Electrical cable on reel, Buflex
- Plug PC4/PC5
- Socket PC4/PC5
- Switch gear
- Electrical outlet, 16 A
- Extra transformer, 15 kVA

» Cabin

- FOPS/ROPS approved cabin:
  - Swingable seat
  - Media player
  - Boot washing kit
  - Air conditioning unit without heating
- Stainless steel cabin
- Air conditioner with heating
- Front window, 24 mm
- FOPS-approved grizzly bar for front window
- Cabin lift/tilt system, 375 mm/15º
- Reversing camera with monitor
- Joystick controlled spotlight
- Low profile cabin

» Carrier

- Engine
  - Deutz TCD 6-cylinder 6.1 L06 (Stage III B/EPA Tier 4i)*
  - Deutz TCD 6-cylinder 2012 L06 2 V (Stage III A/EPA Tier 3)**

**Within CE/USA **Outside CE/USA*

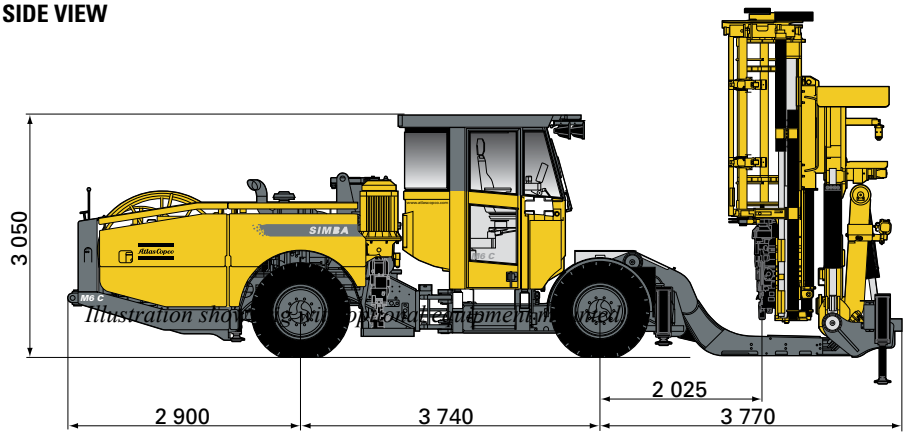
- Fire suppression system, manual
- Fire suppression system, automatic (check-fire)
- Fire suppression system, full automatic
- Particle filter UNIKAT
- Brake lights
- E-carrier

» Miscellaneous

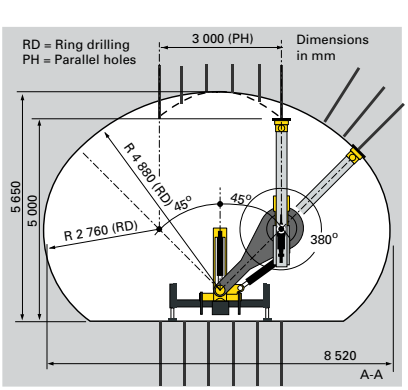
- Hose and cable guide at water/cable reel
- Additional control panel
- Manual rig washing kit
- Manual lubrication kit
- Remote operating kit
  - Trolley
  - 60 m cable
  - Connection
- Link-one parts book
- Manual spotlight
- Bit changer

Measurements

SIDE VIEW



COVERAGE AREA



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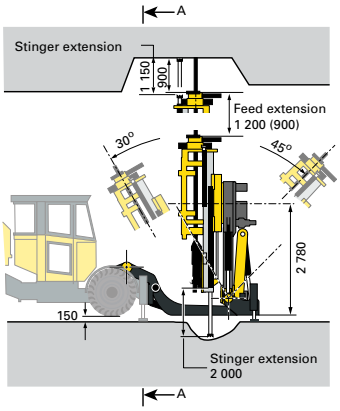

TURNING RADIUS

	depending on surface	
mm	Outer	6 900
	Inner	3 800

DIMENSIONS

mm	Width	2 210
	Height tramming	3 050
	Height roof up	2 945
	Length tramming	10 500
	Ground clearance	205

NOISE AND VIBRATION

	Operator sound pressure level in canopy, drilling, free field (ISO 11201)	106+-6 dB(A) re 20uPa
	Operator sound pressure level in cabin, drilling, free field (ISO 11201)	75+- 3 dB(A) re 20uPa
	Operator sound pressure level working close to machine, drilling, free field	106+-6 dB(A) re 20uPa
	Sound power level (ISO 3744), drilling, free field	126 dB(A) re 1pW
	Vibration levels seated, drilling (ISO 2631-1)	0.07+- 0.07 m/s^2
	Vibration levels standing, drilling (ISO 2631-1)	0.07+- 0.07 m/s^2

WEIGHT

	gross weight	
kg	Total	26 000
	Boom side	14 500
	Engine side	6 400

RECOMMENDED CABLE SIZE AND LENGTH

Voltage	Type	Dimension, mm²	Diameter, mm	Length, m
400 V	H07RN-F	4G150	67	60
440 V	H07RN-F	4G120	60	75
440 V	Buflex	3x150+3G35	52	100
460–500 V	H07RN-F	4G120	60	75
460–500 V	Buflex	3x150+3G25	52	100
500–550 V	H07RN-F	4G95	55	90
500–550 V	Buflex	3x120+3G25	46	135
660–700 V	H07RN-F	4G70	49	110
660–700 V	Buflex	3x95+3G16	42	155
1,000 V	Buflex	3x50+3G10	32	275

G = Protection yellow/green
Recommendations are given for surrounding temperature of 30°C.

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