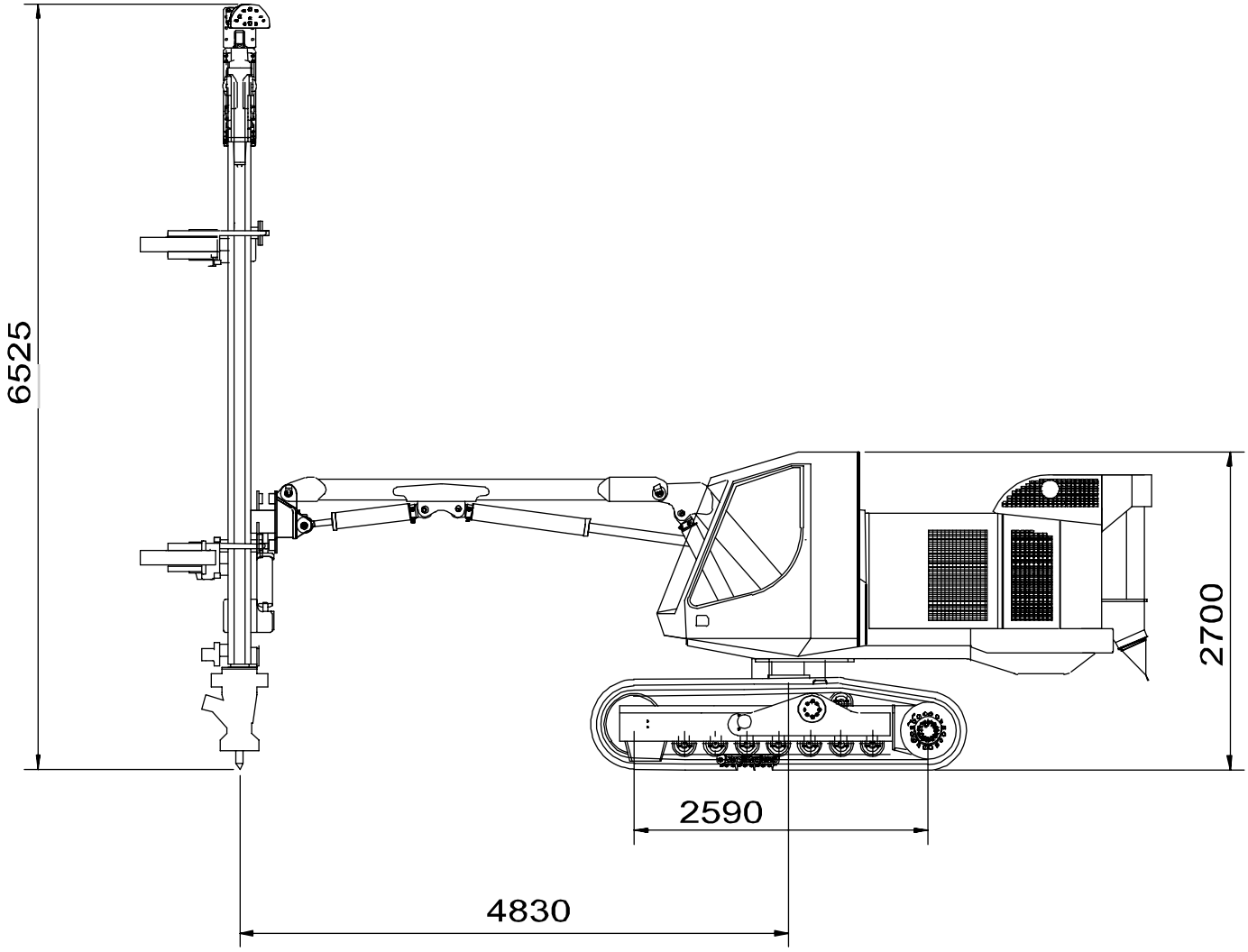

Technical description

Ranger 500 is a hydraulic, self-propelled, self-contained, crawler based surface drilling rig equipped with a cabin (F.O.P.S. and R.O.P.S.) and rod handling system. It drills vertical, inclined or horizontal holes with a diameter of 51 - 89 mm (2" - 3 1/2") utilizing 32, 38 or 45 mm (1 1/4", 1 1/2", or 1 3/4") extension rods.

Ranger 500 is equipped with HL 510, hydraulic top hammer rock drill. With high rotation torque, sufficient flushing and sophisticated ergonomic drilling control system the rig is well suited also in very fractured rock conditions. The rock drill and articulated boom are mounted on the turnable superstructure giving a drilling coverage of over 17 m^2 (190 sq - ft).

Two variable displacement pumps and two gear pumps are directly driven from one end of Caterpillar diesel engine, while the compressor is powered from the other end of the engine via cogged belt. Powerpack is mounted crosswise at the rear end of the superstructure to keep counterweight on the opposite side of the boom and feed regardless of the drilling direction.

PowerTrak Ranger 500 has an ergonomic cabin to increase operator's safety and visibility. The cabin is certified for R.O.P.S. (ISO-3471 Roll-Over protection Structure) and F.O.P.S. (ISO-3449 Falling Object Protection Structure). Windows are laminated for added safety. The noise level in the cabin is less than 80 dB(A). To keep dust at a minimum, the cabin is fitted with efficient filters for incoming fresh air. Adjustable seat, good visibility, adequate lighting and an optimum working temperature are among the many features ensuring a good operating environment. Drilling functions are proportionally controlled by one hydraulic joy-stick. Several routine functions e.g. antijamming are executed automatically. There are fewer levers to make it easy to use. Driving, rear jack and winch control can be done outside the cabin from the optional remote control box.

Typical applications for Ranger 500 are road cutting, pipe-line drilling and foundation drilling, as well as production drilling in medium size quarries. Therefore Ranger 500 is most often used by construction contractors, mines and quarries, and also included in the equipment fleet of rental houses as well.

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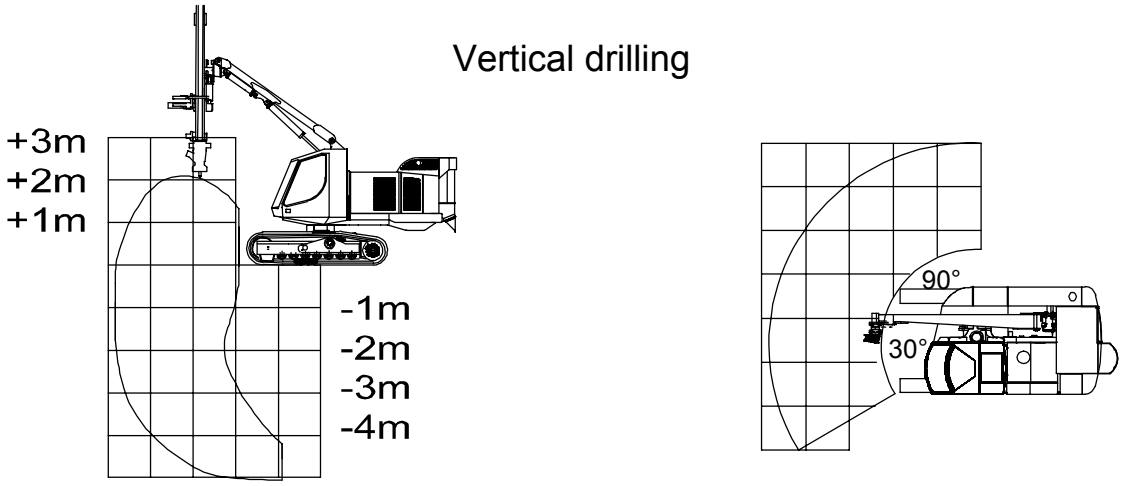
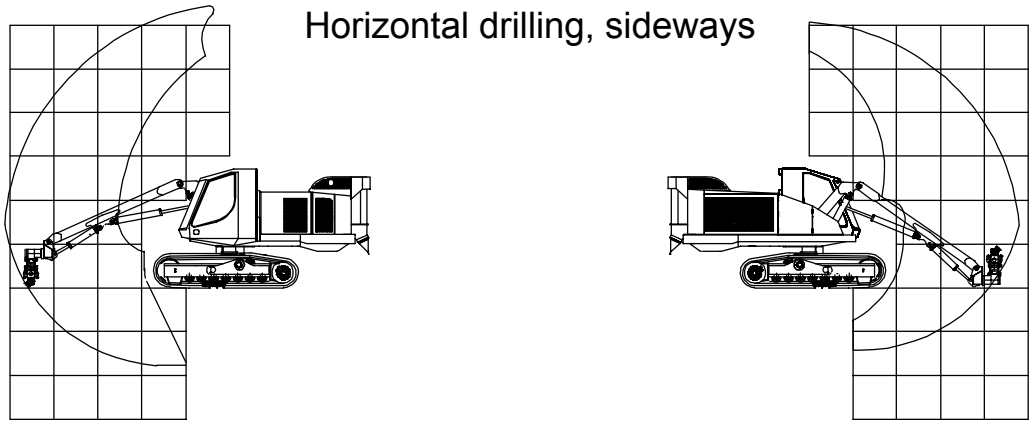
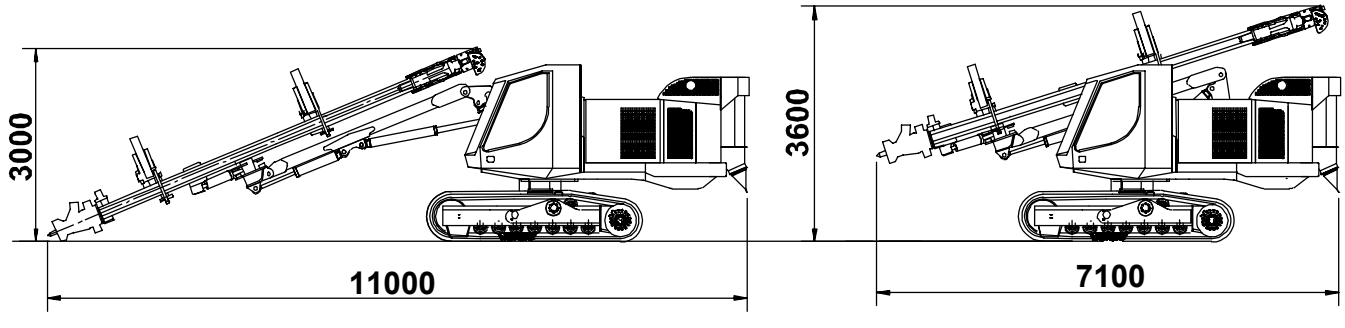
Drilling geometry





Transport dimensions



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Hydraulic rock drill

Rock drill type	HL 510
Drill rod diameters	32, 38, 45 mm
Shank adapter	Standard
Operating pressure	80-170 bar
Percussion rate	60 Hz
Percussion output power	15.5 kW
Maximum rotation torque	680 Nm/190 bar
Shank lubrication	Air / oil mist
Flushing	Air
Weight	130 kg

Chain feed and rod handler

Chain feed type	CF 145H + RH 714
Length of feed	6 525 mm
Rock drill travel	4 200 mm
Max. length of starter rod	4 305 mm
Max. hole length with starter rod	3 600 mm
Feed/pull out force	20 kN
Travelling hose reel	Standard
Front jaws	Centralizing Pito 12H
Rod handler type	RH 714
Storage capacity with MF-rods	6+1
Steel lengths	3 050 or 3 660 mm
Max. hole depth with 45 mm rods	25 m
Feed extension travel	1 350 mm
Feed swing	±45° (±45° with pin change)
Feed tilt	125°
Weight without steels	1 200 kg

Articulated boom

Boom type	DB 700
Boom length	4.8 m
Drilling coverage on flat	17.6 m^2
Collaring height	+2.1 m/-5.0 m
Horizontal holes	Sideways, forwards

Carrier

Track type	FL 6
Grouser plate width	310 mm
Ground contact length	2 590 mm
Ground pressure	0.75 kg/cm^2
Ground clearance	440 mm
Turnable superstructure	120°
Oscillation angles	± 10°
Tramming force	110 kN
Max. tramming speed	3.5 km/h

Powerpack

Engine type	Caterpillar 3116 DIT
Max. tilt angles in all directions	± 45°
Number of cylinders	6
Engine output	108 kW / 2 200 rpm
Transmission type	Direct/cogged belt
Hydraulic pumps	2 variable, displacement piston, two gear pumps
Screw compressor type	Enduro 12
Air flushing capacity	5.8 m^3/min
Flushing air pressure	4-10 bar
Air cleaner	2 pcs, with ejector and safety element
Fuel tank	260 l
Average fuel consuption	14-21 l/h
Fuel saving system	Standard
Weight	1 150 kg

Hydraulic system

Driving, boom and drilling	Load sensing system
Cooling and dust collector	Open center
Filtration rate	12 micron abs., return 25 micron, pressure
Cooling capacity	up to +50°C ambient
Hydraulic oil tank	200 l
Shank lubrication device	SLU 18-1

Control system

Driving control	Pilot operated, hydraulic
Boom control	Direct operated, hydr.
Drilling	Pilot controlled (el/hydr.)
Rod handler	Electric remote
Collaring control	Stepless
Percussion control	Controlled by feed pressure (THC 700)
Antijamming system	Hydraulic
Voltage	24 VDC

Operator's cabin

Cabin type	Ergo
Certificates	F.O.P.S. and R.O.P.S.
Noise level in the cabin	below 80 dB(A)
Controls	Drilling, tramming, boom and rod changer
Heaters	Standard
Pressurization	Standard
Seat	Multiposition
Vibration dampening	Standard
Windows	Safety laminated, tinted, with wipers
Power take-off	12 VDC

Dust collection system

Dust collector type	DC 700H
Capacity/vacuum	23 m^3/min at 1 000 mm vacuum H_2O
Filter elements/material	10 pcs/fiber
Total filter surface	8 m^2
Hydraulic motor output	12 kW
Weight	190 kg

Transport dimensions

Weight (without options)	13 400 kg
Width	2.45 m
Height	3.6 m / 3.0 m
Total length	7.1 m / 11.0 m

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Standard components

1.	Rock drill	HL 510, hydraulic
2.	Chain feed	CF 145H
3.	Rod handler	RH 714 incl. 1 set of jaws
4.	Boom	DB 700, articulated
5.	Carrier	Track mounted, turnable superstructure
6.	Powerpack	Diesel driven, hydraulic pumps and on-board compressor
7.	Hydraulic system	Load sensing and open center
8.	Control system	THC 700
9.	Operator's cabin	F.O.P.S. and R.O.P.S.
10.	Dust collection system	DC 700 H, hydraulic
11.	Working lights	7 pcs
12.	Gauge set	For accumulator pressure checking
13.	Reversing alarm	
14.	Manuals	Service and spare parts manuals: 2 x paper copy 2 x CD-ROM (Toolman)
15.	EU-safety devices	

The jaws for drill steels

	Drill steel type	Drill steel diameter	Recommended hole diameter
1	Extension rods	32 mm 1 1/4"	45 - 57 mm 1 3/4" - 2 1/4"
2	MF-rod	32 mm 1 1/4"	45 - 57 mm 1 3/4" - 2 1/4"
3	Extension rods	38 mm 1 1/2"	64 - 70 mm 2 1/2" - 2 3/4"
4	MF-rod	38 mm 1 1/2"	64 - 70 mm 2 1/2" - 2 3/4"
5	Extension rods	45 mm 1 3/4"	76 - 89 mm 3" - 3 1/2"
6	MF-rod	45 mm 1 3/4"	76 - 89 mm 3" - 3 1/2"

Note

- not with 10' MF-rods
- if several jaws selected please specify jaws assembled

Selection of options

1. Air conditioning
2. Rod greasing system
3. P&Q electric vertical angle indicator (± 6 deg.)
4. Electric angle indicator TIM 2302 with aiming unit
5. Measuring system TIM 2303 with aiming unit
6. Laser based measuring system TIM 2305
7. Electric filling pump for refuelling
8. Remote control box; for rear ground support, driving and oscillation
9. Remote control box + hydraulic winch with cable tightness automatics (replaces previous option)
10. Hydraulic rear ground support
11. Three-bar grouser plates
12. Guides for grousers
13. Fuel operated heater for cabin, hydr. oil and engine
14. Flushing control automatics
15. Shut down of suction for water holes
16. Sanroc Mini H hydraulic bit grinder
17. Movable drill steel support
18. Primary separator PE 50
19. Horizontal drilling kit
20. Ether starting aid for engine, without ether bottle
21. Radio with CD player
22. Central lubrication system
23. Kit for alternative steels
24. Water injection system with tank
25. Water injection system w/o tank
26. Biogradeable hydraulic oil, Shell naturelle HFE 46 or HFE 68 (synthetic ester)
27. Extra manuals
28. First service kit for Ranger 500
29. Special tools for HL 510, field kit ID 880 817 19
30. Special tools for HL 510, complete ID 152 257 68

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