

R-416

HYDRAULIC ROTARY RIG



R-416

HYDRAULIC DRILLING RIG

A new model

The R-416 drilling rig on new Caterpillar 3.25 C high power module has been designed to perform the following jobs:

- **bored pile with or without drilling fluid;**
- **bored pile with casing installed by oscillator or rotary crowd system;**
- **continuous flight auger pile (CFA).**

The main features of R-416 are the followings:

- Machine class: 45 tons;
- New Caterpillar Power 3.25 C module c/w diesel engine and sound proofed canopy, mounted on a 360 degrees slew ring;
- New electronic engine 3126 ATAAC with more power (313 BHP) and meeting the most recent emission regulations;
- New powerful rotary: 161 kNm;
- Self-erecting mast able to withstand the max torque over the whole length;
- Casing driving by rotary crowd system;
- Crowd system by 5,1 m hydraulic cylinder;
- Advanced instrumentation;
- Reliability and safety;
- Stability and easy to handle;
- High productivity;
- Easy to transport;
- Mechanical and hydraulic pre-arrangement for casing oscillator (available on request);
- Crowd system by winch (optional).

Large diameter bored pile

Max pile diameter	mm	1500
Max cased diameter	mm	1300
Max pile depth	m	55
Max nominal torque	kNm	161
Spin off speed	rpm	160
Main winch nominal line pull	kN	150
Service winch nominal pull	kN	65
Engine ¹	type	CATERPILLAR 3126 ATAAC-HEUI
Max Power	kW (BHP)	230 (313) @ 2500 rpm
Crowd system by cilinder	kN	154 / 120
Crowd stroke	mm	5100
Crowd system by winch	kN	165
Crowd winch stroke	m	11
Operating weight ²	ton	47 / 49

The nominal values are referred to 100% total efficiency. / ¹ Meeting the EPA-TIER2 emission regulations. / ²Weight is based on final configuration.

Continuous Flight Auger (CFA)

Max pile diameter	mm	750 / 1000
Max pile depth	m	20,5
Max nominal extraction force	kN	500
Max nominal torque	kNm	161
Operating weight	ton	48

Mechanical locking kelly bar – Ø 355 mm

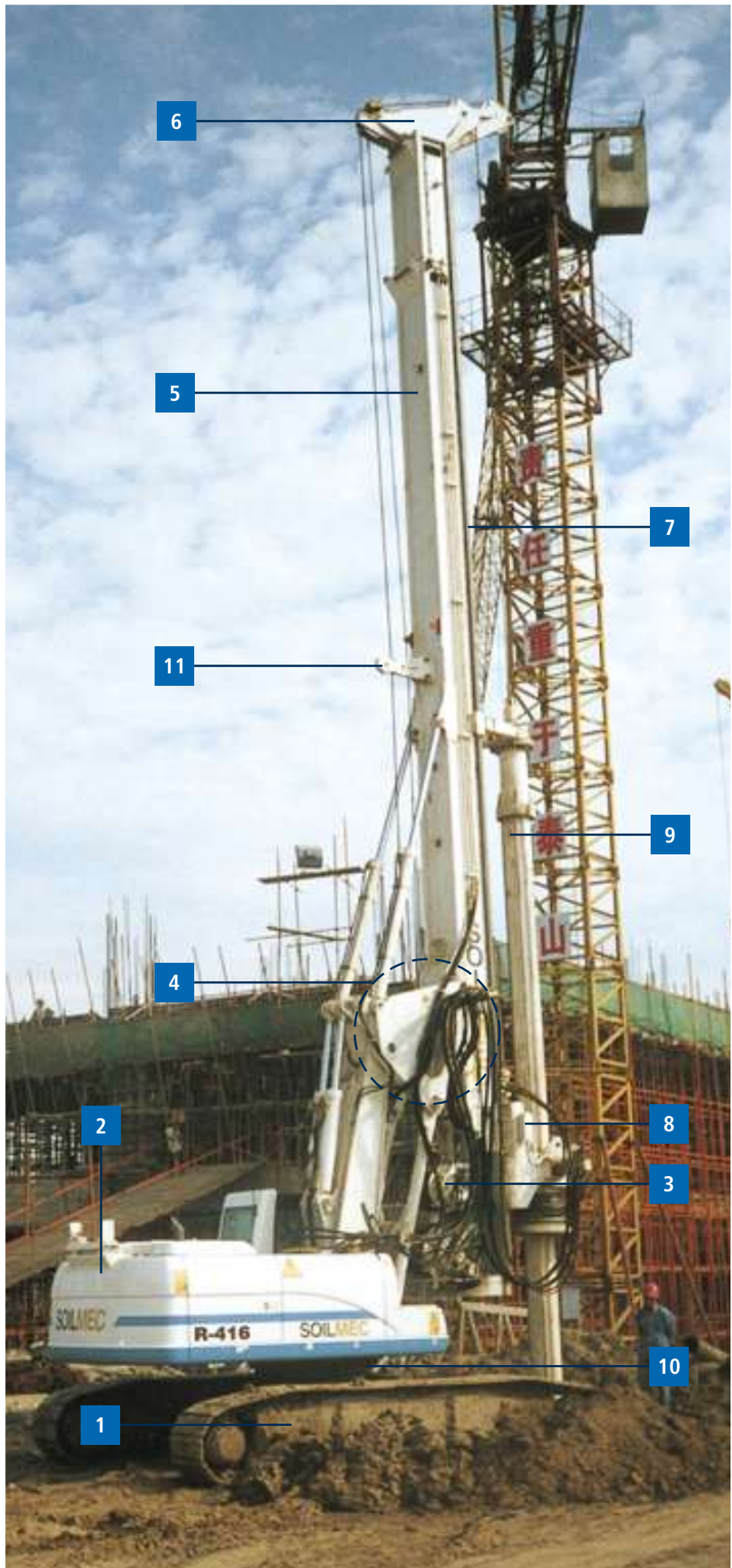
elements n°	length m	depth m	weight ton	H height m
4x	6,0	18,5	2,4	6,9
4x	8,0	28,5	3,0	6,9
4x	9,0	32,5	3,3	6,6
4x	10,5	38,5	3,8	5,1
4x	12,0	45,0	4,2	3,4
4x	13,0	48,0	4,6	2,6

H=Kelly stub height from ground level

Friction kelly bar – Ø 355 mm

elements n°	length m	depth m	weight ton	H height m
4x	6,0	20,0	2,4	6,9
4x	9,0	33,0	3,4	6,6
4x	11,0	40,0	3,7	4,2
4x	12,0	46,0	4,2	3,4
5x	8,5	39,0	4,1	6,9
5x	9,0	41,0	4,3	6,6
5x	11,0	50,0	5,1	3,6
5x	12,0	56,0	5,5	3,8

- 1 - **Undercarriage** class D5 with expandable tracks by means of hydraulic cylinders.
- 2 - **Caterpillar** Power module 3.25 C c/w diesel engine CAT 3126ATAAC and sound proofed canopy, mounted on a 360 degrees slew ring.
- 3 - **Winch** assembly.
- 4 - **Parallelogram system** which allows various working radius and always maintaining the mast in vertical position.
- 5 - **Self-erecting mast** which can withstand the max torque over the whole length it is composed by 11,43 m intermediate element, 2,1 m bottom element and 1,85 m extension.
- 6 - **Sheave cathead.**
- 7 - **Crowd system** by 5,1 m hydraulic cylinder.
- 8 - **Rotary head** with 4 drilling speeds and one high spin-off speed. For each drilling speed the max torque is obtained.
- 9 - **Telescopic kelly bar** with guide on mast either available friction or mechanical locking type.
- 10-**Mechanical and hydraulic** pre arrangement for casing oscillator (optional).
- 11-**Crowd system** winch (optional).



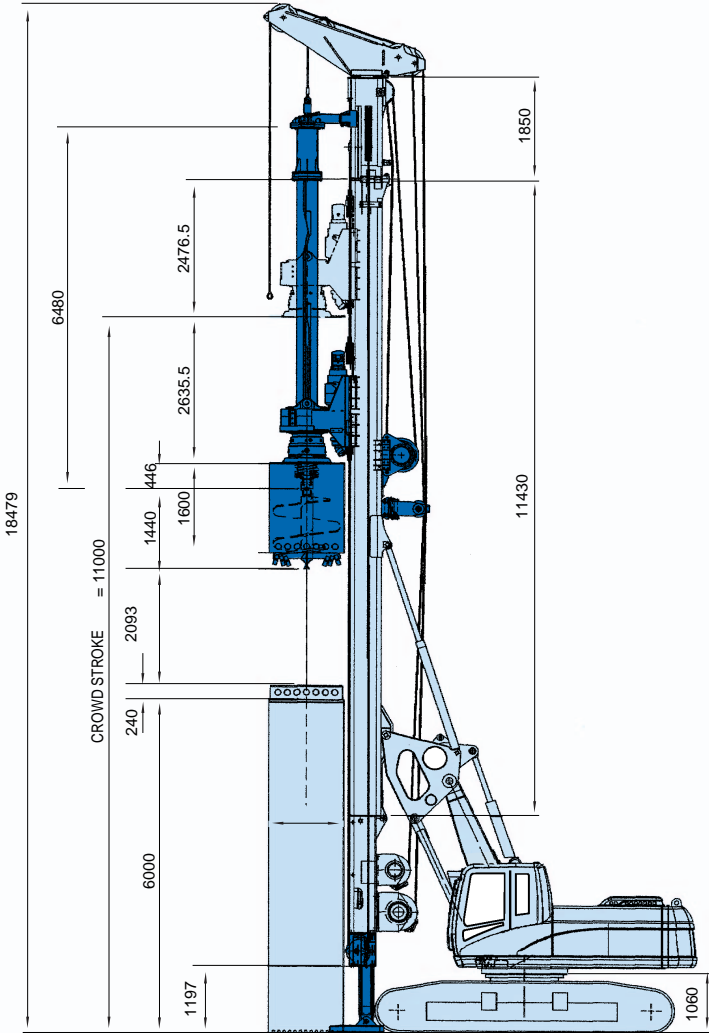
The new R-416 is installed on new "Caterpillar" turret with easy access to any hydraulic and mechanical parts. New designed cabin allows better visibility and easier way of use.

R-416

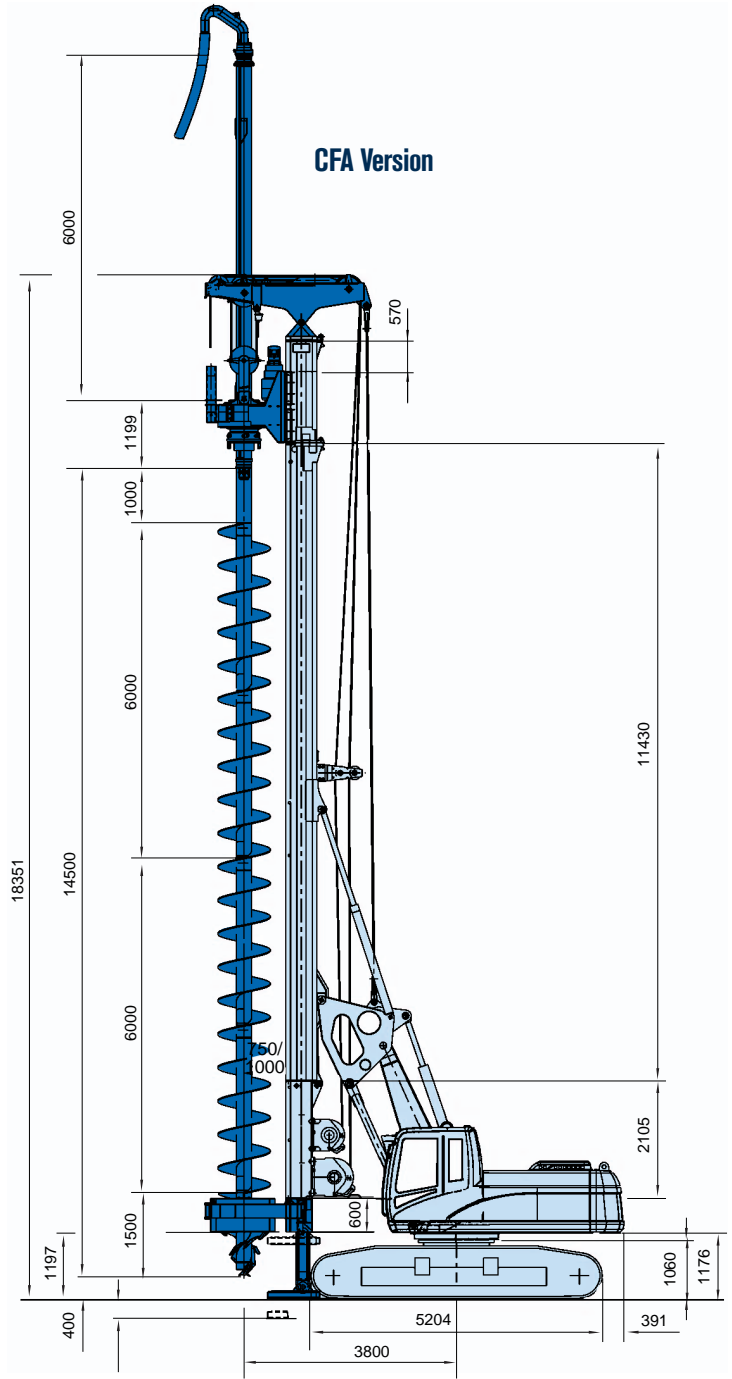
CROWD SYSTEM BY WINCH / CFA

Working Condition

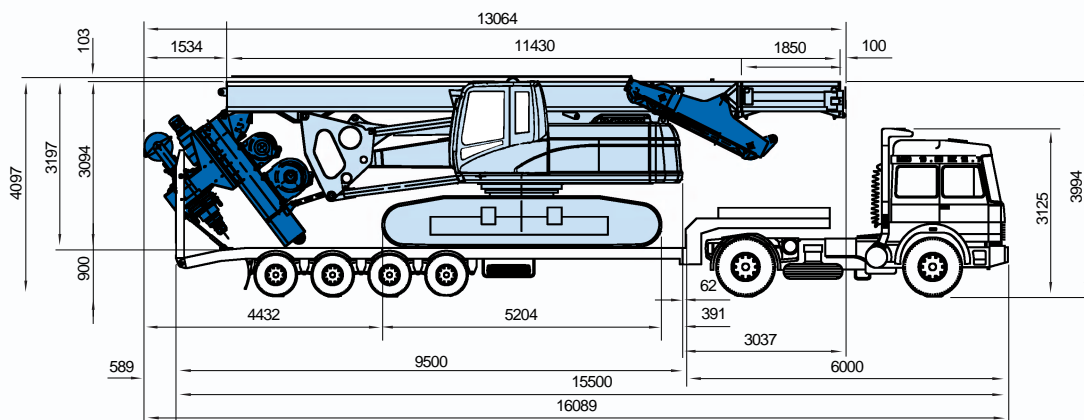
Crowd System by Winch



CFA Version



Transport Conditions - CFA







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