

**SR-20**

LDP  
CFA

Hydraulic  
Rotary Rig



Hydraulic Rotary Rig **SR-20**

**soilmec**   
Drilling and Foundation Equipment



## Rotary

Soilmec rotaries are designed and manufactured to meet the need for increase production and performance on various applications, with the added benefit of increased component life and reliability.

## Ease of transport and quick assembly

- Can be transport complete with kelly bar.
- No special road permits required.

## Compact powerful engine

Soilmec installs large displacement engines, providing exceptional performance and reliability.

- High performance, availability and reliability by using tried-and-tested technology with high power-to volume-ratio.
- The modern electronic injection system ensures low fuel consumption and therefore low operating costs.
- Low noise emissions, smooth running characteristics and durability.
- Meets exhaust emission regulations 2004/26/EU, Step III A and US-EPA Tier 3

## DMS control system

DMS is an innovative system, developed by Soilmec, which controls and monitors the operation of the machine. For ease of operation the system is controlled by a touch screen located in the cab. The system main function, is to enable the machine to perform different functions more efficiently.

A dedicated power module electronic control system ensures the main pumps and diesel engine work at their most effective and productive levels.

## Ergonomic design

The cab is designed to be spacious, quiet and comfortable for the operator, assuring high productivity throughout the working day. Controls are conveniently located for easy operation.

## The Soilmec advantage

- A real multifunctional machine, designed from scratch to give you the best drilling solution.
- Long life expectancy with a high residual value.
- Best price/performance ratio.
- Built with the customer in mind.



- 1** Undercarriage
- 2** Turret
- 3** Winches
- 4** Parallelogram system
- 5** Self-erecting mast
- 6** Cathead
- 7** Crowd system
- 8** Rotary head
- 9** Telescopic kelly bar
- 10** Counterweight
- 11** Cab

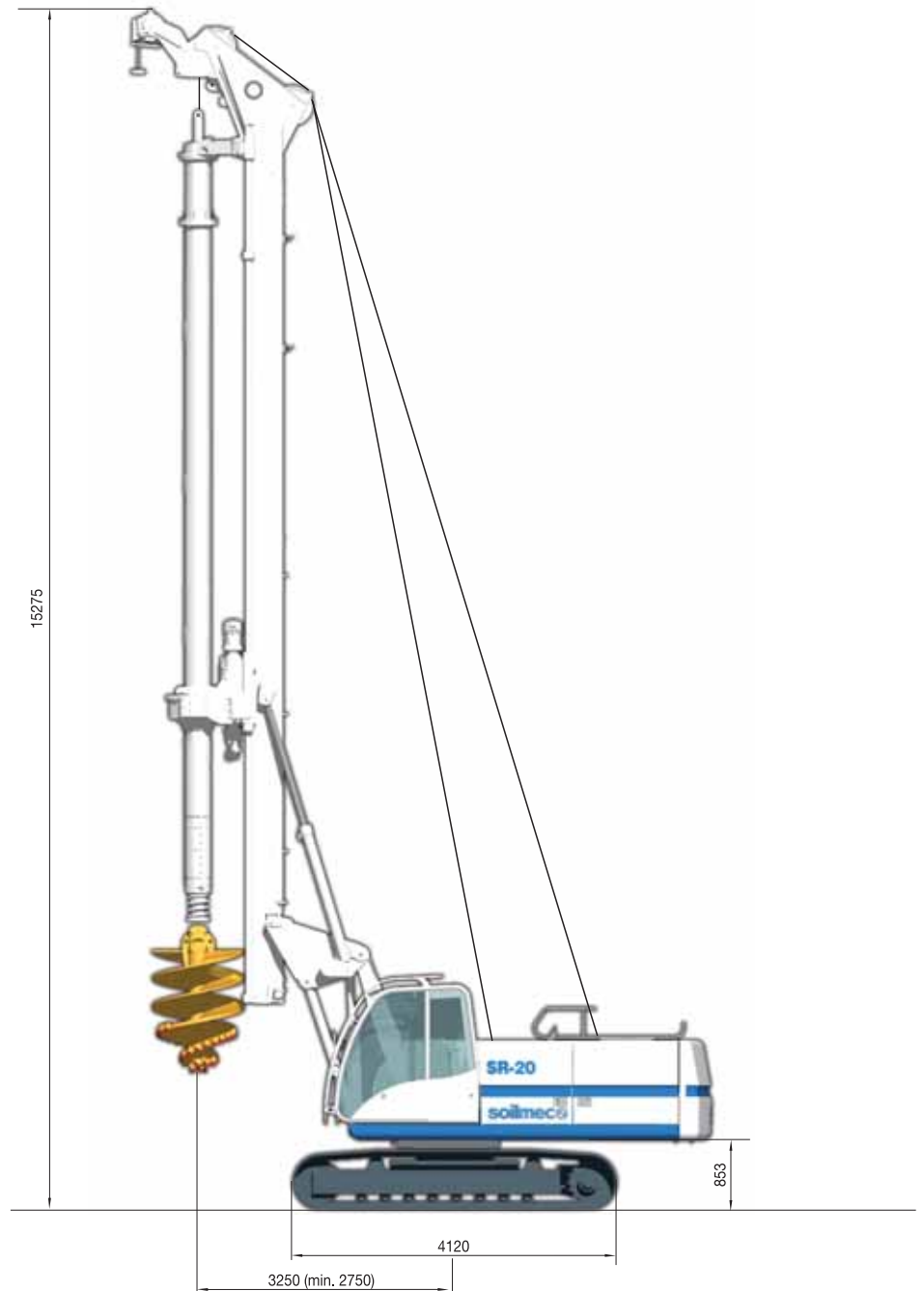
Cummins QSB4.5		
Power @ 2200 rpm	<b>119 kW</b>	<i>159 HP</i>
Operating weight (approx)		
with kelly	<b>28000 kg</b>	<i>61725 lb</i>
Torque	<b>100 kNm</b>	<i>73755 lb<sub>f</sub>ft</i>
Max diameter	<b>1200 mm</b>	<i>47 in</i>
Max depth	<b>40 m</b>	<i>131.2 ft</i>







# LDP - KELLY DRILLING SYSTEM

## Crowd Cylinder Version

The hydraulic drilling rig SR-20 has been specially designed to suit the following applications:

- **cased bored piles** with casing driven directly by rotary head or optionally by casing oscillator powered by the base carrier itself;
- **deep uncased bored piles** stabilized by drilling fluid or dry hole;
- **CFA (Continuous Flight Auger) piles** by means of long auger string.



		Rotary Drive - Spinoff type	
<b>Overall height</b> (kelly system)		15275 mm	601 in
<b>Operating weight</b> (approx) with kelly 4x13.5		28000 kg	61729 lb
	<b>Rotary Drive - Spinoff type</b>		
	- Torque (nominal)	100 kNm	73755 lbf*ft
	- Speed of rotation (max)	43 rpm	43 rpm
	- Spinoff speed	147 rpm	147 rpm
	<b>Crowd cylinder system</b>		
	- Crowd force pull down	68 kN	15287 lbf
	- Crowd force pull up	124 kN	27876 lbf
	- Speed down	7 m/min	23 ft/min
	- Speed up	15 m/min	49.2 ft/min
	- Stroke	3500 mm	138 in
	<b>Main winch</b>	controlled descent	controlled descent
	- Line pull (1st layer)	103 kN	23155 lbf
	- Rope diameter	20 mm	0.79 in
	- Rope length	33 m / 73 m	108 ft / 239 ft
	- Line speed (max.)	78 m/min	256 ft/min
	<b>Auxiliary winch</b>	controlled descent	controlled descent
	- Line pull (1st layer)	41 kN	9217 lbf
	- Rope diameter	15 mm	0.59 in
	- Line speed (max.)	67 m/min	220 ft/min
	<b>Auxiliary winch</b>	free fall	free fall
	- Line pull (1st layer)	41 kN	9217 lbf
	- Rope diameter	15 mm	0.59 in
	- Line speed (max.)	67 m/min	220 ft/min
	<b>Mast inclination</b>		
	- Backward/Forward/Lateral	12° / 4° / 3°	12° / 4° / 3°

Soilmec integrates high quality level components: Gearmatic, Hydromatic, Lohmann, Rothe erde, Trasmital, Zollern.

## Standard equipment

- Rotary drive spinoff type
- Main winch controlled descend type
- Main and auxiliary winch grooved drums
- Hoist limit switch on main and auxiliary winches
- Swivel for main rope
- Crowd in fast or slow mode
- Service rope parking point

### Measuring and control equipment

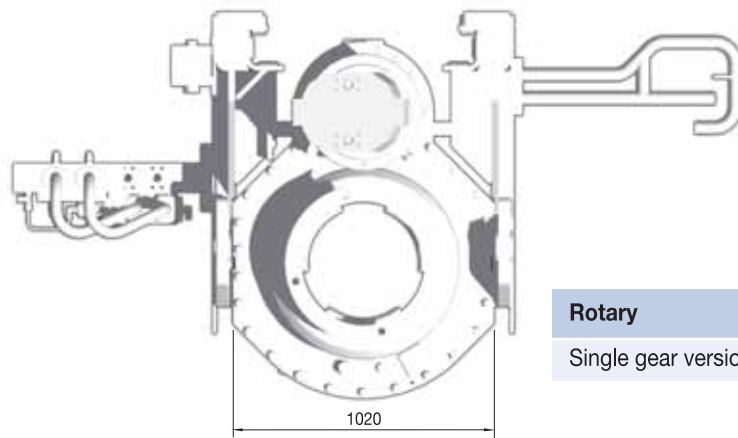
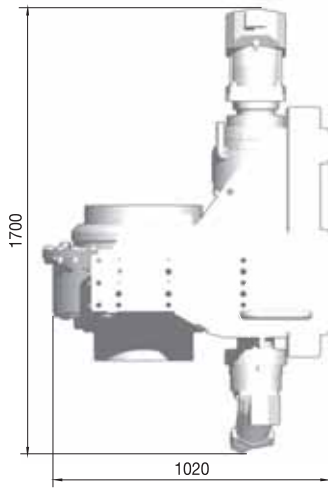
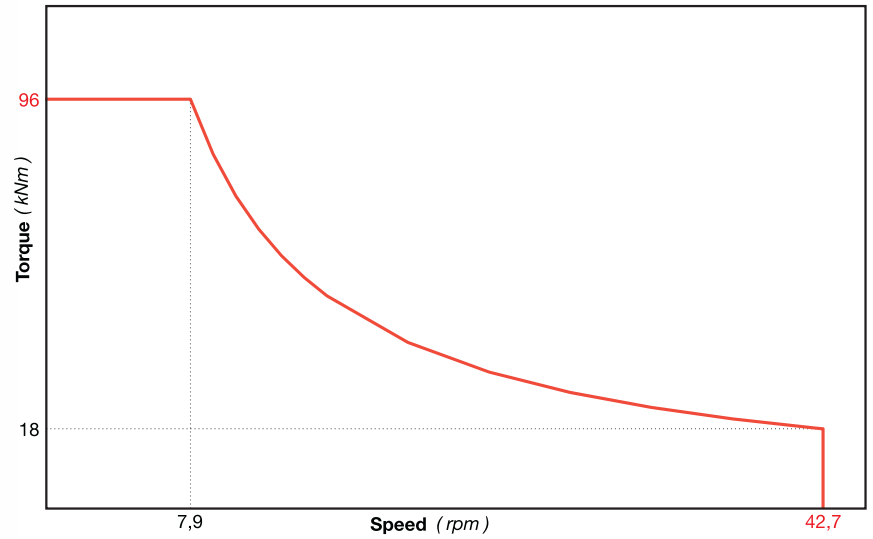
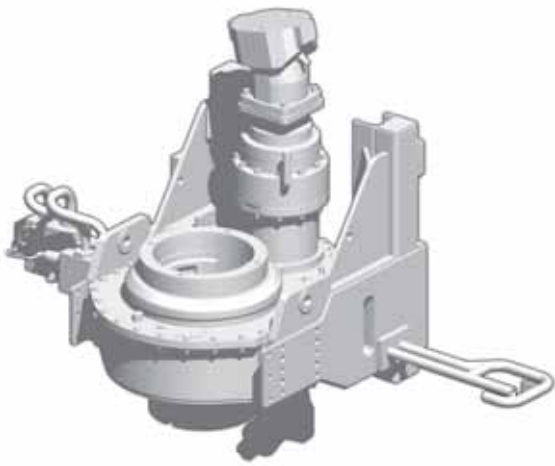
- Mast inclination measurement on X/Y axes (*digital/analog display*)
- Mast automatic vertical alignment
- Depth measuring device on main winch
- Speed measuring device on rotary
- Crowd pressure setting



Crowd cylinder version

# TECHNICAL DATA - ROTARY DRIVE

## Rotary RD-160



Rotary	Weight	
Single gear version	2700 kg	5952 lbs





	<b>Engine</b>	<b>Cummins QSB4.5</b>	<i>Cummins QSB4.5</i>
	- Rated output SAE J1995	<b>119 kW @ 2200 rpm</b>	<i>159 HP @ 2200 rpm</i>
	- Engine conforms to Exhaust emission Standard	<b>EU stage III A, US EPA Tier 3</b>	<i>EU stage III A, US EPA Tier 3</i>
	- Sound pressure level in cabin (EN791 Annex A)	<b>74 dB (A)</b>	<i>74 dB (A)</i>
	- Sound power level (2000/14EG u. EN791, Annex A)	<b>106 dB (A)</b>	<i>106 dB (A)</i>
	<b>Hydraulic system</b>		
	- Hydraulic power setting	<b>80 kW</b>	<i>107 HP</i>
	- Hydraulic pressure	<b>30 MPa</b>	<i>4351 psi</i>
	- Flow rates (main circuits)	<b>286 l/min</b>	<i>76 US gal/min</i>
	<b>Undercarriage (retractable crawler frames)</b>		
	- Overall width of crawlers retracted	<b>2500 mm</b>	<i>99 in</i>
	- Overall width of crawlers extended	<b>3400 mm</b>	<i>134 in</i>
	- Width of triple grouser track shoes	<b>600 mm</b>	<i>24 in</i>
	- Overall length of crawlers	<b>4120 mm</b>	<i>162 in</i>
	- Traction force	<b>218 kN</b>	<i>49007 lbf</i>
	- Travel speed	<b>2,2 km/h</b>	<i>1.4 mph</i>

\* Soilmec integrates high quality level components: Berco, Rexroth, Trasmital.

## Standard equipment

- Oscillator attachment
- Emergency mode of operation for engine
- Engine diagnostic system
- Diagnostic panel for hydraulic functions
- Transport securing lugs on crawler units
- Access ladder on upper carriage
- On-board lighting set
- On-board tool set
- Electric refuelling pump
- High-comfort operator's cab
- Protective roof grate (*FOPS compliant*)
- Air conditioning system
- Radio and CD player

## Optional equipment

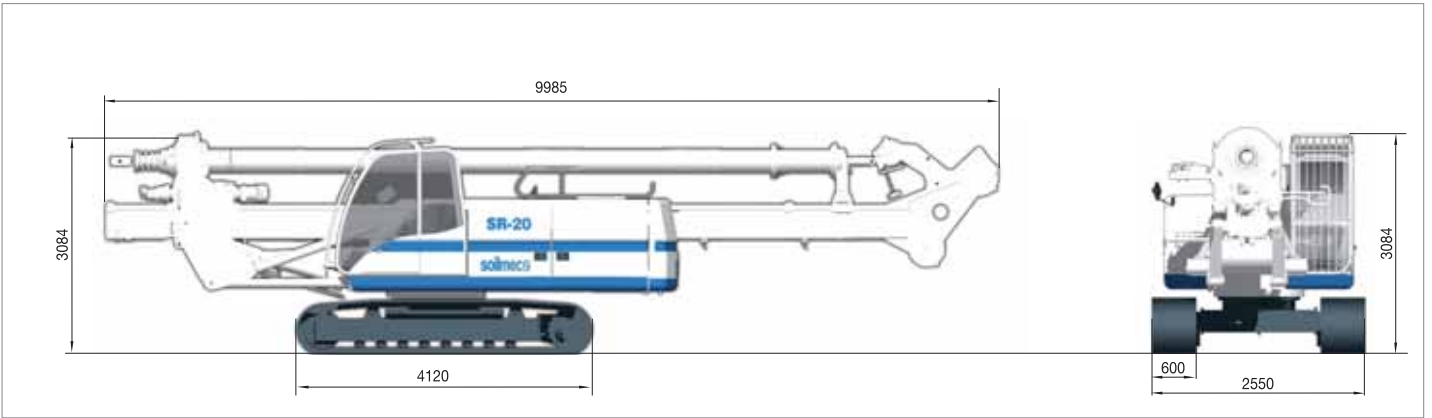
### Base carrier

- Biodegradable oil
- Pressurized air conditioning system

### Drilling Equipment

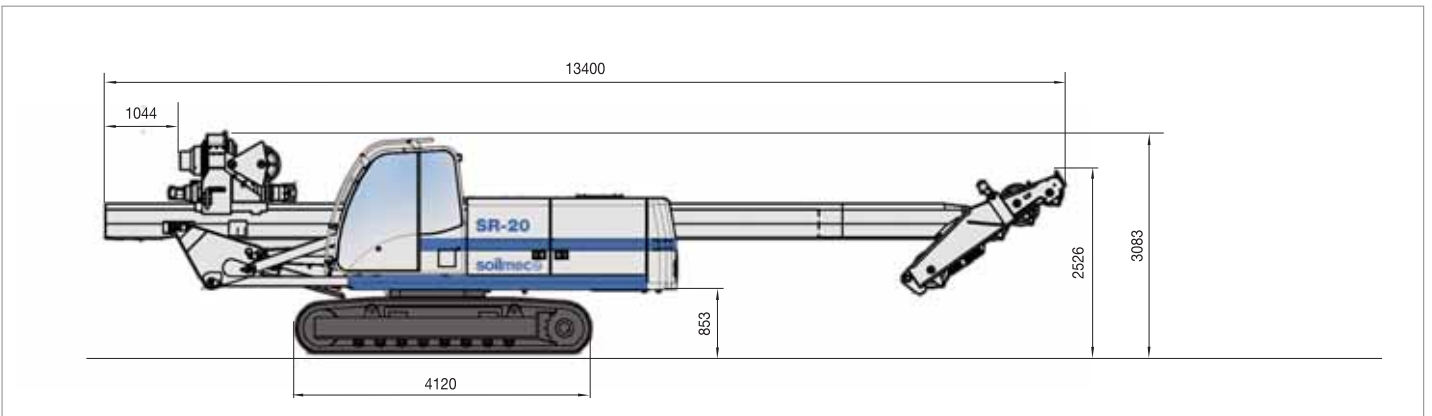
- Freefall auxiliary winch
- Swivel for auxiliary rope
- Central lubrication system
- Videocamera attachment

## TRANSPORT DATA



Transport LDP version

Weight **26000 kg** 57320 lb

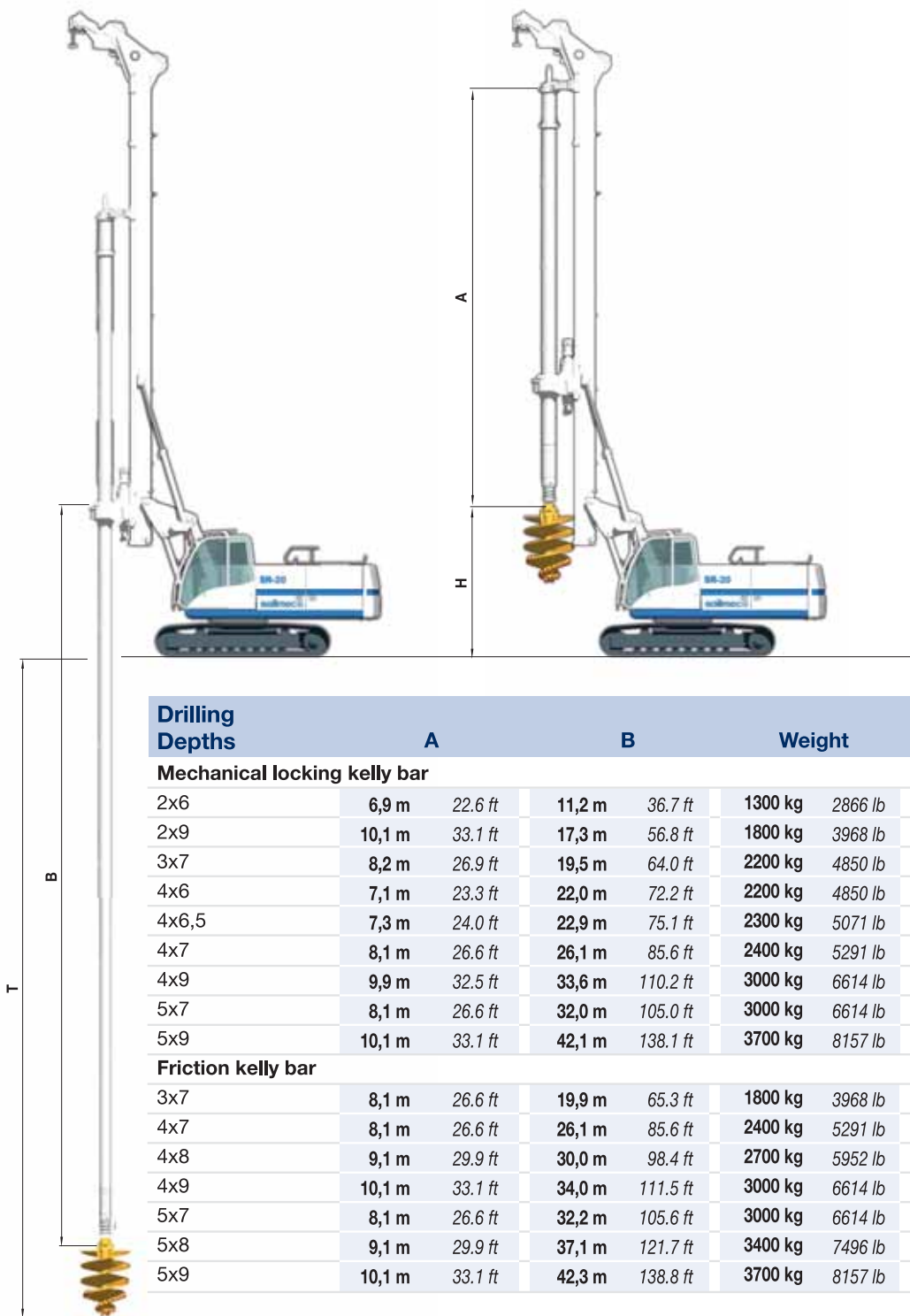


Transport CFA version

Weight **24000 kg** 52910 lb



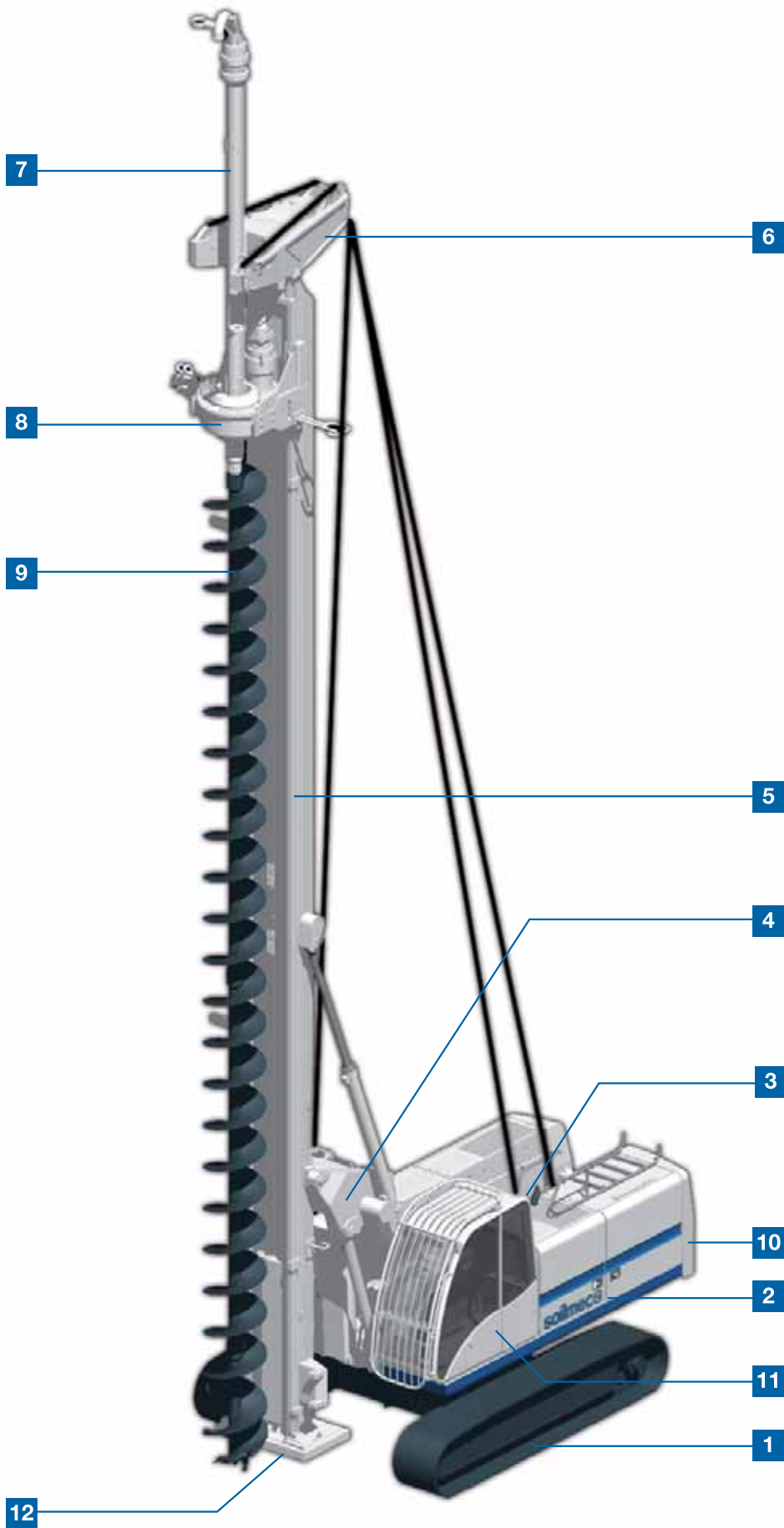




Drilling Depths	A		B		Weight		H		T	
<b>Mechanical locking kelly bar</b>										
2x6	6,9 m	22.6 ft	11,2 m	36.7 ft	1300 kg	2866 lb	6,6 m	21.7 ft	9,7 m	31.8 ft
2x9	10,1 m	33.1 ft	17,3 m	56.8 ft	1800 kg	3968 lb	3,4 m	11.2 ft	15,8 m	51.8 ft
3x7	8,2 m	26.9 ft	19,5 m	64.0 ft	2200 kg	4850 lb	5,3 m	17.4 ft	18,0 m	59.1 ft
4x6	7,1 m	23.3 ft	22,0 m	72.2 ft	2200 kg	4850 lb	6,4 m	21.0 ft	20,5 m	67.3 ft
4x6,5	7,3 m	24.0 ft	22,9 m	75.1 ft	2300 kg	5071 lb	6,2 m	20.3 ft	21,4 m	70.2 ft
4x7	8,1 m	26.6 ft	26,1 m	85.6 ft	2400 kg	5291 lb	5,4 m	17.7 ft	24,6 m	80.7 ft
4x9	9,9 m	32.5 ft	33,6 m	110.2 ft	3000 kg	6614 lb	3,6 m	11.8 ft	32,1 m	105.3 ft
5x7	8,1 m	26.6 ft	32,0 m	105.0 ft	3000 kg	6614 lb	5,4 m	17.7 ft	30,5 m	100.1 ft
5x9	10,1 m	33.1 ft	42,1 m	138.1 ft	3700 kg	8157 lb	3,4 m	11.2 ft	40,6 m	133.2 ft
<b>Friction kelly bar</b>										
3x7	8,1 m	26.6 ft	19,9 m	65.3 ft	1800 kg	3968 lb	5,4 m	17.7 ft	18,4 m	60.4 ft
4x7	8,1 m	26.6 ft	26,1 m	85.6 ft	2400 kg	5291 lb	5,4 m	17.7 ft	24,6 m	80.7 ft
4x8	9,1 m	29.9 ft	30,0 m	98.4 ft	2700 kg	5952 lb	4,4 m	14.4 ft	28,5 m	93.5 ft
4x9	10,1 m	33.1 ft	34,0 m	111.5 ft	3000 kg	6614 lb	3,4 m	11.2 ft	32,5 m	106.6 ft
5x7	8,1 m	26.6 ft	32,2 m	105.6 ft	3000 kg	6614 lb	5,4 m	17.7 ft	30,7 m	100.7 ft
5x8	9,1 m	29.9 ft	37,1 m	121.7 ft	3400 kg	7496 lb	4,4 m	14.4 ft	35,6 m	116.8 ft
5x9	10,1 m	33.1 ft	42,3 m	138.8 ft	3700 kg	8157 lb	3,4 m	11.2 ft	40,8 m	133.9 ft

# APPLICATIONS

## CFA - Continuous Flight Auger



- 1 Undercarriage
- 2 Turret
- 3 Winches
- 4 Parallelogram system
- 5 Self-erecting mast
- 6 Cathead
- 7 Sleeve extension
- 8 Rotary head
- 9 Continuous Flight Auger
- 10 Counterweight
- 11 Cab
- 12 Foot element

### 4 - part line pull



	4-part line pull	
Auger extension	3,75 m	12.3 ft
Drilling depth with auger cleaner	14,0 m	45.9 ft
Drilling depth without auger cleaner	15,3 m	50.2 ft
Max drilling diameter	750 mm	29.6 in
Max auger weigh	3200 kg	7055 lb
Max extraction force	280 kN	62945 lbf
Cont. flight auger length including starter auger	12000 mm	477.8 in
Operating weight (approx. w/o augers)	27000 kg	59524 lb



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