

**SR-30**

LDP  
CFA  
DW  
MP

Hydraulic  
Rotary Rig



Hydraulic Rotary Rig **SR-30**

**soilmec**   
Drilling and Foundation Equipment

## Rotary

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

## Ease of transport and quick assembly

- Crawlers can be retracted to respect transport requirements.
- The rig can be transported complete with the kelly bar.

## 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.

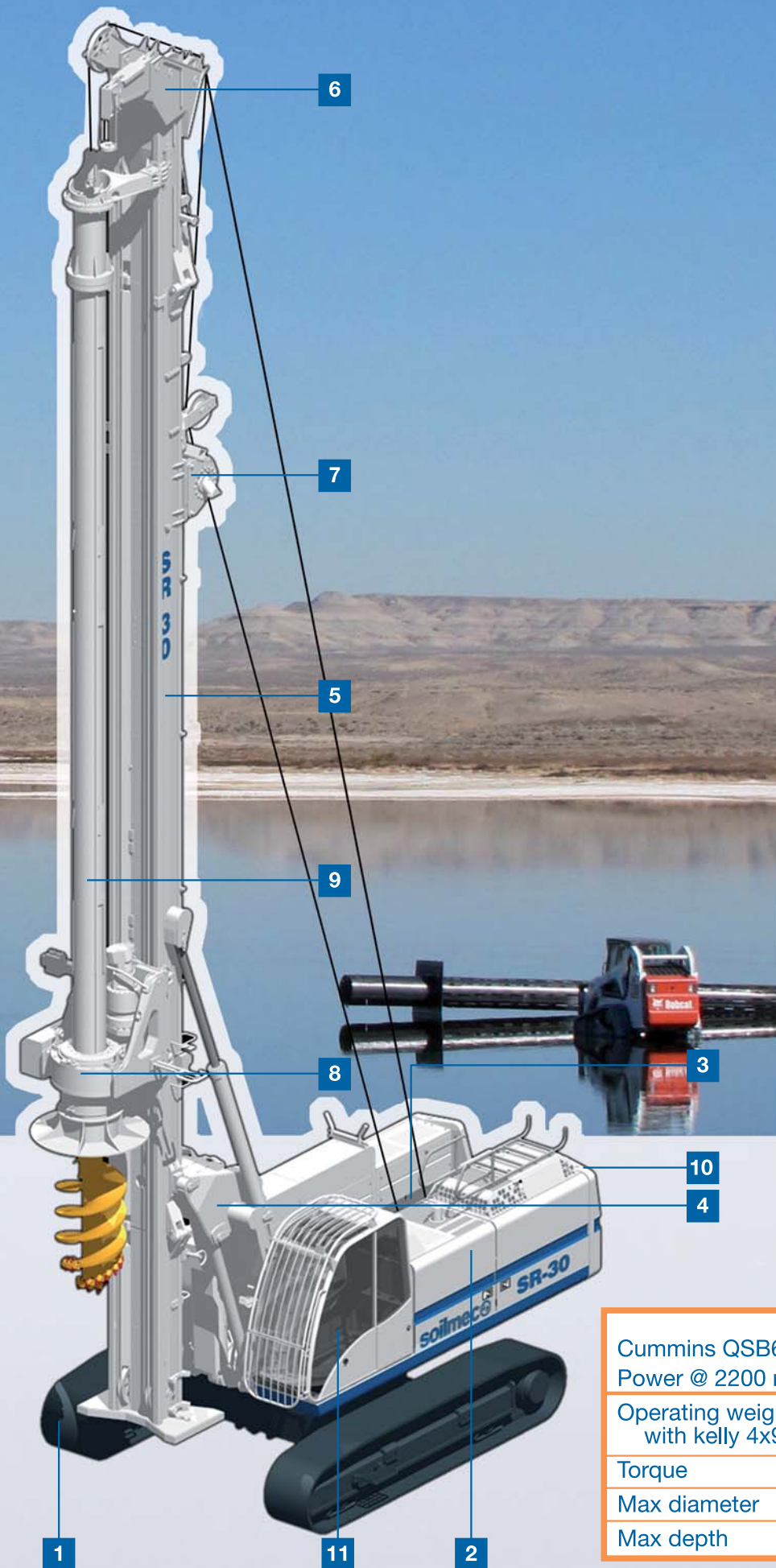
A dedicated power module electronic control system ensures the main pumps and Diesel engine work at their most effective and productive levels.

## 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

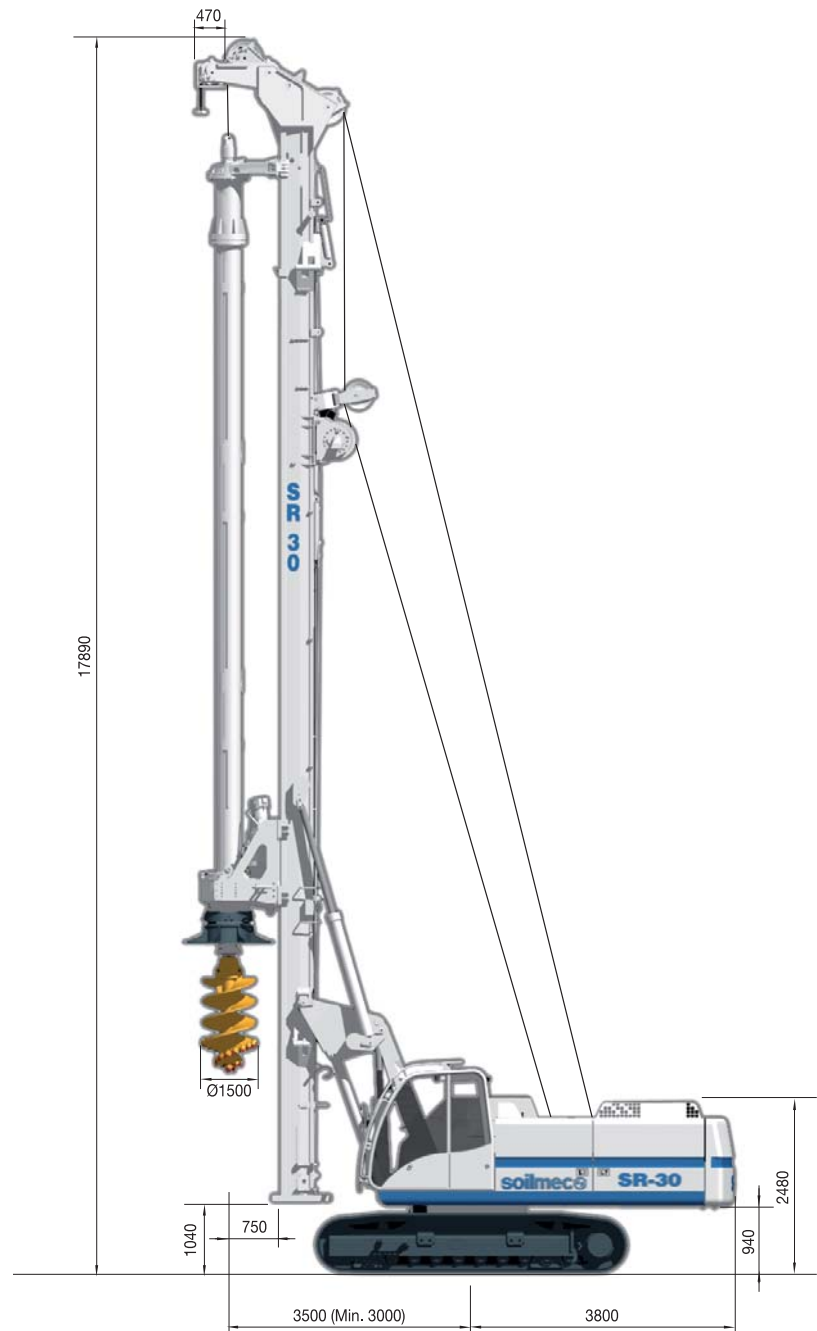
Cummins QSB6.7		
Power @ 2200 rpm	<b>164 kW</b>	220 HP
Operating weight (approx) with kelly 4x9 m	<b>36350 kg</b>	80137 lb
Torque	<b>130 kNm</b>	95881 lb <sub>f</sub> ft
Max diameter	<b>1500 mm</b>	59 in
Max depth	<b>49,3 m</b>	161.7 ft

# LDP - KELLY DRILLING SYSTEM

## Crowd Winch Version

The hydraulic drilling rig SR-30 has been specially designed for suiting the following applications:

- **cased bored piles** with casing driven directly through rotary head;
- **deep uncased bored piles** stabilized by drilling fluid or dry hole;
- **CFA (Continuous Flight Auger) piles** by means of long auger string;
- it can be converted into **DW diaphragm wall base machine** to work with a **guided grab (GK-5)**;
- **MP micropiling** kit available.



## DMS - Drilling Mate System

The SR-30 in kelly version is equipped with the DRILLING MATE SYSTEM (DMS) on 12" touch screen to monitor and control of the operating parameters. The standard DMS equipment is composed of:

- **PLC** controller for all electrically actuated functions
- fault checking and reporting
- monitor unit designed to display:

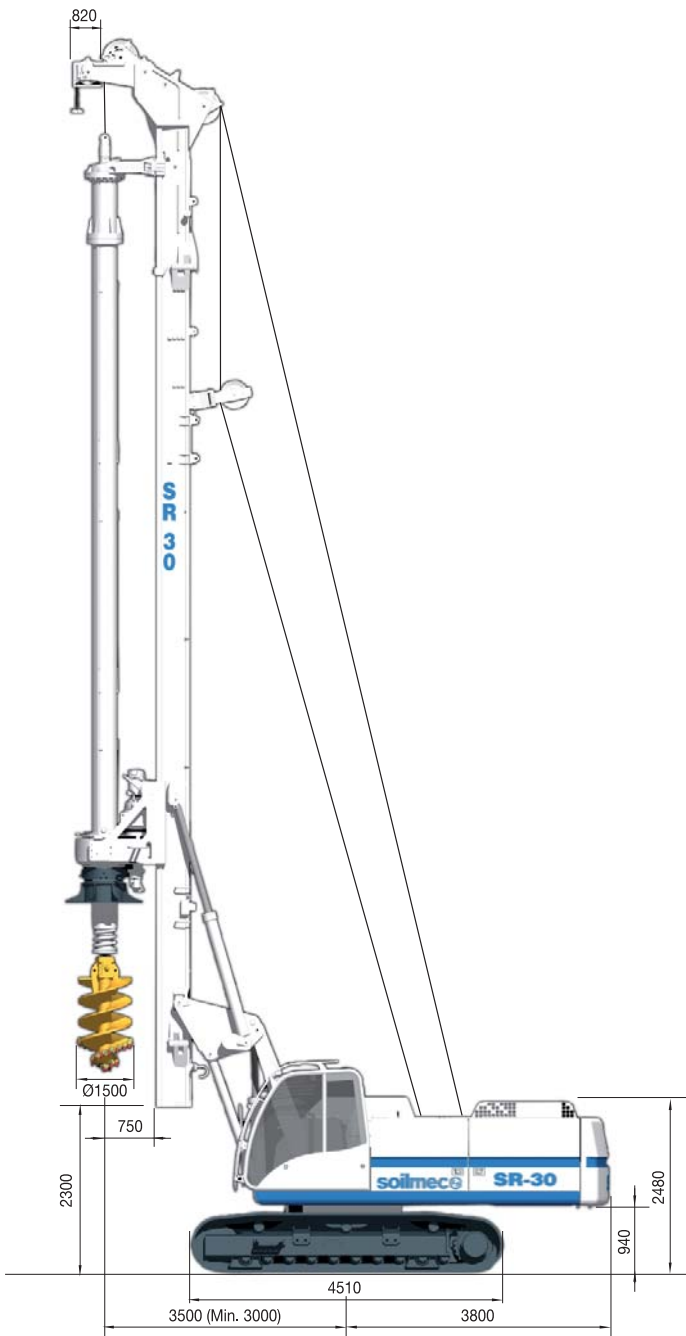
- engine information and diagnostic capability
- pump pressures
- mast verticality
- drilling depth
- rotary speed and pressure
- crowd pressure
- graphics drilling charts

*The following additional optional features are available:*

- automatic turret swinging for bored hole centering

- automatic mast vertical alignment
- recording of operating data on memory card
- DMS PC software package to analyze and print production data and job site daily reports
- DMS MANAGER for remote control, transmission of process and operating data, tele assistance.

**DMS**  
DRILLING MATE SYSTEM










Crowd cylinder version



Crowd cylinder version

## DATI TECNICI

	CROWD CYLINDER		CROWD WINCH		
<b>Overall height</b>	<b>18050 mm</b>	<i>710.5 in</i>	<b>17890 mm</b>	<i>704.2 in</i>	
<b>Operating weight</b> (approx) with kelly 4x9 m	<b>36350 kg</b>	<i>80137 lb</i>	<b>39450 kg</b>	<i>86971 lb</i>	
	<b>Rotary Drive - Spin-off type</b>	<b>RD-130</b>	<b>RD-130</b>		
	-Torque (nominal)	<b>130 kNm</b>	<i>95881 lb<sub>f</sub>ft</i>	<b>130 kNm</b>	<i>95881 lb<sub>f</sub>ft</i>
	-Speed of rotation (max)	<b>39 rpm</b>	<i>39 rpm</i>	<b>39 rpm</b>	<i>39 rpm</i>
	-Spinoff speed	<b>143 rpm</b>	<i>143 rpm</i>	<b>143 rpm</b>	<i>143 rpm</i>
	<b>Rotary Drive - Shifting gear type</b>	<b>RD-130 G</b>	<b>RD-130 G</b>		
	-Torque (nominal)	<b>130 kNm</b>	<i>95881 lb<sub>f</sub>ft</i>	<b>130 kNm</b>	<i>95881 lb<sub>f</sub>ft</i>
	-Speed of rotation (max)	<b>60 rpm</b>	<i>60 rpm</i>	<b>60 rpm</b>	<i>60 rpm</i>
	-Spinoff speed	<b>106 rpm</b>	<i>106 rpm</i>	<b>106 rpm</b>	<i>106 rpm</i>
	<b>Crowd system</b>				
	-Crowd force (pull down/up)	<b>101/124 kN</b>	<i>22705/27876 lb<sub>f</sub></i>	<b>200/200 kN</b>	<i>44961/44961 lb<sub>f</sub></i>
	-Stroke (kelly system)	<b>3500 mm</b>	<i>138 in</i>	<b>11800 mm</b>	<i>464 in</i>
	-Stroke (CFA system)	<b>14000 mm</b>	<i>551 in</i>	<b>13000 mm</b>	<i>512 in</i>
	-Speed (down/up)	<b>5,7/7,4 m/min</b>	<i>18.7/24.2 ft/min</i>	<b>2,8/2,8 m/min</b>	<i>9.1/9.1 ft/min</i>
	-Fast speed (down/up)	<b>n.a.</b>	<i>n.a.</i>	<b>7,5/7,5 m/min</b>	<i>24.6/24.6 ft/min</i>
	<b>Main winch SW-135</b>	<b>controlled descent</b>	<i>controlled descent</i>	<b>controlled descent</b>	<i>controlled descent</i>
	-Line pull (1st layer) effective/nominal	<b>113/135 kN</b>	<i>25403/30349 lb<sub>f</sub></i>	<b>113/135 kN</b>	<i>25403/30349 lb<sub>f</sub></i>
	-Rope diameter/length	<b>22 mm/84 m</b>	<i>0.8 in/276 ft</i>	<b>22 mm/84 m</b>	<i>0.8 in/276 ft</i>
	-Line speed (max.)	<b>78,5 m/min</b>	<i>258 ft/min</i>	<b>78,5 m/min</b>	<i>258 ft/min</i>
	<b>Auxiliary winch SW-70</b>	<b>controlled descent</b>	<i>controlled descent</i>	<b>controlled descent</b>	<i>controlled descent</i>
	-Line pull (1st layer) effective/nominal	<b>54/65 kN</b>	<i>12139/14612 lb<sub>f</sub></i>	<b>54/65 kN</b>	<i>12139/14612 lb<sub>f</sub></i>
	-Rope diameter	<b>18 mm</b>	<i>0.7 in</i>	<b>18 mm</b>	<i>0.7 in</i>
	-Line speed (max.)	<b>58 m/min</b>	<i>190 ft/min</i>	<b>58 m/min</b>	<i>190 ft/min</i>
	<b>Auxiliary winch SF-70 (optional)</b>	<b>free fall</b>	<i>free fall</i>	<b>free fall</b>	<i>free fall</i>
	-Line pull (1st layer) effective/nominal	<b>54/65 kN</b>	<i>12139/14612 lb<sub>f</sub></i>	<b>54/65 kN</b>	<i>12139/14612 lb<sub>f</sub></i>
	-Rope diameter	<b>18 mm</b>	<i>0.7 in</i>	<b>18 mm</b>	<i>0.7 in</i>
	-Line speed (max.)	<b>68 m/min</b>	<i>223 ft/min</i>	<b>68 m/min</b>	<i>223 ft/min</i>
	<b>Mast inclination</b>				
	-Backward/forward/lateral	<b>12/4/3°</b>	<i>12/4/3°</i>	<b>12/4/3°</b>	<i>12/4/3°</i>

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

### Standard equipment

- Rotary drive spin-off type
- Main winch controlled descend type
- Main winch with special grooving
- Hoist limit switch on main and auxiliary winches
- Swivel for main rope
- Crowd in fast or slow mode
- Pivoted anchor points for main rope

#### Measuring and control equipment

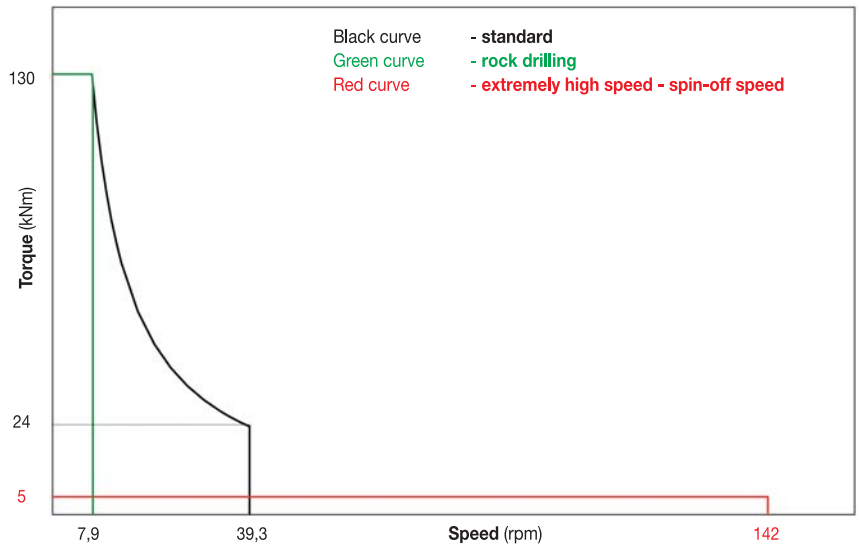
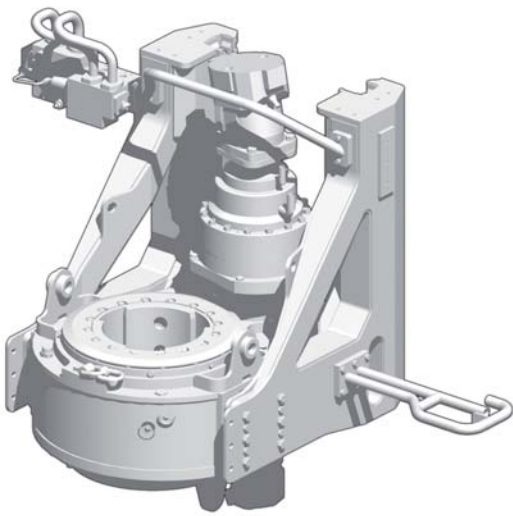
- PLC processor for all electrically actuated functions
- DMS system electronic monitoring and visualization system
- Mast inclination measurement on X/Y axes (*digital/analog display*)
- Automatic vertical alignment of mast
- Depth measuring device on main winch
- Speed measuring device on rotary



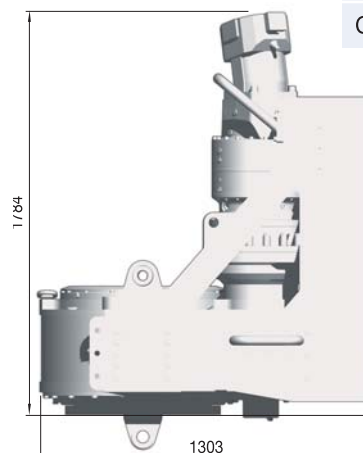
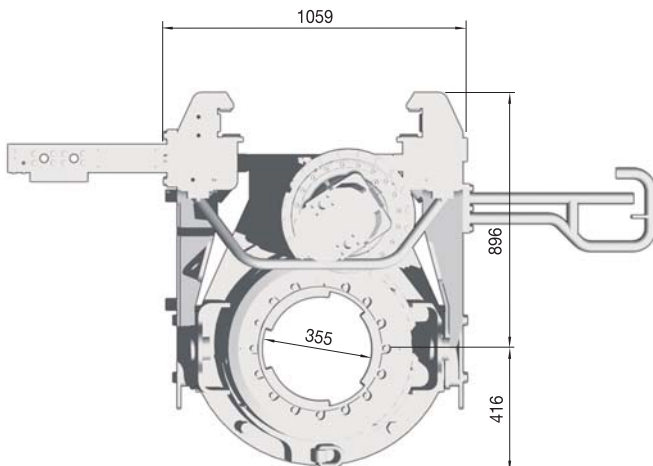
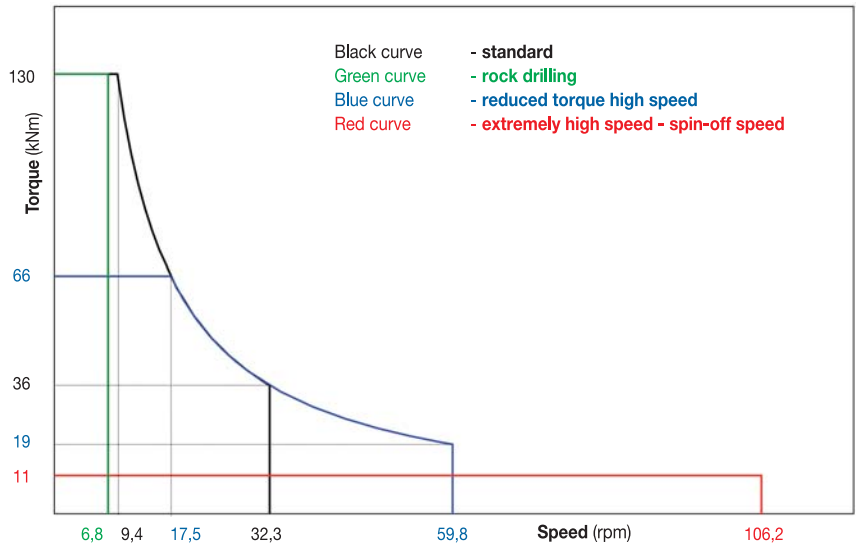
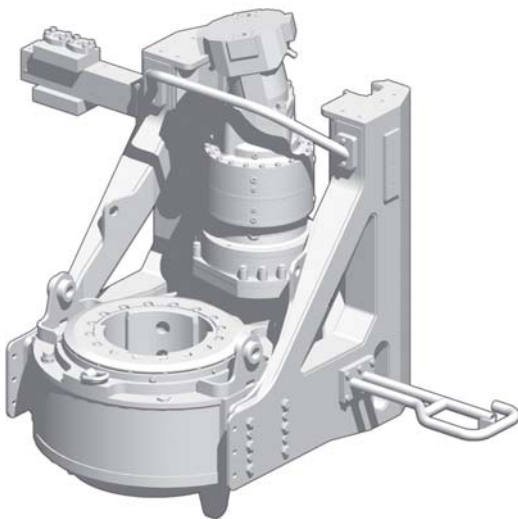
Continuous Flight Auger version

# TECHNICAL DATA - ROTARY DRIVE

## Rotary RD-130

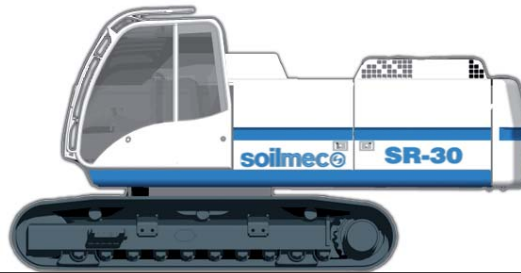





## Rotary RD-130 G



Rotary	Weight	
Crowd cylinder version	3100 kg	6830 lbs
Crowd winch version	3400 kg	7495 lbs

## TECHNICAL DATA - BASE CARRIER



	<b>Engine</b>	<b>Cummins QSB6.7</b>	<i>Cummins QSB6.7</i>
	-Rated output ISO 3046-I	<b>164 kW @ 2.200 rpm</b>	<i>220 HP @ 2200 rpm</i>
	-Engine conforms to Exhaust emission Standard	<b>EU stage III, EPA CARB Tier 3</b>	<i>EU stage III, EPA CARB Tier 3</i>
	-Diesel tank capacity	<b>350 l</b>	<i>92.4 US gal</i>
	-Sound pressure level in cabin (EN791 Annex A)	<b>84 dB (A)</b>	<i>84 dB (A)</i>
	-Sound power level (2000/14EG u. EN791, Annex A)	<b>110 dB (A)</b>	<i>110 dB (A)</i>
	<b>Hydraulic system*</b>		
	-Hydraulic power output (measured at inlet to rotary drive)	<b>120 kW</b>	<i>161 HP</i>
	-Hydraulic pressure	<b>300 bar</b>	<i>4786 psi</i>
	-Flow rates (main circuits)	<b>352 l/min</b>	<i>93 US gal/min</i>
	-Hydraulic oil tank capacity	<b>380 l</b>	<i>100 US gal</i>
	<b>Undercarriage*</b> (retractable crawler frames)		
	-Crawler type	<b>D4D</b>	<i>D4D</i>
	-Overall width of crawlers (retracted/extended)	<b>2550/3700 mm</b>	<i>100/146 in</i>
	-Width of triple grouser track shoes	<b>600 mm</b>	<i>24 in</i>
	-Overall length of crawlers	<b>4510 mm</b>	<i>178 in</i>
	-Traction force effective/nominal	<b>244/290 kN</b>	<i>54852/65193 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

- Emergency mode of operation for engine
- Engine diagnostic system
- Diagnostic panel for hydraulic functions
- Removable counterweight
- Transport securing lugs on crawler units
- Access ladder on uppercarriage
- On-board lighting set
- On-board tool set
- Electric refuelling pump
- High-comfort operator's cab (*width: 850 mm*)
- Protective roof grate (*FOPS compliant*)
- Air conditioning system
- Radio and CD player

### Optional equipment

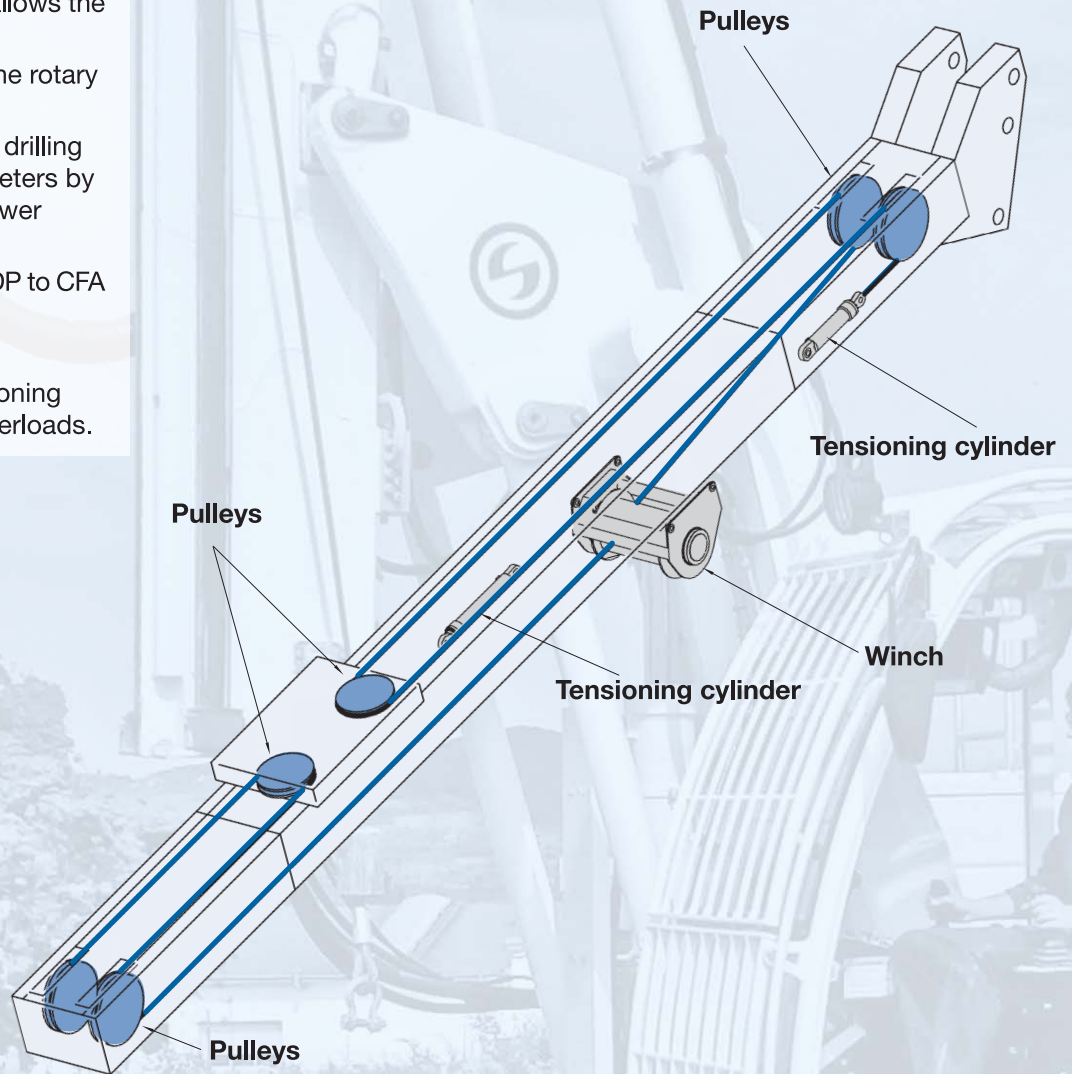
- Base carrier**
  - Bio-degradable oil
  - Pressurized air conditioning system
- Drilling Equipment**
  - Freefall auxiliary winch
  - Swivel for auxiliary rope
  - Central lubrication system
  - Videocamera attachment
- Alternative equipment options**
  - Wider triple grouser track shoes



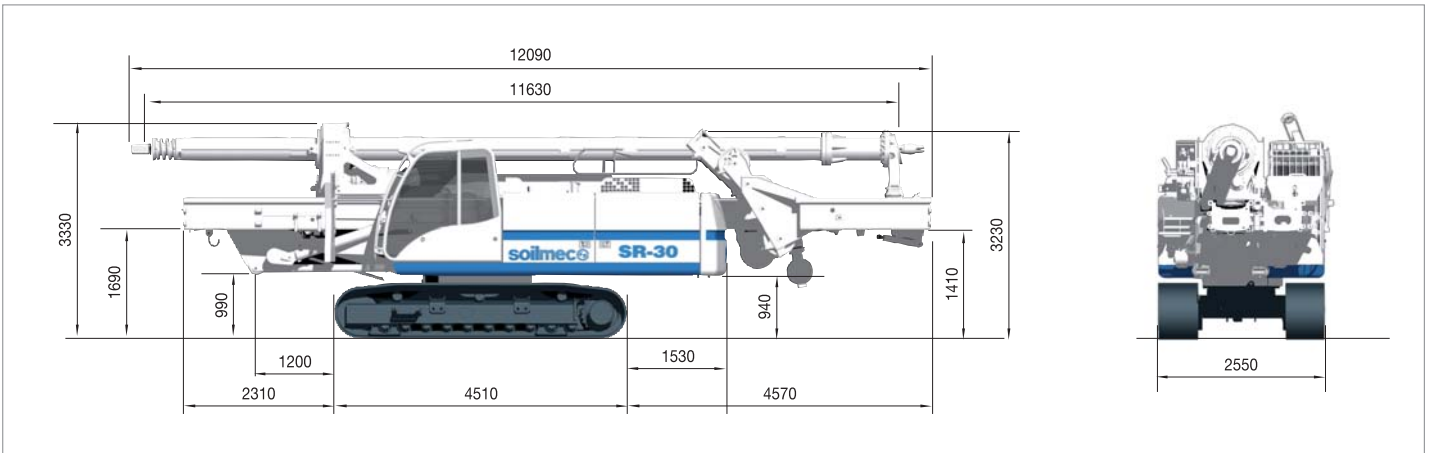
The crowd winch system allows the best versatility of use:

- Large clearance under the rotary for casing driving.
- Possibility to extend the drilling range to very large diameters by dismounting the mast lower section.
- Quick conversion from LDP to CFA version.

The double dynamic tensioning avoids rope dangerous overloads.



## TRANSPORT DATA

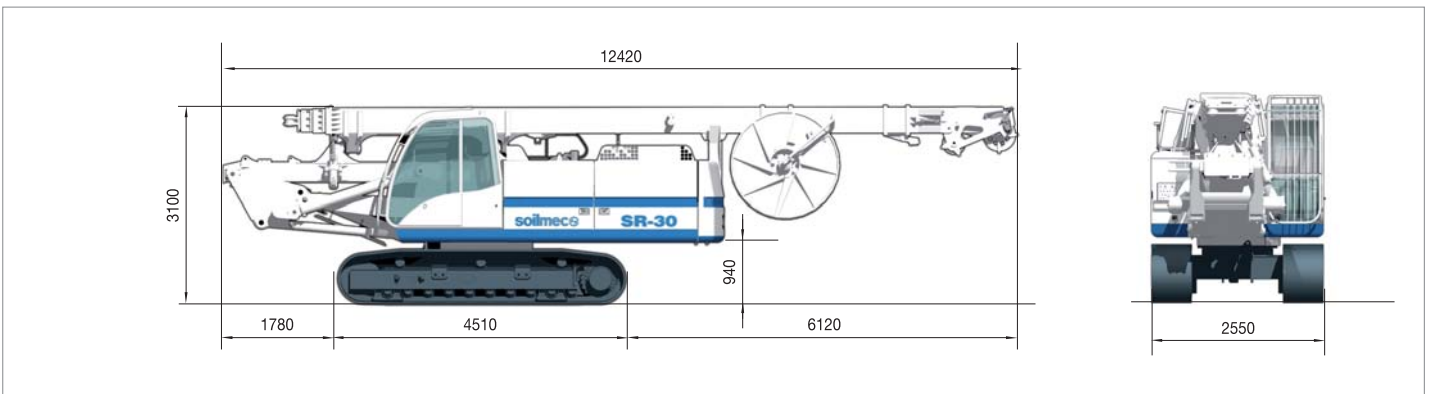


Transport c/w rotary head and 4x11 kelly bar

Weight

**36900 kg**

**81350 lb**



Transport w/o grab

Weight

**34400 kg**

**75838 lb**



Cab



Counterweight

# DMS

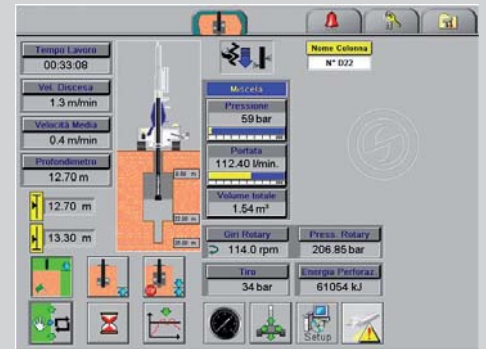
DRILLING MATE SYSTEM

Soilmec innovative DMS - Drilling Mate System - has been designed to incorporate:

- CAN OPEN bus system
- colour touch screen suitable for the drilling field

DMS consists of 3 items:

- DMS
- DMS PC
- DMS MANAGER



## DMS Drilling Mate System

For jet grouting works monitoring, Soilmec micro drilling rigs are provided (on demand) with DMS-jet which is an optional package including sensors to be fitted on the rig, PLC and touch screen.

The system follows the main process parameters:

- drilling depth
- drilling head revolution speed
- drilling head torque
- crowd force
- extraction force
- drilling energy
- feed speed
- hoist speed
- grout pressure
- grout delivery
- air pressure
- air delivery
- working time
- drilling mast position

During the treatment, most significant data are displayed on monitor allowing the driller to operate and follow the consolidation job. For each column, complete data are stored on a USB key. They also can be sent (on driver request) by e-mail in the form of attached file, through the DMS modem, (GSM/GPRS EDGE) to customer office.

DMS send also alarms concerning groups involved in the process.

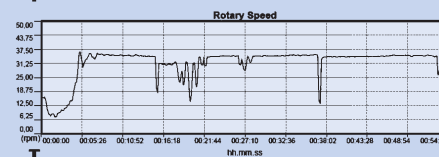
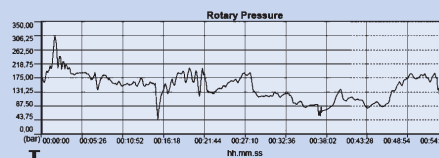
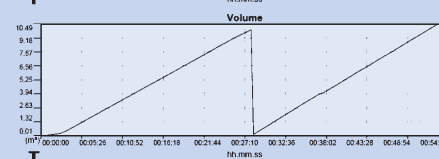
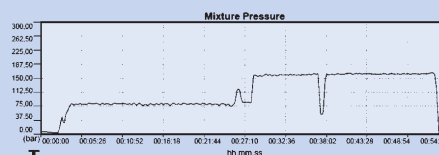
Data are raw and machine language formatted, they have therefore to be converted for PC use.

## DMS PC

DMS PC is soilmec specific software to be installed on customer's PC for raw data conversion. It allows the customer to read, edit and compute the treatment data by means of the most usual softwares.

DMS PC allows editing daily production reports under the form of diagrams and daily report, to document compliance of execution works with job specifications.

DMS PC allows also establishing statistical analysis to follow day by day the job site return.



## DMS Manager

A system designed for surveying a machines fleet. It includes a dedicated server and software. It enables access to, through internet, permanent contact with the rig, receiving in real time, alarms as well as production data sent by the machines (GPRS modem, satellite).



## Spare Part Online Center (SPOC)

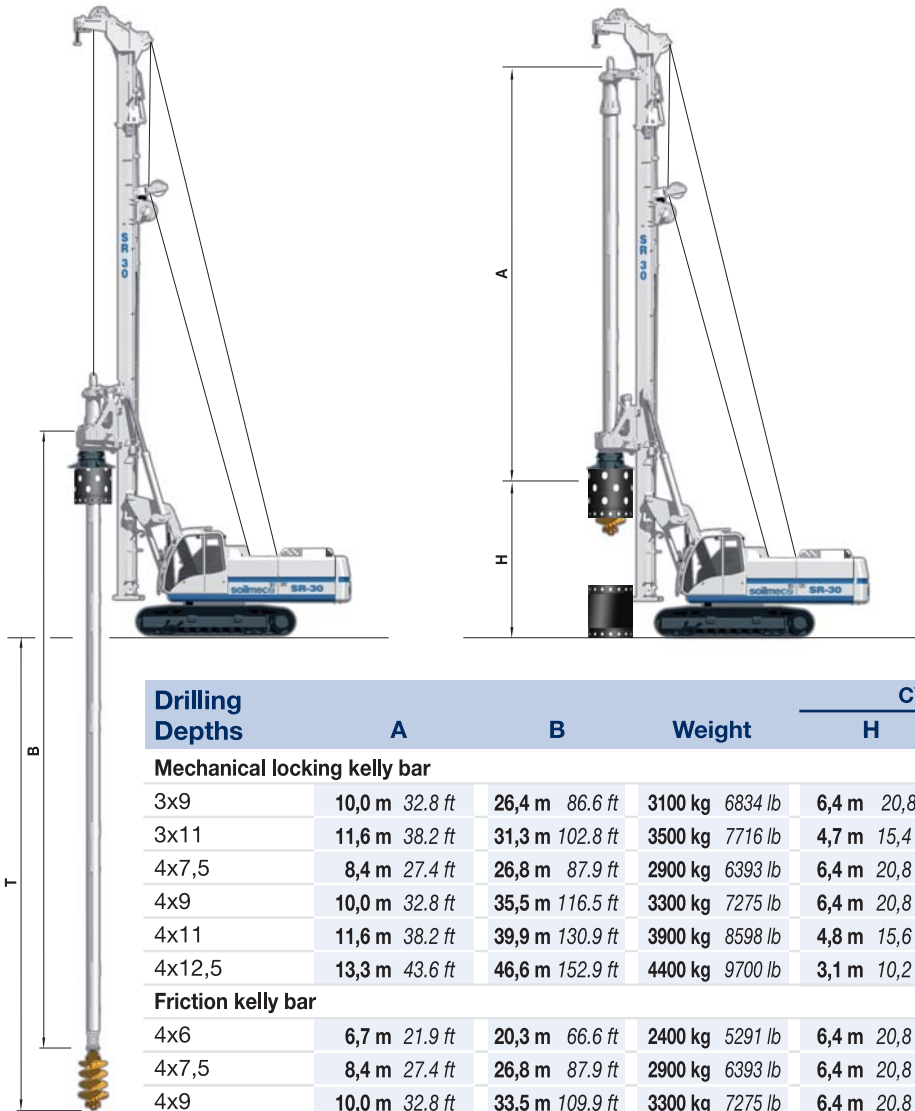
Although not specifically engineered for DMS, the package enhances the instrumentation since customers can optimize the management of their rigs.

In fact this online system offers:

- consultation and downloading of rig documentation, e.g. user and maintenance manuals electrical/hydraulic drawings, DMS manuals, technical documentation, etc.
- placement and management of purchase orders for spare parts.
- real time availability of components of spare parts.

# APPLICATIONS

## LDP - Kelly Drilling System

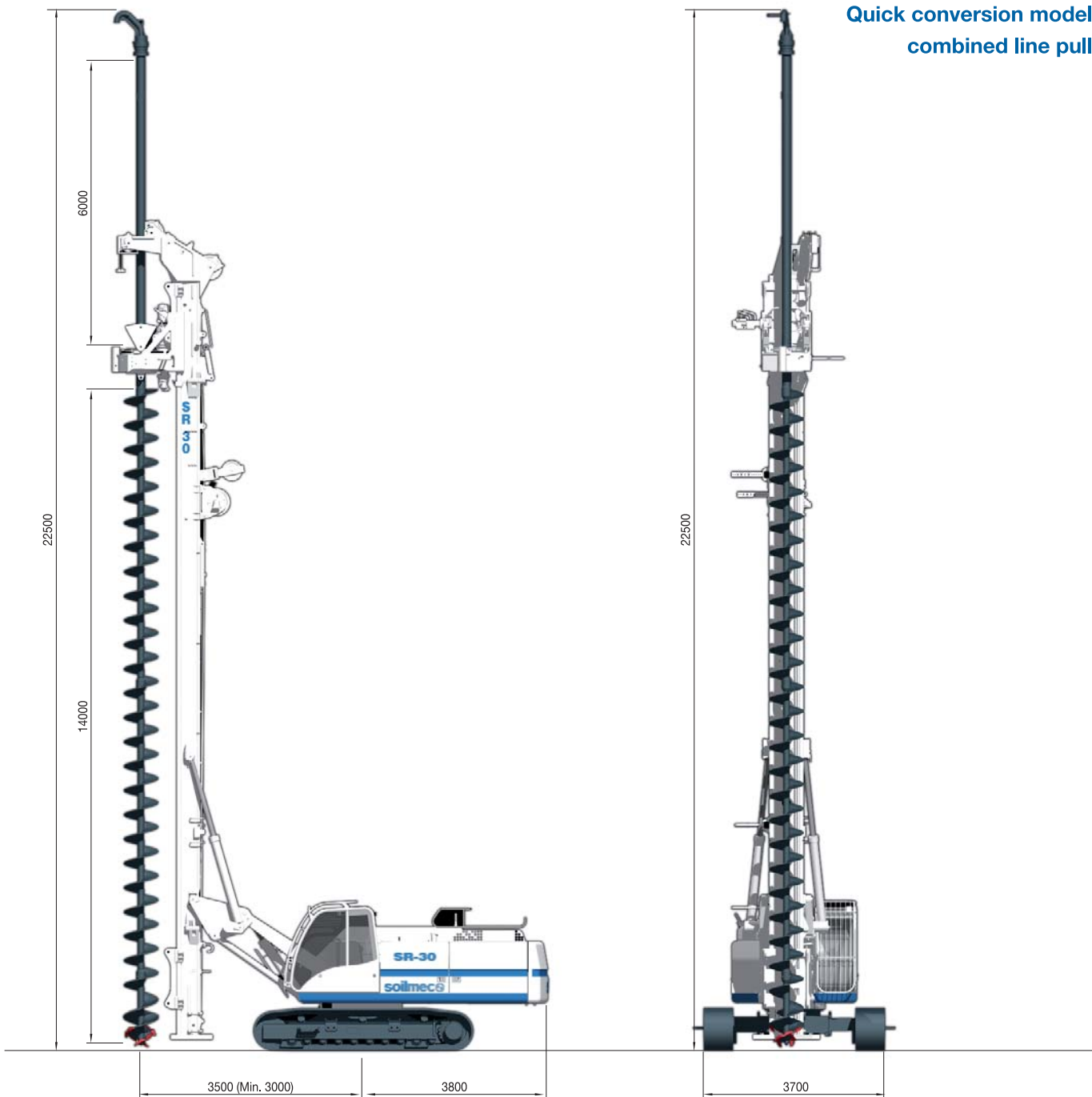


Drilling Depths	A	B	Weight	CYLINDER		WINCH	
				H	T	H	T
<b>Mechanical locking kelly bar</b>							
3x9	10,0 m 32.8 ft	26,4 m 86.6 ft	3100 kg 6834 lb	6,4 m 20,8 ft	24,1 m 79.1 ft	6,4 m 20,8 ft	26,0 m 85.3 ft
3x11	11,6 m 38.2 ft	31,3 m 102.8 ft	3500 kg 7716 lb	4,7 m 15,4 ft	29,1 m 95.5 ft	4,7 m 15,4 ft	30,9 m 101.4 ft
4x7,5	8,4 m 27.4 ft	26,8 m 87.9 ft	2900 kg 6393 lb	6,4 m 20,8 ft	24,6 m 80.7 ft	8,0 m 26,2 ft	26,4 m 86.6 ft
4x9	10,0 m 32.8 ft	35,5 m 116.5 ft	3300 kg 7275 lb	6,4 m 20,8 ft	33,3 m 109.3 ft	6,4 m 20,8 ft	35,1 m 115.2 ft
4x11	11,6 m 38.2 ft	39,9 m 130.9 ft	3900 kg 8598 lb	4,8 m 15,6 ft	37,7 m 123.7 ft	4,8 m 15,6 ft	39,5 m 129.6 ft
4x12,5	13,3 m 43.6 ft	46,6 m 152.9 ft	4400 kg 9700 lb	3,1 m 10,2 ft	44,4 m 145.7 ft	3,1 m 10,2 ft	46,2 m 151.6 ft
<b>Friction kelly bar</b>							
4x6	6,7 m 21.9 ft	20,3 m 66.6 ft	2400 kg 5291 lb	6,4 m 20,8 ft	18,1 m 59.4 ft	9,7 m 31,8 ft	19,9 m 65.3 ft
4x7,5	8,4 m 27.4 ft	26,8 m 87.9 ft	2900 kg 6393 lb	6,4 m 20,8 ft	24,6 m 80.7 ft	8,0 m 26,2 ft	26,4 m 86.6 ft
4x9	10,0 m 32.8 ft	33,5 m 109.9 ft	3300 kg 7275 lb	6,4 m 20,8 ft	31,3 m 102.7 ft	6,4 m 20,8 ft	33,1 m 108.6 ft
4x11	11,6 m 38.2 ft	40,1 m 131.6 ft	3900 kg 8598 lb	4,8 m 15,6 ft	37,9 m 124.3 ft	4,8 m 15,6 ft	39,7 m 130.2 ft
4x12	12,9 m 42.2 ft	46,0 m 150.9 ft	4300 kg 9480 lb	3,5 m 11,5 ft	43,8 m 143.7 ft	3,5 m 11,5 ft	45,6 m 149.6 ft
5x8,5	9,6 m 31.6 ft	39,8 m 130.6 ft	3900 kg 8598 lb	6,4 m 20,8 ft	37,6 m 123.4 ft	6,8 m 22,1 ft	39,4 m 129.3 ft
5x9	10,0 m 32.8 ft	41,3 m 135.5 ft	4100 kg 9039 lb	6,4 m 20,8 ft	39,1 m 128.3 ft	6,4 m 20,8 ft	40,9 m 134.2 ft
5x10	11,0 m 36.1 ft	46,6 m 152.9 ft	4400 kg 9700 lb	5,4 m 17,6 ft	44,4 m 145.7 ft	5,4 m 17,6 ft	46,2 m 151.6 ft
5x11	11,6 m 38.2 ft	49,7 m 163.1 ft	4800 kg 10582 lb	4,8 m 15,6 ft	47,5 m 155.8 ft	4,8 m 15,6 ft	49,3 m 161.7 ft

Drilling Diameters	CYLINDER		WINCH	
Uncased	1500 mm	59 in	1500 mm	59 in
Cased	1200 mm	47 in	1200 mm	47 in

# APPLICATIONS

## CFA - Continuous Flight Auger

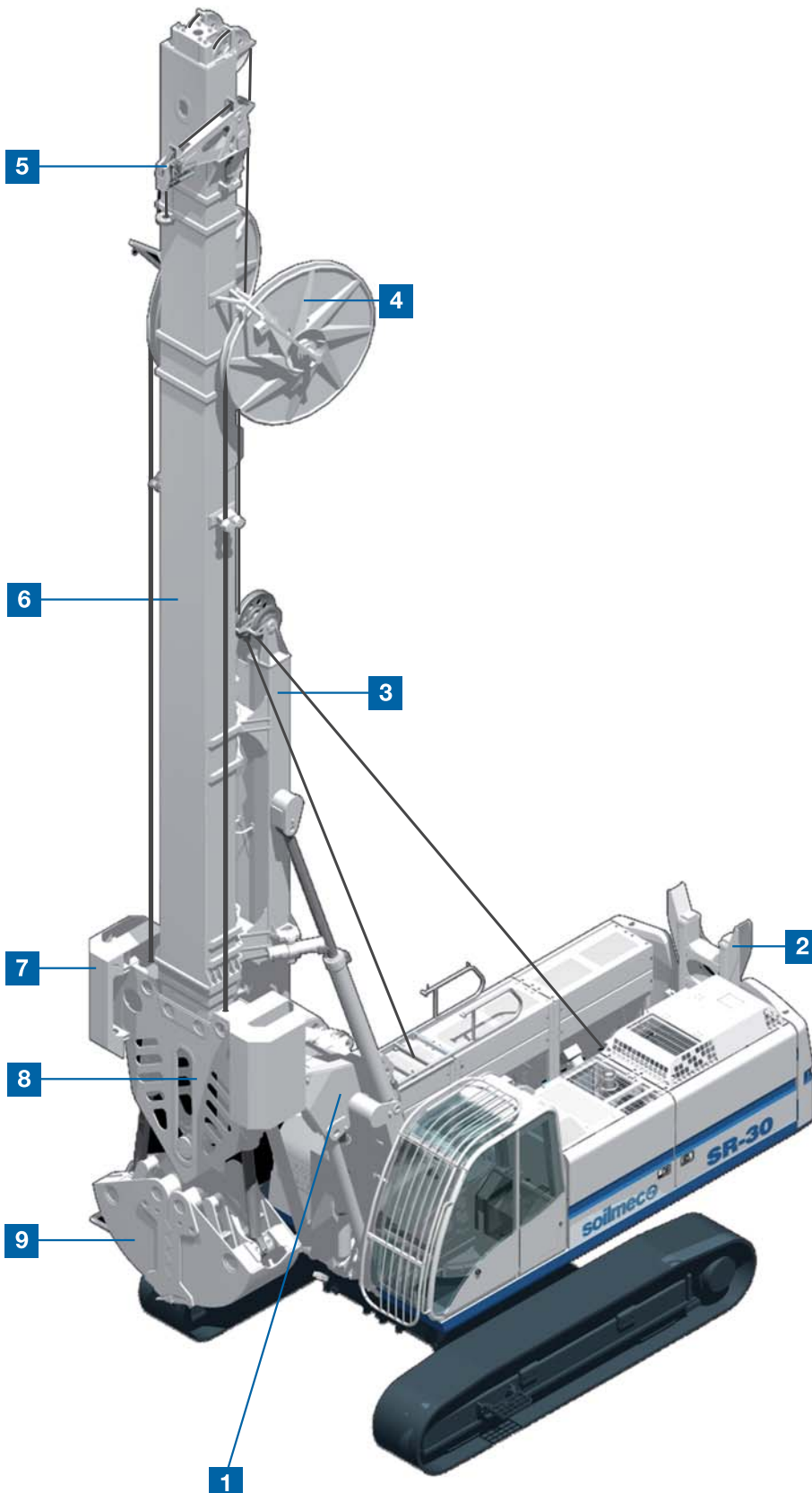


	combined line pull		4-part line pull	
Kelly extension	6 m	19.6 ft	6 m	19.6 ft
Drilling depth with auger cleaner	17,5 m (11,5+6)	57.4 ft (37.8+19.6)	18,3 m (12,3+6)	60 ft (40.4+19.6)
Drilling depth without auger cleaner	18,7 m (12,7+6)	61.3 ft (41.7+19.6)	19,5 m (13,5+6)	63.9 ft (44.3+19.6)
Max drilling diameter	750 mm	29.5 in	750 mm	29.5 in
Max extraction force	330 kN	74186 lbf	380 kN	85426 lbf
Max crowd force	100 kN	22480 lbf	37 kN	8318 lbf
Continuous flight auger length including starter auger	14000 mm	551 in	14000 mm	551 in
Operating weight (approx. w/o augers)	36500 kg	80500 lb	34500 kg	76060 lb

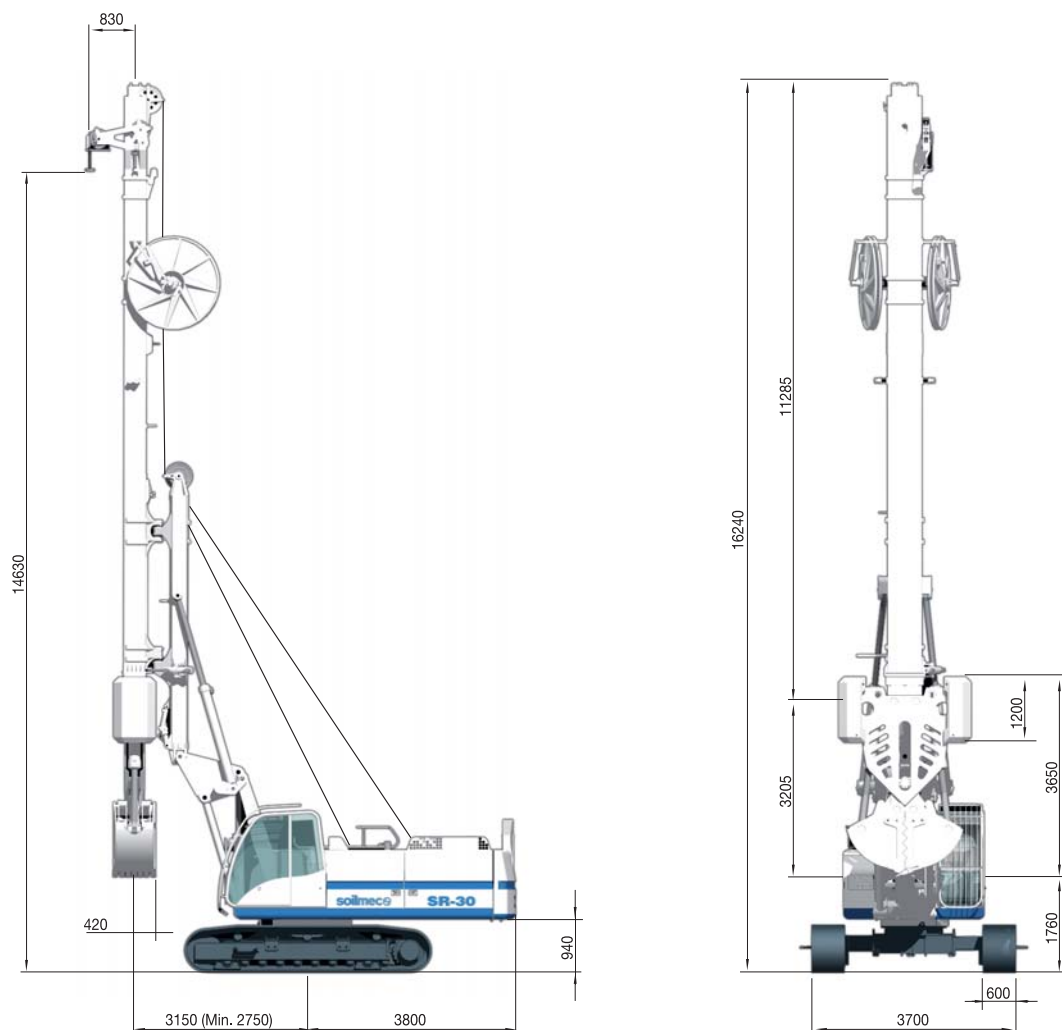
# APPLICATIONS

## Guided grab GK-5 for diaphragm walls

- Easy and quick change from kelly to grab version
- Hydraulic retractable jib allowing to work close to other pre-existing buildings
- Hydraulic safety device for transport
- Grab frame with reduced thickness thanks to two mechanically synchronized jacks for the jaws' opening/closing
- Kelly bars made of four elements (one is fixed while the other three are telescopic).
- Mast rotation +/-45°
- Transported complete with the mast folded on the rig and the grab frame already assembled
- To carry out diaphragm walls with a thickness variable from 400 to 800 mm and width from 2000 to 2500 mm in standard version with the same grab body
- Optional kit for thicknesses of 300- 600 mm available
- Max performing depth: 31 m (with a 5 m extension)



- 1 Standard parallelogram system
- 2 Kelly rest
- 3 Mast
- 4 Hose winders
- 5 Service jib
- 6 Telescopic kelly
- 7 Stabilizers
- 8 Grab body
- 9 Jaws



Panel thickness	400-800 mm	15.7-31.5 in
Panel width	2000-2500 mm	78.7-98.4 in
Max diaphragm depth	31 m	101.7 ft
Rated Power	164 kW	220 HP
Main winch, nominal	135 kN	30348 lbr
<b>DIAPHRAGM WALL</b>		
Grab weight (c/w kelly)	14000 kg	30860 lbs
Grab total length (c/w kelly)	14 m	46 ft
Approx weight (crane+grab)	40000 kg	88180 lbs



SOILMEC distributes machinery and structures all over the world, supported by SOILMEC subsidiary companies and dealers. The complete Soilmec network list is available on the webpage [www.soilmec.it](http://www.soilmec.it)