Hydraulic Rotary Rig **SR-65**

soilmec
Drilling and Foundation Equipment

Rotary

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

Ease of transport and quick assembly

- Counterweight with a self-handling system (service crane not required).
- Crawlers can be retracted under 3 m wide.

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 purpose, 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 chance of any market opportunity .
- 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 Self erecting counterweight
11 Cab

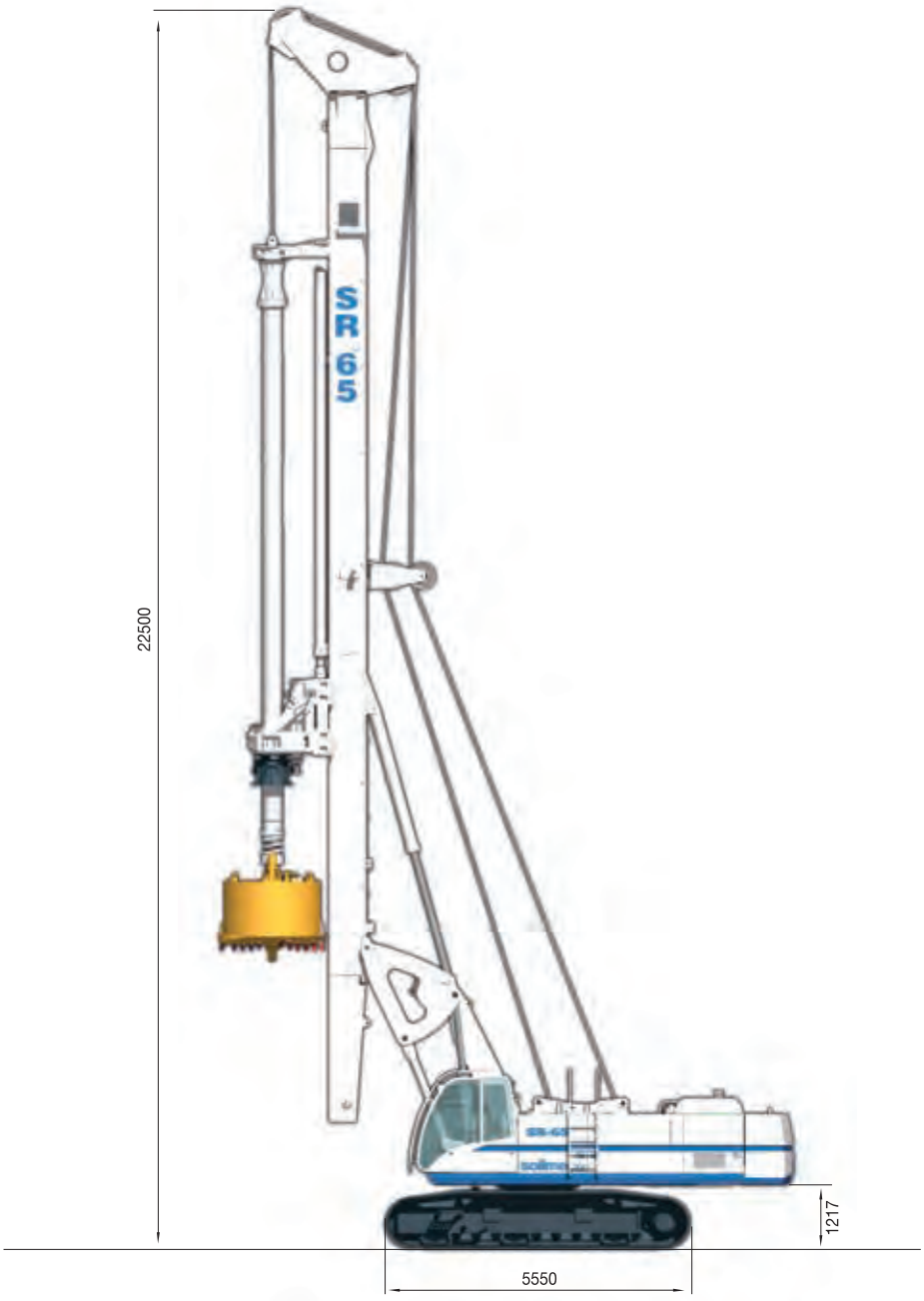
Deutz TCD 2015-V06 Power @ 1900 rpm	**300 kW**	*402 HP*
Operating weight (approx) with kelly 4x13,5 m	**74400 kg**	*164022 lb*
Torque	**237 kNm**	*147799 lbfft*
Max diameter	**2500 mm**	*98 in*
Max depth	**77 m**	*252.6 ft*

LDP - KELLY DRILLING SYSTEM

Crowd Cylinder Version

The hydraulic drilling rig SR-65 has been specially designed to suit the following applications:

- **deep uncased bored piles** stabilized by drilling fluid or dry hole;
- **cased bored piles** with casing driven directly by rotary head or optionally, by casing oscillator powered by the base carrier itself;
- **LHR (Low Headroom)** special rig configuration dedicated to confined headroom spaces;
- **CFA (Continuous Flight Auger) piles** by means of long auger string;
- **CAP (Cased Auger Piles) piles** with double rotary system;
- **DP** (**Displacement Piles**) *on demand*;
- **TJ** (**Turbojet**) - column soil consolidation *on demand*;
- **Soil-mixing** - column soil consolidation *on demand*;
- it can be converted into **DW (Diaphragm Wall)** base machine to work with an **hydraulic grab** *on demand*.



DMS - Drilling Mate System

The SR-65 in kelly version is equipped with the DRILLING MATE SYSTEM (DMS) operated trough a 12" touch screen to control and monitoring the operating parameters as well as productive data.

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	
	Overall height	**22500 mm**	*886 in*
	Operating weight (approx) with kelly 4x13.5	**74400 kg**	*164022 lb*
	Rotary Drive - Single gear version	**RD-240**	*RD-240*
	-Torque (nominal)	**237 kNm**	*174799 lbf*ft*
	-Speed of rotation (max)	**26,4 rpm**	*26.4 rpm*
	-Spinoff speed	**141 rpm**	*141.0 rpm*
	Crowd system		
	-Crowd force pull (down/up)	**200/264 kN**	*44961/59349 lbf*
	-Stroke (kelly system)	**6500 mm**	*256 in*
	-Stroke (CFA system)	**20200 mm**	*795 in*
	Speed (down/up)	**4,5/10 m/min**	*14.8/32.8 ft/min*
	-Fast speed (down/up)	**11,4/11,4 m/min**	*37.4/37.4 ft/min*
	Main winch SW-250	**controlled descent**	*controlled descent*
	-Line pull (1st layer) effective/nominal	**209/249 kN**	*46984/55976 lbf*
	-Rope diameter/length	**30 mm/141 m**	*1.19 in/463 ft*
	-Line speed (max.)	**80 m/min**	*262 ft/min*
	Auxiliary winch SW-140	**controlled descent**	*controlled descent*
	-Line pull (1st layer) effective/nominal	**122/145 kN**	*27426/32597 lbf*
	-Rope diameter	**26 mm**	*1.02 in*
	-Line speed (max.)	**90 m/min**	*295 ft/min*
	Auxiliary winch SF-140	**free fall**	*free fall*
	-Line pull (1st layer) effective/nominal	**123/147 kN**	*27651/33046 lbf*
	-Rope diameter	**26 mm**	*1.02 in*
	-Line speed (max.)	**90 m/min**	*295 ft/min*
	Mast inclination		
	-Backward/ Forward/Lateral	**10/4/3°**	*10/4/3°*

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 and auxiliary winch with special grooving
- Hoist limit switch on main rope
- Swivel for main rope
- Crowd in fast or slow mode
- Pivoted anchor points for main and auxiliary ropes

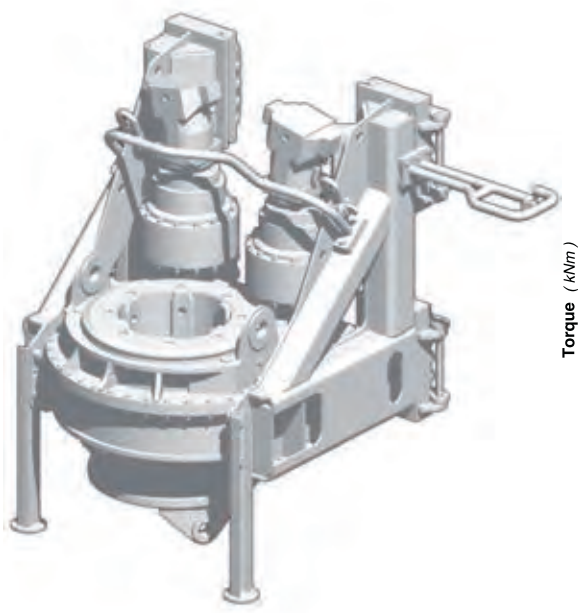
Measuring and control equipment

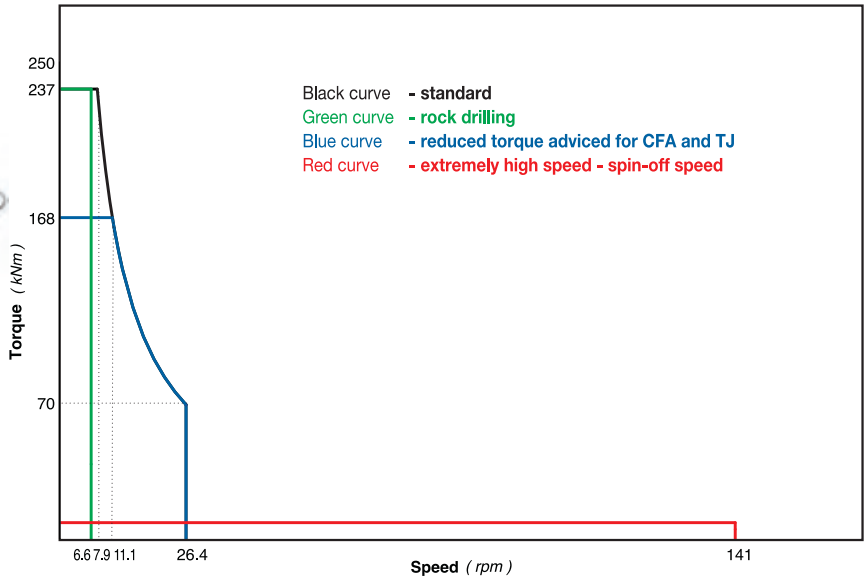
- PLC processor for all electrically actuated functions
- DMS system electronic monitoring and visualization system
- Mast inclination measurement on X/Y axes *(digital/analog display)*
- Automatic vertical mast alignment
- Depth measuring device on main winch
- Speed measuring device on rotary
- Crowd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

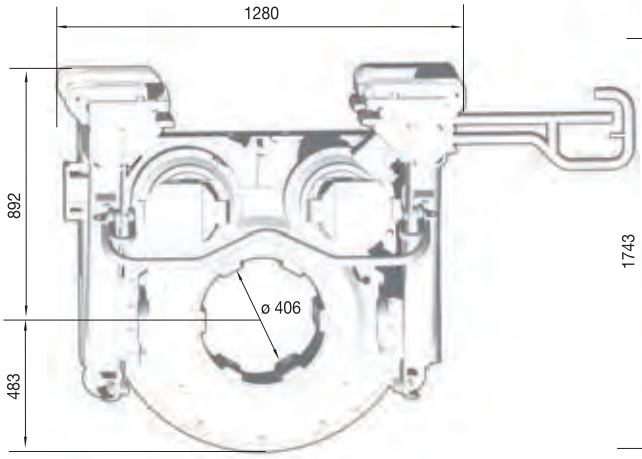
Continuous Flight Auger version

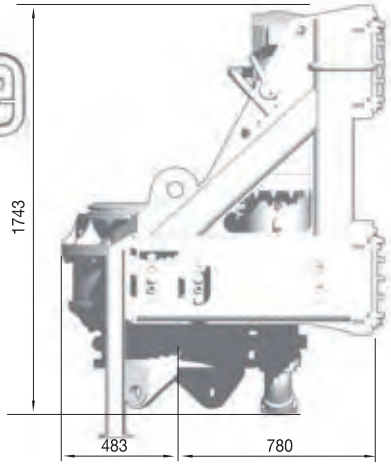
TECHNICAL DATA - ROTARY DRIVE

Rotary RD-240







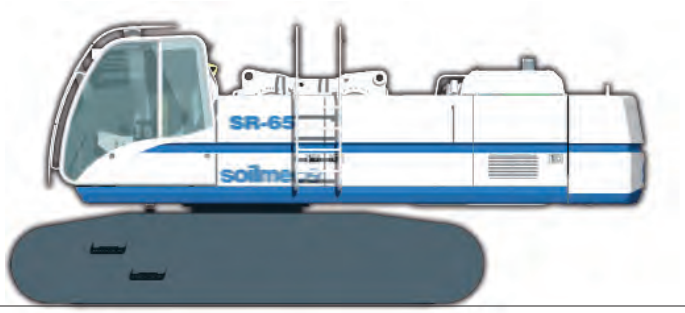


Rotary	Weight	
Single gear version	**3800 kg**	*8378 lbs*


Crowd cylinder version

Continuous Flight Auger version

TECHNICAL DATA - BASE CARRIER



Engine	**Deutz TCD2015-V06**	*Deutz TCD2015-V06*
-Rated output ISO 3046-I	**300 kW @ 1900 rpm**	*402 HP @ 1900 rpm*
-Engine conforms to Exhaust emission Standard	**EU stage III A, EPA CARB Tier 3**	*EU stage III A, EPA CARB Tier 3*
-Diesel tank capacity	**330 l**	*87 US gal*
-Sound pressure level in cabin (EN791 Annex A)	**74 dB (A)**	*74 dB (A)*
-Sound power level (2000/14EG u. EN791, Annex A)	**115 dB (A)**	*115 dB (A)*
Hydraulic system		
-Hydraulic power output (measured at inlet to rotary drive)	**200 kW**	*268 HP*
-Hydraulic pressure	**35 MPa**	*5076 psi*
-Flow rates (main circuits)	**2x 280 l/min**	*2x 74 US gal/min*
-Hydraulic oil tank capacity	**560 l**	*148 US gal*
Undercarriage (retractable crawler frames)		
-Crawler type	**D7F**	*D7F*
-Overall width of crawlers retracted/extended	**2980/4480 mm**	*117/176 in*
-Width of triple grouser track shoes	**900 mm**	*35 in*
-Overall length of crawlers	**5550 mm**	*219 in*
-Traction force effective/nominal	**416/495 kN**	*93474/111278 lbf*
-Travel speed	**1,6 km/h**	*1.0 mph*

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

Standard equipment

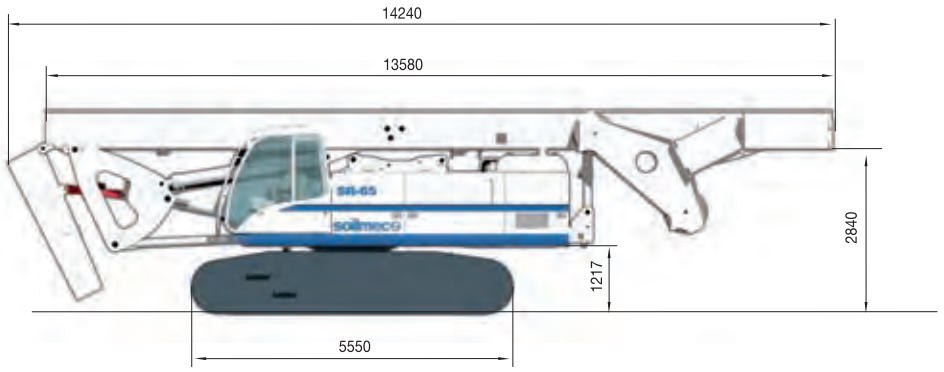
- Oscillator attachment
- Emergency mode of operation for engine
- Engine diagnostic system
- Diagnostic panel for hydraulic functions
- Removable counterweight
- Transport securing lugs on crawler units
- Access ladder on upper carriage
- On-board lighting set
- On-board tool set
- Electric refuelling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

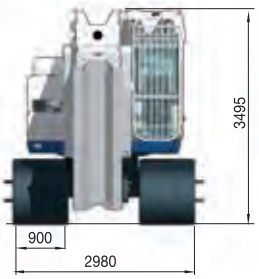
Optional equipment

Base carrier
- Central lubrication system
- Biodegradable oil
- Pressurized air conditioning system

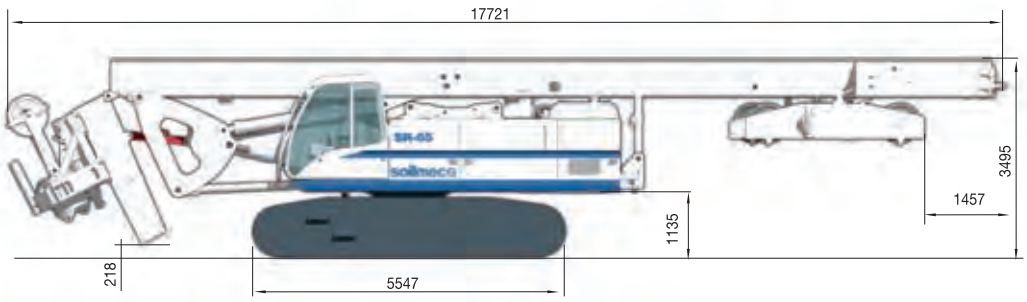
Drilling Equipment
- Freefall main winch
- Swivel for auxiliary rope
- Videocamera set

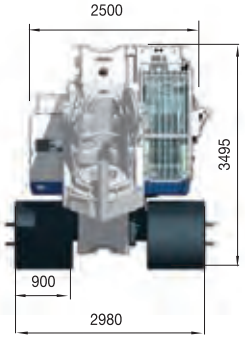
TRANSPORT DATA



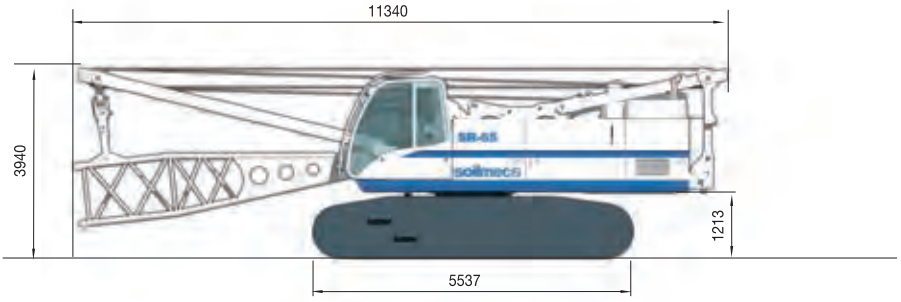


Transport w/o rotary	Weight	**65000 kg**	*165346 lb*



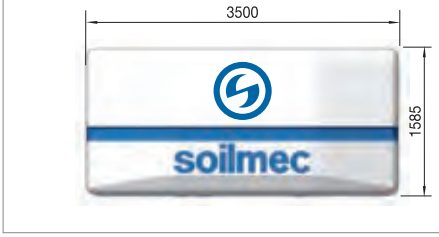


Transport in CFA version	Weight	**66800 kg**	*147268 lb*



Transport in diaphragm wall version	Weight	**75500 kg**	*166446 lb*


Transport configuration



Counterweight	Weight	**8500 kg**	*18739 lb*

DMS

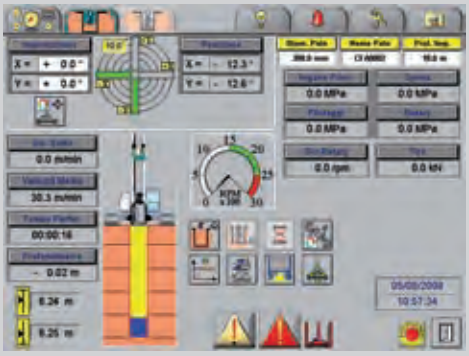
DRILLING MATE SYSTEM

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

As a standard, DMS device is fitted on all Soilmec machines. Its main features are the following:

• DMS constitutes an interface between Diesel engine and operator displaying main engine working parameters as instantaneous fuel consumption or engine instantaneous load.

• DMS allows monitoring the overall machine operations displaying and recording alarms.

• DMS offers a troubleshooting instrument helping the operator to locate the fault.

• DMS evidences the rig programmed maintenance schedule.

• DMS displays in real time the production parameters to let the operator follow and survey the production process. Production data are stored on USB key for further processing with DMS-PC software.

• DMS send out, on operator's request, through modem (GPRS, EDGE SATELLITE) connection, production data to customer e-mail address and, if permanent connection is enable, rig functioning parameters to SOILMEC CONTROL CENTER server.

Production data are expressed according to the drilling technology in use.

The numerous drilling technologies that can be carried out with Soilmec rigs are available after specific activation:

• **LDP/CFA/DP/RCDS**
• **CAP**
• **GRAB**
• **HYDROMILL**
• **JET/DRILLING/ANCHORS**
• **TTM1-TM2/SOILMIXING**

Some technologies may be completed with:

• APS (Automatic Positioning System) for rig pile spotting.

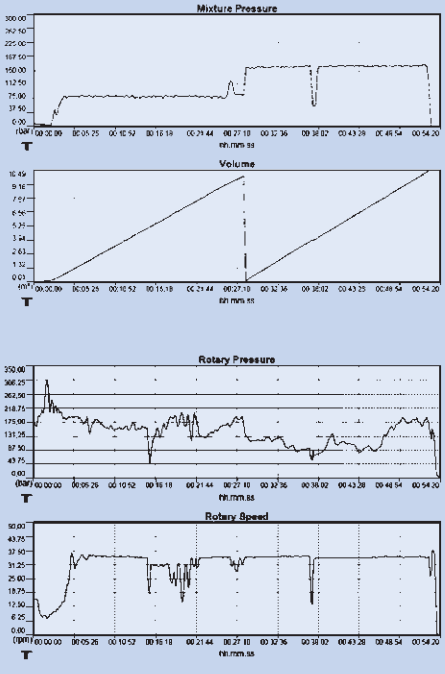
• DPS (Drilling Positioning System) to check drilling vertical deviation.

DMS PC

DMS PC is the software dedicated to DMS data computing. It has to be installed on customer's PC. It allows the customer to read and process the piling data files stored on USB key (or attached to e-mail sent by the DMS unit) after execution, in order to edit documents as diagrams and reports concerning the produced piles including all the parameters registered during each pile execution. In other words, while DMS displays data during the pile execution to let the operator control his work, DMS-PC allows to edit documents.

DMS PC allows for example establishing daily pile production reports to document the compliance of executed piles specifications.

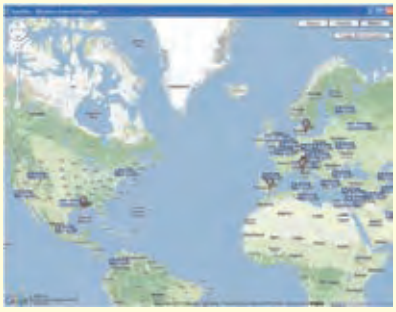
DMS PC allows also to make statistical analysis of fuel consumption.



DMS MANAGER

A system designed for remotely surveying a machines fleet. It includes a dedicated server and software to be located at the control place. Through internet, it enables, the permanent contact with the rig, receiving in real time, alarms, as well as production data, sent by the machine through its modem (GPRS EDGE, SATELLITE).

DMS manager allows to use the whole DMS capability.



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:

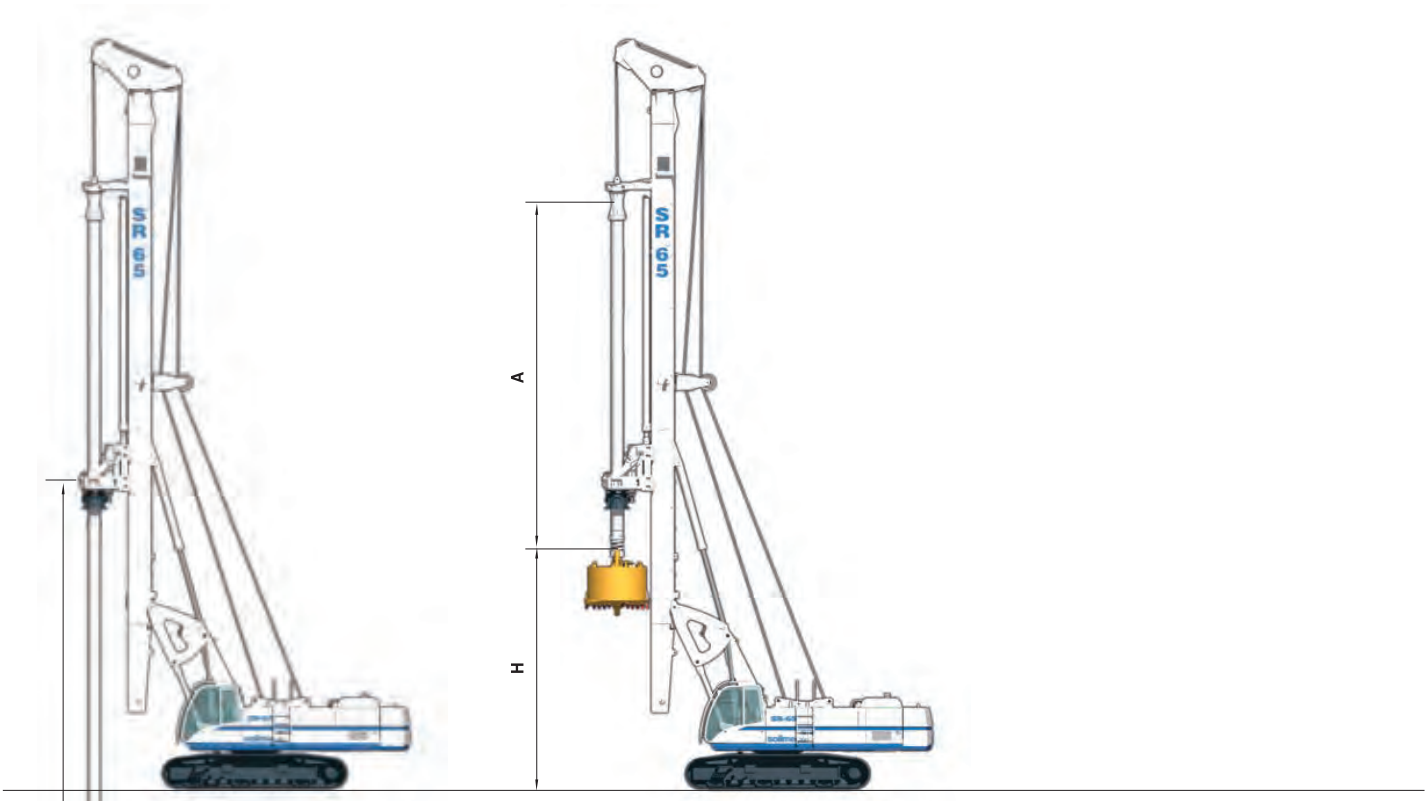
• consultation and downloading of rig documentation, e.g. user and maintenance manuals electrical/hydraulic drawings, DMS manuals, technical documentation, etc.

• 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 H		CYLINDER T	
Mechanical locking kelly bar										
3x9	**9,9 m**	*32.5 ft*	**24,6 m**	*80.7 ft*	**4100 kg**	*9039 lb*	**8,4 m**	*27.6 ft*	**23,3 m**	*76.4 ft*
3x13,5	**14,6 m**	*47.9 ft*	**38,6 m**	*126.6 ft*	**5700 kg**	*12566 lb*	**6,4 m**	*21.0 ft*	**37,3 m**	*122.4 ft*
4x7,5	**8,3 m**	*27.2 ft*	**25,8 m**	*84.6 ft*	**4400 kg**	*9700 lb*	**8,4 m**	*27.6 ft*	**24,5 m**	*80.4 ft*
4x10,5	**11,4 m**	*37.4 ft*	**38,6 m**	*126.6 ft*	**5850 kg**	*12897 lb*	**8,4 m**	*27.6 ft*	**37,3 m**	*122.4 ft*
4x11,5	**12,5 m**	*41.0 ft*	**42,6 m**	*139.8 ft*	**6300 kg**	*13889 lb*	**8,4 m**	*27.6 ft*	**41,3 m**	*135.5 ft*
4x13,5	**14,6 m**	*47.9 ft*	**50,9 m**	*167.0 ft*	**7250 kg**	*15983 lb*	**6,4 m**	*21.0 ft*	**49,6 m**	*162.7 ft*
4x15,5	**16,6 m**	*54.5 ft*	**59,4 m**	*194.9 ft*	**8200 kg**	*18078 lb*	**4,4 m**	*14.4 ft*	**58,1 m**	*190.6 ft*
4x16,5	**17,7 m**	*58.1 ft*	**63,6 m**	*208.7 ft*	**8700 kg**	*19180 lb*	**3,3 m**	*10.8 ft*	**62,3 m**	*204.4 ft*
Friction kelly bar										
4x10,5	**11,4 m**	*37.4 ft*	**38,6 m**	*126.6 ft*	**5850 kg**	*12897 lb*	**8,4 m**	*27.6 ft*	**37,3 m**	*122.4 ft*
4x11,5	**12,5 m**	*41.0 ft*	**42,6 m**	*139.8 ft*	**6300 kg**	*13889 lb*	**8,4 m**	*27.6 ft*	**41,3 m**	*135.5 ft*
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4x16,5	**17,7 m**	*58.1 ft*	**63,6 m**	*208.7 ft*	**8700 kg**	*19180 lb*	**3,3 m**	*10.8 ft*	**62,3 m**	*204.4 ft*
5x10,5	**11,3 m**	*37.1 ft*	**47,7 m**	*156.5 ft*	**6100 kg**	*13448 lb*	**8,4 m**	*27.6 ft*	**46,4 m**	*152.2 ft*
5x11,5	**12,4 m**	*40.7 ft*	**53,1 m**	*174.2 ft*	**6600 kg**	*14550 lb*	**8,4 m**	*27.6 ft*	**51,8 m**	*169.9 ft*
5x13,5	**14,4 m**	*47.2 ft*	**63,5 m**	*208.3 ft*	**7550 kg**	*16645 lb*	**6,5 m**	*21.3 ft*	**62,2 m**	*204.1 ft*
5x15,5	**16,7 m**	*54.8 ft*	**73,8 m**	*242.1 ft*	**8550 kg**	*18849 lb*	**4,3 m**	*14.1 ft*	**72,5 m**	*237.9 ft*
5x16,5	**17,6 m**	*57.7 ft*	**79,0 m**	*259.2 ft*	**9000 kg**	*19841 lb*	**3,4 m**	*11.2 ft*	**77,7 m**	*254.9 ft*

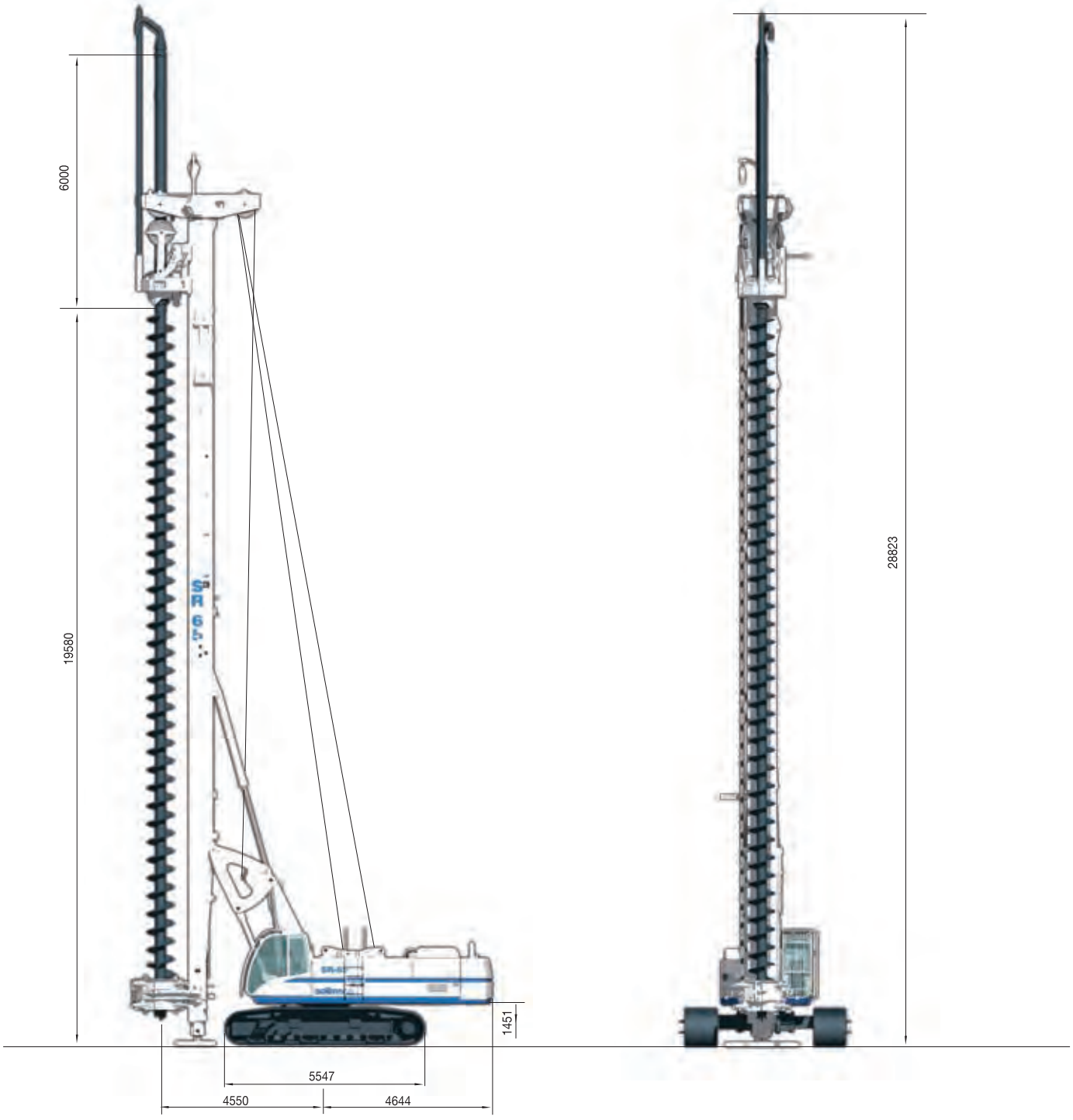
Drilling Diameters	CYLINDER	
Uncased	**2000 (2500) mm**	*78 (98.5) in*
Cased	**2000 mm**	*78 in*

( ) removing the mast bottom section

APPLICATIONS

CFA - Continuous Flight Auger

Traditional CFA
4-part line pull

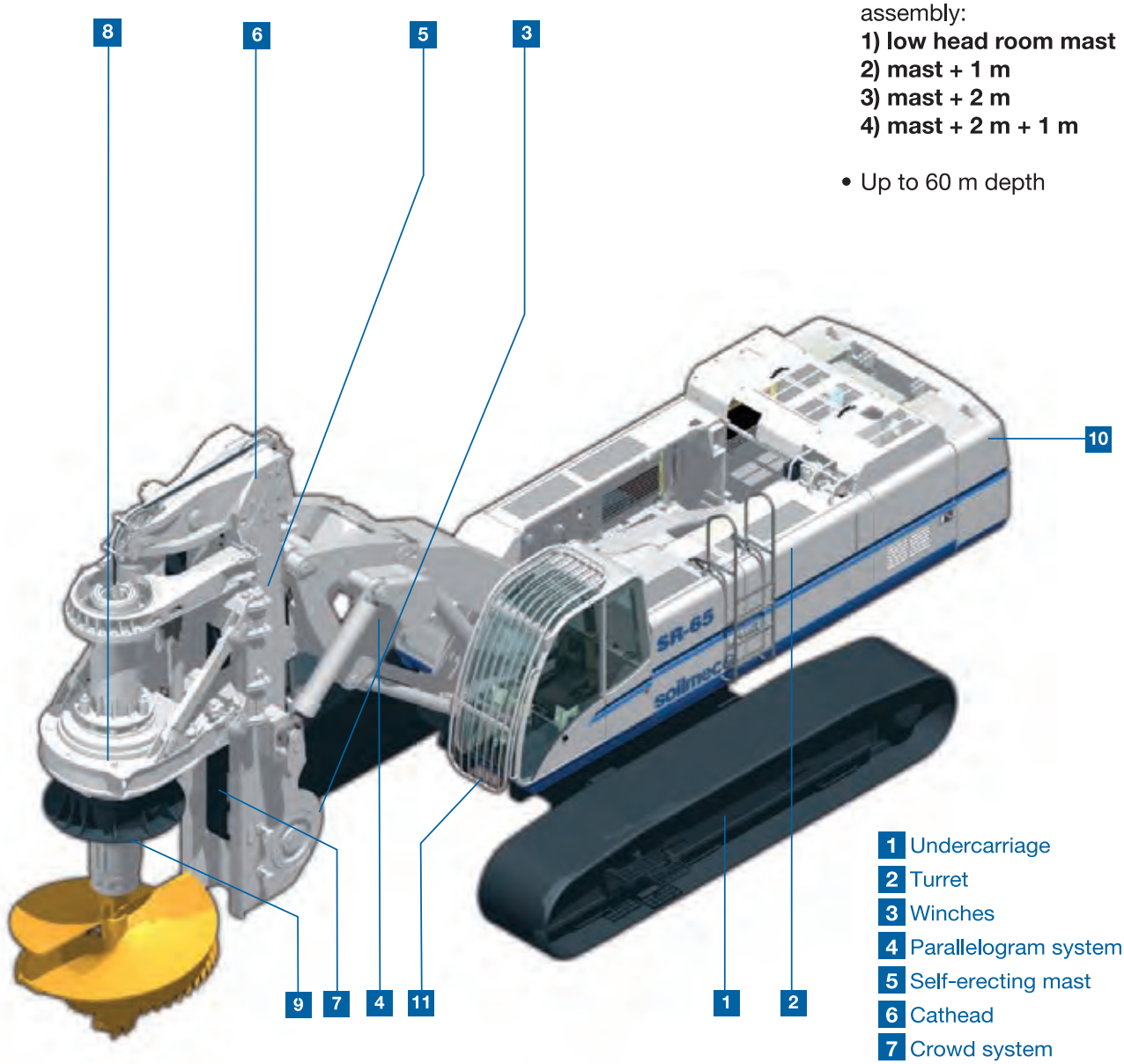


	4-part line pull	
Auger extension	**6 m**	*19.7 ft*
Drilling depth with auger cleaner	**24 m (18+6)**	*78.7 ft (59.1+19.6)*
Drilling depth without auger cleaner	**25,5 m (19,5+6)**	*83.7 ft (64.1+19.6)*
Max drilling diameter	**1200 mm**	*47.3 in*
Max extraction force (nominal)	**740 kN**	*166355.7 lbf*
Max crowd force (nominal)	**320 kN**	*71938 lbf *ft*
Continuous flight auger length including starter auger	**19580 mm**	*771.5 in*
Operating weight (approx. w/o augers)	**73800 kg**	*162699 lb*

APPLICATIONS

LHR - Low Head Room Kit

- Special kit for low headroom piling
- Four configuration modular mast assembly:
  1) low head room mast
  2) mast + 1 m
  3) mast + 2 m
  4) mast + 2 m + 1 m
- Up to 60 m depth



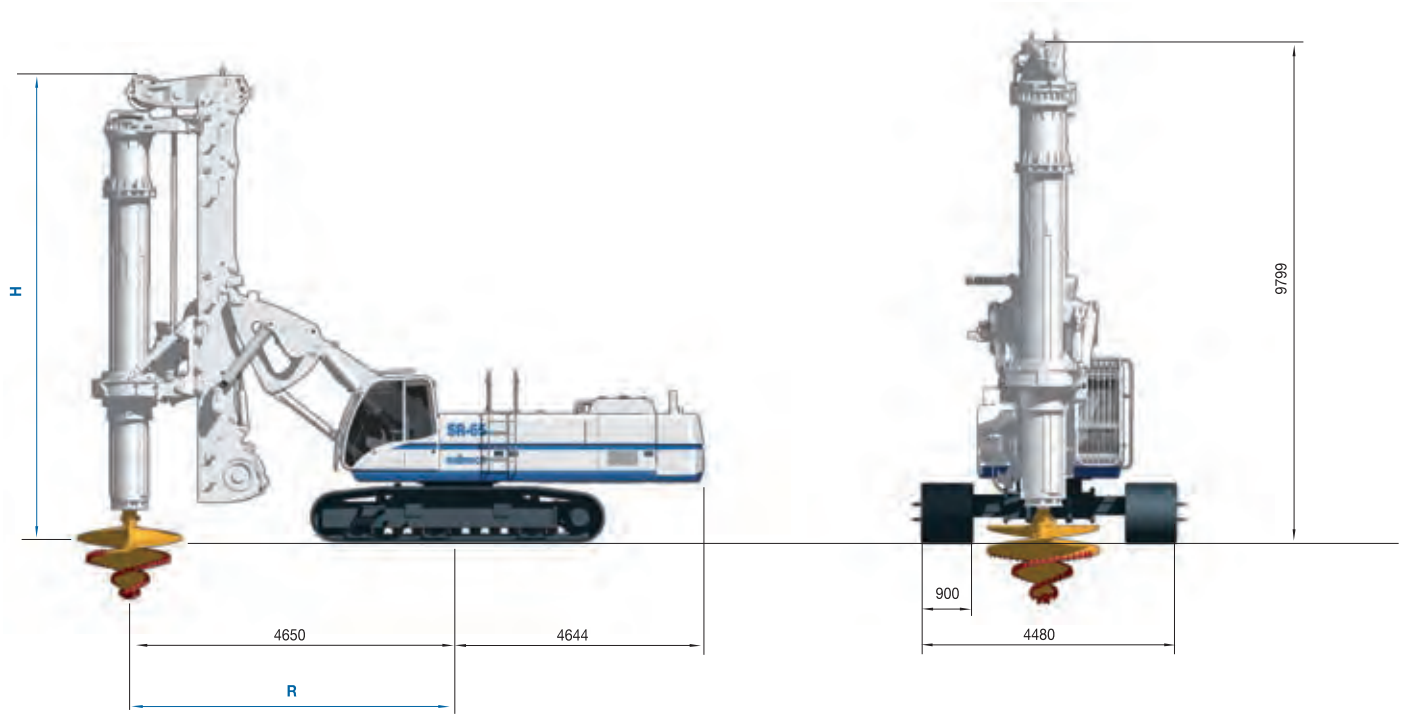
1 Undercarriage
2 Turret
3 Winches
4 Parallelogram system
5 Self-erecting mast
6 Cathead
7 Crowd system
8 Rotary head
9 Telescopic kelly bar
10 Self erecting counterweight
11 Cab

Drilling Depths

Max extension		R	H	Max kelly lenght	kelly 4X	kelly 5X	kelly 9X	kelly 10X	kelly self mounted
2 + 1 m	*6.6 + 3.3 ft*	**4,7 m** *15 ft*	**9,8 m** *32 ft*	**7,0 m** *23 ft*	**23,0 m** *75 ft*	**29,3 m** *96 ft*	**54,6 m** *179 ft*	**60,9 m** *200 ft*	**Yes**
2 + 1 m	*6.6 + 3.3 ft*	**6,2 m** *20 ft*	**8,8 m** *29 ft*	**6,0 m** *20 ft*	**20,0 m** *66 ft*	**25,3 m** *83 ft*	**46,6 m** *153 ft*	**51,9 m** *170 ft*	**Yes**
2 m	*6.6 ft*	**4,7 m** *15 ft*	**8,8 m** *29 ft*	**6,0 m** *20 ft*	**19,0 m** *62 ft*	**24,3 m** *80 ft*	**45,6 m** *150 ft*	**50,9 m** *167 ft*	**Yes**
2 m	*6.6 ft*	**6,2 m** *20 ft*	**7,8 m** *26 ft*	**5,0 m** *16 ft*	**16,0 m** *52 ft*	**20,3 m** *67 ft*	**37,6 m** *123 ft*	**41,9 m** *137 ft*	**Yes**
1 m	*3.3 ft*	**4,7 m** *15 ft*	**7,8 m** *26 ft*	**5,0 m** *16 ft*	**15,0 m** *49 ft*	**19,3 m** *63 ft*	**36,6 m** *120 ft*	**40,9 m** *134 ft*	**Yes**
1 m	*3.3 ft*	**6,2 m** *20 ft*	**6,8 m** *22 ft*	**4,0 m** *13 ft*	**12,0 m** *39 ft*	**15,3 m** *50 ft*	**28,6 m** *94 ft*	**31,9 m** *105 ft*	**Yes**
None	*None*	**4,7 m** *15 ft*	**6,8 m** *22 ft*	**4,0 m** *13 ft*	**11,0 m** *36 ft*	**14,3 m** *47 ft*	**27,6 m** *91 ft*	**30,9 m** *101 ft*	**Yes**
None	*None*	**6,2 m** *20 ft*	**5,8 m** *19 ft*	**3,0 m** *10 ft*	**8,0 m** *26 ft*	**11,3 m** *37 ft*	**19,6 m** *64 ft*	**21,9 m** *72 ft*	**Yes**

LHR - Low Head Room Kit

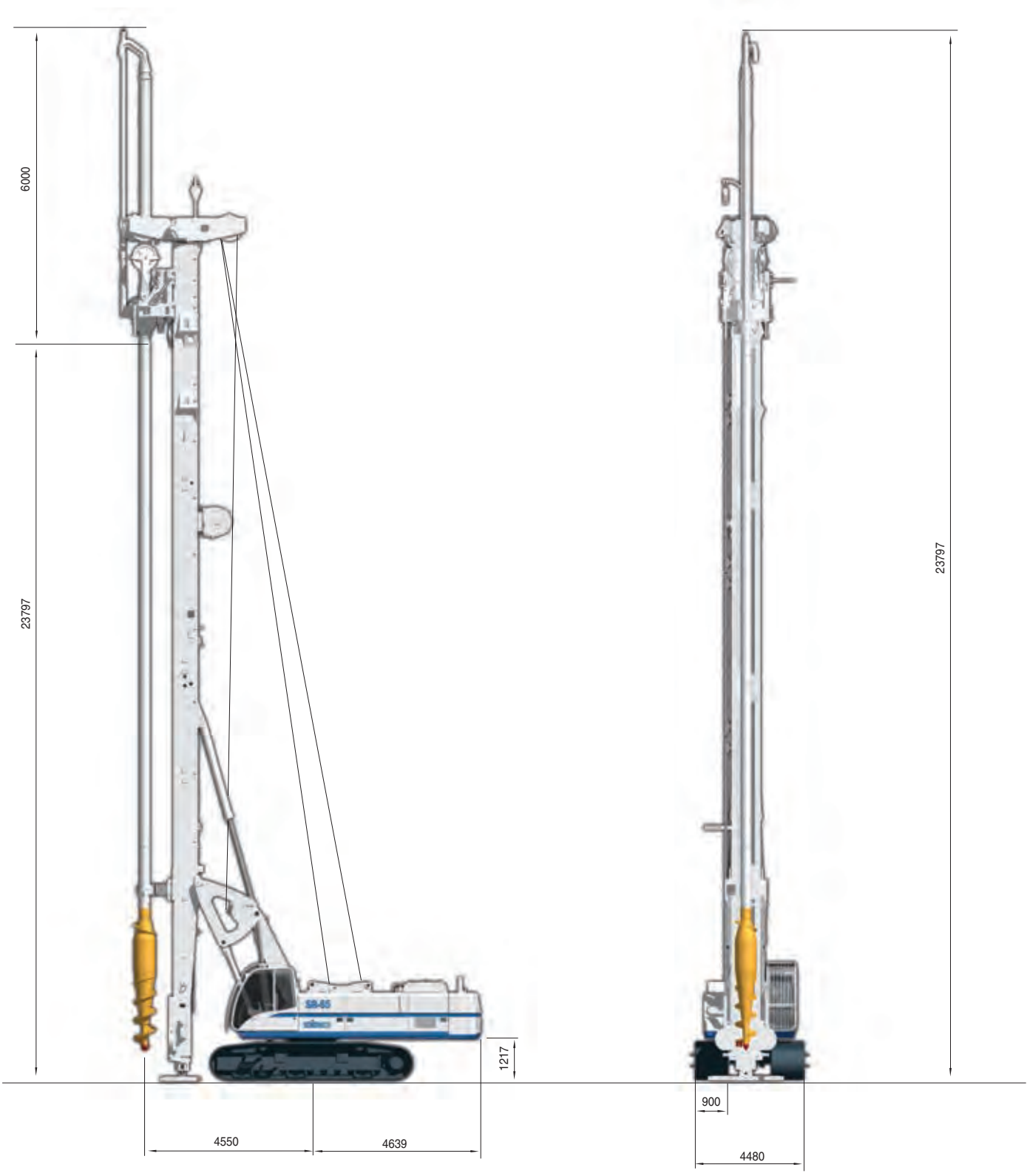
2+1 m mast extension version



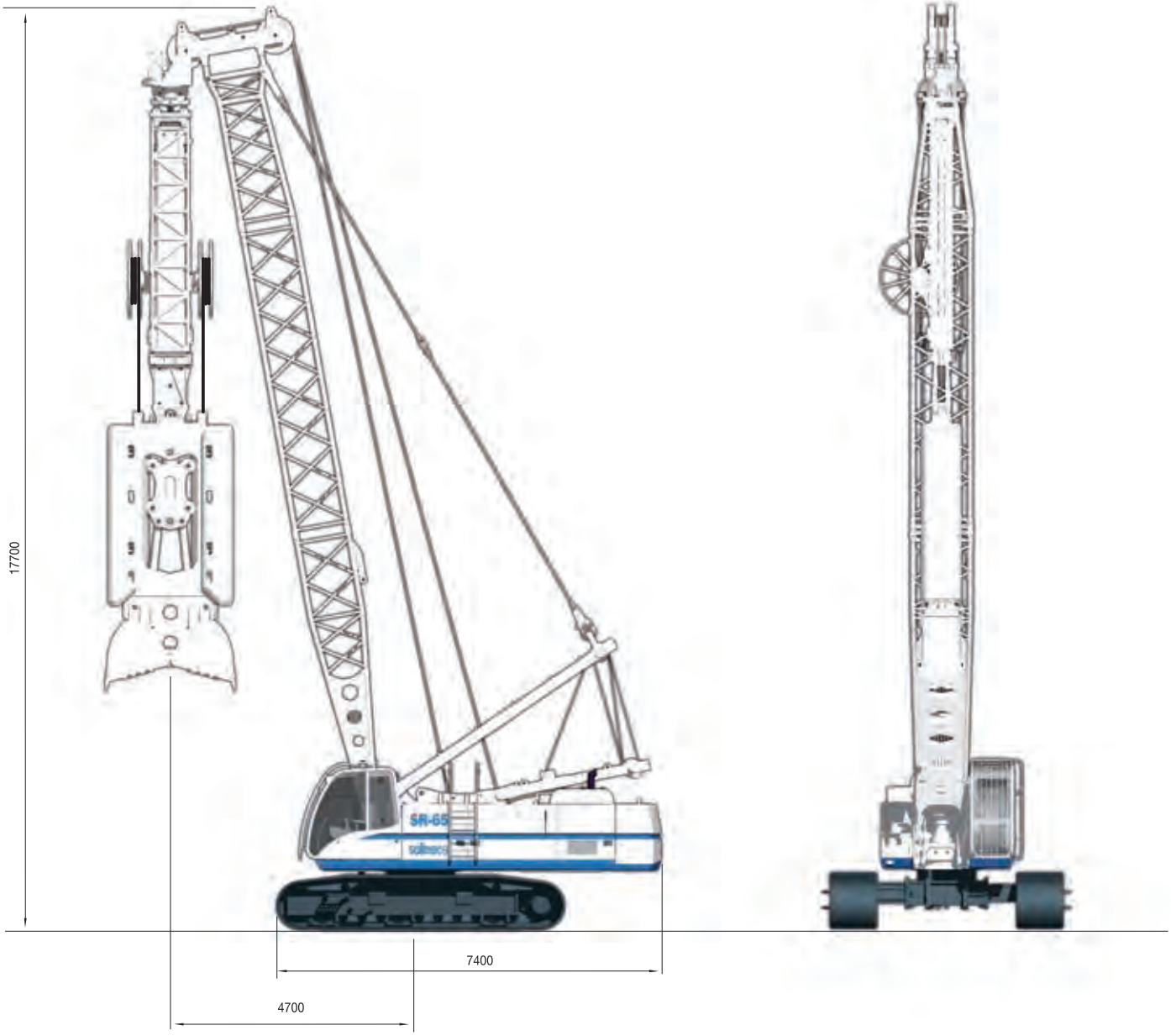
Max drilling diameter	**2500 mm**	*118 in*
Max pile depth (see table)	**60 m**	*197 ft*
Crowd force	**248 kN**	*55752 lbf*
Operating weight (approx.)	**65000 kg**	*143299 lb*
Rotary inner passage	**687 mm**	*27.1 in*

APPLICATIONS

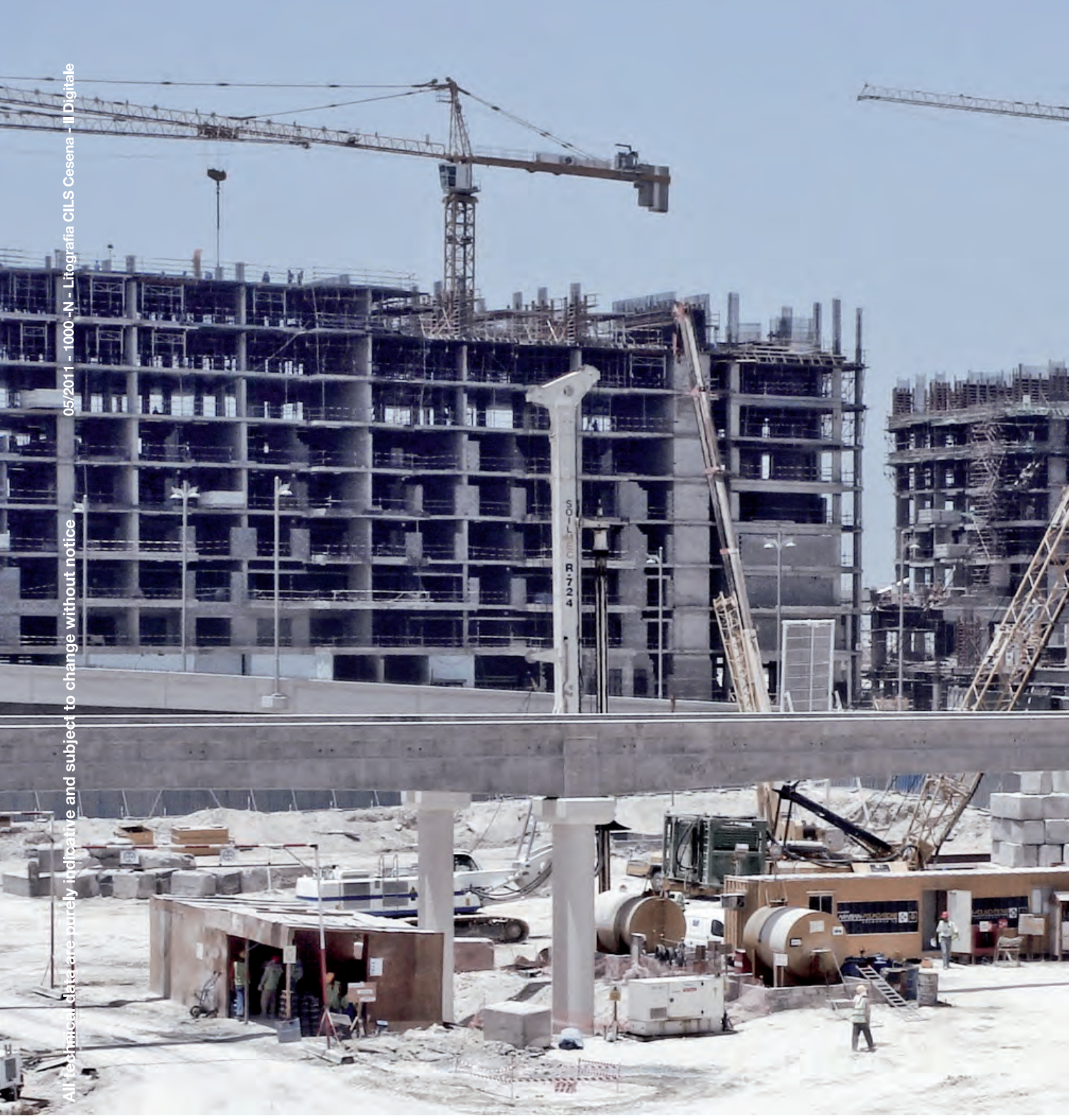
DP



Max pile diameter	**600 mm**	*24 in*
Max pile depth	**23 m**	*75 ft*
Crowd force (nominal)	**320 kN**	*71938 lbf*
Operating weight (approx.)	**71000 kg**	*156527 lb*



Grab model	BH-12	
Max depth	**75 m**	*246 ft*
Excavation dimension (width x length)	**500/1200 x 2000/3500 mm**	*20/47 x 79/138 in*
Grab weight (approx.)	**12 t**	*26455 lb*
Operating cylinder, bore	**240 mm**	*9.5 in*
Thrust at 30 MPa	**1360 kN**	*305740 lbf*



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