

Heavy Duty Crawler Crane

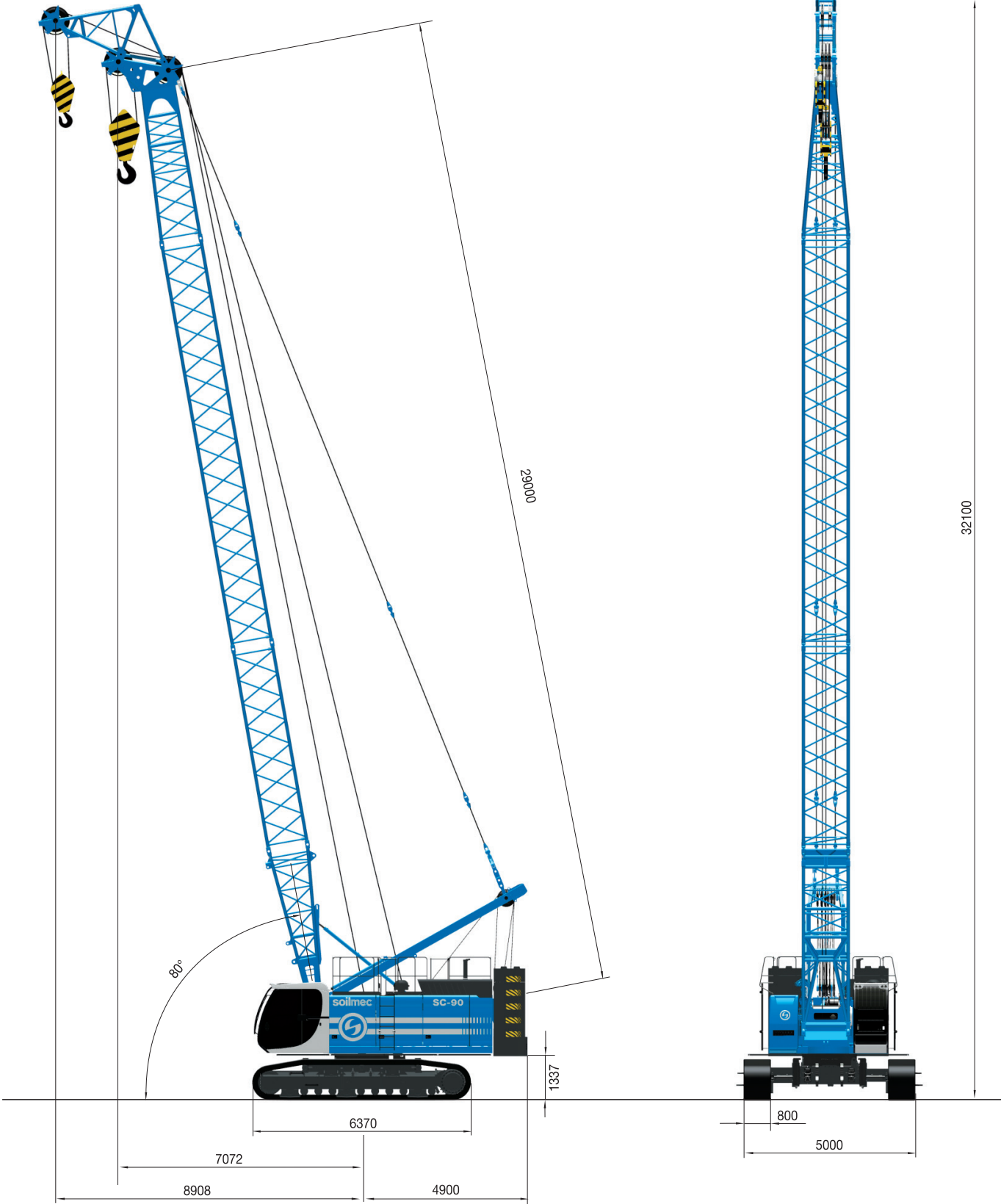
# SC-90 HD



**soilmec**   
Drilling and Foundation Equipment

# SC-90 HD Heavy Duty Crawler Crane

## MAIN BOOM EQUIPMENT



# SC-90 HD Heavy Duty Crawler Crane

## TECHNICAL DATA SHEET

<b>Operating weight</b>	<b>93000 kg</b>	<b>205029.7 lb</b>
<b>Diesel engine</b>	<b>CAT C18 with ACERT™ Technology</b>	<b>CAT C18 with ACERT™ Technology</b>
- Max Rated Power	<b>470 kW @ 1800 rpm</b>	<b>630 HP @ 1800 rpm</b>
- Engine conforms to exhaust emissions standard	<b>Stage IIIB and US EPA Tier 4 Int, Stage IIIA and US EPA Tier 3</b>	<b>Stage IIIB and US EPA Tier 4 Int, Stage IIIA and US EPA Tier 3</b>
- Displacement	<b>18,1 liters</b>	<b>4.79 US gal</b>
- N. of cylinders and arrangement	<b>6 in line</b>	<b>6 in line</b>
- Aspiration	<b>Turbocharged, air to air aftercooled</b>	<b>Turbocharged, air to air aftercooled</b>
- Cooling	<b>Water-cooled</b>	<b>Water-cooled</b>
- Electric system	<b>24 V</b>	<b>24 V</b>
<b>Hydraulic system</b>		
- Max working pressure	<b>300 Bar</b>	<b>4351 PSI</b>
- Main pums max oil flow	<b>3 x 360 l/min; 2 x 325 l/min</b>	<b>3x95 gal/min; 2x86 gal/min</b>
- Cooling	<b>Oil-to-air heat exchanger</b>	<b>Oil-to-air heat exchanger</b>
<b>Service refill capacity</b>		
- Fuel Tank	<b>800 l</b>	<b>211.3 gal</b>
- Hydraulic Tank	<b>800 l</b>	<b>211.3 gal</b>
<b>Main winches</b>	<b>Lebus LFF255</b>	<b>Lebus LFF255</b>
- 1st layer line pull (effective load)	<b>250 kN</b>	<b>56202 lbf</b>
- Rope diameter	<b>34 mm</b>	<b>1.3 in</b>
- Rope speed	<b>80 m/min</b>	<b>262.5 ft/min</b>
<b>Boom</b>		
- Length min-max	<b>11-56 m</b>	<b>36-183.7 ft</b>
- Tubular (horizontal x vertical)	<b>1300 x 1150 mm</b>	<b>51 x 42 in</b>
- Boom extension length	<b>3-6-12 m</b>	<b>9.8-19.7-42.6 in</b>
<b>Undercarriage</b>	<b>fixed gauge - removable sides</b>	<b>fixed gauge - removable sides</b>
- Overall width of crawlers	<b>5000 mm</b>	<b>196.8 in</b>
- Overall length of crawlers	<b>6370 mm</b>	<b>250.8 in</b>
- Track shoe width - Triple grouser	<b>800 mm</b>	<b>31.5 in</b>
- Travel speed	<b>1,2 - 2,4 km/h</b>	<b>0.75-1.5 mph</b>

## STANDARD EQUIPMENT

### BASE MACHINE

- 2 x 225 Ah capacity batteries for low temperature
- PLC system for electric-hydraulic controls
- Steps for crawlers
- Tracks with chain tensioning device
- Grease lubricated tracks
- Automatic swing parking brake and automatic travel parking brake
- Two front working lights
- Rear view mirror
- Counterweight self-removal
- Swivel for main rope
- Hydro-clean micro filtration with water separation
- Electric refuelling pumps for diesel and hydraulic oil with automatic stop system.

### CAB / CONTROL

- Air conditioner, heater and defroster with automatic climate control
- Beverage/Cup holder
- Radio and CD player
- High brightness led internal to the cab
- Courtesy lights in the cab
- Signal/warning horn
- Floor mat
- Lockable glove compartment
- Retracted seat belt
- Stationary skylight
- Sunshade for windshield
- Travel control pedals with removable hand levers
- Parallelogram wiper including a washer nozzle mounted below the cab windshield

- Warning in cab of hydraulic oil contamination
- Tempered safety glass panel
- Armrests

### SAFETY DEVICE

- Load Moment Indicator (with boom lowering slow stop function)
- Fire extinguisher
- Cab top guard
- Catwalk (on side and in front of operator's cab)
- Depthmeter on both main winches
- State-of-the-art safety load indicator with graphic display
- Rope and Load limit switch.
- Hoist limit switch on both main winches

## OPTIONAL EQUIPMENT

- Track triple grouser: 900 mm
- Flat track shoes
- Windshield guards
- Reversible cooling fan including protective screen
- Bio lubrication engine oil
- "CAT BIO HYD ADVANCED" hydraulic bio-oil (compliant with European directive 2005/360/EC).
- GSM modem
- Hydraulic arrangement for Casing oscillator

- attachment
- Positive or negative free fall controls
- Satellite system for remote transmission of operating data
- Electric hand throttle
- Auxiliary winch
- Tagline winch
- Automatic lubrication system
- Winch synchronisation (both winches work with

- the same speed)
- Potentiometer to tune the load between main winches during 2-rope grab operation
- 3-color percentage indicator
- Swing and travel alarm
- Lights for overall dimensions
- LCD cameras monitor multi-display

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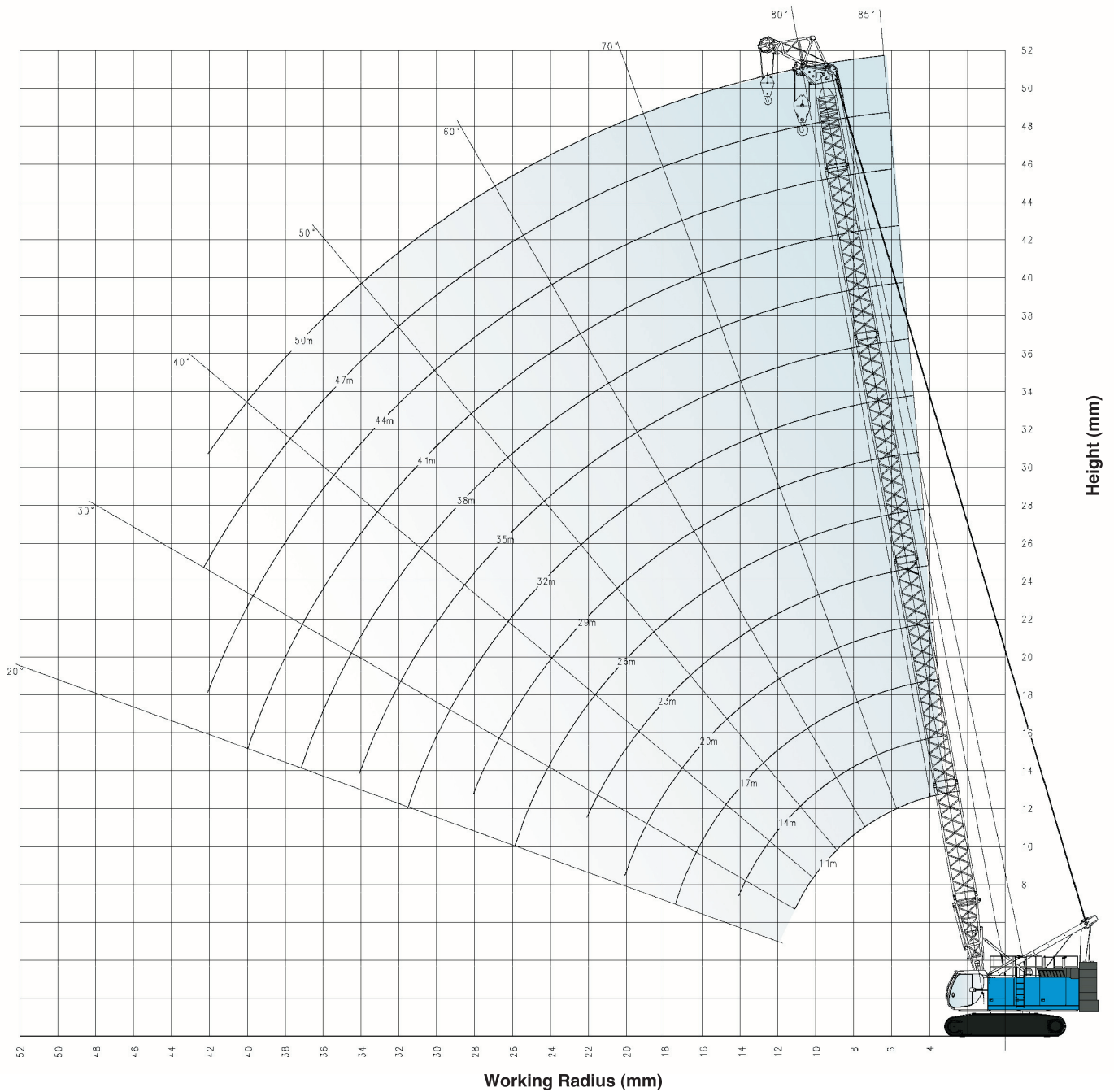
## LOAD CHART

Capacity (t)																
Boom Length (m)																
Radius (m)	11 m	14 m	17 m	20 m	23 m	26 m	29 m	32 m	35 m	38 m	41 m	44 m	47 m	50 m	53 m	56 m
3,6	90,0	90,0	90,0													
4,0	90,0	89,5	86,0	79,8												
5,0	73,6	70,4	66,0	62,1	58,5	55,3	49,1	41,6								
6,0	59,4	56,2	53,2	50,6	48,1	45,7	43,7	41,6	36,7	31,9	28,0	24,8				
7,0	49,1	46,7	44,6	42,6	40,8	39,0	37,4	35,8	34,4	31,9	28,0	24,8	22,9	20,6	16,8	14,1
8,0	40,6	39,8	38,2	36,7	35,2	33,9	32,5	31,3	30,0	29,0	27,9	24,8	22,9	20,6	16,8	14,1
9,0	34,8	34,7	33,4	32,0	30,9	29,7	28,7	27,6	26,6	25,7	24,7	23,8	22,9	20,6	16,8	14,1
10,0	30,1	30,6	29,6	28,4	27,6	26,5	25,6	24,7	23,8	23,0	22,2	21,5	20,6	19,9	16,8	14,1
11,0	26,0	27,4	26,5	25,4	24,7	23,8	23,0	22,2	21,6	20,8	20,1	19,3	18,7	18,0	16,8	14,1
12,0		24,4	23,8	23,0	22,3	21,6	20,9	20,2	19,5	18,9	18,3	17,6	17,0	16,5	15,8	14,1
13,0		21,9	21,8	21,0	20,4	19,7	19,1	18,5	17,9	17,3	16,7	16,1	15,6	15,0	14,5	13,9
14,0		19,7	19,8	19,2	18,7	18,1	17,6	17,0	16,5	15,9	15,3	14,8	14,3	13,8	13,3	12,8
16,0			16,4	16,4	16,0	15,4	15,0	14,4	14,0	13,5	13,1	12,6	12,2	11,8	11,3	10,9
18,0				13,8	13,8	13,4	12,9	12,5	12,1	11,7	11,3	10,9	10,5	10,1	9,7	9,3
20,0				11,8	11,8	11,8	11,4	10,9	10,6	10,2	9,8	9,4	9,1	8,7	8,4	8,0
22,0					10,2	10,1	10,0	9,6	9,3	9,0	8,6	8,3	8,0	7,6	7,3	6,9
24,0						8,8	8,7	8,5	8,3	7,9	7,6	7,3	7,0	6,7	6,3	6,0
26,0						7,7	7,6	7,5	7,4	7,1	6,7	6,4	6,2	5,8	5,5	5,2
28,0							6,7	6,6	6,5	6,3	6,0	5,7	5,4	5,1	4,8	4,5
30,0								5,8	5,7	5,6	5,4	5,0	4,8	4,5	4,2	3,9
32,0								5,1	5,0	4,9	4,7	4,5	4,3	4,0	3,7	3,4
34,0									4,4	4,3	4,1	4,0	3,8	3,5	3,2	2,9
36,0										3,8	3,6	3,4	3,3	3,0	2,8	2,5
38,0										3,3	3,1	3,0	2,9	2,7	2,4	2,1
40,0											2,7	2,6	2,4	2,3	2,1	1,8
42,0												2,2	2,1	1,9	1,7	1,5
44,0													1,8	1,7	1,6	1,4
46,0														1,4	1,2	1,1
48,0																
50,0																
52,0																

Boom configuration																		
Type	Length			N° of boom extensions (*)														
Boom foot	5,5 m	18 ft		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Boom insert	3 m	10 ft		-	1	-	1	-	1	-	1	-	1	-	1	-	1	-
Boom insert	6 m	20 ft		-	-	1	1	2	2	3	3	4	4	5	5	6	6	7
Boom head	5,5 m	18 ft		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Boom length (m)				11	14	17	20	23	26	29	32	35	38	41	44	47	50	53
Boom length (ft)				36	46	56	66	76	86	96	105	115	125	135	144	154	164	174

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## MAIN BOOM

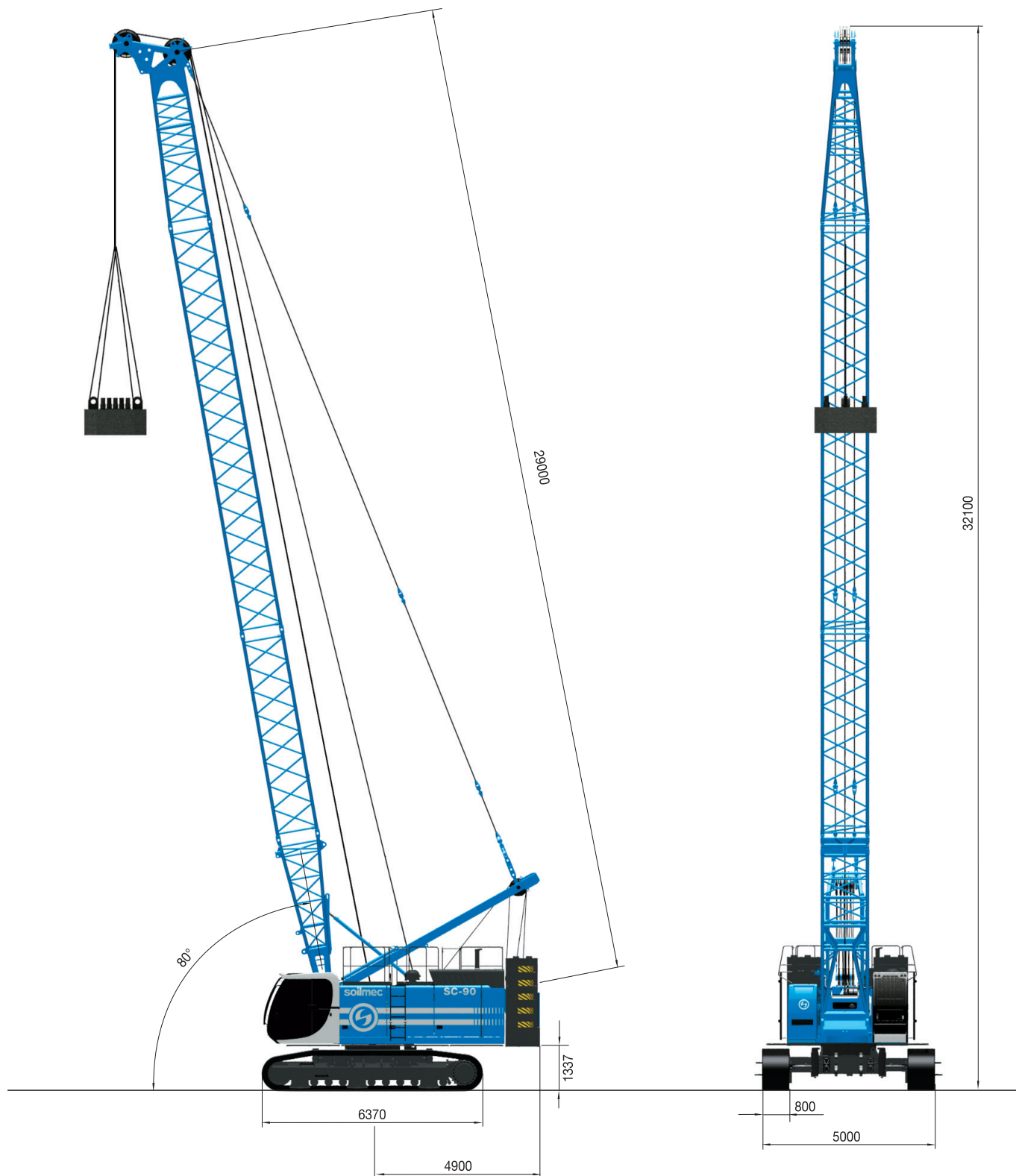


### Notes

- Rated loads are in metric tons valid for 360 degrees working area.
- Lifting capacities are in compliance with DIN 15019/part 2/chart 1 and ISO 4305 and do not exceed 75% of tipping load of the machine.
- Working radius are measured from the swing center of the machine.
- Rated loads are calculated with the machine on firm and level ground, without travelling
- Weights of lifting attachments (e.g.: hook, ropes, bucket, etc.) are included in the rated load: therefore their weights must be subtracted from rated load to obtain net lifting value.
- This load chart is valid if crawler frames are extended.
- Lifting capacities are based on freely suspended loads. Operator must reduce lifted loads and operating speeds in case of adverse conditions (e.g.: wind, soft ground, out-of-level, pendulum action, sudden load stopping, operating speeds, etc.)
- This load chart are only for reference. For actual lifting capacities please refer to load chart in operator's manual.
- Instruction in the "Operator's Manual" must be strictly observed during machine operations.
- Operations are not approved for working radius and boom lengths that have no ratings associated on load chart

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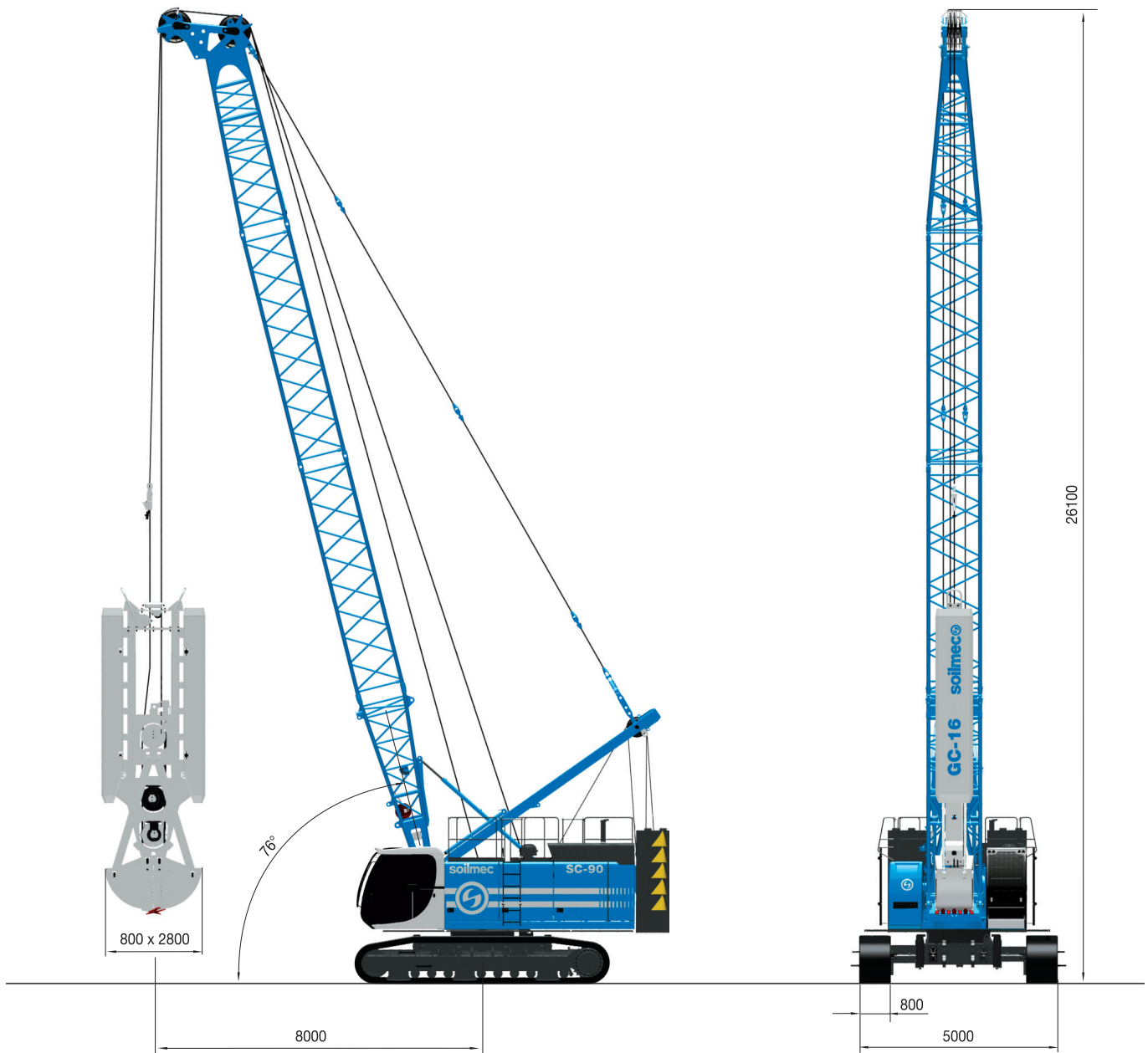
## DYNAMIC COMPACTION VERSION



Dynamic compaction				
Boom length	20 m	65.6 ft	Capacity	25 t / 55115 lb
Boom length	23 m	75.5 ft	Capacity	25 t / 55115 lb
Boom length	26 m	85.3 ft	Capacity	20 t / 44092 lb
Boom length	29 m	95.1 ft	Capacity	20 t / 44092 lb

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## CABLE GRAB VERSION

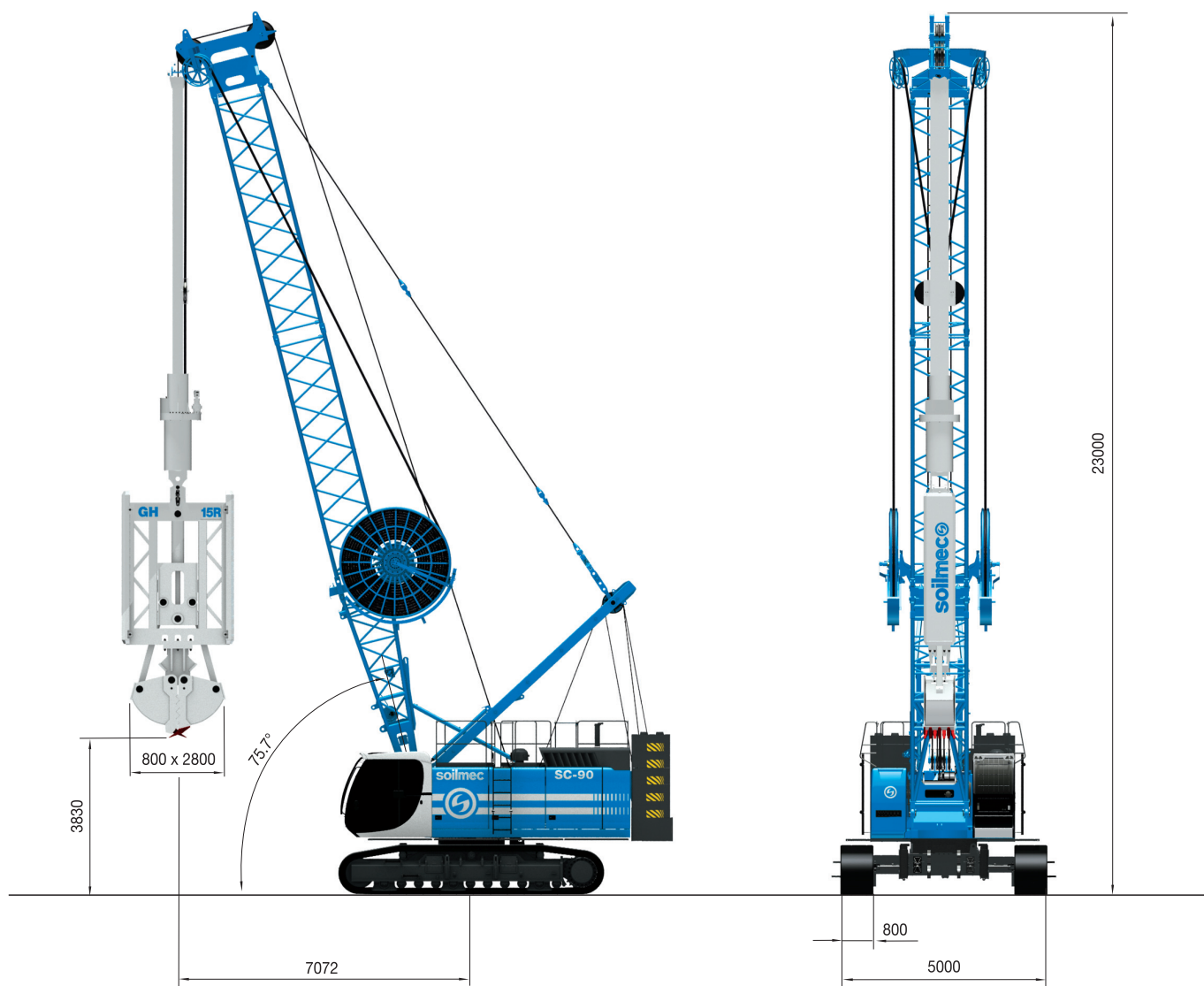


### GC-16 Grab type - Cable operated grab

Excavation dimension (width x length)	800/1200 x 2800/3500 mm	31.5/47 x 110/138 in
Grab weight	16 t	35274 lb
Winches	2 x 250 kN	2 x 56202 lbf
Max rope speed at first layer (m/min)	82 m/min	269 ft/min
Rope diameter	34 mm	1.3 in
Nr. of rope lines	5	5

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## HYDRAULIC GRAB VERSION



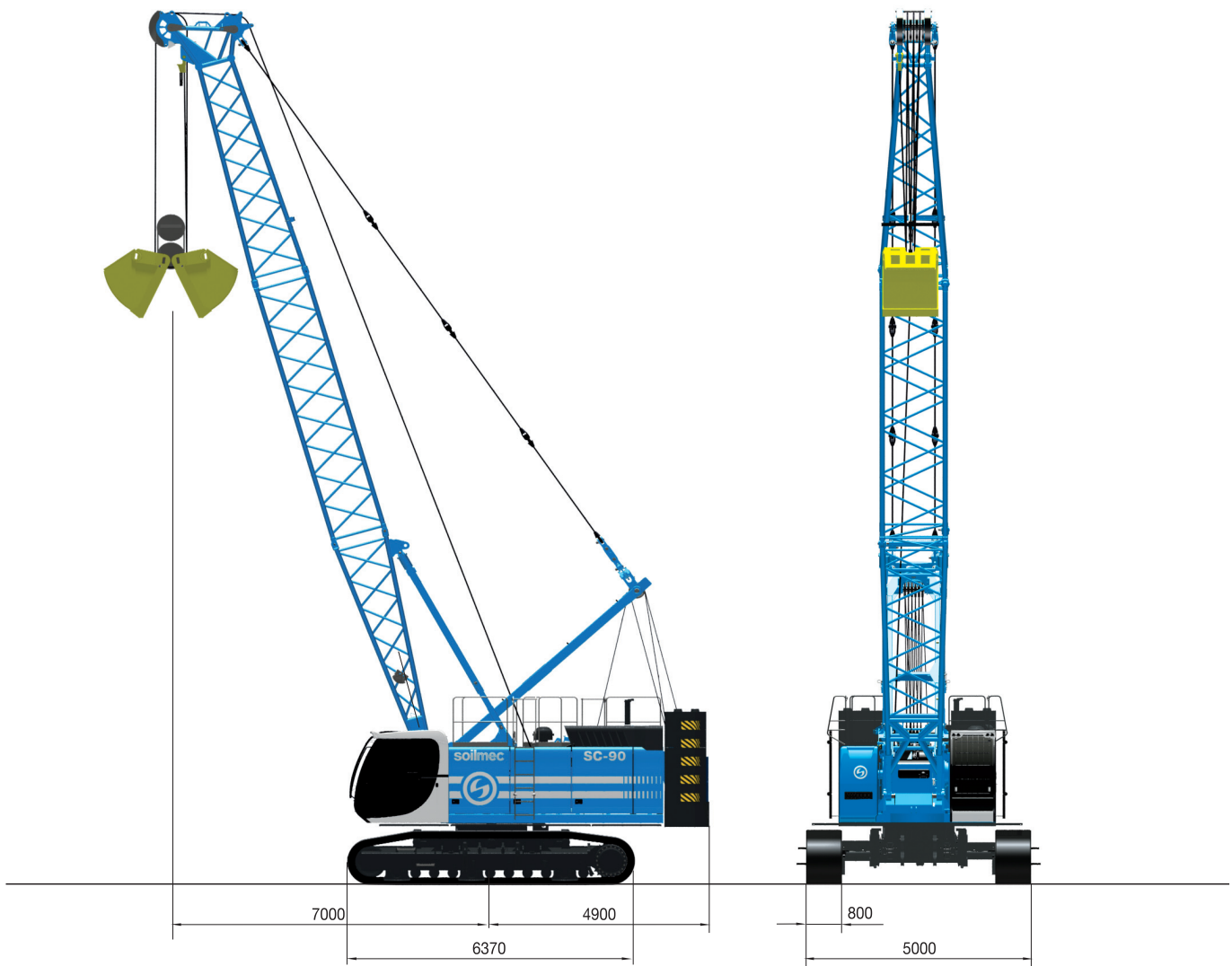
GH-15R Grab type	Hydraulically controlled suspended by rope	
	Rotograb 360°	Rotograb 360°
Grab revolving system	75 m	246 ft
Max depth	600/1500 x 2800/4200 mm	24/60 x 112/165 in
Excavation dimension range (width x length)	15,2 t	33510 lb
Grab tot. (approx.)	30MPa	300 bar
Continuous operating pressure	4000 kg	8818.5 lb
Kelly guide weight	438 kN	98466 lbf
Closing force*	240 mm	9.5 in
Operating cylinder bore	1360 kN	305740 lbf
Operating cylinder thrust at 30 Mpa		

\*GH-15R at 1000 x 3000 mm / 39.5 x 118 in



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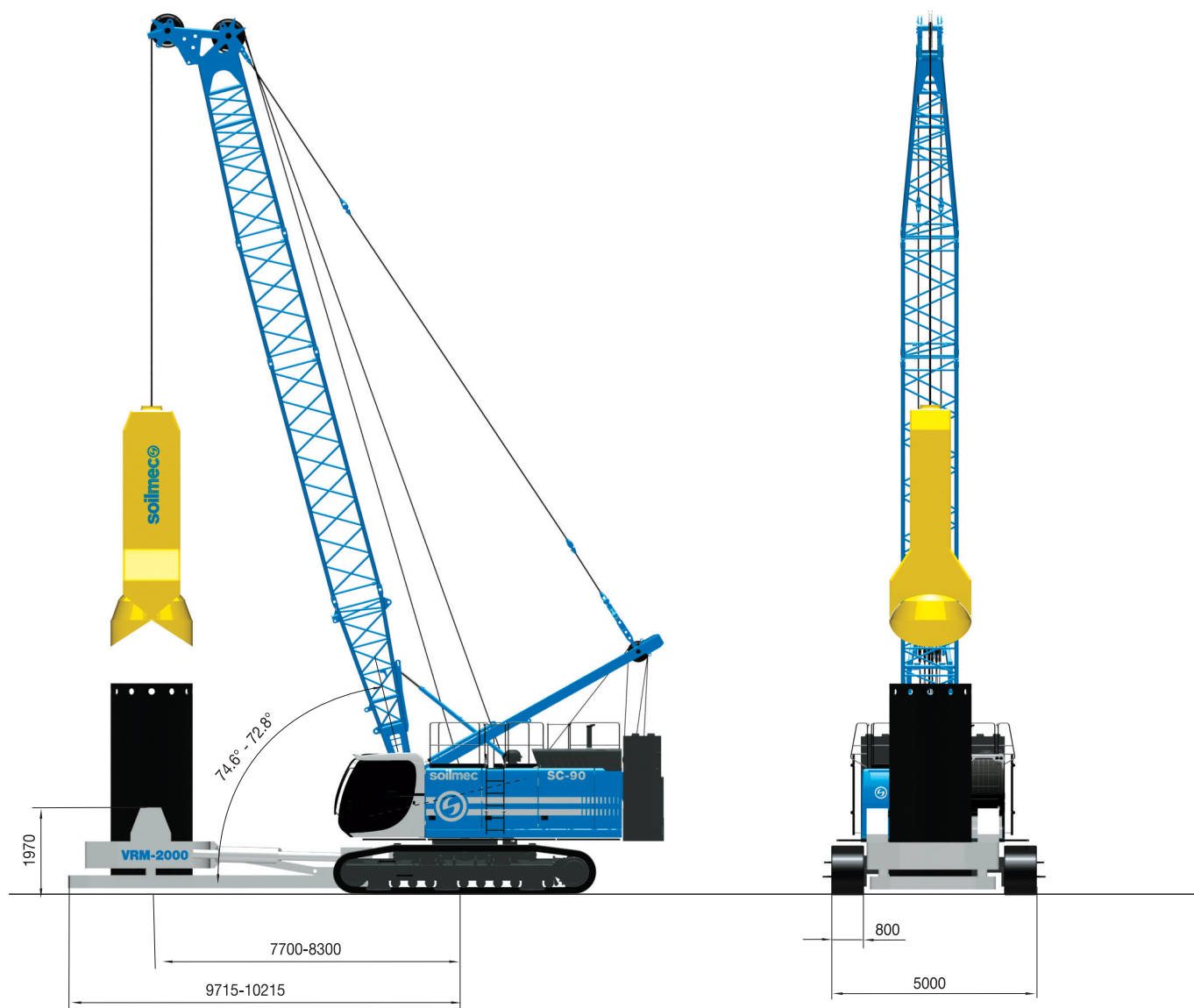
## CLAMSHELL VERSION



Clamshell		
Winches	2 x 250 kN	2 x 56202 lbf
Rope diameter	34 mm	1.3 in
1 - rope clamshell	21 t	46297 lb
2 - rope clamshell	28 t	61729 lb

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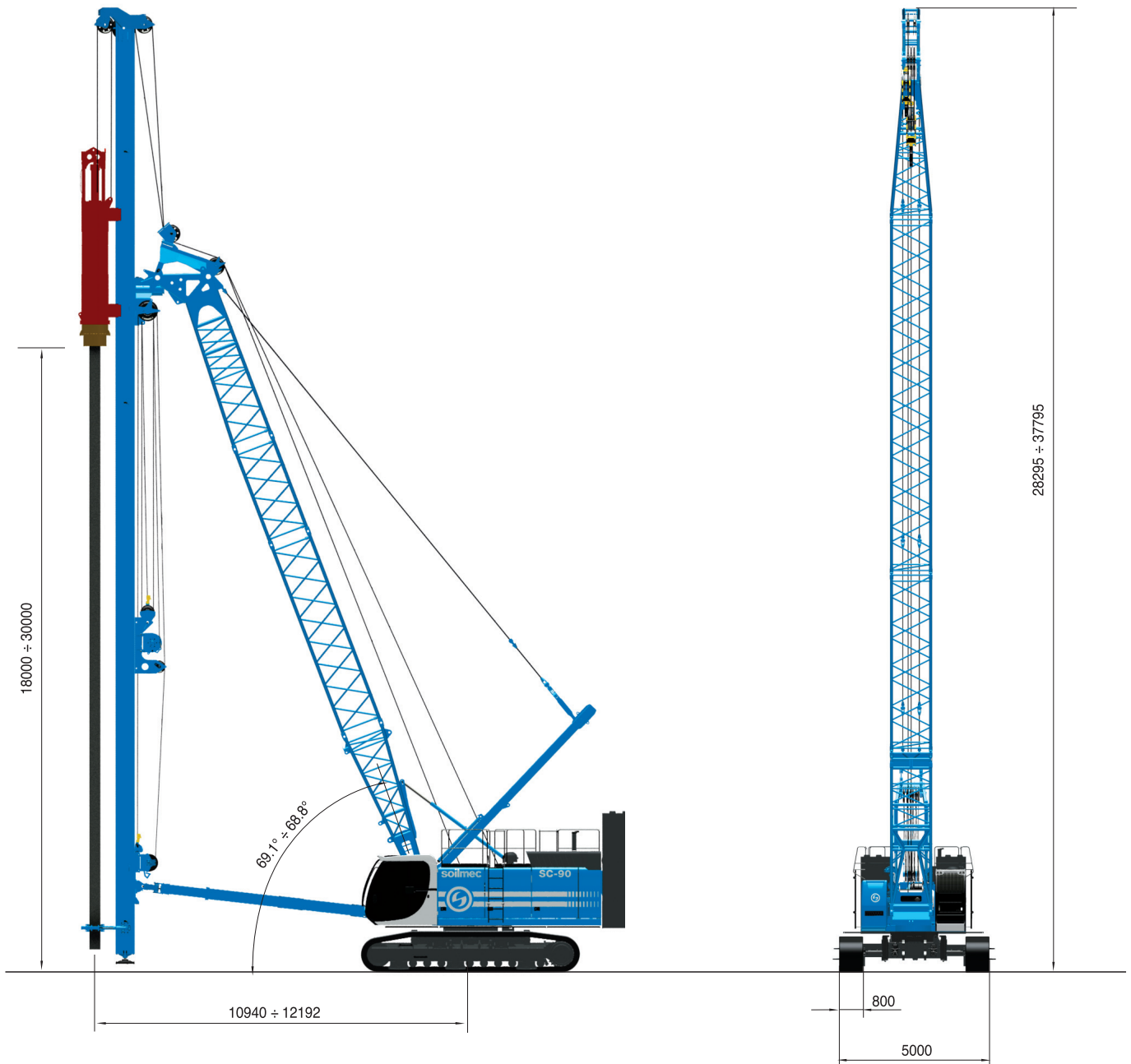
## HAMMER GRAB VERSION with Casing Oscillator



Hammer grab		
Max allowable weight in two rope operation	18 t	39683 lb
Drilled pile diameter	2000 mm	78.7 in
Winche pull (1° layer)	250 kN	56202 lbf
Rope speed (1° layer)	77 m/min	253 ft/min

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## PILE DIVING

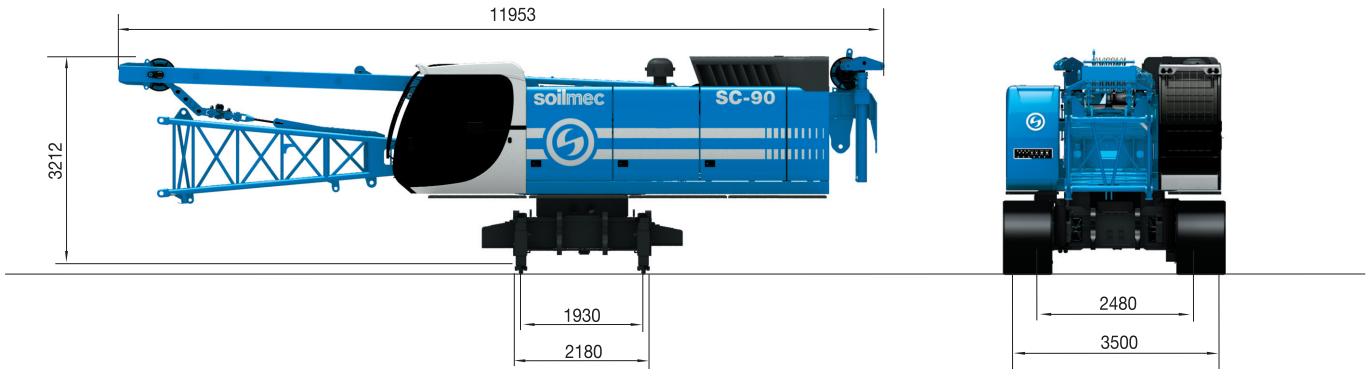


Pile diving	Hydraulic hammer type A		Hydraulic hammer type B		Diesel hammer type C	
Hammer total weight	11,5 t	25353 lb	9 t	19841 lb	4 t	8818 lb
Hammer RAM weight	7 t	15432 lb	5 t	11023 lb	1,8 t	3968 lb
Usable pile length	18 m	59.1 ft	22 m	72.2 ft	30 m	98.4 ft
Crane boom length	20 m	65.6 ft	20 m	65.6 ft	23 m	75.5 ft
Leader length	27 m	88.6 ft	30 m	98.4 ft	36 m	118.1 ft
Possible leader inclinations - Front/rear/side batter	18°/18°/15°	18°/18°/15°	18°/18°/15°	18°/18°/15°	16°/18°/15°	16°/18°/15°

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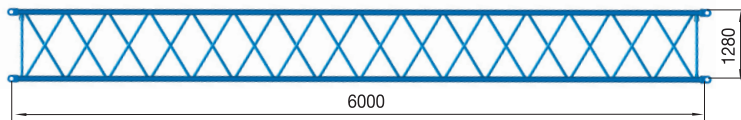
## TRANSPORT DIMENSIONS AND WEIGHTS

### Main machine

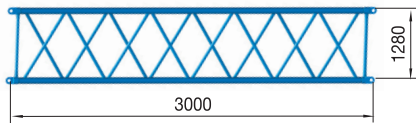


<b>Width</b>	<b>3500 mm</b>	<b>138 in</b>
<b>Weight</b>	<b>44000 kg</b>	<b>97000 lb</b>

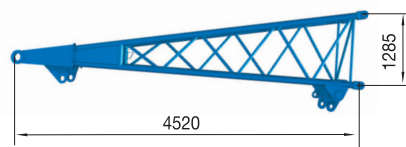
### Boom



<b>Width</b>	<b>1360 mm</b>	<b>53.5 in</b>
<b>Weight</b>	<b>1000 kg</b>	<b>2204.6 lb</b>

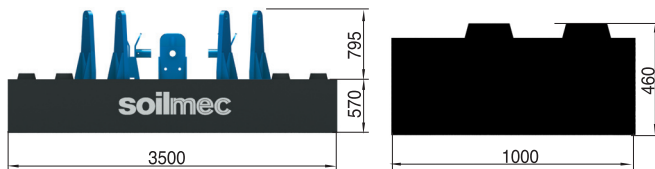


<b>Width</b>	<b>1360 mm</b>	<b>53.5 in</b>
<b>Weight</b>	<b>650 kg</b>	<b>1433 lb</b>



<b>Width</b>	<b>1360 mm</b>	<b>53.5 in</b>
<b>Weight</b>	<b>2800 kg</b>	<b>6172.9 lb</b>

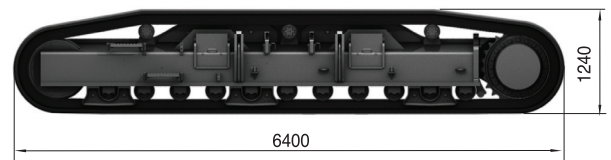
### Counterweight (26.5 t)



<b>Base width</b>	<b>1010 mm</b>	<b>40 in</b>
<b>Base weight</b>	<b>12060 kg</b>	<b>26588 lb</b>

<b>Block width</b>	<b>942 mm</b>	<b>37 in</b>
<b>Block weight</b>	<b>1350 kg</b>	<b>2970 lb</b>

### Sideframes



<b>Width</b>	<b>800 mm</b>	<b>315 in</b>
<b>Weight</b>	<b>10000 kg</b>	<b>22046 lb</b>

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