

Heavy Duty Crawler Crane

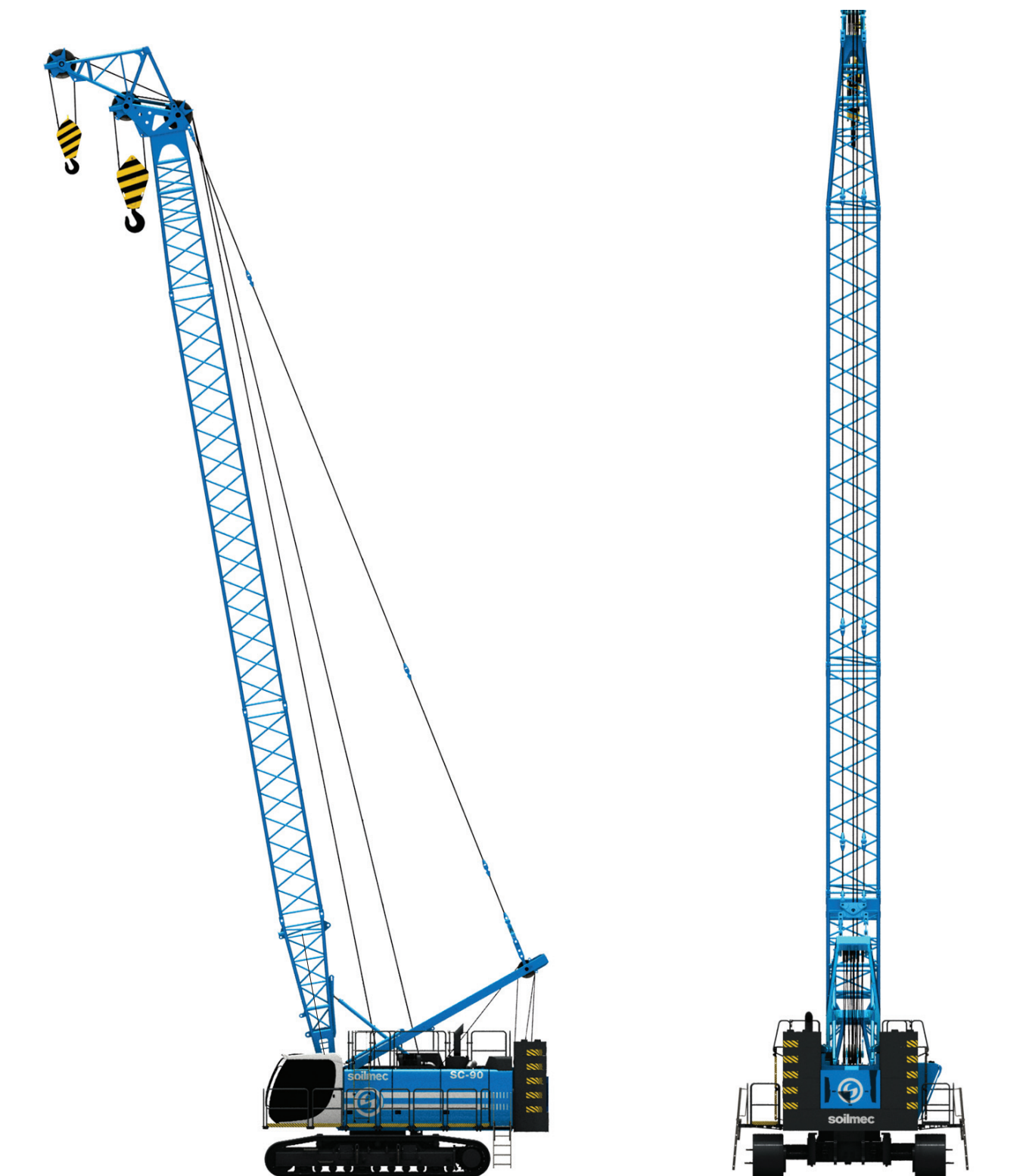
# SC-90 HD



**soilmec**   
Drilling and Foundation Equipment

# SC-90 HD Heavy Duty Crawler Crane

## LIFTING APPLICATION



Operating weight (approx.)

93000 kg

205029.7 lb

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## TECHNICAL DATA SHEET

Diesel engine	CAT C18 ACERT™	CAT C18 ACERT™
- Max Rated Power	470 kW @ 1800 rpm	630 HP @ 1800 rpm
- Engine conforms to exhaust emissions standard	EU Stage IV - US EPA Tier 4f or EU Stage IIIA - US EPA Tier 3	EU Stage IV - US EPA Tier 4f or EU Stage IIIA - US EPA Tier 3
- Displacement	18,1 liters	4.78 US gal
- Aspiration	Turbocharged, air to air aftercooled	Turbocharged, air to air aftercooled
<b>Hydraulic system</b>		
- Main pumps max oil flow	3 x 360 l/min; 2 x 325 l/min	3x95 gal/min; 2x86 gal/min
<b>Service refill capacity</b>		
- Fuel Tank	800 l	211.3 gal
- Hydraulic Tank	800 l	211.3 gal
<b>Main winches</b>	Free Fall	Free Fall
- 1st layer line pull (effective)	250 kN	56202 lbf
- Rope diameter	34 mm	1.3 in
- Rope speed	77 m/min	253 ft/min
- Rope capacity (1st layer)	36 m	118 ft
<b>Swing System</b>		
- Nr° of swing drivers	1 or 2	1 or 2
- Max swing speed	3 rpm	3 rpm
- Tail swing radius	4900 mm	193 in
<b>Boom</b>		
- Length min-max	11 - 56 m	36 - 184 ft
- Boom extension length	3 - 6 - 12 m	9.8 - 19.7 - 42.6 in
<b>Undercarriage</b>	variable gauge - removable sides	variable gauge - removable sides
- Overall width (extended side frames)	5000 mm	196.8 in
- Overall width (retracted side frames)	3500 mm	138 in
- Overall length of crawlers	6370 mm	250.8 in
- Track shoe width - Triple grouser	800 mm	31.5 in
- Travel speed	1,2 - 2,4 km/h	0.75 - 1.5 mph

## STANDARD EQUIPMENT

### BASE MACHINE

- Two front working lights
- PLC system for electric-hydraulic controls
- Rear view mirror
- Steps for crawlers
- Counterweight self-removal
- Tracks with chain tensioning device
- Swivel for main rope
- Grease lubricated tracks
- Hydro-clean micro filtration with water separation
- Automatic swing parking brake and automatic travel parking brake
- 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
- Stationary skylight
- Radio and CD player
- Sunshade for windshield
- High brightness led internal to the cab
- Travel control pedals with removable hand levers
- Courtesy lights in the cab
- Parallelogram wiper including a washer nozzle mounted below the cab windshield
- Signal/warning horn
- Hydraulic oil contamination warning inside the cab
- H-Cab with sliding doors

- Retracted seat belt
- 12" DMS touch or 10" non touch
- Tempered safety glass panel
- Armrests

### SAFETY DEVICE

- Load Moment Limiter (with boom lowering slow stop function)
- Fire extinguisher
- State-of-the-art safety load indicator with graphic display and 3 color percentage indicator traffic light
- Cab top guard
- Catwalk (on side and in front of operator's cab)
- Hoist limit switch on both winches
- Safety 3 rope turns unwinding limited switch on winches

## OPTIONAL EQUIPMENT

- Flat truck shoes: 900 mm
- Electric hand throttle
- Flat track shoes
- Tagline winch
- Reversible cooling fan including protective screen
- Automatic lubrication system
- Bio lubrication engine oil
- Boom walk ways with personal fall arrest system

- Winch synchronisation (both winches work at the same speed) for 2 rope grab operations
- "CAT BIO HYD ADVANCED" hydraulic bio-oil (compliant with European directive 2005/360/EC).
- GSM modem
- Hydraulic arrangement for Casing oscillator attachment
- Swing and travel alarm
- Positive or negative free fall controls

- Lights for overall dimensions
- Satellite system for remote transmission of operating data
- LCD cameras monitor multi-display
- Removable tracks
- Swing limitation system
- Depthmeter on both winches

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## LOAD CHART FOR LIFTING APPLICATION

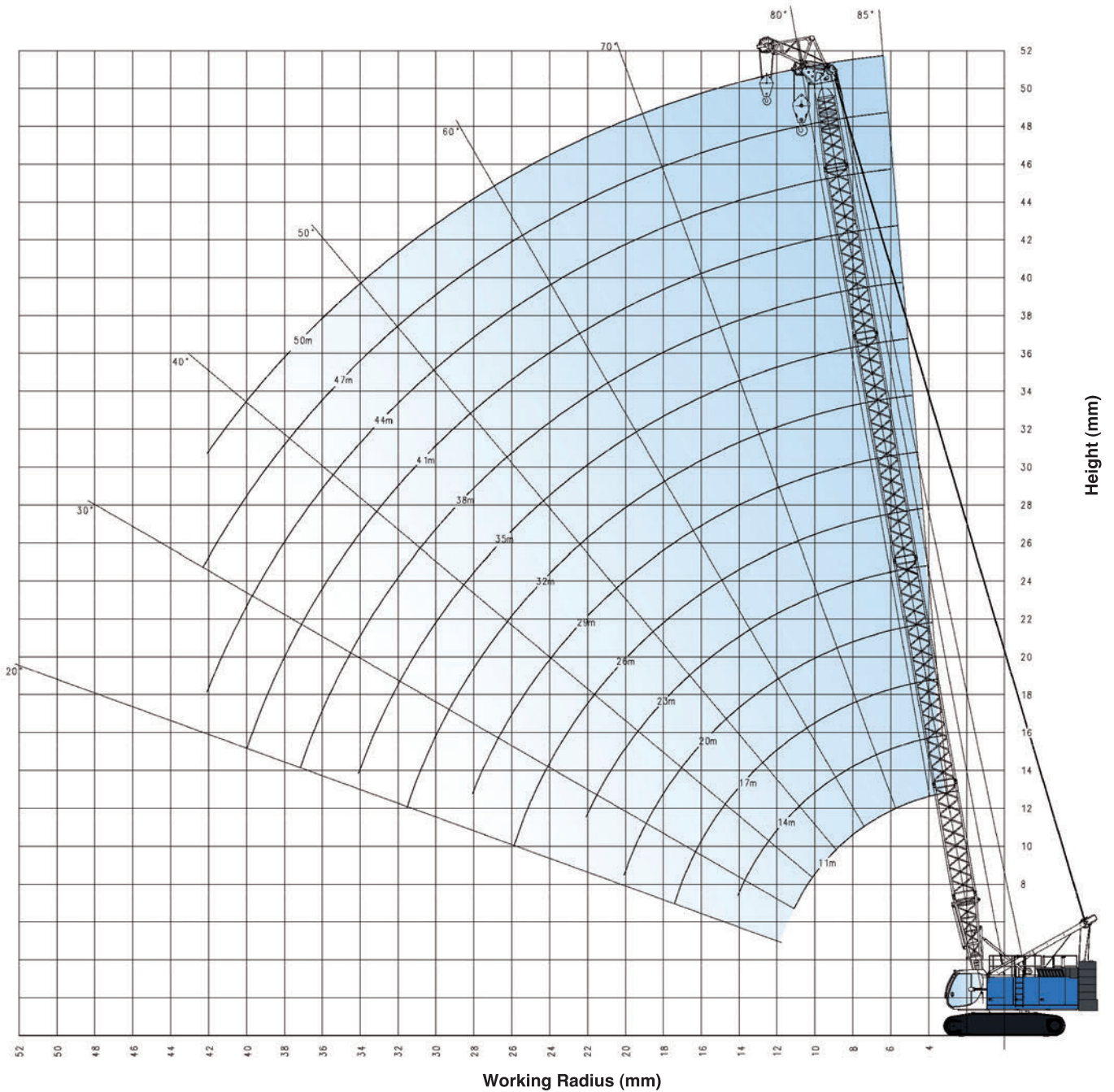
SC-90HD Load chart (t) for lifting operation																
Boom Length (m)																
Radius (m)	11 m	14 m	17 m	20 m	23 m	26 m	29 m	32 m	35 m	38 m	41 m	44 m	47 m	50 m	53 m	56 m
3,6	90,0	90,0	90,0													
4,0	90,0	89,5	86,0	79,8												
5,0	73,6	70,4	66,0	62,1	58,5	55,3	49,1	41,6								
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	1,4	1,2
46,0														1,4	1,2	1,1

SC-90HD Load chart (t) for duty cycle operation									
Boom Length (m)									
Radius (m)	17 m	20 m	23 m	26 m	29 m	32 m	35 m	38 m	
6,0	38,7	35,2	32,4	29,7	27,5	25,4	23,4	1,8	
7,0	33,6	30,9	28,6	26,5	24,5	22,6	21,2	19,5	
8,0	29,6	27,3	25,5	3,6	21,8	20,6	19,2	17,8	
9,0	26,4	24,3	22,7	21,4	20,1	18,7	17,5	16,4	
10,0	24,0	22,2	20,9	19,5	18,3	17,1	16,0	15,0	
12,0	18,9	18,4	17,6	16,5	15,5	14,5	13,5	12,6	
14,0	15,3	15,2	15,0	14,2	13,1	12,3	11,8	11,1	

Boom Configuration					
Boom Length	Boom foot	Boom insert	Boom insert	Boom head	
m					
	5,5 m	3 m	6 m	5,5 m	
11	1	-	-	1	n. boom extension
14	1	1	-	1	
17	1	-	1	1	
20	1	1	1	1	
23	1	-	2	1	
56	1	1	2	1	
29	1	-	3	1	
32	1	1	3	1	
35	1	-	4	1	
38	1	1	4	1	
41	1	-	5	1	
44	1	1	5	1	
47	1	-	6	1	
50	1	1	6	1	
53	1	-	7	1	
56	1	1	7	1	

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## LIFTING APPLICATION WORKING RANGE



### Auxiliary Jib

standard

### Max capacity

25 t 55115 lb

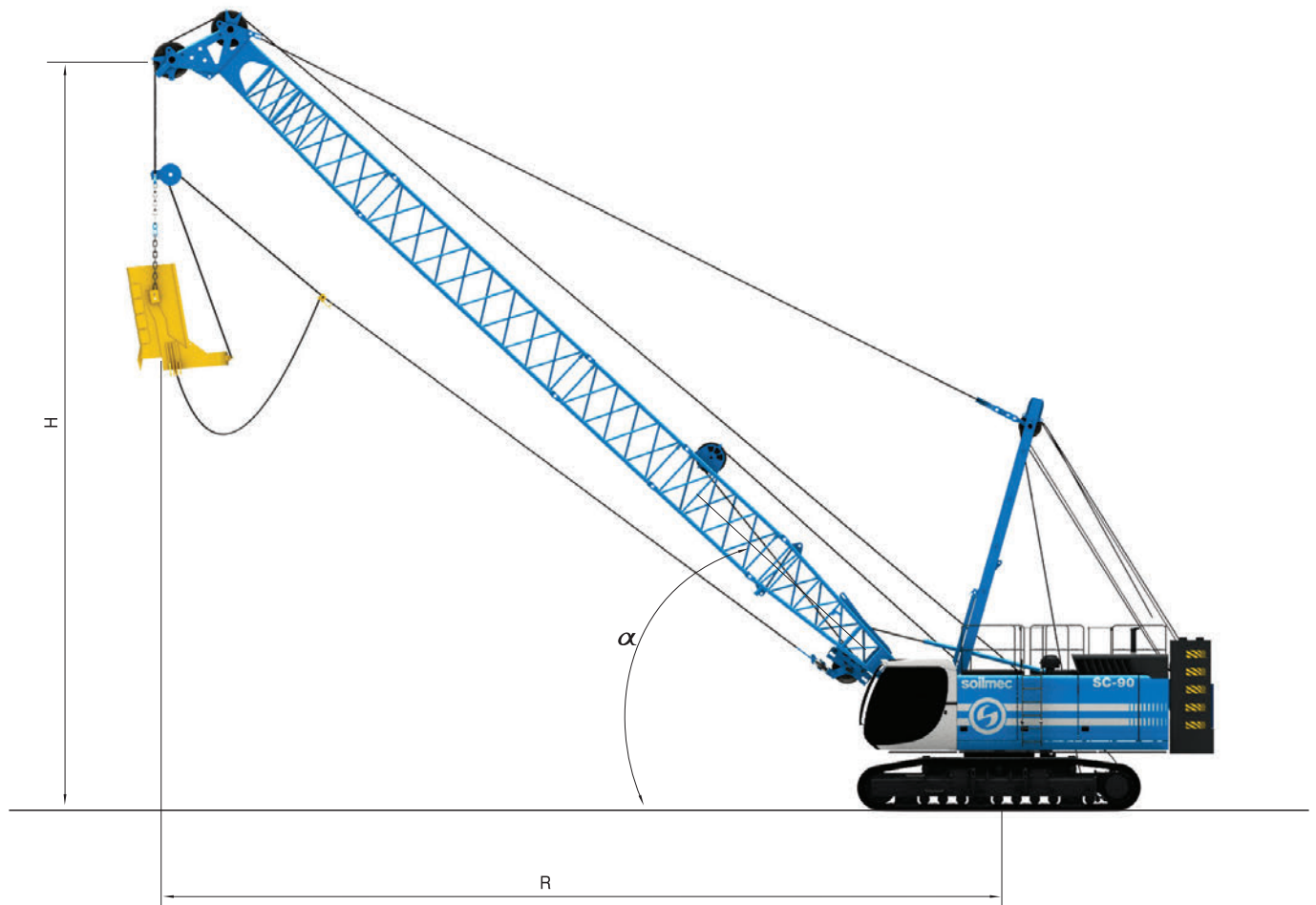
Load chart programmed in Load moment indicator

### Boom configuration

- Rated loads are in metric tons valid for 360 degrees working area.
- Lifting capacities are in compliance with ISO 4305 (Table 1+2) + tipping angle 4° for dynamic effect
- Working radius are measured from the swing center of the machine and under load.
- 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.
- Load charts are valid with maximum undercarriage track.
- Optional equipment on boom (e.f. boom catwalks; jib; etc.) must be deducted from rated load to get net lifting value.
- Lifting capacities are based on freely suspended loads. Rated loads and operating speeds must be reduced in case of adverse conditions (e.g.: wind, soft ground, out-of-level, pendulum action, sudden load stopping, operating speeds, etc.)
- Load chart above 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.

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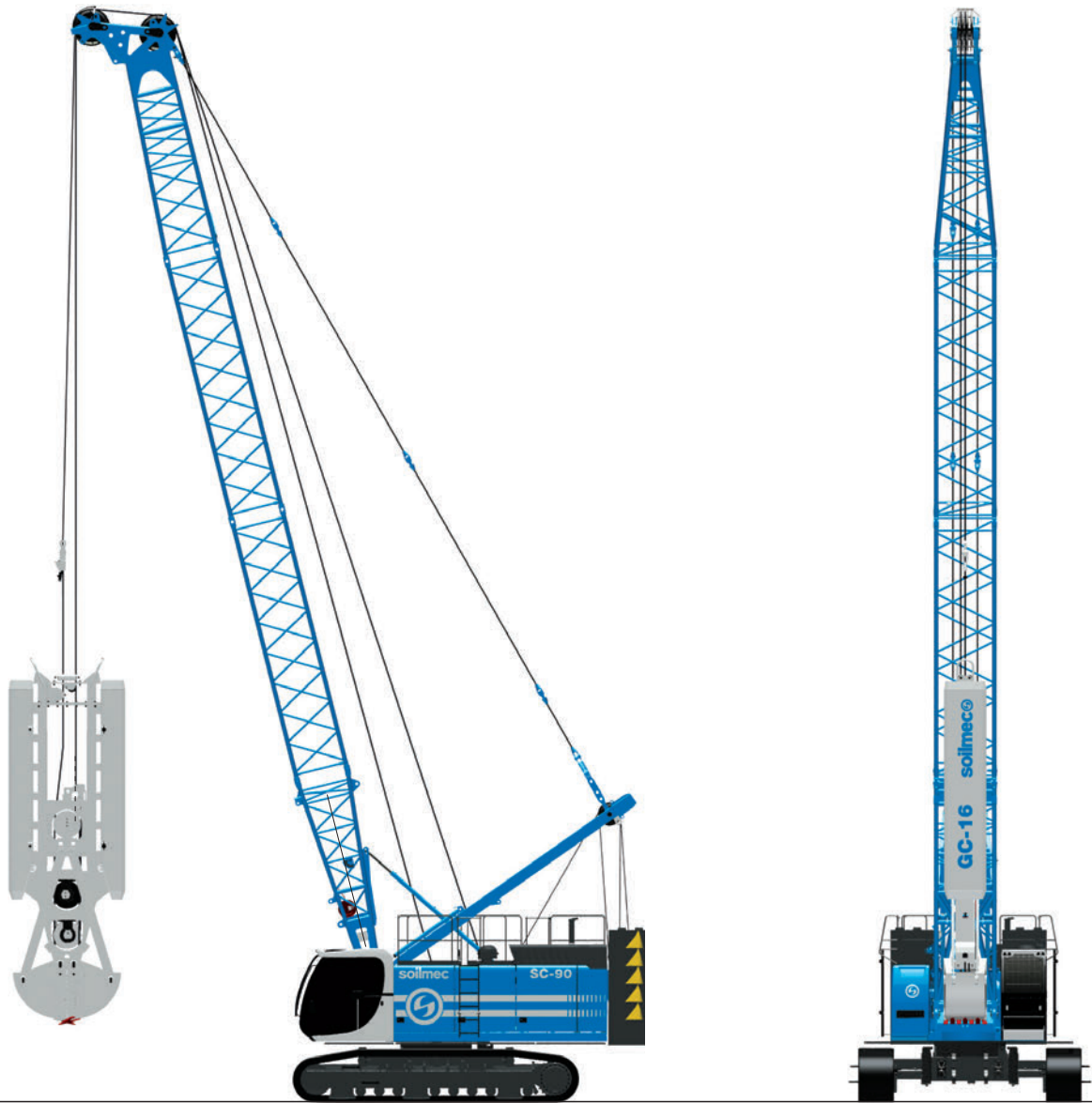
## DRAGLINE APPLICATION



Angle	Boom length (m)																	
	14			17			20			23			26			29		
α (deg)	R (m)	H (m)	Capacity (t)	R (m)	H (m)	Capacity (t)	R (m)	H (m)	Capacity (t)	R (m)	H (m)	Capacity (t)	R (m)	H (m)	Capacity (t)	R (m)	H (m)	Capacity (t)
50	10,8	12,2	19,9	12,7	14,5	19,9	14,6	16,8	17,1	16,6	19,1	14,3	18,5	21,4	12,0	20,4	23,7	10,2
45	11,6	11,3	19,9	13,7	13,4	18,8	15,9	15,5	15,2	18,0	17,6	12,6	20,1	19,8	10,6	22,2	21,9	8,9
40	12,4	10,3	19,9	14,7	12,3	17,1	17,0	14,2	13,7	19,3	16,1	11,4	21,6	18,0	9,5	23,9	20,0	7,9
35	13,0	9,3	19,9	15,5	11,0	15,7	18,0	12,8	12,6	20,4	14,5	10,4	22,9	16,2	8,6	25,3	17,9	7,1
30	13,6	8,2	18,8	16,2	9,7	14,7	18,8	11,2	11,7	21,4	12,7	9,6	24,0	14,2	7,9	26,6	15,7	6,5
25	-	-	-	16,8	8,4	13,9	19,6	9,7	11,0	22,3	10,9	9,0	25,0	12,2	7,4	27,7	13,5	6,1

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## MECHANICAL GRAB APPLICATION



Mechanical grab		
Max grab weight	16 t	35274 lb
Winches	2 x 250 kN	2 x 56202 lbf
Max rope speed at first layer	82 m/min	269 ft/min

Please refer to load chart for duty cycle operation

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## HYDRAULIC GRAB APPLICATION



Diaphragm wall grab	Hydraulically controlled suspended by rope	
Max grab weight	16 t	35274 lb
Grab revolving system	Rotograb 360°	Rotograb 360°
Max depth	75 m	246 ft
Excavation dimension range (width x length)	600/1500 x 2800/4200 mm	24/60 x 112/165 in

Please refer to load chart for duty cycle operation



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## CLAMSHELL APPLICATIONS



### Clamshell

1 - rope clamshell

21 t

46297 lb

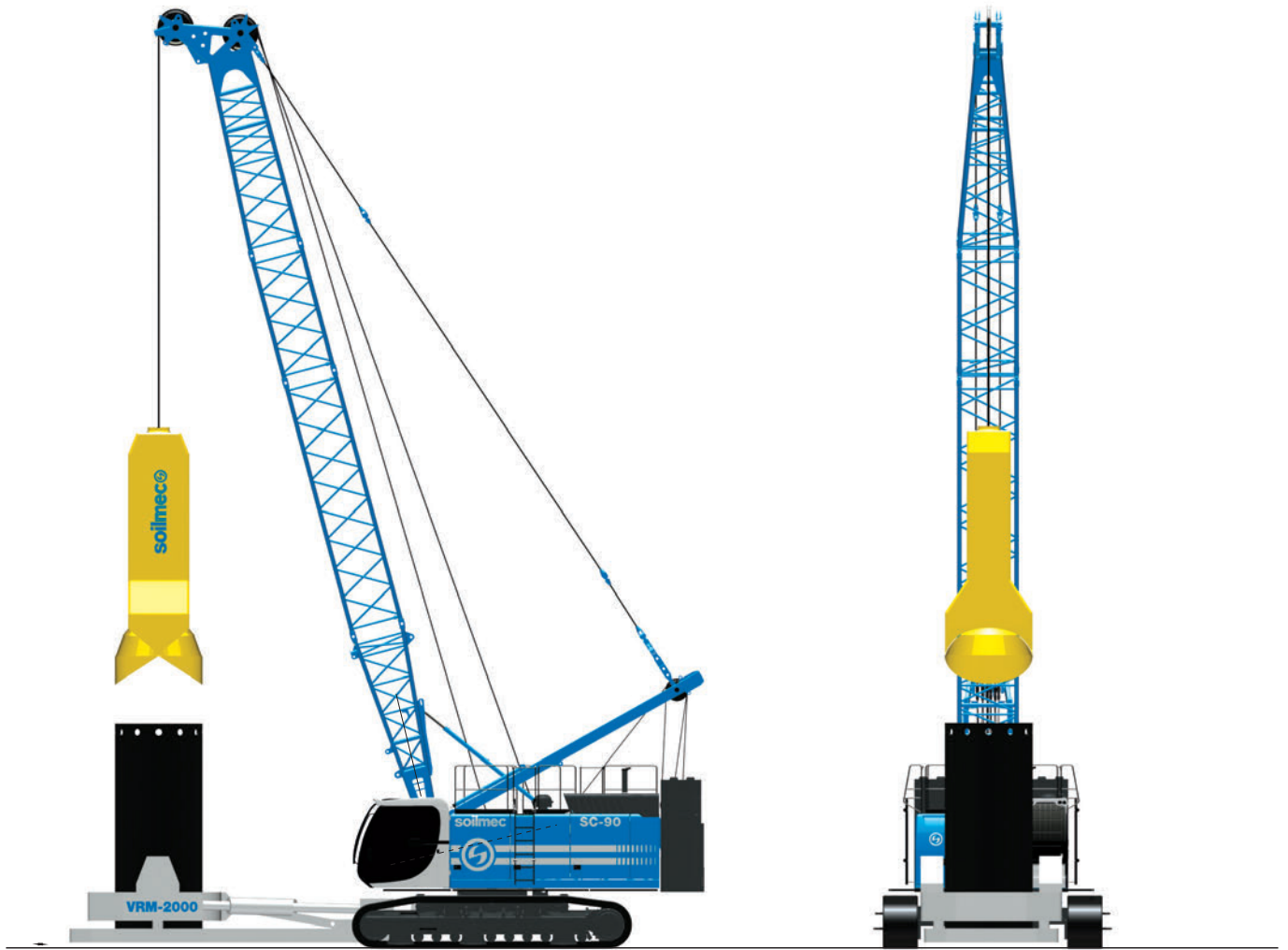
2 - rope clamshell

28 t

61729 lb

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## HAMMER GRAB AND CASING OSCILLATOR APPLICATION



<b>Hammer grab and casing oscillator</b>		
<b>Max weight</b>	<b>18 t</b>	<b>39683 lb</b>
<b>Max drilling diameter</b>	<b>2000 mm</b>	<b>78.7 in</b>

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## PILE DRIVING

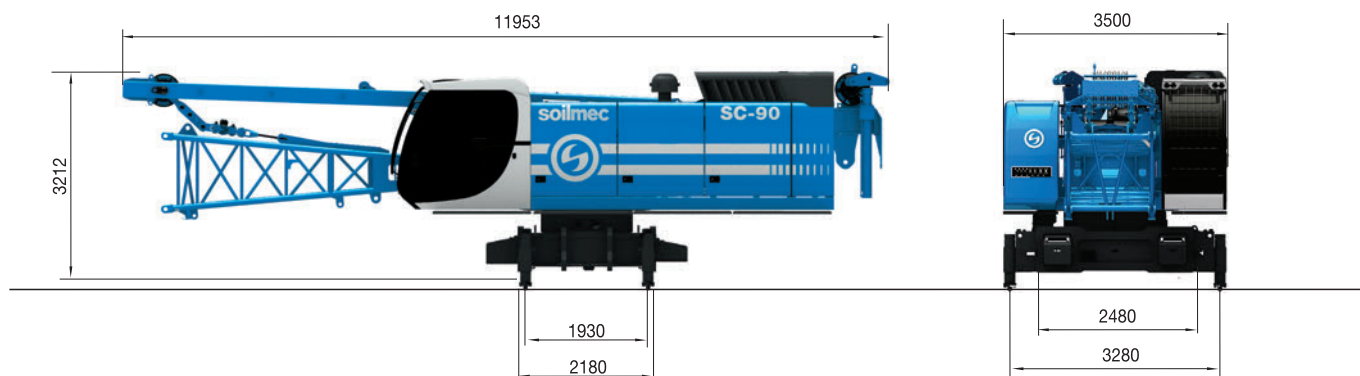


Pile driving		
Pile length	30 m	98.4 ft
Crane boom length	23 m	75.5 ft
Leader length	36 m	118.1 ft
Possible leader inclinations - Front/rear/side batter	16°/18°/15°	16°/18°/15°

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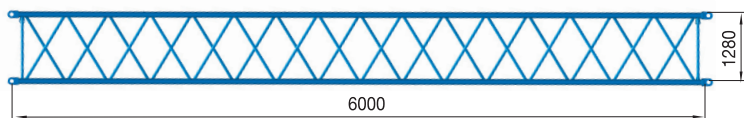
## TRANSPORT DIMENSIONS AND WEIGHTS

### Main machine

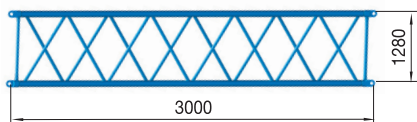


<b>Width</b>	<b>3500 mm</b>	<b>138 in</b>
<b>Weight</b>	<b>44000 kg</b>	<b>97000 lb</b>
<b>Weight c/w tracks</b>	<b>64000 kg</b>	<b>141100 lb</b>

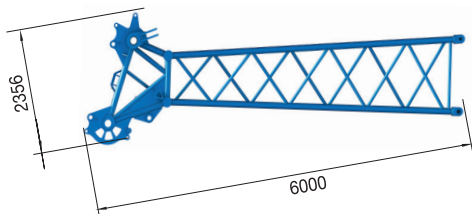
### Boom



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

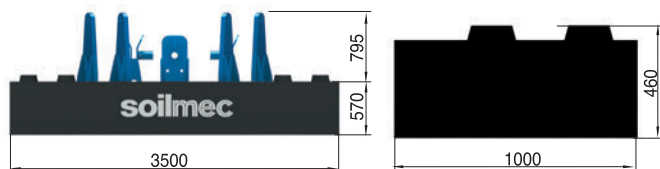


<b>Width</b>	<b>1360 mm</b>	<b>53.5 in</b>
<b>Weight</b>	<b>650 kg</b>	<b>1433 lb</b>



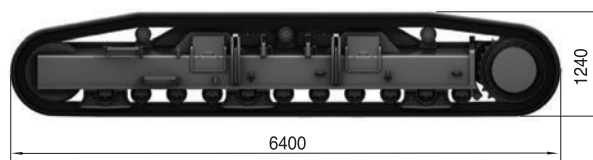
<b>Width</b>	<b>1360 mm</b>	<b>53.5 in</b>
<b>Weight</b>	<b>2800 kg</b>	<b>6172.9 lb</b>

### 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>20000 kg</b>	<b>44092 lb</b>

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