



321 kW (Stage V)



70 t



56.9 m



MAXCAB

670E

Duty Cycle Crane

670E Advanced. The E-Series



What makes up the E-Series

- 65 years of experience in designing and constructing duty cycle cranes
- Uncompromisingly high performance in all areas
- Technology that can be mastered: High-quality components without over-engineering
- Long service life and high value retention

1969: The first fully hydraulic duty cycle crane anywhere worldwide, SK 15

Your top benefits

1 Green Efficiency

Save fuel - reduce operating costs
Work quietly - protect operator and environment



2 Top-level performance

Durable mechanical systems - stressed parts optimized
High speeds - high load capacities

3 Maximum usability

Maxcab comfort cab - work in comfort
SENCON - work program selection made easy



4 Flexible operation

Drive under full load - small space requirements
Strong undercarriage traction - good off-road mobility

5 Easy to transport

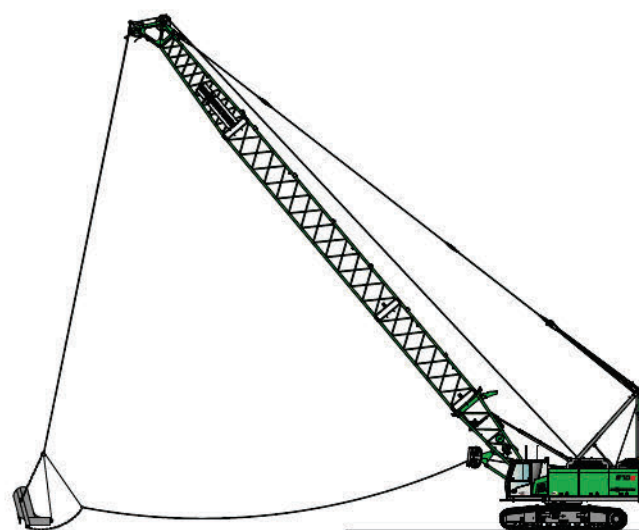
Telescopic undercarriage - quickly deployable
Ballast filling system - short set-up time

6 Maintenance and service made easy

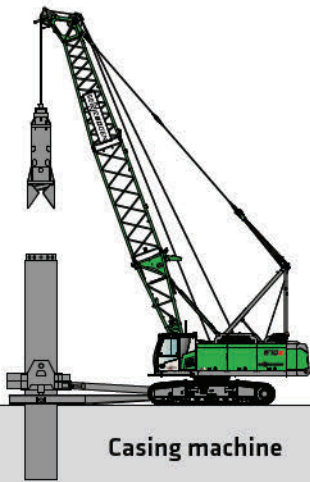
SENNEBOGEN control system - easy diagnosis
Simple maintenance - clear labeling

7 Consultation and support in your area

3 production sites - 2 subsidiaries
150 sales partners - over 350 service stations



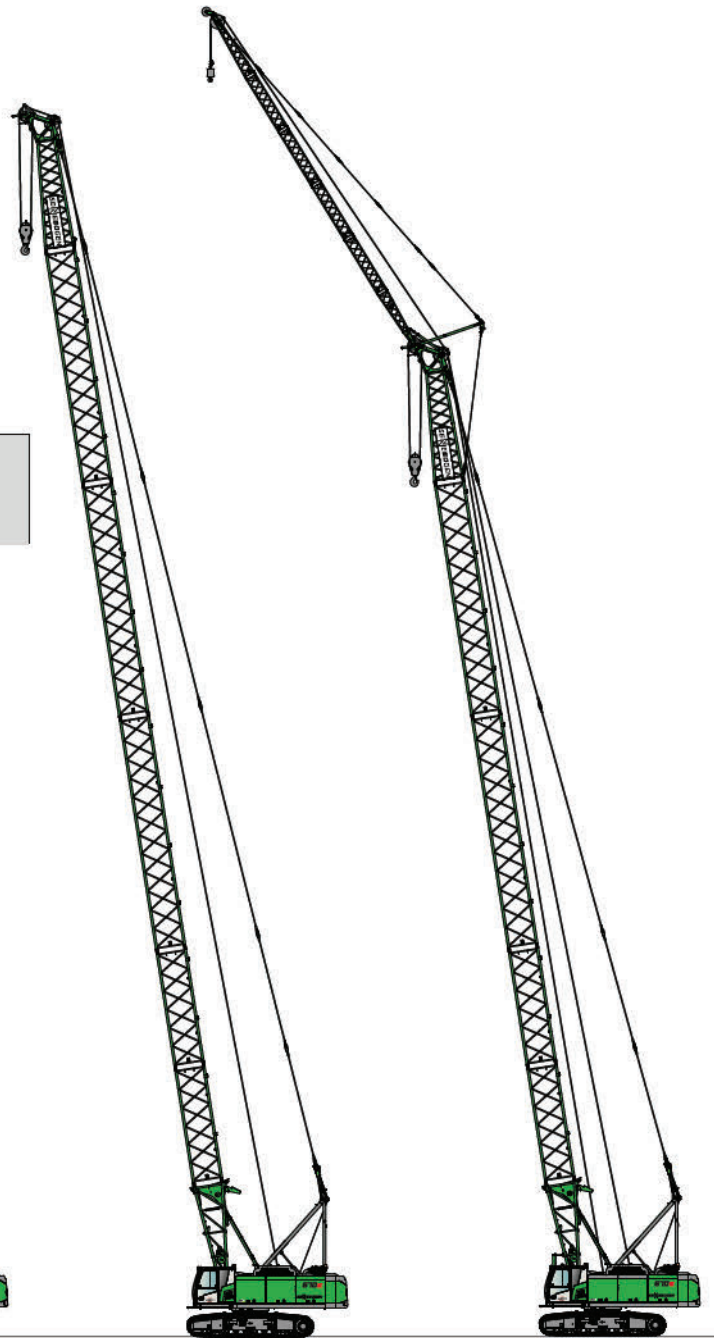
Dragline bucket equipment



Casing machine

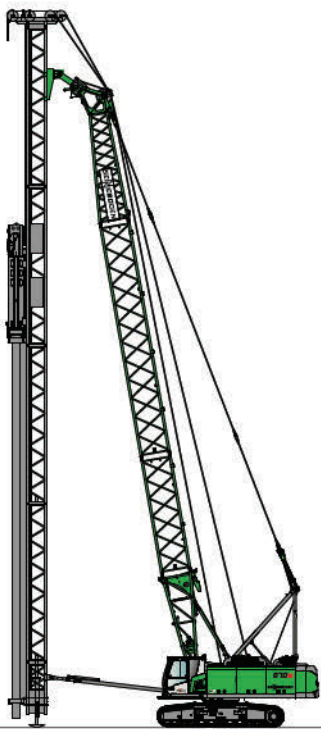


Diaphragm wall grab



Crane equipment

Crane equipment with fixed fly jib



Leader



Grab equipment





MACHINE TYPE

Model (type) **670**

ENGINE

Power	Cummins QSM11 333 kW / 453 HP at 1800 min⁻¹ (Stage III) Cummins X12 261 kW / 355 HP at 1800 min⁻¹ (Stage V) Cummins X12 321 kW / 436 HP at 1800 min⁻¹ (Stage V) Direct injection, turbocharged, charge air cooling, reduced emissions, automatic idle/stop
Cooling	water-cooled
Air filter	Dry filter with pre-separator, automatic dust discharge, main element and safety element, contamination indicator
Fuel tank	690 l
Electr. system	24 V
Batteries	2 x 155 Ah , main switch

UPPERCARRIAGE

Design	Torsion-resistant box design, precision crafted, bronze bushings for boom mountings Clear, service-friendly design, engine installed in the longitudinal direction
Lighting	LED headlights for optimal lighting of the work area
Safety	Camera monitoring of rear area and right side
Options	<ul style="list-style-type: none"> ■ Low-temperature package for use at temperatures below -20 °C ■ Ballast support fixture ■ Pinion tooth lubrication for slewing ring outer ■ automatic internal central lubrication system for equipment and slewing ring ■ Walkways on left and right of uppercarriage ■ Sea climate resistant coating ■ Electric fuel pump

HYDRAULIC SYSTEM

Multi-circuit hydraulic system for optimum functionality and performance, all movements can be operated simultaneously. The hydraulic pumps are variable displacement piston pumps with individual control and energy-saving flow-on-demand control. The pumps only pump as much oil as will actually be used. Pressure purging, load limit control

Operating pressure **up to 330 bar**

Filtration	High-performance filtration with long change interval, contamination indicator
Hydraulic tank	770 l (670 l up to middle of sight glass)
Control system	Proportional, precision hydraulic servo control of the movements, 2 servo joysticks for work functions, additional functions via switches and foot pedals - arranged clearly and ergonomically
Options	<ul style="list-style-type: none"> ■ Bio-oil filling ■ SENNEBOGEN HydroClean micro-filter system with water separator ■ Potentiometer for casing machine and other attachments ■ Grab filling mechanism ■ Auxiliary hydraulics with 1 x 310 l/min

ROTARY DRIVE

Gearbox	2 compact planetary gears with bent-axis hydraulic engine, integrated brake valves, positionable swing bearing brake
Parking brake	Spring-loaded multi-disk brake
Slewing ring	Ball bearing supported ring with external teething
Slewing speed	0-4.0 min ⁻¹ , 3 adjustable slewing speeds
Options	<ul style="list-style-type: none"> ■ Reinforced slewing ring for heavy dynamic operations

CABIN



Cab type	Maxcab, fixed
Cab equipment	Sliding door, sliding window in driver's door, excellent ergonomics, climate automation, seat heater, air-suspension comfort seat, fresh air filter / circulating air filter, joystick steering, 12 V / 24 V USB connections, SENCON
Options	<ul style="list-style-type: none"> ■ Active seat climate control ■ Auxiliary heating system with timer ■ Active carbon filter for cabs ■ Bullet proof windshield ■ Bullet proof skylight ■ Safety side window and rear window ■ Sunblind for skylight and windshield ■ Protective roof grating ■ FOPS protective roof grating ■ Protective front grating ■ Radio with speakers ■ Maxcab Industry with continuous bullet proof windshield ■ Electric cooling box ■ Hydraulically elevating cab

EQUIPMENT

Design	Decades of experience, state-of-the-art computer simulation, superlative stability and service life
Boom adjustment winch	Bent-axis hydraulic engine drive with compact planetary gear, 52 kN tensile force; cable diameter 14 mm, adjustment speed 15° to 81° in approx. 48 sec.
Safety brake	Spring-loaded multi-disk brake
Boom	Boom length up to 56.9 m
Options	<ul style="list-style-type: none"> ■ Auxiliary boom for load capacities up to 12 t ■ Fixed fly up to 18 m ■ Steel cable rollers ■ Auxiliary cable rollers for grab operation ■ HD cable rollers for working with optimized cable guidance ■ Load moment limitation for lifting gear operation: Latest generation of load moment monitoring, display shows all important data, lifting limit switch, pressure relief valves, cable exit protection

UNDERCARRIAGE

Design	Heavy-duty T83/390 crawler undercarriage with hydraulically extendable track width. Stable welded construction.
Drive	Strong travel drive with axial piston hydraulic engine and directly attached automatically functioning brake valve and compact planetary gear on each running gear side, protected drive gearing
Parking brake	Spring-loaded multi-disk brake
Traveling gear	Maintenance-free B7 tractor chassis with hydraulic chain tension, 700 mm triple grouser shoes,
Speed	0 - 1.9 km/h
Options	<ul style="list-style-type: none"> ■ 700 mm flat track shoes (transport width 3000 mm) ■ 800 mm triple grouser shoes (transport width 3200 mm)

WINCH

The winches are driven via high-pressure-regulated adjustable hydraulic engines, so there is always optimal pulling force speed control. Hydraulic lowering brake valves for sensitive, wear-free braking. Strong oil bath, planetary gear, low-maintenance.

Crane and freefall brakes are spring-loaded, maintenance-free, low-wear multi-disk brakes operating in oil bath, oil-cooled. The individually, variably adjustable freefall brake actively assists the driver, prevents slack cables and reduces wear on the machine.

	Series	Option
Winches	16 t	20 t
Cable pull (nominal load) 1st Position	160 kN	200 kN
Cable diameter	26 mm	28 mm
Cable speed 2nd Position	0-117 m/min	0-103 m/min
Options	<ul style="list-style-type: none"> ■ Tagline winch 9 kN ■ Tagline winch 18 kN ■ Tagline winch 30 kN ■ Cable tension pulley 	

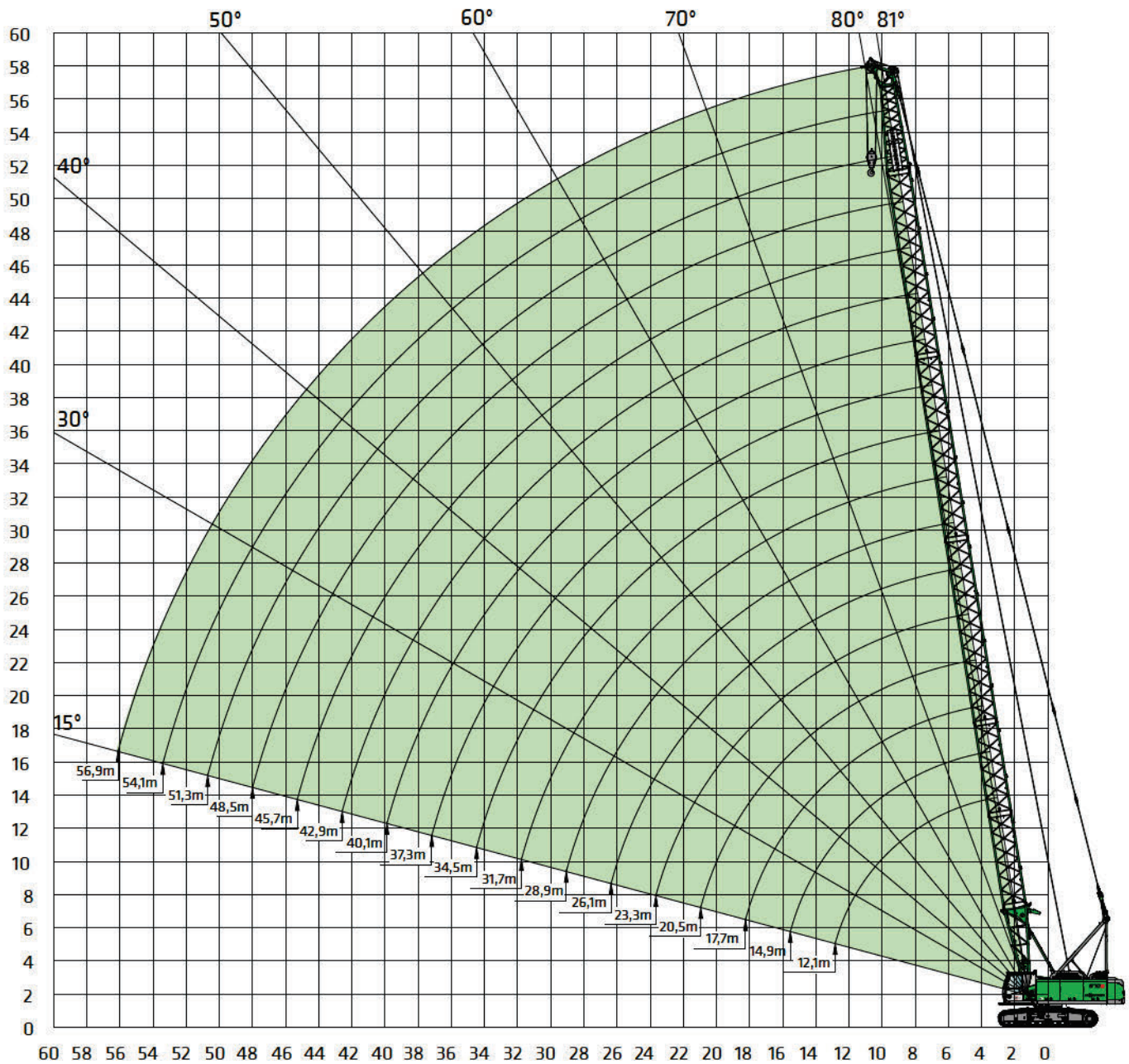
OPERATING WEIGHT

Mass	approx. 70 t
Note	670 R with 2 x 16 t freefall winches, basic boom 12.1 m, counter weight 22 t, 60 t bottom block, 700 mm triple grouser shoes, 150 m hoist cable Operating weight varies by model and equipment.





Main boom



		Boom configuration																
	Boom length	12.1	14.9	17.7	20.5	23.3	26.1	28.9	31.7	34.5	37.3	40.1	42.9	45.7	48.5	51.3	54.1	56.9
Lower boom section type 1442	5.5 m	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Boom section type 1442	2.8 m	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
Boom section type 1442	5.6 m	0	0	1	1	2	2	1	1	2	2	1	1	2	2	1	1	2
Boom section type 1442	11.2 m	0	0	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3
Head piece type 1442	6.6 m	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Auxiliary boom S124 (optional)	12.0 t	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	-

670E Load ratings

HD



Main boom

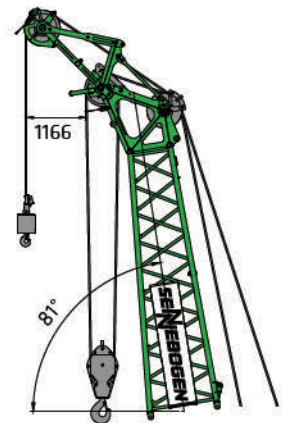
Reach [m]	Boom length [m]																
	12.1	14.9	17.7	20.5	23.3	26.1	28.9	31.7	34.5	37.3	40.1	42.9	45.7	48.5	51.3	54.1	56.9
3.6	70.0																
4.0	67.0	67.0	56.0/4.5														
5.0	52.0	52.0	50.0	47.0	41.7/5.4	37.0/5.8											
6.0	42.6	42.0	40.0	38.5	37.1	35.5	33.0/6.3	29.7/6.7									
7.0	33.8	33.7	33.6	32.5	31.5	30.0	29.4	28.0	27.0/7.1	24.5/7.6							
8.0	27.9	27.8	27.7	27.6	27.2	26.0	25.5	24.5	24.0	23.0	22.5	20.5/8.5					
9.0	23.6	23.5	23.5	23.3	23.3	23.0	22.5	21.5	21.2	20.5	20.0	19.3	18.9	17.6/9.3	16.3/9.8		
10.0	20.5	20.4	20.3	20.2	20.1	20.0	19.9	19.4	18.9	18.3	17.9	17.3	16.9	16.4	16.0	15.2/10.2	13.4/10.6
11.0	18.0	17.9	17.8	17.7	17.6	17.5	17.4	17.3	17.0	16.5	16.2	15.6	15.3	14.8	14.5	13.9	13.2
12.0	16.1	15.9	15.9	15.7	15.6	15.5	15.5	15.3	15.3	15.0	14.7	14.2	13.9	13.5	13.2	12.7	12.3
13.0	12.2	14.3	14.2	14.1	14.0	13.9	13.8	13.7	13.7	13.5	13.4	13.0	12.7	12.3	12.0	11.6	11.2
14.0		13.0	12.9	12.7	12.7	12.5	12.5	12.3	12.3	12.2	12.1	11.9	11.6	11.3	11.0	10.7	10.3
15.0		11.9	11.8	11.6	11.5	11.4	11.3	11.2	11.1	11.0	10.9	10.8	10.7	10.4	10.1	9.8	9.5
16.0		10.1/15.7	10.8	10.6	10.6	10.4	10.4	10.2	10.2	10.0	9.9	9.8	9.7	9.5	9.4	9.1	8.8
17.0			10.0	9.8	9.7	9.6	9.5	9.4	9.3	9.2	9.1	9.0	8.8	8.7	8.6	8.4	8.1
18.0			9.2	9.1	9.0	8.8	8.8	8.6	8.6	8.4	8.3	8.2	8.1	7.9	7.8	7.7	7.5
19.0			8.5/18.4	8.4	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.5	7.4	7.3	7.2	7.0	6.9
20.0				7.9	7.7	7.6	7.5	7.4	7.3	7.2	7.1	7.0	6.8	6.7	6.6	6.4	6.3
22.0				7.3/21.1	6.8	6.6	6.5	6.4	6.3	6.2	6.1	6.0	5.8	5.7	5.6	5.4	5.3
24.0					6.1/23.8	5.8	5.8	5.6	5.5	5.4	5.3	5.1	5.0	4.9	4.8	4.6	4.5
26.0						5.2	5.1	4.9	4.9	4.7	4.6	4.5	4.3	4.2	4.1	3.9	3.8
28.0						5.0/26.5	4.6	4.4	4.3	4.1	4.1	3.9	3.8	3.6	3.5	3.4	3.2
30.0							4.3/29.2	3.9	3.8	3.6	3.6	3.4	3.3	3.1	3.0	2.9	2.7
32.0								3.5/31.9	3.4	3.2	3.2	3.0	2.9	2.7	2.6	2.5	2.3
34.0									3.1	2.9	2.8	2.6	2.5	2.3	2.2	2.1	1.9
36.0									2.9/34.6	2.6	2.5	2.3	2.2	2.0	1.9	1.8	1.6
38.0										2.4/37.3	2.2	2.0	1.9	1.7	1.6	1.5	1.3
40.0											2.0	1.8	1.6	1.5	1.4	1.2	1.1
42.0												1.6	1.4	1.3	1.2	1.0	0.9
44.0												1.5/42.7	1.2	1.1	1.0	0.8	0.7
46.0													1.1/45.4	0.9	0.8	0.6	
48.0														0.7	0.6		
50.0																	
TAB. no. 670R-80/1985/22.0/01.17 SH																	
Number of falls																	
ø 28mm	5	5	5	4	3	3	3	3	2	2	2	2	2	2	2	2	1
ø 26mm	6	6	5	4	4	4	3	3	3	3	2	2	2	2	2	2	2

Notes:

- The load ratings given apply when the machine is on a firm and level surface.
- The load ratings are given in tons and apply 360 degrees.
- The load capacities are in observance of standards ISO 4305 Tab. 1+2 as well as the tilt angle method (4° tilt angle).
- The weight of the load handling equipment (hooks, suspension gear) should be deducted from the load capacities.
- The load ratings apply for the maximum undercarriage track width of 3800 mm.
- Load capacities must be limited or reduced in adverse conditions such as soft or uneven ground, slopes, wind, side loads, swinging loads, jolts or sudden stopping of loads, personnel and operators not experienced in handling loads.
- Permissible cable pull per strand in crane mode for cable diameter 26 mm - 12,000 kg / for cable diameter 28 mm - 14,000 kg
- The load ratings apply to the SH boom (boom assembly as per operating instructions)
- The load ratings apply for optimal boom assembly and pulley head with plastic rollers.
- The load ratings given are for reference only. Please refer to the operating instructions for the relevant applicable load ratings.

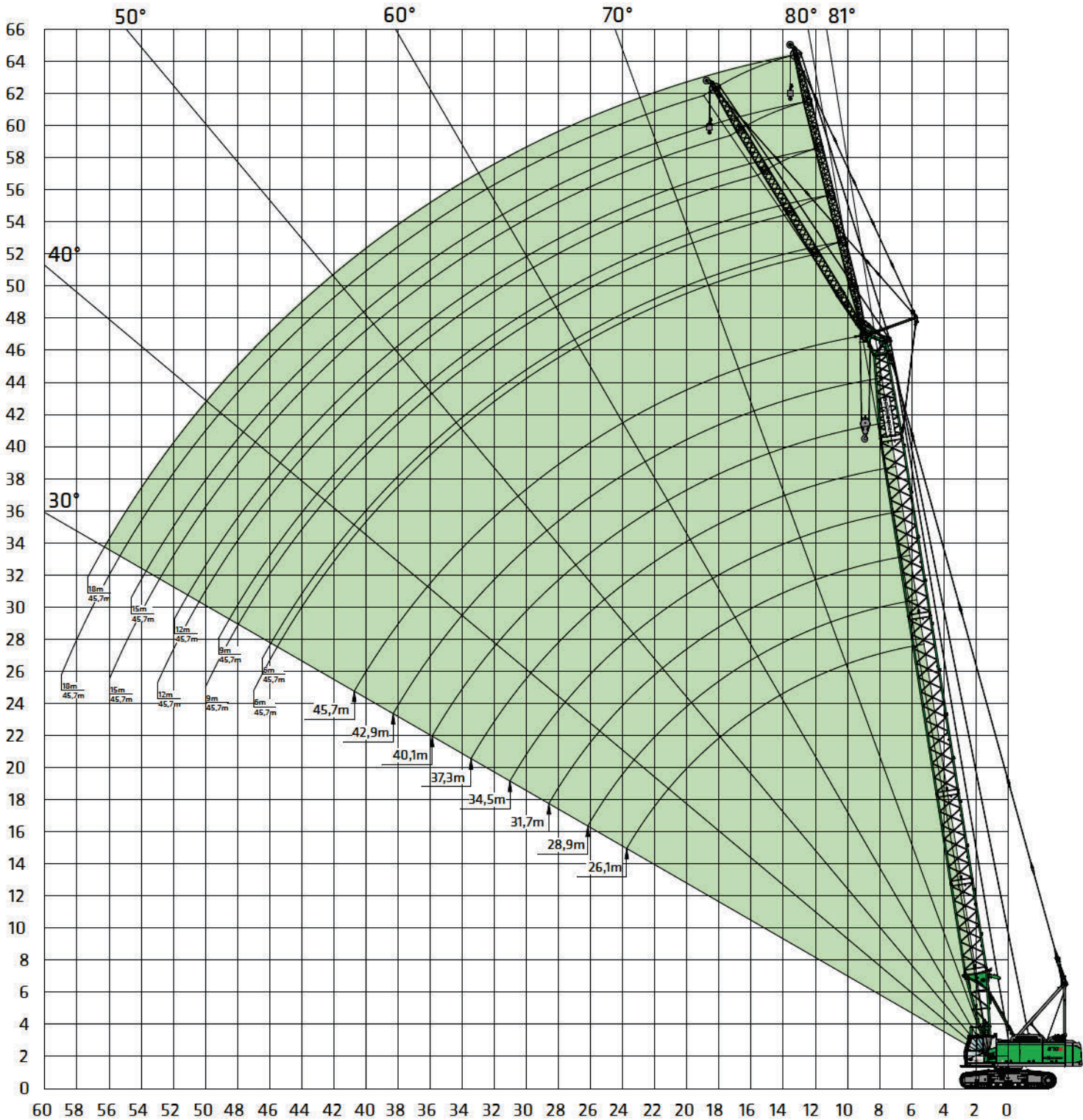
Auxiliary boom S12.4

max. lifting capacity 12.0 t





Main boom
Fixed fly boom



670E Boom configuration

HD



Main boom with fixed fly jib

		Boom configuration												
		Main boom								Fixed fly jib				
		26.1	28.9	31.7	34.5	37.3	40.1	42.9	45.7	6.0	9.0	12.0	15.0	18.0
Boom lower section type 1442	5.5 m	1	1	1	1	1	1	1	1					
Boom section type 1442	2.8 m	1	0	1	0	1	0	1	0					
Boom section type 1442	5.6 m	2	1	1	2	2	1	1	2					
Boom section type 1442	11.2 m	0	1	1	1	1	2	2	2					
Boom head piece type 1442	5.9 m	1	1	1	1	1	1	1	1					
Fly boom lower section type 598	3.0 m									1	1	1	1	1
Fly boom lower section type 598	3.0 m									0	1	2	3	4
Fly boom head piece type 598	3.0 m									1	1	1	1	1

Combination options

		Boom configuration							
		Main boom							
Fixed fly jib length		26.1	28.9	31.7	34.5	37.3	40.1	42.9	45.7
6.0 m		x	x	x	x	x	x	x	x
9.0 m		x	x	x	x	x	x	x	x
12.0 m		x	x	x	x	x	x	x	x
15.0 m		x	x	x	x	x	x	x	x
18.0 m		x	x	x	x	x	x	x	x

X = possible configuration



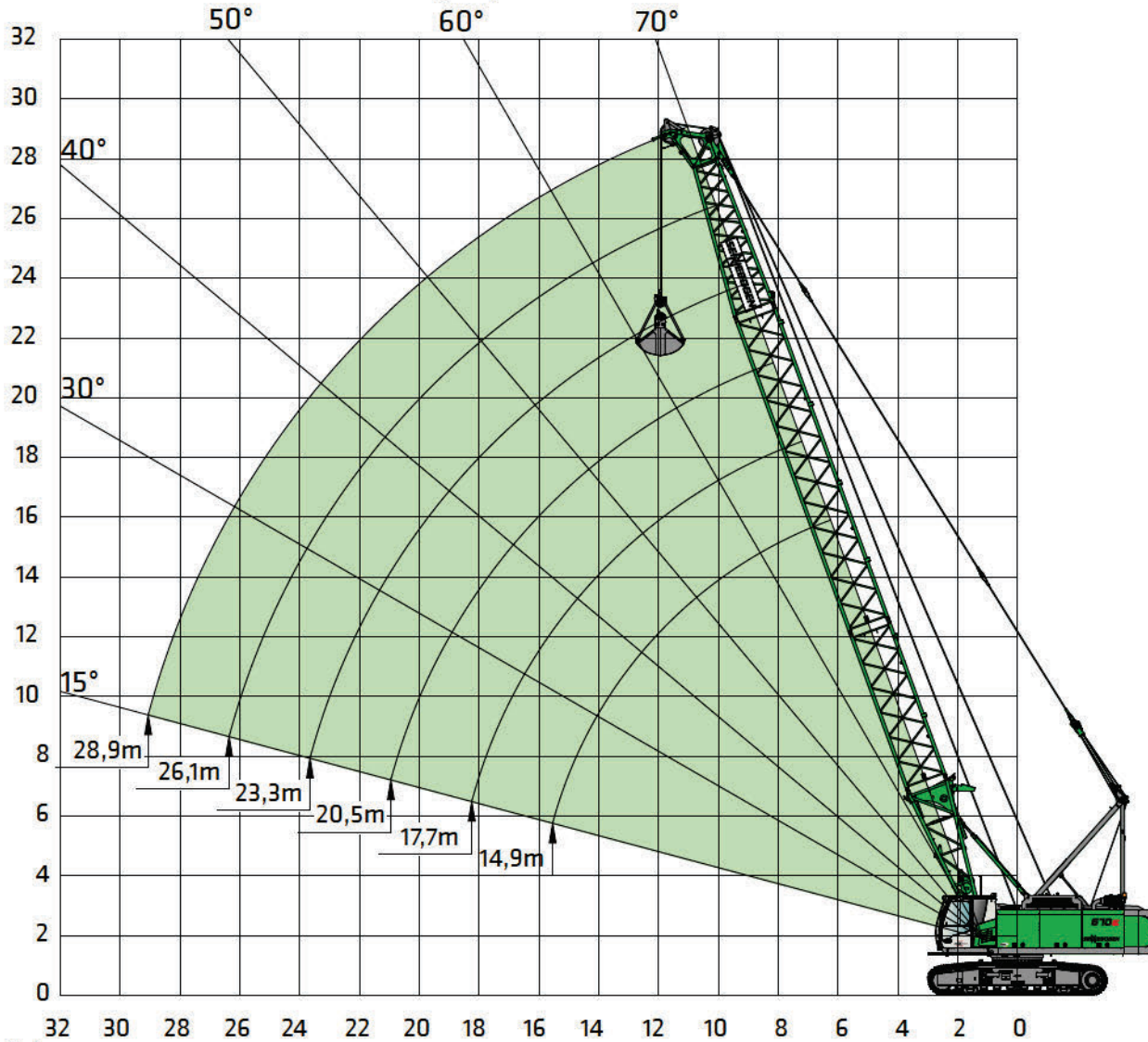
Hook

For 160 kN winch with 26 mm cable diameter

Capacity	Weight	Cable strands and max. load capacity [kg]					
		6	5	4	3	2	1
15t	300 kg						12,000
40t 1-roll	500 kg				36,000	24,000	12,000
60t 2-roll	600 kg		60,000	48,000	36,000	24,000	12,000
80 3-roll	1000 kg	70,000	60,000	48,000	36,000	24,000	12,000

For 200 kN winch with 28 mm cable diameter

Capacity	Weight	Cable strands and max. load capacity [kg]				
		5	4	3	2	1
15t	350 kg					14,000
40t 1-roll	550 kg			40,000	28,000	14,000
70t 2-roll	900 kg	70,000	56,000	42,000	28,000	14,000

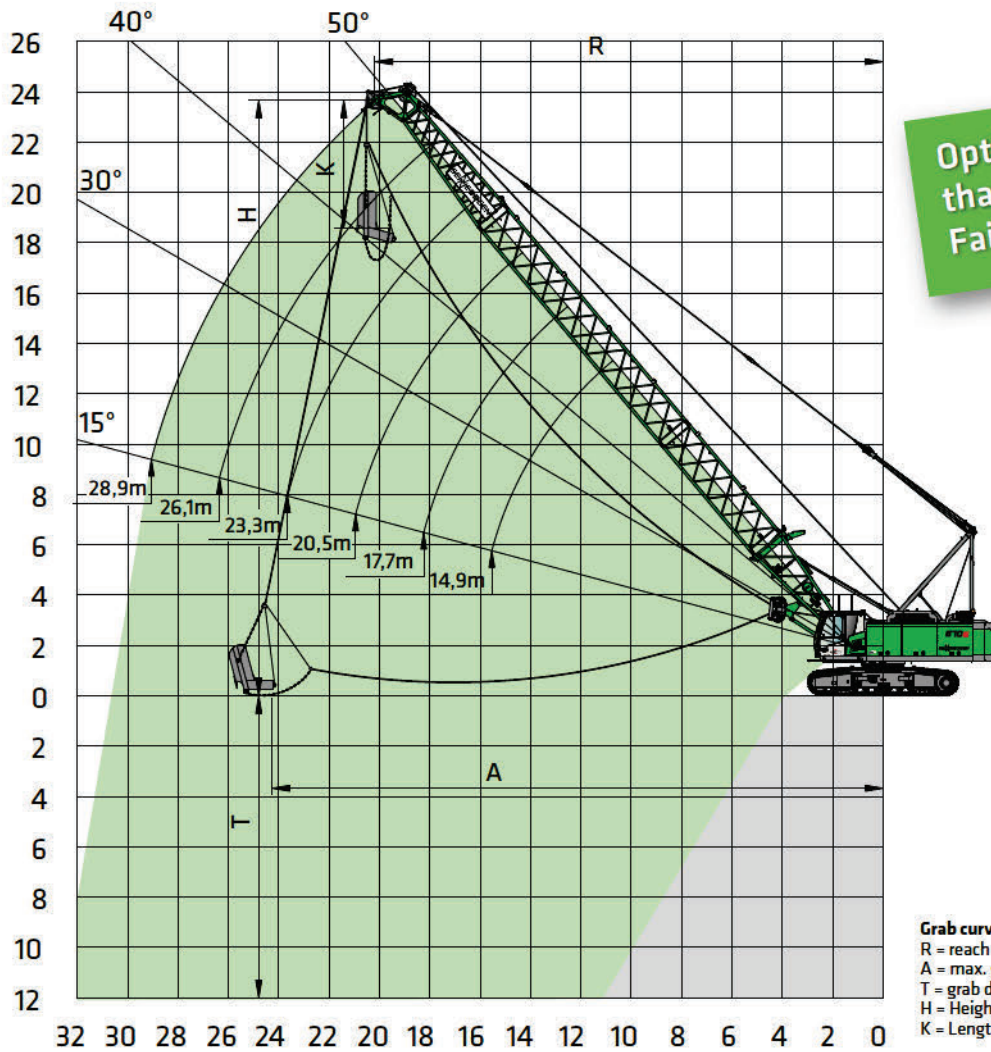


Notes:

- The load ratings given apply when the machine is on a firm and level surface.
- The load ratings are given in tons and apply 360 degrees.
- The load ratings apply to the maximum stabilizer/undercarriage track width of 3840 mm.
- The load ratings include the grab weight and do not exceed 66.7% of the tipping load
- For operation with a mechanical two-rope grab and even load distribution on the closing and holding ropes, the load capacity is limited by the permissible cable pull or the maximum tensile force of a winch:

Winch tensile force [kN]	160	200
Cable diameter [mm]	26	28
Minimum breaking force [kN]	568	710
Maximum load capacity in single-winch mode [t]	16.0	20.0
Maximum load capacity in dual-winch mode [t]	24.2	30.3

22 t	Boom length [m]																	
	14.9			17.7			20.5			23.3			26.1			28.9		
	R	H	t	R	H	t	R	H	t	R	H	t	R	H	t	R	H	t
70	6.8	15.7	29.5	7.8	18.4	24.3	8.7	21.0	20.5	9.7	23.6	17.7	10.6	26.3	15.4	11.6	28.9	13.7
65	8.0	15.2	23.4	9.2	17.7	19.2	10.4	20.3	16.2	11.5	22.8	13.9	12.7	25.3	12.1	13.9	27.9	10.7
60	9.1	14.5	19.5	10.5	17.0	16.0	11.9	19.4	13.4	13.3	21.8	11.4	14.7	24.2	9.9	16.1	26.7	8.7
55	10.2	13.8	16.7	11.8	16.1	13.7	13.4	18.4	11.4	15.0	20.7	9.7	16.6	23.0	8.4	18.2	25.3	7.3
50	11.2	13.0	14.7	13.0	15.1	12.0	14.8	17.3	10.0	16.6	19.4	8.5	18.4	21.6	7.2	20.2	23.7	6.3
45	12.1	12.1	13.3	14.1	14.0	10.8	16.1	16.0	8.9	18.0	18.0	7.6	20.0	20.0	6.4	22.0	22.0	5.6
40	12.9	11.1	12.1	15.1	12.9	9.8	17.2	14.7	8.1	19.4	16.5	6.8	21.5	18.3	5.8	23.7	20.1	5.0
35	13.7	10.0	11.3	16.0	11.6	9.1	18.3	13.2	7.5	20.6	14.8	6.3	22.9	16.4	5.3	25.2	18.0	4.6
30	14.4	8.9	10.6	16.8	10.3	8.6	19.2	11.7	7.0	21.6	13.1	5.9	24.1	14.5	4.9	26.5	15.9	4.2
25	14.9	7.7	10.1	17.4	8.9	8.1	20.0	10.1	6.7	22.5	11.2	5.5	25.1	12.4	4.6	27.6	13.6	4.0
20	15.4	6.5	9.7	18.0	7.4	7.8	20.6	8.4	6.4	23.3	9.3	5.3	25.9	10.3	4.4	28.5	11.3	3.8
15	15.7	5.2	9.4	18.4	5.9	7.6	21.1	6.7	6.2	23.8	7.4	5.1	26.5	8.1	4.3	29.2	8.8	3.6



Optimal cable guidance thanks to SENNEBOGEN Fairlead system

Grab curve:
 R = reach
 A = max. grab width = approx. $R + 1/3$ to $1/2 (H-K)$
 T = grab depth = approx. 40-50 % of R
 H = Height
 K = Length of dragline bucket

Notes:

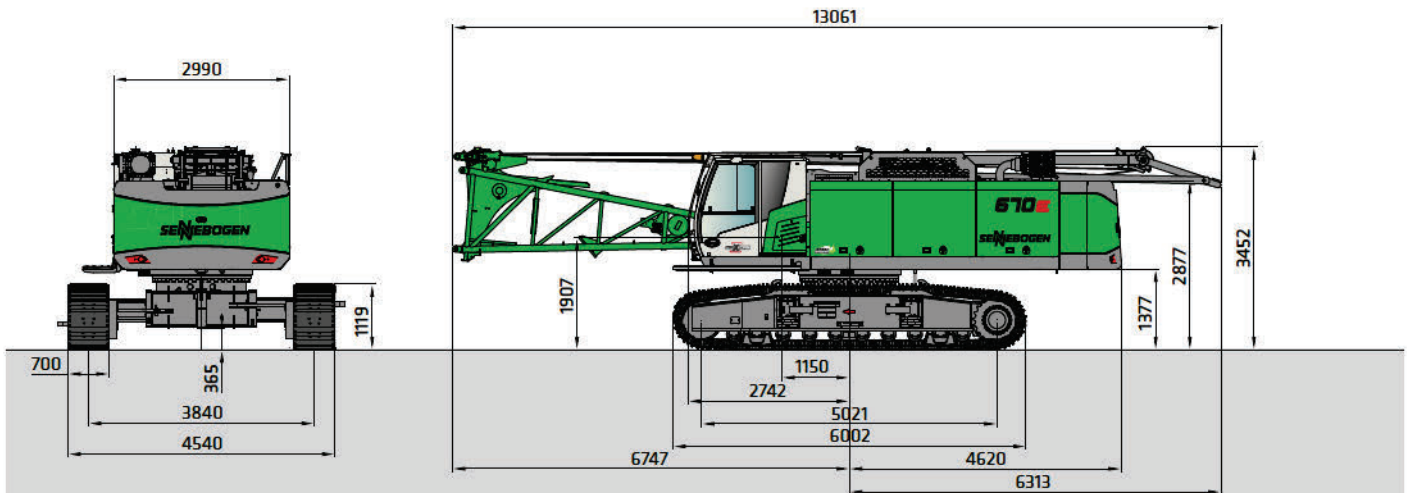
- The specified load ratings given apply when the machine is on a firm and level surface.
- The load ratings are given in tons and apply 360 degrees.
- The load ratings apply to the maximum stabilizer/undercarriage track width of 3840 mm.
- The load ratings include the dragline bucket weight and do not exceed 75 % of the tipping load.
- The load capacity is limited by the maximum cable pull and/or by the maximum tensile force of one winch

Winch tensile force [kN]	160	200
Cable diameter [mm]	26	28
Minimum breaking force [kN]	568	710
Maximum load capacity in dragline bucket mode [t]	16.0	20.0

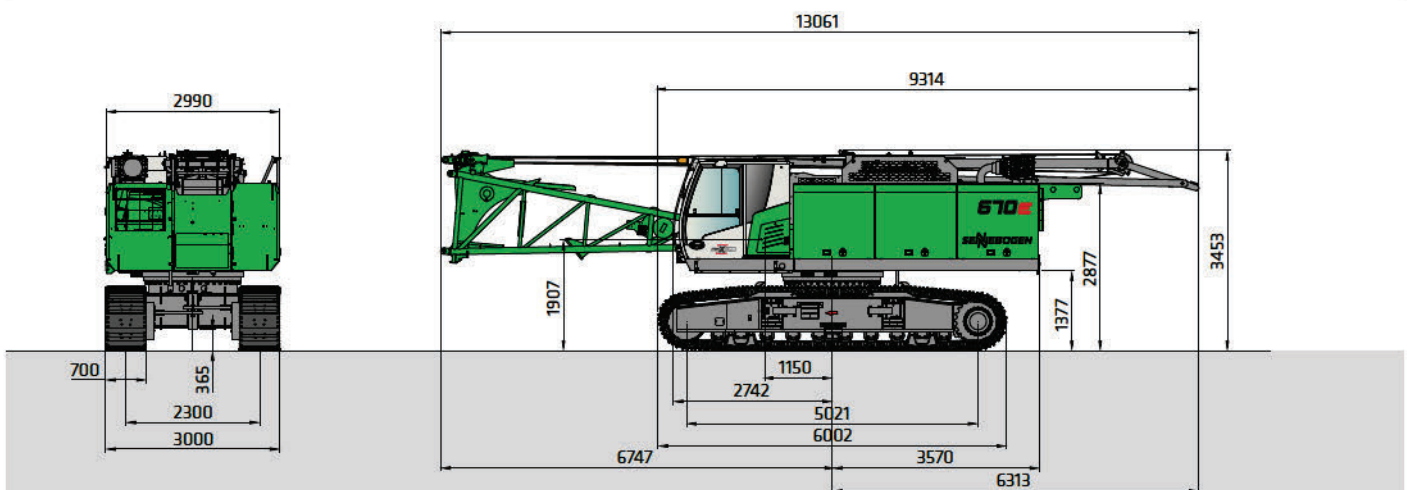
22 t	Boom length [m]																	
	14.9			17.7			20.5			23.3			26.1			28.9		
	R	H	t	R	H	t	R	H	t	R	H	t	R	H	t	R	H	t
50	11.2	13.0	16.6	13.0	15.1	13.5	14.8	17.3	11.3	16.6	19.4	9.5	18.4	21.6	8.2	20.2	23.7	7.1
45	12.1	12.1	14.9	14.1	14.0	12.1	16.1	16.0	10.1	18.0	18.0	8.5	20.0	20.0	7.2	22.0	22.0	6.3
40	12.9	11.1	13.7	15.1	12.9	11.1	17.2	14.7	9.2	19.4	16.5	7.7	21.5	18.3	6.5	23.7	20.1	5.6
35	13.7	10.0	12.7	16.0	11.6	10.3	18.3	13.2	8.4	20.6	14.8	7.1	22.9	16.4	6.0	25.2	18.0	5.1
30	14.4	8.9	11.9	16.8	10.3	9.6	19.2	11.7	7.9	21.6	13.1	6.6	24.1	14.5	5.5	26.5	15.9	4.8
25	14.9	7.7	11.3	17.4	8.9	9.1	20.0	10.1	7.5	22.5	11.2	6.2	25.1	12.4	5.2	27.6	13.6	4.5

670E Basic machine dimensions

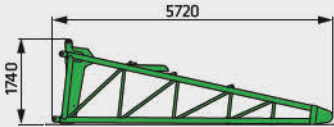
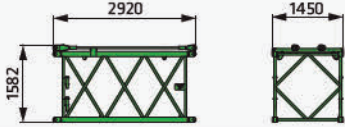
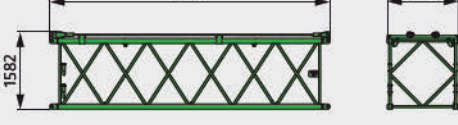


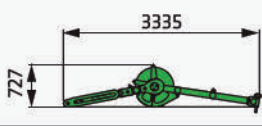



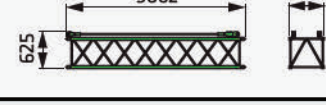
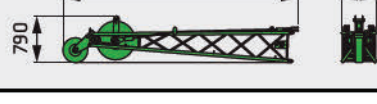
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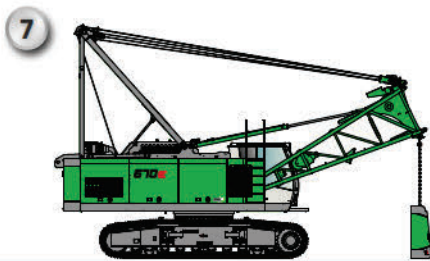
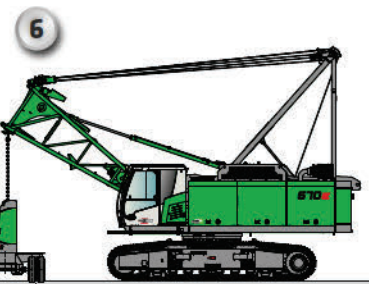
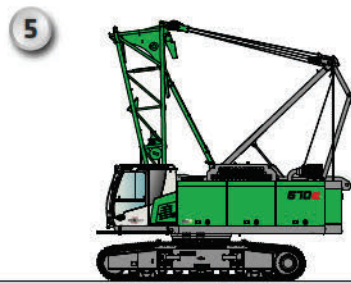
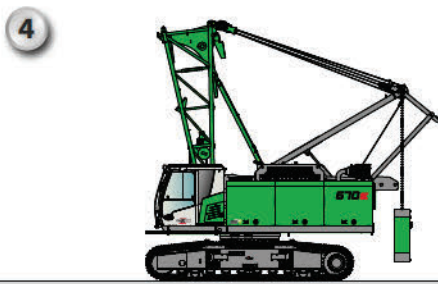
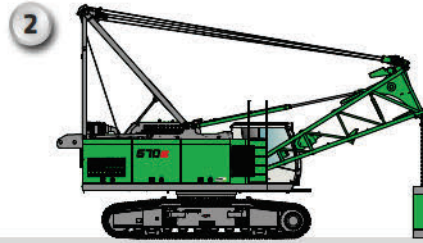
670 R with 22 t counterweight, T83/990 telescoping undercarriage, lower boom section, 2 x 16 t freetail winch, approx. 67.8 t



670 R without counterweight, lower boom section, 2 x 16 t freetail winch, approx. 45.8 t

	<p>Boom lower section 5.5 m type 1442</p> <p>Weight: 2,000 kg (may vary due to additional equipment)</p>
	<p>Boom section 2.8 m type 1442</p> <p>Weight: 400 kg</p>
	<p>Boom section 5.6 m type 1442</p> <p>Weight: 650 kg</p>
	<p>Boom section 11.2 m type 1442</p> <p>Weight: 1130 kg</p>
	<p>Boom head piece 6.6 m type 1442</p> <p>Weight: 1600 kg</p>
	<p>S 12.4 auxiliary boom</p> <p>Weight: 410 kg</p>
	<p>Counter weight</p> <p>Weight: 10,000 kg</p>
	<p>Counter weight</p> <p>Weight: 12,000 kg</p>
	<p>Fly boom lower section 3 m type 598</p> <p>Weight: 330 kg</p>
	<p>Fly boom section 3 m type 598</p> <p>Weight: 120 kg</p>
	<p>Fly boom head piece 3 m type 598</p> <p>Weight: 210 kg</p>

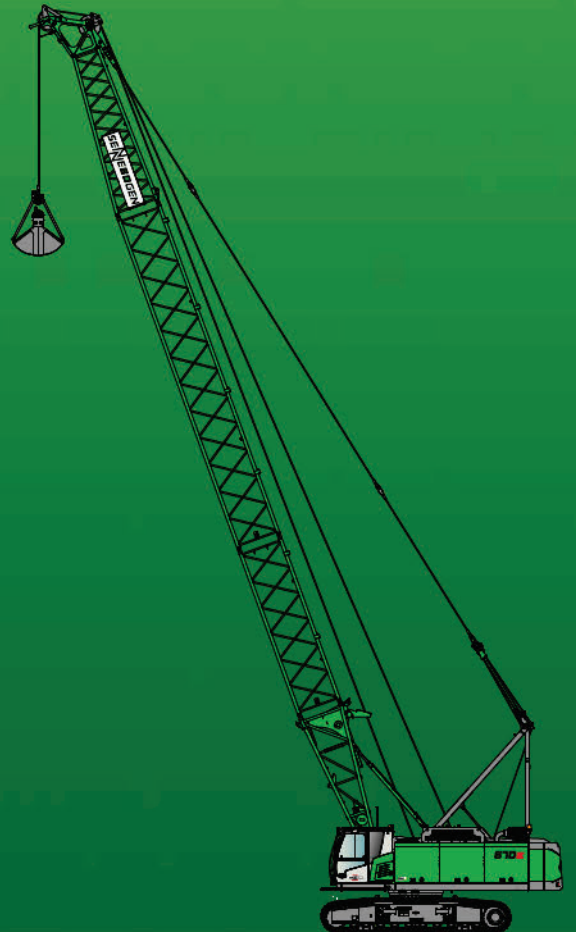
670E Ballast mounting system



Safe and easy self mounting of rear ballast.



670E



This catalog describes machine models, the scope of equipment of individual models, and configuration options (standard equipment and optional equipment) of the machines delivered by SENNEBOGEN Maschinenfabrik GmbH. Machine illustrations may contain optional and supplementary equipment. Actual equipment may vary depending on the country to which the machines are delivered, especially in regard to standard and optional equipment. All product designations used may be trademarks of SENNEBOGEN Maschinenfabrik GmbH or other supplying companies, and any use by third parties for their own purposes may violate the rights of the owners.

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