

# SARENS HLTC 1900



## HEAVY LIFT TOWER CRANE

- Load moment: 2.048tm
- Capacity: 80t
- Jib configuration: 36m / 42m / 48m / 54m / 60m
- Power supply:

Crane configuration	Power supply grid (generator)	Main fuses
1 x Luffing winch	3x400V+PE 50Hz/ 450 kVA (675 kVA)	630A
3 x Slewing gear		
2 x Hoist winch		
1 x Luffing winch	3x400V+PE 50Hz/ 330 kVA (500 kVA)	500A
3 x Slewing gear		
1 x Hoist winch		

### Regenerative / non-regenerative operation:

The AFE (Active Front End) inverters on the HLTC cranes can be switched between regenerative (standard) and non-regenerative operation (optional).

- If regenerative operation is selected, the crane has to be connected to the national grid through a transformer. The excess energy, e.g. when lowering a load or luffing down the jib, will be fed back to the grid, which saves energy.
- If non-regenerative operation is selected, a resistor bank has to be mounted on the crane. Braking resistors will dissipate the excess energy. The crane can then be connected to a generator or through a transformer to a grid that does not allow energy feedback.

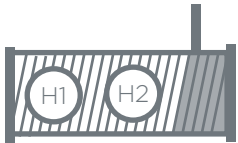
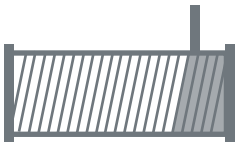

### No inrush currents:

The HLTC cranes have an integrated energy buffer, avoiding inrush currents due to start of the winches. First the alternating current (3x400V 50Hz) is rectified to a direct current of around 650V. This direct current is then buffered, providing an amount of energy that is stored for instant use. The inverter converts the direct current to alternating current with variable frequency for variable speed. This system prevents inrush currents.

### No grid disturbance due to harmonics:

The rectifiers and inverters are active front end (AFE) types with an additional LCL filter (= EMC filter) installed. AFE inverters use IGBT transistors instead of diodes. The AFE inverter monitors the input current waveform and shapes it to be sinusoidal, greatly reducing total harmonic distortion (THD) and improving the power factor to almost 1. The LCL filter reduces further any residual higher-order harmonics caused by the switching frequency of the IGBTs.

- Classification crane: A3
- Wind category: C25 (out-of-service)

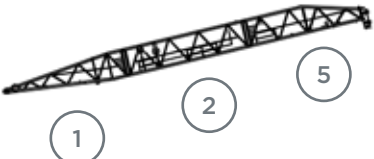
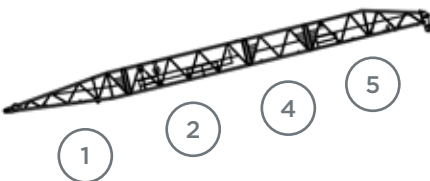
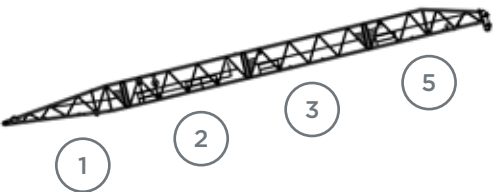
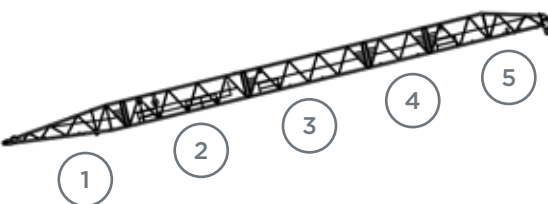
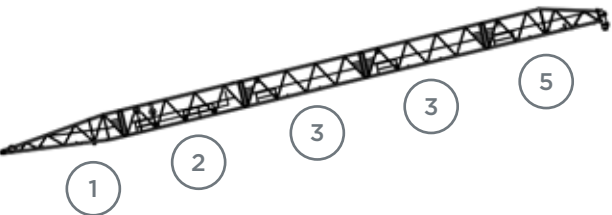
	Gear	Working speed	Rope diameter	Rope length	Nominal single line pull
Hoisting winch		<p>at 16t line load 61m/min - 39m/min on layer 9 - 1</p> <p>at 8t line load 122m/min - 78m/min on layer 9 - 1</p>	28mm	800m	173 kN on layer 9
Luffing winch		47m/min on layer 4	28mm	380m	
Slewing gear		0,7rpm			

**HLTC 1900  
JIB CONFIGURATION**

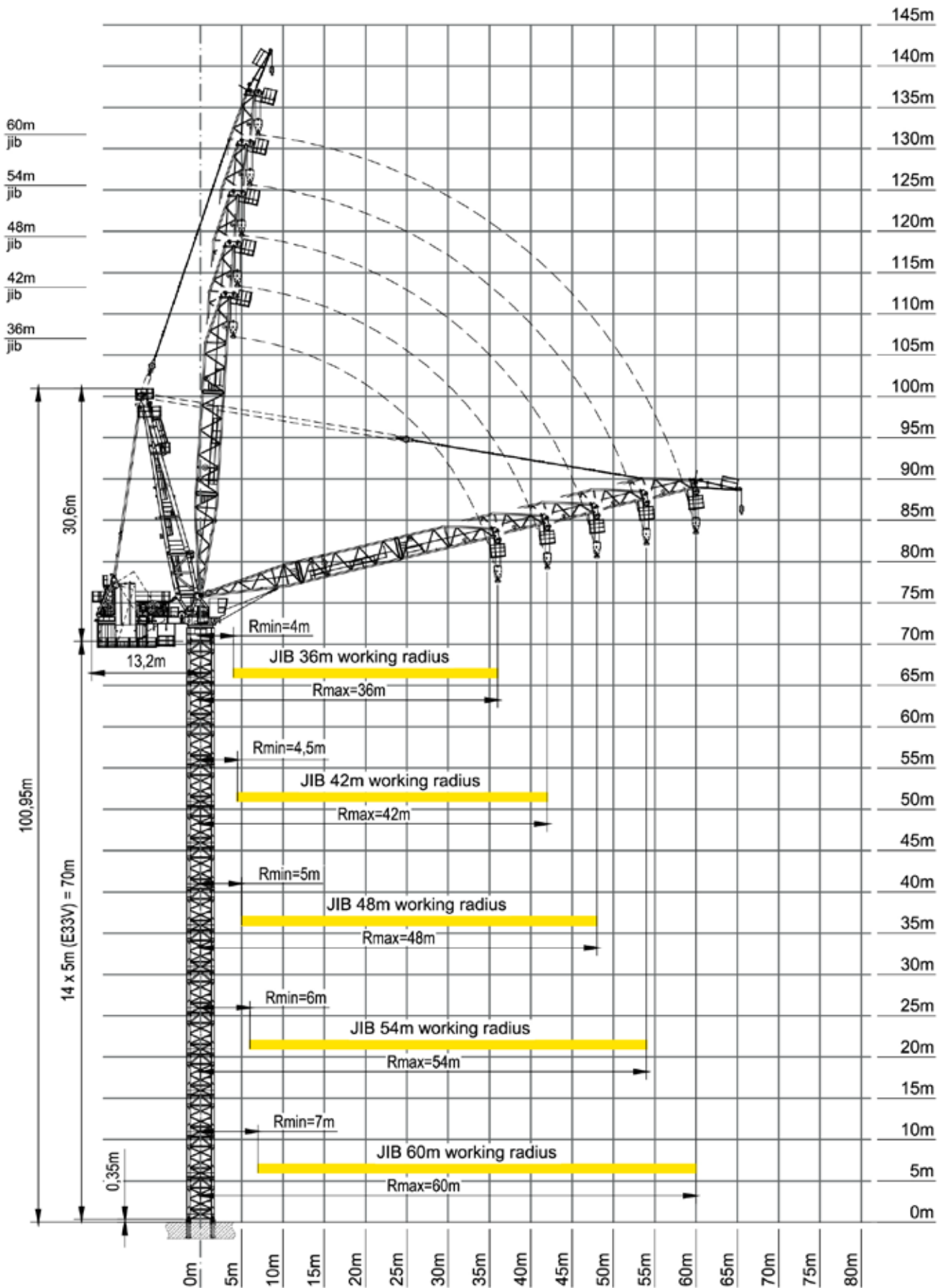


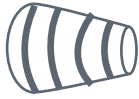
**NOTHING TOO HEAVY, NOTHING TOO HIGH**

## HLTC 1900 JIB CONFIGURATION

Jib Length	Jib Configuration	Counterweight	Counterweight configuration
36m		101,9t	2x No.1 2x No.2 2x No.3 1x No.4 1x No.5
42m		110,6t	3x No.2 3x No.3 1x No.4 1x No.5
48m			
54m		128,9t	2x No.1 3x No.2 3x No.3 1x No.4 1x No.5
60m			

# HLTC 1900 WORKING RANGE





17m/s



ISO

## HLTC 1900 LOAD CHART

### 5-FALL

Radius [m]	min. R	20	22,5	23	24	24,5	26	30	36	40	42	46	48	50	54
Capacity Jib 36m [t]	(4m) 80	80	80	80	80	80	75,3	65,1	54	-	-	-	-	-	-
Capacity Jib 42m [t]	(4,5m) 80	80	80	80	80	78,3	73,7	63,7	52,8	47,3	45	-	-	-	-
Capacity Jib 48m [t]	(5m) 80	80	80	80	76,6	75,1	70,7	61,2	50,9	45,7	43,5	39,7	38	-	-
Capacity Jib 54m [t]	(6m) 80	80	80	78,2	74,9	73,3	68,9	59,4	49,1	44	41,8	38	36,3	34,7	32

### 4-FALL

Radius [m]	min. R	30	30,5	31	31,5	32	34	36	40	42	48	50	54	60
Capacity Jib 36m [t]	(4m) 64	64	64	64	64	64	59,8	56	-	-	-	-	-	-
Capacity Jib 42m [t]	(4,5m) 64	64	64	64	64	62,9	59	55,5	49,6	47	-	-	-	-
Capacity Jib 48m [t]	(5m) 64	64	64	64	62,9	61,8	57,8	54,3	48,2	45,7	39,2	-	-	-
Capacity Jib 54m [t]	(6m) 64	64	64	62,8	61,7	60,7	56,6	53,1	47	44,4	37,9	36,1	32,9	-
Capacity Jib 60m [t]	(7m) 64	64	62,8	61,7	60,6	59,6	55,7	52,3	46,4	43,9	37,6	35,8	32,7	28,8

### 3-FALL

Radius [m]	min. R	36	38	40	41	42	44	46	48	50	54	60
Capacity Jib 36m [t]	(4m) 48	48	-	-	-	-	-	-	-	-	-	-
Capacity Jib 42m [t]	(4,5m) 48	48	48	48	48	48	-	-	-	-	-	-
Capacity Jib 48m [t]	(5m) 48	48	48	48	48	48	45,1	42,4	40	-	-	-
Capacity Jib 54m [t]	(6m) 48	48	48	48	48	46,6	43,9	41,5	39,2	37,2	33,5	-
Capacity Jib 60m [t]	(7m) 48	48	48	48	46,6	45,3	42,9	40,7	38,7	36,8	33,5	29,3

### 2-FALL

Radius [m]	min. R	36	40	42	48	50	54	57	58	60
Capacity Jib 36m [t]	(4m) 32	32	-	-	-	-	-	-	-	-
Capacity Jib 42m [t]	(4,5m) 32	32	32	32	-	-	-	-	-	-
Capacity Jib 48m [t]	(5m) 32	32	32	32	32	-	-	-	-	-
Capacity Jib 54m [t]	(6m) 32	32	32	32	32	32	32	-	-	-
Capacity Jib 60m [t]	(7m) 32	32	32	32	32	32	32	32	31,3	30

- Capacities are given in metric tons.
- Capacities are based on 50m tower height and hook at ground level. For longer hook travel distances, a reduction of the capacity with the additional weight of the hoist rope is required.
  - 5-fall: 20kg/m
  - 4-fall: 16kg/m
  - 3-fall: 12kg/m
  - 2-fall: 8kg/m
- Capacities are to be reduced by 3,5t if the auxiliary jib is installed. The maximum capacity for lifting at the auxiliary jib is 8t (2-fall).
- Hook block weight is included in the load chart and is therefore not to be deducted from the capacity as per load chart.
- Radius is from slewing centre.
- The maximum allowed wind speed for crane operation is measured by the anemometer in the top of the jib. The load charts take into account the wind effect on the load as exerted by the 3-second wind gust at the top of the jib, acting on a projected area of 1 m<sup>2</sup> per ton of lifted load multiplied by a drag factor of 1,2.



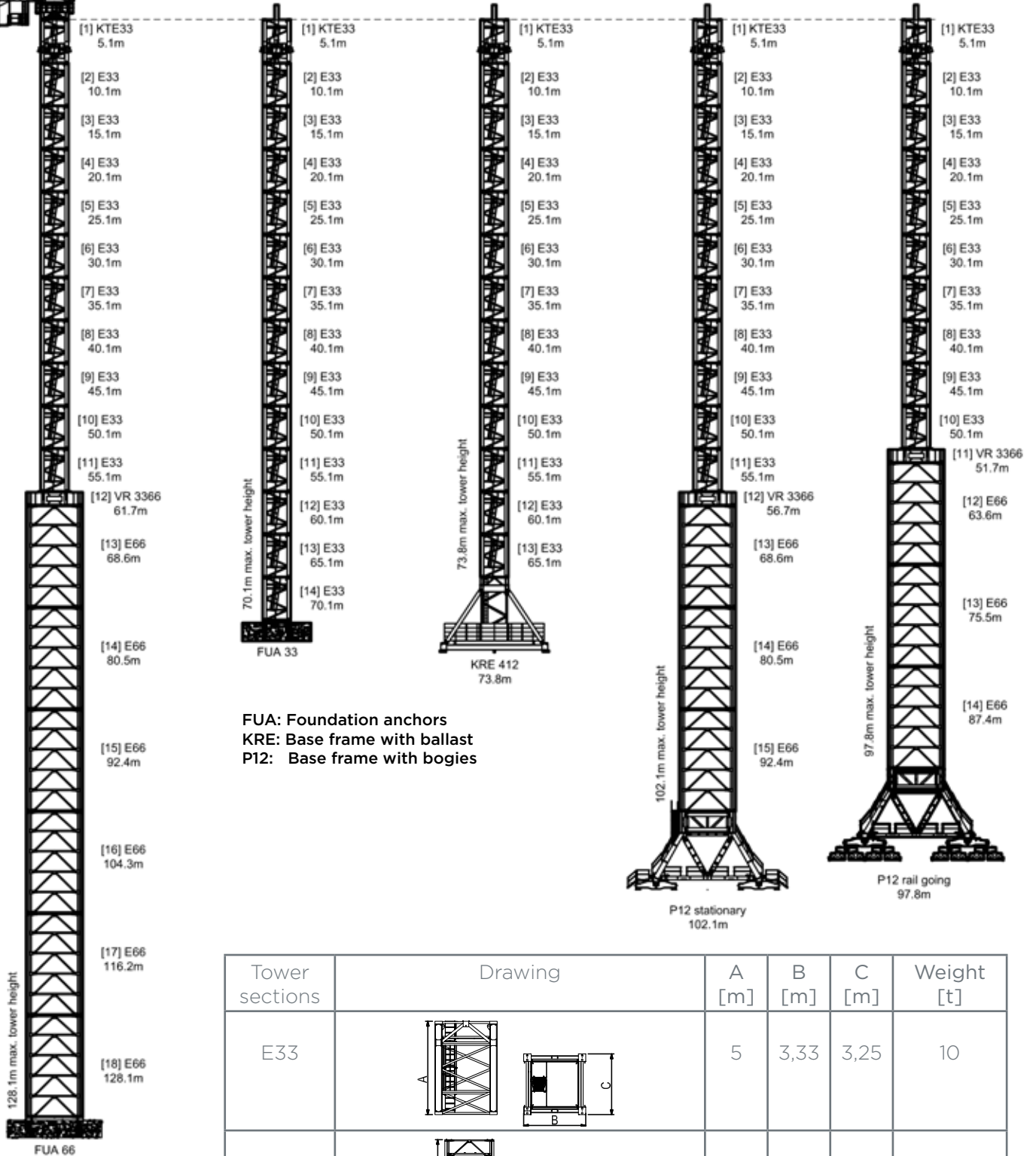
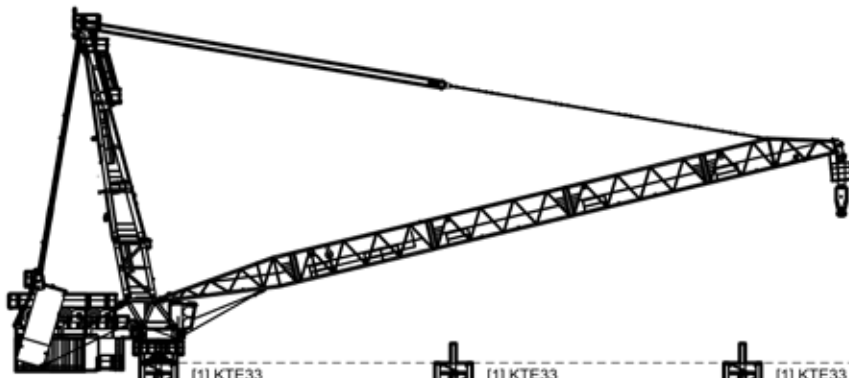
HLTC 1900  
Tower 50m - Jib 60m







# HLTC 1900 TOWER CONFIGURATION



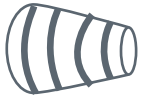
Tower sections	Drawing	A [m]	B [m]	C [m]	Weight [t]
E33		5	3,33	3,25	10
E66*		11,9	6,6	6,6	30,5

\*The tower sections are disassembled for transport.



Istanbul, Turkey  
Tower 50m - Jib 60m

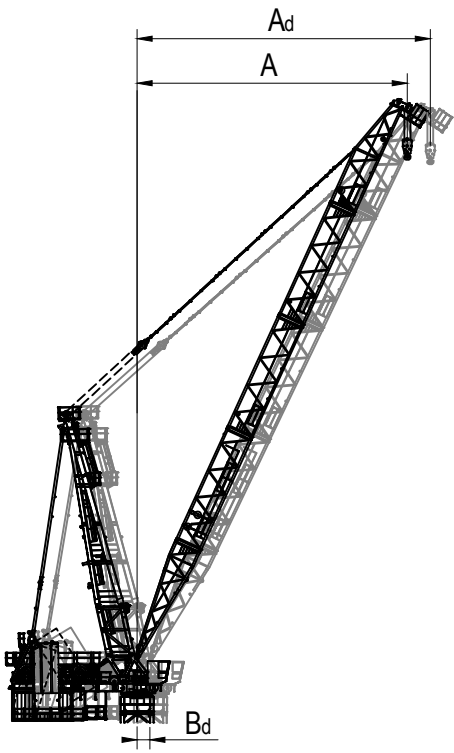
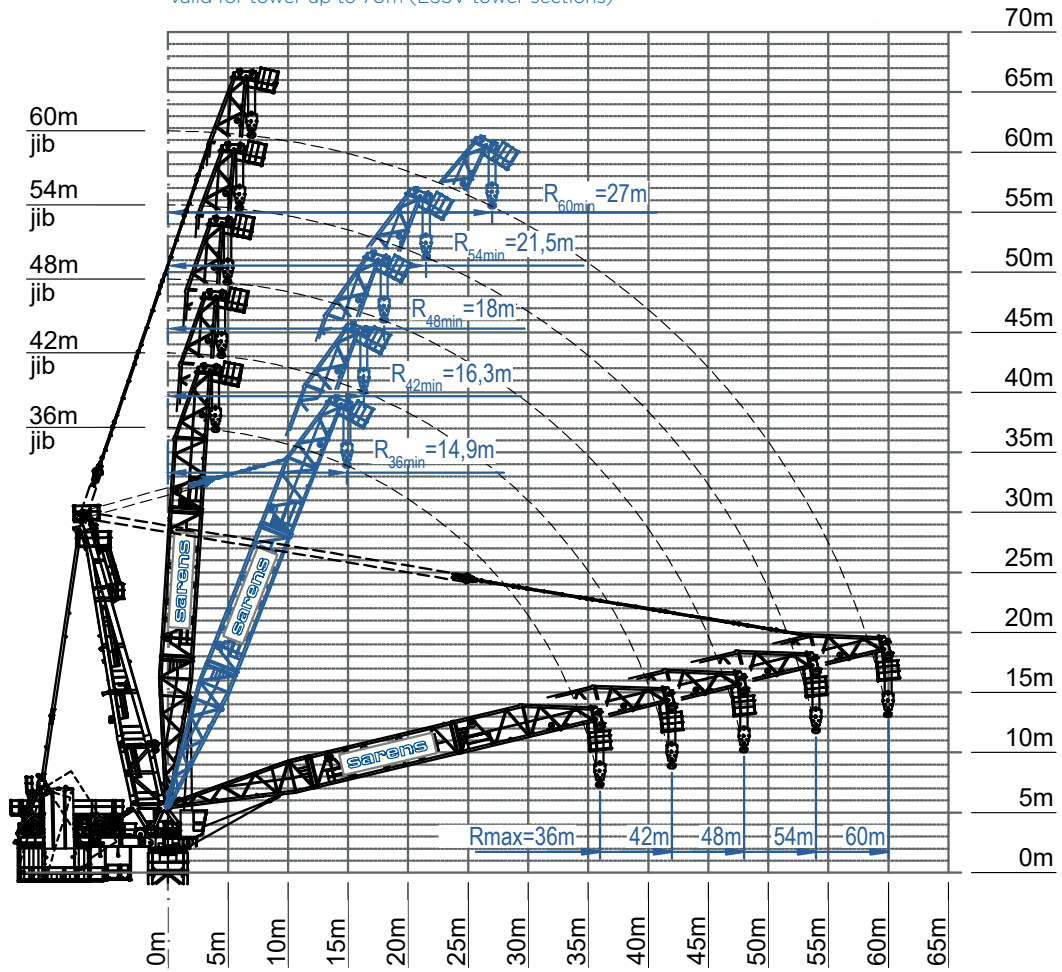




wind category C25

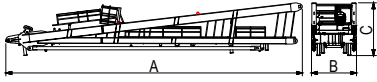
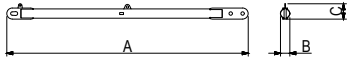
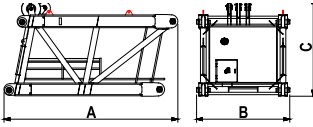
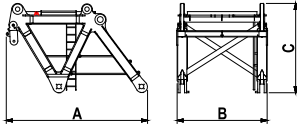
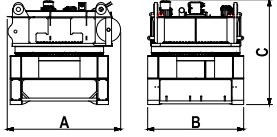
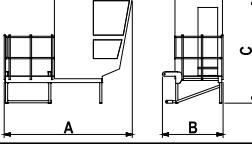
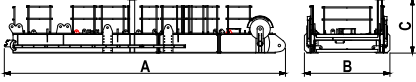
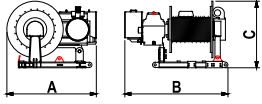
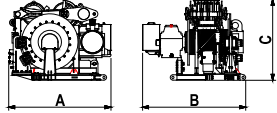
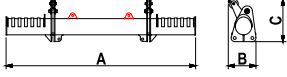
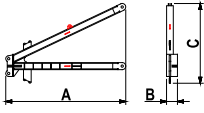
# HLTC 1900 OUT OF SERVICE

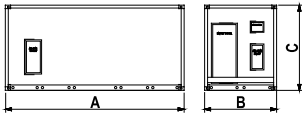
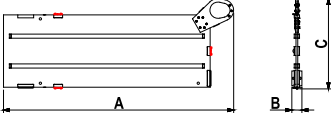
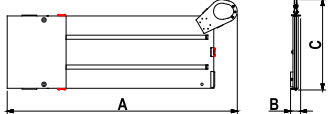
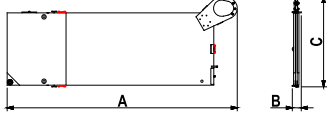
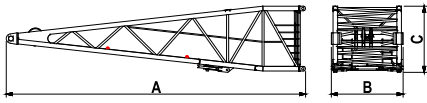
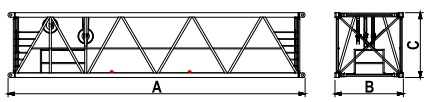
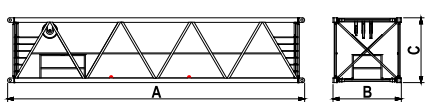
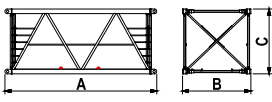
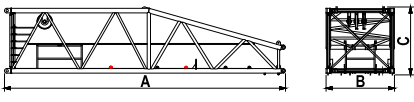
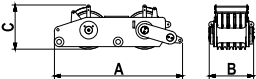
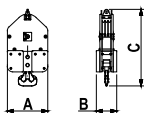
HLTC 1900 out-of-service jib position  
valid for tower up to 70m (E33V tower sections)



HLTC 1900, out-of-service condition			
jib	"A" min radius [m]	"A <sub>d</sub> " min radius + deflection [m]	"B <sub>d</sub> " deflection of tower [m]
36	14.9	15.7	1.12
42	16.3	17.3	1.22
48	18.0	19.4	1.26
54	21.5	23.2	1.32
60	27.0	29.3	1.30

## HLTC 1900 COMPONENTS

Item	Description	Drawing	A [m]	B [m]	C [m]	Weight [t]	Quantity
1	Cat head		20,1	3,1	3,6	31	1
2	Cat head pendants L5700		5,68	0,22	0,36	0,33	2
3	Cat head extension		5,9	3,2	3,4	9,5	1
4	Short head section		4,8	3,05	3,1	8,6	1
5	Slewing platform		3,85	3,25	3,6	30	1
6	Operator cab		3,65	1,75	3,0	1,3	1
7	Machinery platform (3 parts)		11,6	3,55	2,3	13,6	1
8	Hoist winch with base frame (with 800m rope)		2,55	2,95	1,9	11,2	2
9	Luffing winch with base frame and roller block		2,9	2,91	2,3	12	1
10	Counterweight crossbar		5,35	0,79	1,2	1,65	1
11	V-shaped support (right + left)		4,1	0,37	2,7	1,2	2

Item	Description	Drawing	A [m]	B [m]	C [m]	Weight [t]	Quantity
12	Electrical container		6,1	2,44	2,9	8	1
13	Counterweight No. 1		7,8	0,34	3,1	9,15	2
14	Counterweight No. 2 + 3		7,8	0,34	3,1	13,5	6
15	Counterweight No. 4 + 5		7,8	0,3	3,1	14,8	2
16	Jib foot <span style="float: right;">①</span>		12,7	3,1	2,8	7,2	1
17	Jib insert L12350 <span style="float: right;">②</span>		12,6	2,9	2,75	6,8	1
18	Jib insert L12350 <span style="float: right;">③</span>		12,6	2,9	2,75	5,6	2
19	Jib insert L6200 <span style="float: right;">④</span>		6,5	2,9	2,7	3,3	1
20	Jib head <span style="float: right;">⑤</span>		11,9	2,9	2,9	6,4	1
21	Jib head sheave set		2,17	0,75	0,75	1,4	1
22	Hook block 80t		1,15	0,58	2,2	2,8	1



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SARENS HLTC 1900 - version December 2024

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