

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/ 600 kVA	720A
3 x Slewing gear		
2 x Hoist winch		
1 x Luffing winch	3x400V+PE 50Hz/ 550 kVA	660A
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.

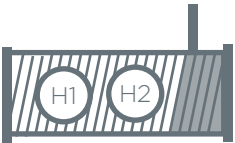


No inrush currents:

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.

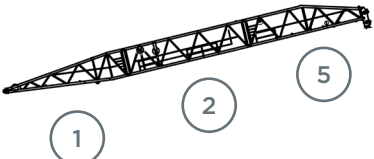
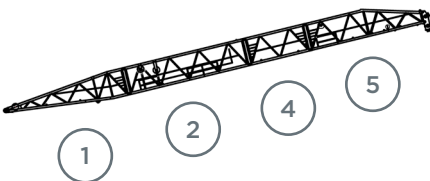
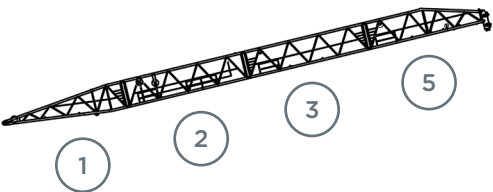
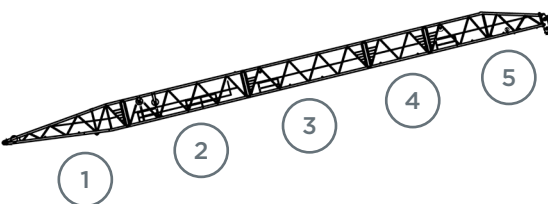
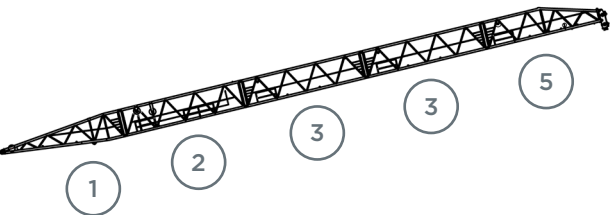
- Classification crane: A3
- Wind category: C25 (out-of-service)

	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			

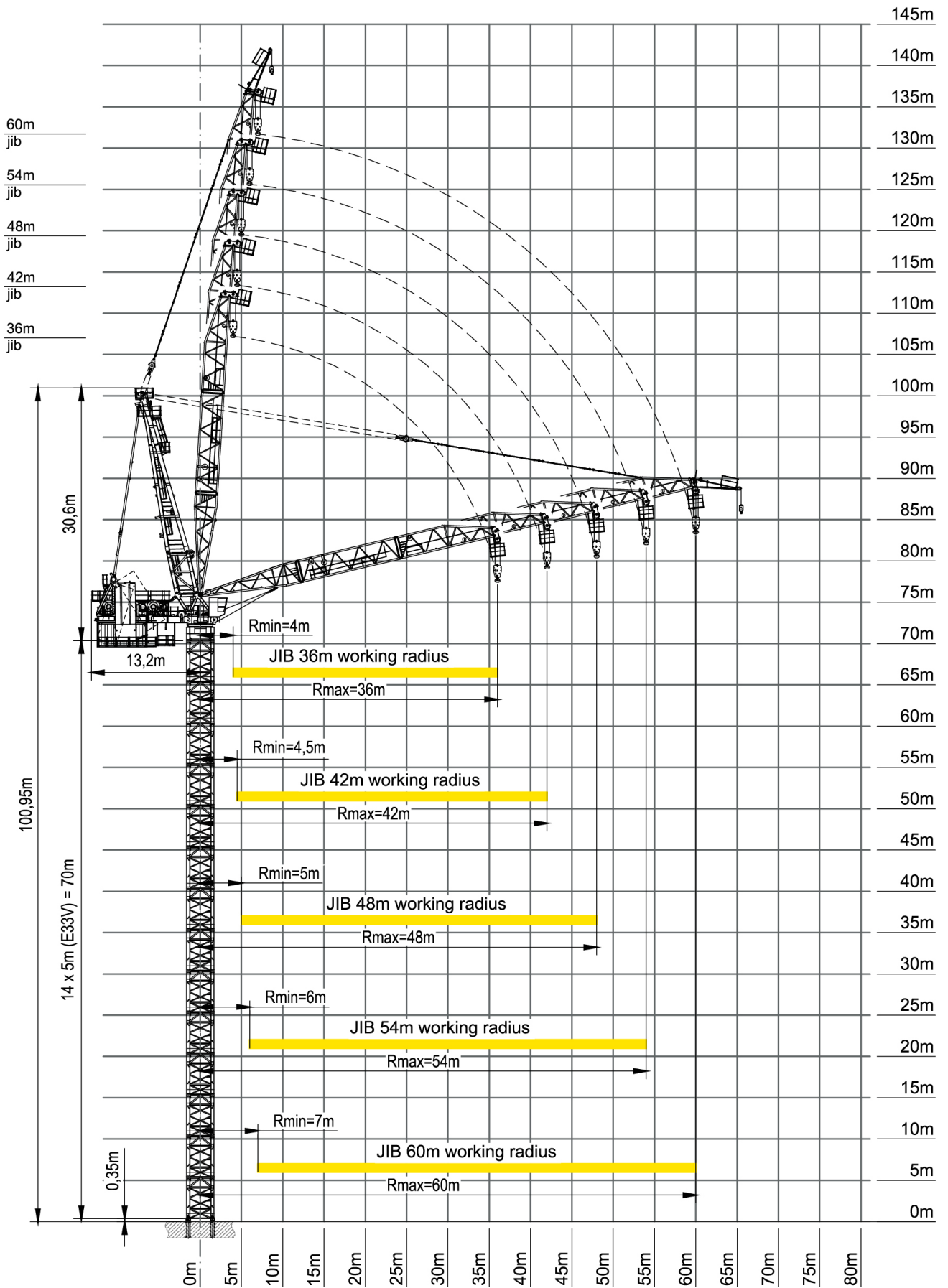
HLTC 1900
JIB CONFIGURATION

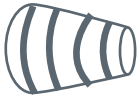


HLTC 1900 JIB CONFIGURATION

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

HLTC 1900 WORKING RANGE





17m/s



ISO

**HLTC 1900
LOAD CHART****5-FALL**

Radius [m]

Capacity [t]	Min.	10	20	22,5	23	24	24,5	26	30	34	36	38	40	42	46	48	50	54
Jib 36m	80 (R4m)	80	80	80	80	80	80	75,3	65,1	57,3	54	-	-	-	-	-	-	-
Jib 42m	80 (R4,5m)	80	80	80	80	80	78,3	73,7	63,7	56	52,8	49,9	47,3	45	-	-	-	-
Jib 48m	80 (R5m)	80	80	80	80	76,6	75,1	70,7	61,2	53,9	50,9	48,2	45,7	43,5	39,7	38	-	-
Jib 54m	80 (R6m)	80	80	80	78,2	74,9	73,3	68,9	59,4	52,2	49,1	46,4	44	41,8	38	36,3	34,7	32

4-FALL

Radius [m]

Capacity [t]	Min.	10	20	30	30,5	31	31,5	32	34	36	38	40	42	46	48	50	54	60
Jib 36m	64 (R4m)	64	64	64	64	64	64	64	59,8	56	-	-	-	-	-	-	-	-
Jib 42m	64 (R4,5m)	64	64	64	64	64	64	62,9	59	55,5	52,4	49,6	47	-	-	-	-	-
Jib 48m	64 (R5m)	64	64	64	64	64	62,9	61,8	57,8	54,3	51,1	48,2	45,7	41,2	39,2	-	-	-
Jib 54m	64 (R6m)	64	64	64	64	62,8	61,7	60,7	56,6	53,1	49,9	47	44,4	39,9	37,9	36,1	32,9	-
Jib 60m	64 (R7m)	64	64	64	62,8	61,7	60,6	59,6	55,7	52,3	49,2	46,4	43,9	39,5	37,6	35,8	32,7	28,8

3-FALL

Radius [m]

Capacity [t]	Min.	10	20	30	34	36	38	40	41	42	44	46	48	50	54	60
Jib 36m	48 (R4m)	48	48	48	48	48	-	-	-	-	-	-	-	-	-	-
Jib 42m	48 (R4,5m)	48	48	48	48	48	48	48	48	48	-	-	-	-	-	-
Jib 48m	48 (R5m)	48	48	48	48	48	48	48	48	48	45,1	42,4	40	-	-	-
Jib 54m	48 (R6m)	48	48	48	48	48	48	48	48	46,6	43,9	41,5	39,2	37,2	33,5	-
Jib 60m	48 (R7m)	48	48	48	48	48	48	48	46,6	45,3	42,9	40,7	38,7	36,8	33,5	29,3

2-FALL

Radius [m]

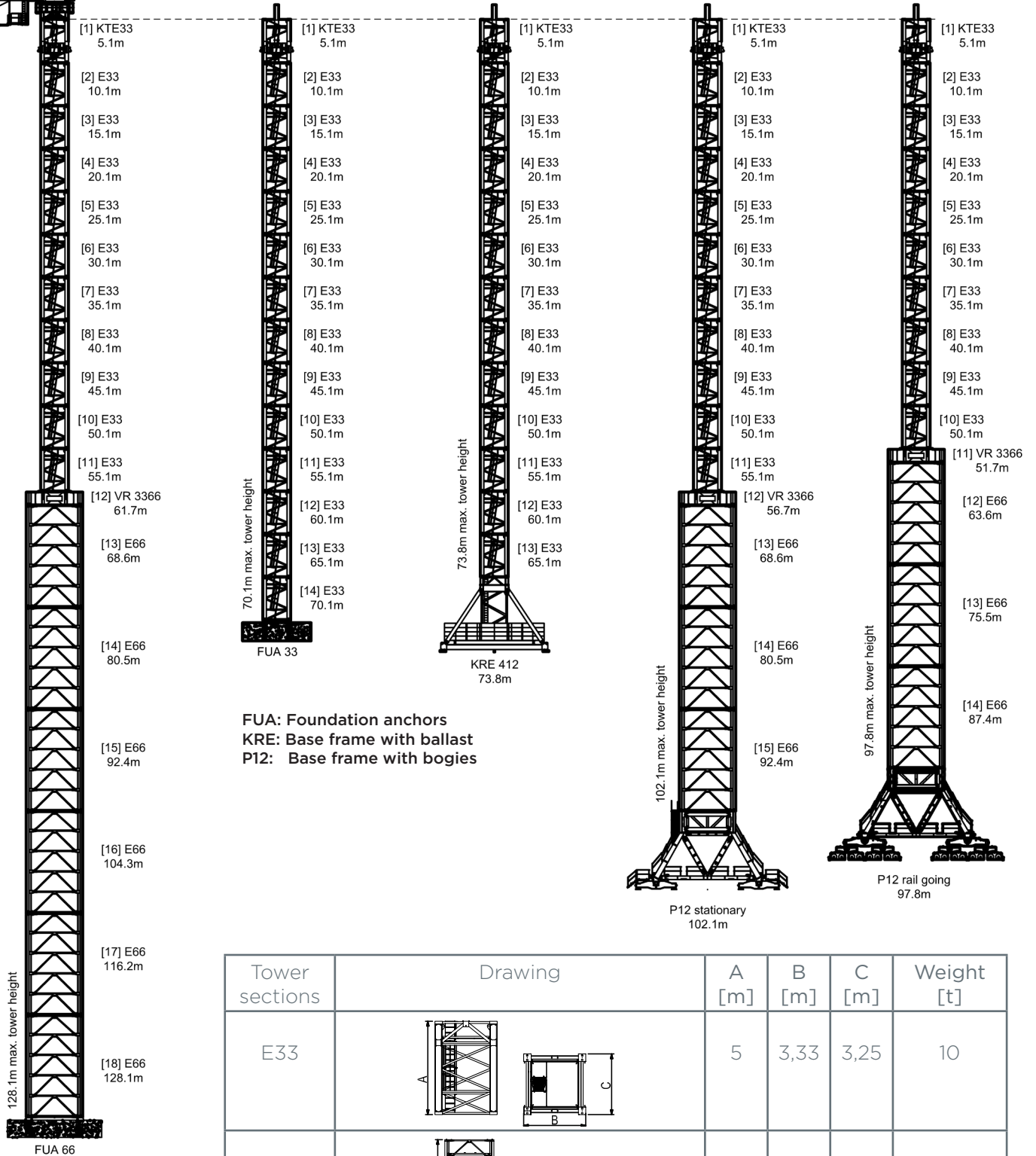
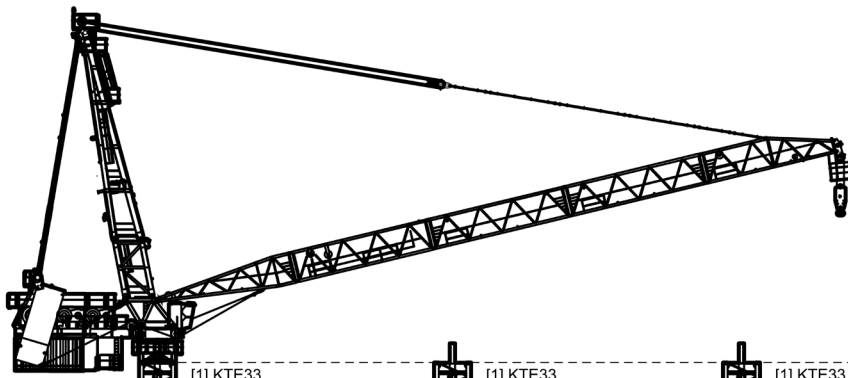
Capacity [t]	Min.	10	20	30	36	40	42	48	50	54	57	58	60
Jib 36m	32 (R4m)	32	32	32	32	-	-	-	-	-	-	-	-
Jib 42m	32 (R4,5m)	32	32	32	32	32	32	-	-	-	-	-	-
Jib 48m	32 (R5m)	32	32	32	32	32	32	32	-	-	-	-	-
Jib 54m	32 (R6m)	32	32	32	32	32	32	32	32	32	-	-	-
Jib 60m	32 (R7m)	32	32	32	32	32	32	32	32	32	32	31,3	30

- 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.
- Hook block weight is included in the 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 m² per ton of lifted load multiplied by a drag factor of 1,2.



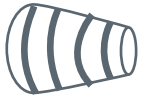
HLTC 1900
Tower 50m - Jib 60m

HLTC 1900 TOWER CONFIGURATION



HLTC 1900

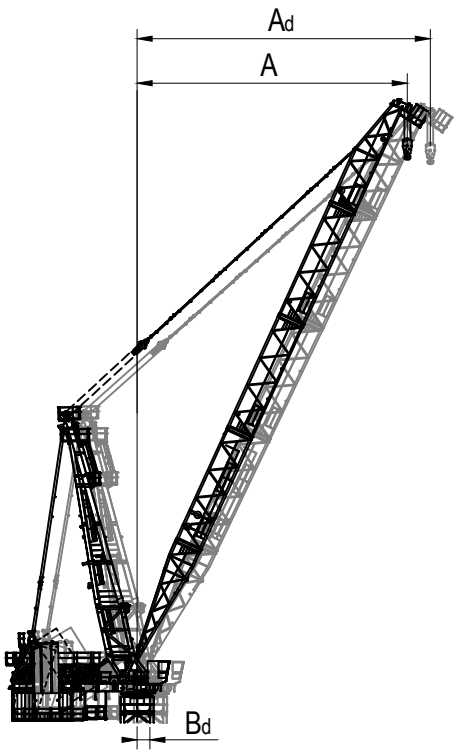
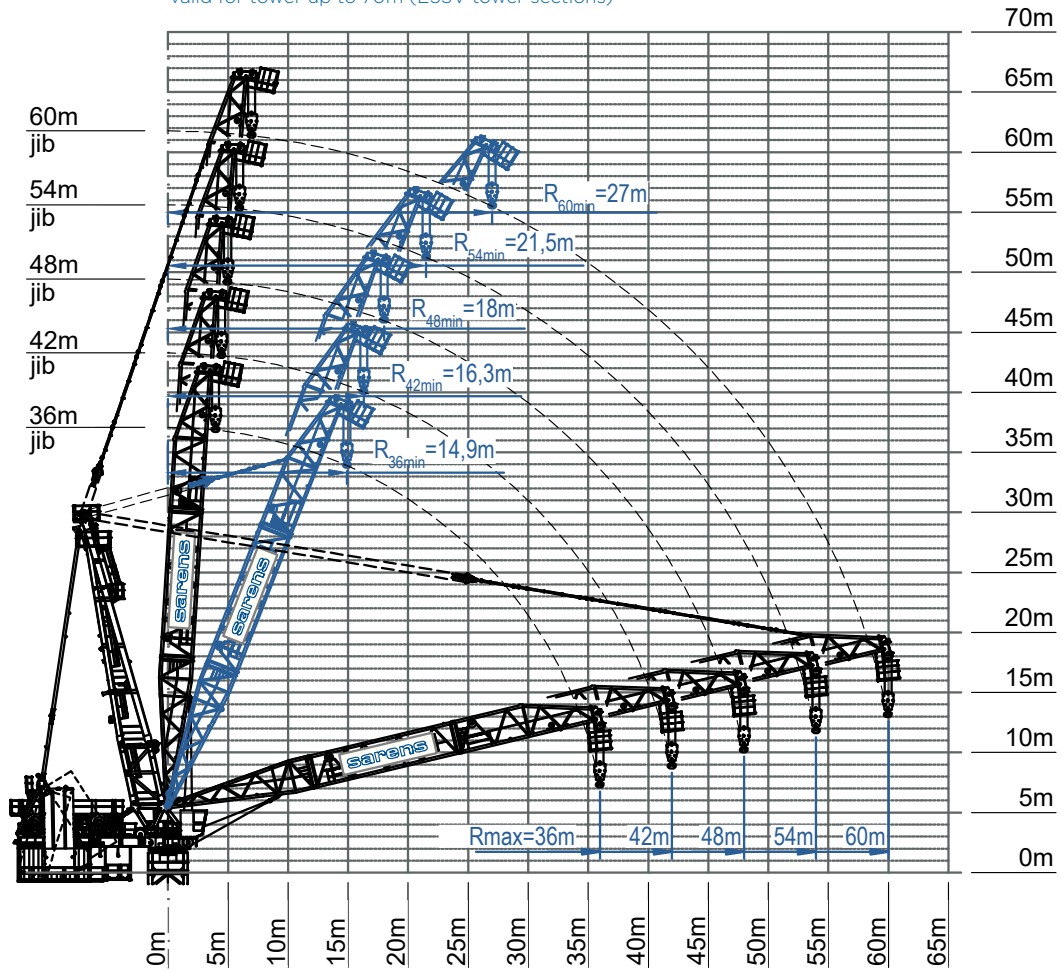




wind category C25

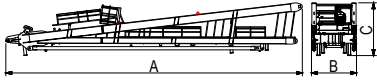
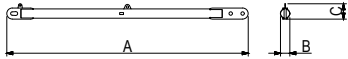
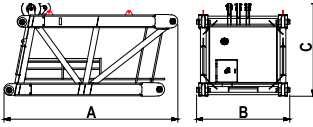
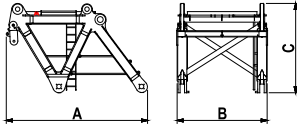
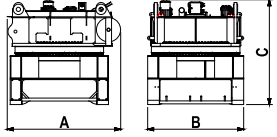
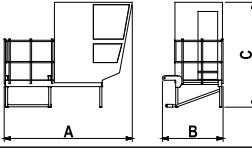
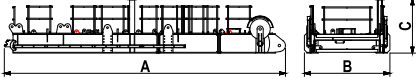
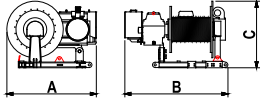
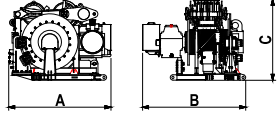
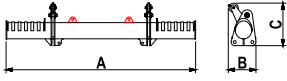
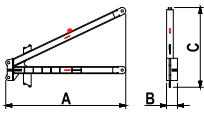
HLTC 1900 OUT OF SERVICE

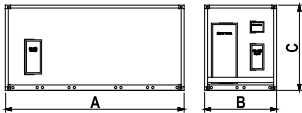
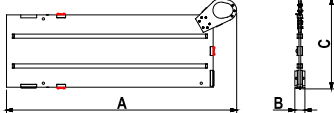
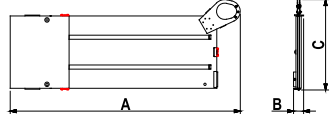
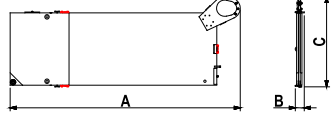
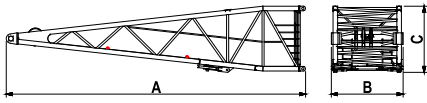
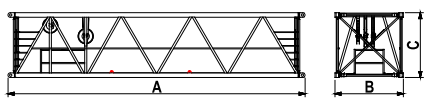
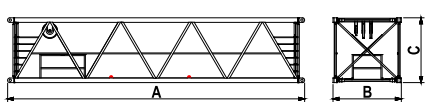
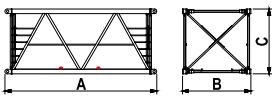
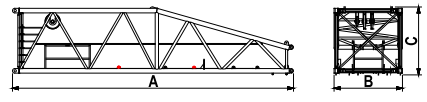
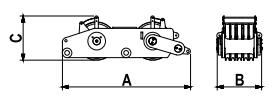
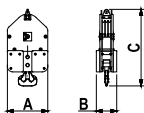
HLTC 1900 out-of-service jib position
valid for tower up to 70m (E33V tower sections)



HLTC 1900, out-of-service condition			
jib	"A" min radius [m]	"A _d " min radius + deflection [m]	"B _d " 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 ①		12,7	3,1	2,8	7,2	1
17	Jib insert L12350 ②		12,6	2,9	2,75	6,8	1
18	Jib insert L12350 ③		12,6	2,9	2,75	5,6	2
19	Jib insert L6200 ④		6,5	2,9	2,7	3,3	1
20	Jib head ⑤		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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