

KATO KR-20H-3 ROUGH TERRAIN HYDRAULIC CRANE

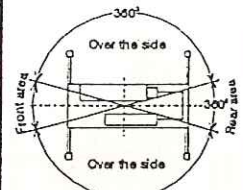
CHART 1

TOTAL RATED LOAD IN KILOGRAMS
THIS DOCUMENT SHOULD BE READ IN CONJUNCTION WITH THE A.C.S.

B(m)	A	OUTRIGGERS FULLY EXTENDED (360°)				OUTRIGGERS EXTENDED 4.7m (OVER THE SIDE)				OUTRIGGERS EXTENDED 3.6m (OVER THE SIDE)				
		8.4m	14.5m	20.6m	26.7m	8.4m	14.5m	20.6m	26.7m	8.4m	14.5m	20.6m	26.7m	
*0.6		25,000												
2.5		20,000	16,000			20,000	16,000			20,000	16,000			
3.0		20,000	16,000			20,000	16,000			20,000	16,000			
3.5		20,000	16,000	9,000		20,000	16,000	9,000		20,000	16,000	9,000		
4.0		18,500	15,500	9,000		18,500	15,500	9,000		14,500	13,600	9,000		
4.5		16,500	14,200	9,000	6,800	16,500	14,200	9,000	6,800	11,500	11,100	9,000	6,800	
5.0		15,000	13,100	9,000	6,800	15,000	13,100	9,000	6,800	9,500	9,100	9,000	6,800	
5.5		13,700	12,100	9,000	6,800	12,500	12,100	9,000	6,800	8,000	7,650	8,100	6,800	
6.0		12,500	11,200	9,000	6,800	10,600	10,200	9,000	6,800	6,900	6,500	7,000	6,800	
6.5		11,500	10,400	8,500	6,800	9,000	8,750	8,500	6,800	6,000	5,600	6,150	6,300	
7.0			9,700	8,000	6,800		7,600	8,000	6,800		4,850	5,400	5,600	
8.0			8,450	7,100	6,100		5,800	6,450	6,100		3,750	4,250	4,500	
9.0			6,700	6,400	5,500		4,650	5,200	5,500		2,950	3,400	3,700	
10.0			5,450	5,800	5,000		3,800	4,300	4,550		2,350	2,800	3,050	
11.0			4,500	5,050	4,550		3,100	3,600	3,850		1,850	2,300	2,550	
12.0			3,800	4,300	4,200		2,550	3,050	3,300		1,450	1,900	2,150	
13.0				3,700	3,800			2,600	2,800			1,550	1,800	
14.0				3,200	3,450			2,200	2,400			1,300	1,500	
15.0				2,800	3,000			1,900	2,100			1,050	1,250	
16.0				2,400	2,650			1,600	1,800			850	1,050	
17.0				2,100	2,350			1,350	1,600			650	850	
18.0				1,850	2,100			1,150	1,350			500	700	
19.0					1,850				1,150				550	
20.0					1,600				1,000					
22.0					1,250				700					
24.0					950				500					
25.0					800									
CRITICAL BOOM ANGLE		-	-	-	-	-	-	-	-	-	-	-	-	35°

A : BOOM LENGTH(m)

B : WORKING RADIUS(m)



Working Radius Diagram

NOTES :

- These capacities are based on condition that the crane is set on firm ground horizontally. Those above the bold lines are based on the crane's strength and those below on it's stability.
- Total rated loads below the bold lines do not exceed 75% of tipping load.
- The weights of the lifting hooks are set out in the chart below, the weight of slings and all similiary used load handling devices must be added to the weight of the load.

CAPACITY OF HOOK	20,000kg	3,000kg
WEIGHT OF HOOK	230kg	60kg

- The total rated loads shown are based on the actual working radius which includes any deflection of the boom.
- The working radius details shown in chart 2 refer to operations with 26.7 metres of boom. For operations with other boom lengths such operations should be performed on the basis of boom angle only, regardless of boom length.
- The outriggers may be extended and fixed at different settings i.e. fully extended 5.8m and two intermediate settings of 4.7m and 3.6m.
- The crane's rated capacity is generally determined by the amount the outriggers are extended, particularly over the side, it is therefore necessary to refer to the relevant rated load charts prior to commencing work. Load ratings over the front and rear have been determined with fully extended outriggers.

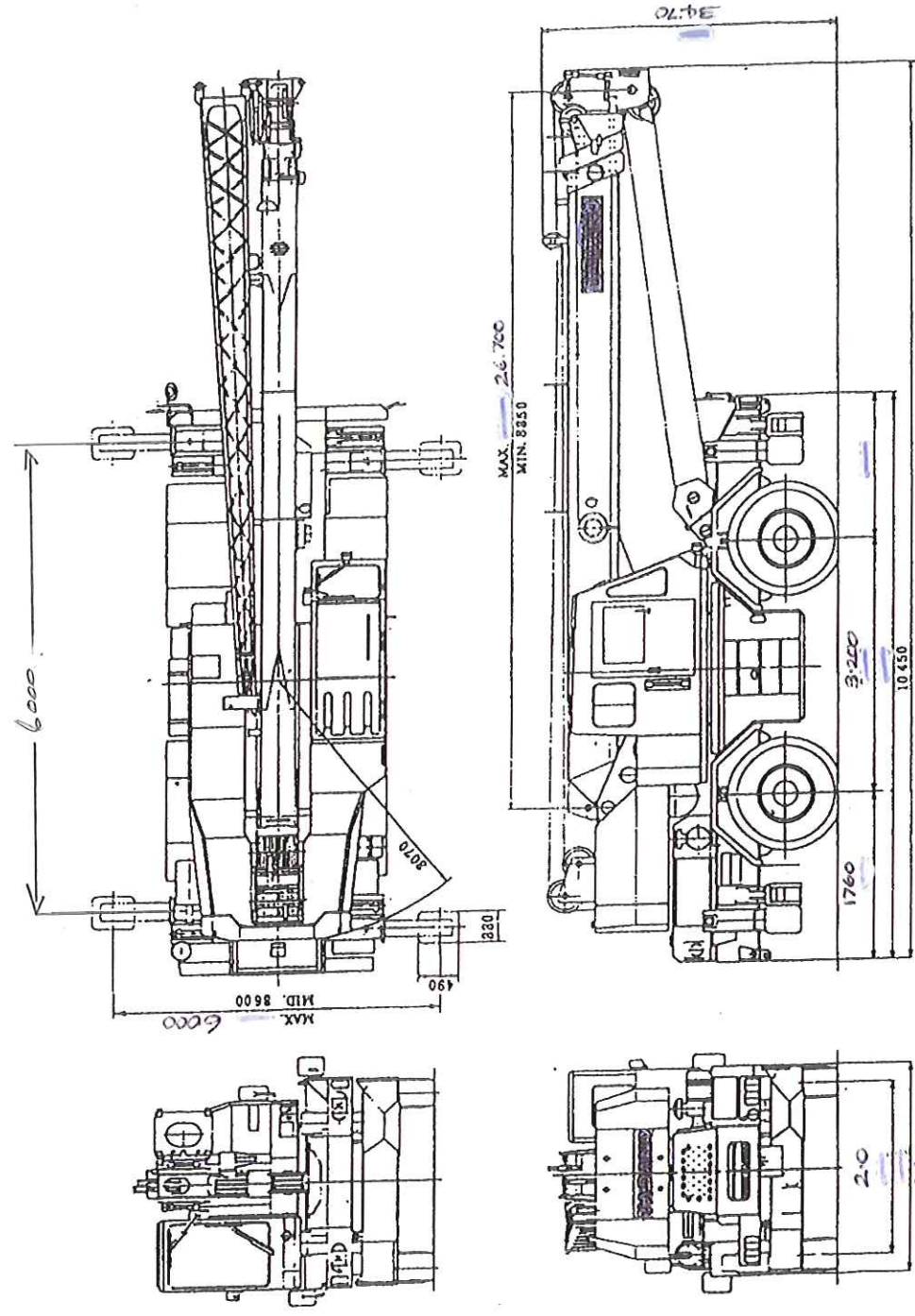
- Load ratings with the single top are the same as the main boom ratings but should not exceed 3,000kg.
- If the boom length exceeds the specified value, refer to the rated lifting capacities for that boom length and the next highest boom length. The crane should be operated within the smaller lifting capacity.
- Deduct 500kg from the rated lifting loads of the main boom when the jib is attached to the main boom head. The single top must not be used whilst the jib is in place.
- With or without a load the boom angle must not be reduced to less than the number of degrees shown as the critical boom angle at the bottom of each load chart. In the event of such a reduction the crane will tip.
- Standard number of part lines for each boom length are as shown below. Load per line should not surpass 3,000kg.

BOOM LENGTH	8.4m	14.5m	20.6m	26.7m	SINGLE TOP
NO. OF PART LINES	7	7	4	4	1

- Free fall operation should be performed only without any load on the hook.
- Special weather caution: Should wind gusts exceed 10m/sec postpone the operation. Refer to the operation and maintenance manual.
- Refer to the crane manual.

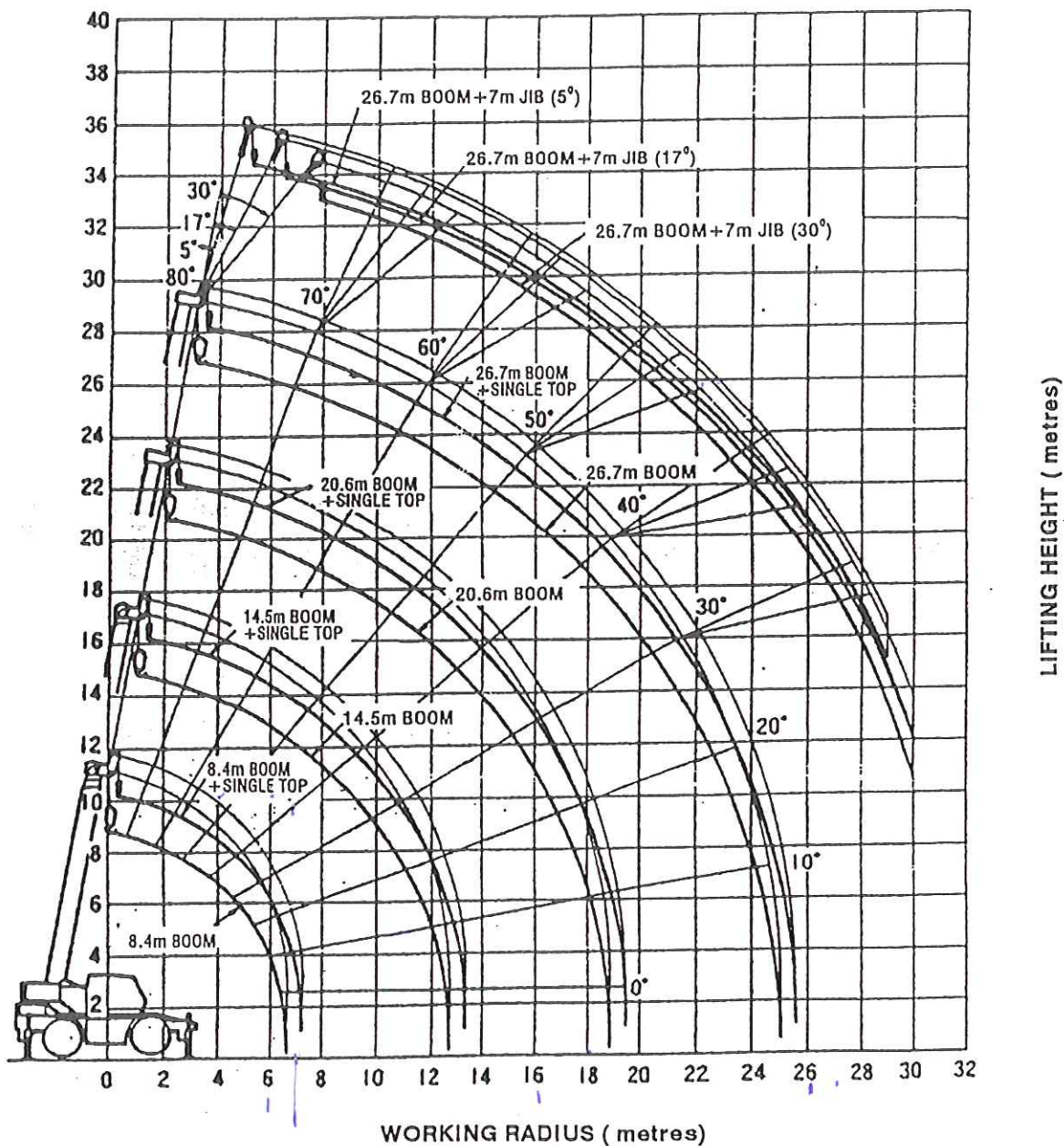
Unit 72

DIMENSIONS (1/100)



KATO KR-20H-3 ROUGH TERRAIN HYDRAULIC CRANE

WORKING RADIUS - LIFTING HEIGHT DIAGRAM



NOTE: This diagram does not include any deflection of the jib or boom.

KATO KR-20H-3 ROUGH TERRAIN HYDRAULIC CRANE

CHART 2

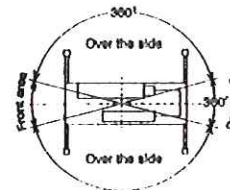
TOTAL RATED LOAD IN KILOGRAMS
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26.7m BOOM + 7.0m JIB

USE 3000kg HOOK (60kg)

OUTRIGGERS FULLY EXTENDED 5.8m (380°)							OUTRIGGERS AT (4.7m) EXTENSION (OVER THE SIDE)							OUTRIGGERS AT (3.6m) EXTENSION (OVER THE SIDE)						
JOB OFFSET BOOM ANGLE	5°		17°		30°		JOB OFFSET BOOM ANGLE	5°		17°		30°		JOB OFFSET BOOM ANGLE	5°		17°		30°	
	B(m)	C(kg)	B(m)	C(kg)	B(m)	C(kg)		B(m)	C(kg)	B(m)	C(kg)	B(m)	C(kg)		B(m)	C(kg)	B(m)	C(kg)	B(m)	C(kg)
80	6.2	3,000	7.5	2,400	8.8	2,000	80	6.2	3,000	7.5	2,400	8.8	2,000	80	6.2	3,000	7.5	2,400	8.8	2,000
75	9.4	3,000	10.5	2,400	11.7	2,000	75	9.4	3,000	10.5	2,400	11.7	2,000	75	9.4	3,000	10.5	2,400	11.7	2,000
73	10.6	3,000	11.5	2,400	12.8	2,000	70.5	12.0	3,000	13.0	2,400	14.0	2,000	73.5	10.4	3,000	11.3	2,400	12.5	2,000
70.5	12.0	3,000	13.0	2,400	14.0	2,000	68.5	14.1	2,550	15.0	2,150	16.1	1,950	72	11.1	2,650	12.2	2,400	13.3	2,000
65	14.9	2,400	15.8	2,050	18.8	1,800	63.5	15.5	2,100	16.5	1,850	17.6	1,760	71	11.6	2,450	12.7	2,200	13.8	2,000
60	17.4	2,050	18.2	1,800	19.2	1,650	60	17.2	1,700	18.2	1,600	19.2	1,450	68	13.0	1,950	14.2	1,750	15.3	1,600
55	19.8	1,800	20.5	1,600	21.3	1,550	55	19.8	1,200	20.5	1,150	21.2	1,100	65	14.6	1,550	15.6	1,400	16.7	1,300
53	20.7	1,650	21.4	1,550	22.1	1,500	50	21.7	900	22.6	850	23.1	800	60	16.8	1,050	18.0	950	18.9	900
50	21.9	1,450	22.7	1,400	23.2	1,350	45	23.6	650	24.5	600	24.9	550	55	19.3	650	20.2	600	21.1	550
45	23.6	1,150	24.5	1,100	25.0	1,050	40	25.4	450	25.9	450	26.4	400	53	20.0	550	21.0	500	21.9	450
40	25.6	900	26.2	850	26.8	850	CRITICAL BOOM ANGLE 30°		30°		30°		CRITICAL BOOM ANGLE 48°		48°		48°		48°	
35	27.2	700	27.7	680	27.9	700	CRITICAL BOOM ANGLE 30°		30°		30°		CRITICAL BOOM ANGLE 48°		48°		48°		48°	
30	28.6	550	29.0	550	29.0	550	CRITICAL BOOM ANGLE 30°		30°		30°		CRITICAL BOOM ANGLE 48°		48°		48°		48°	
25	29.8	450	30.0	450			CRITICAL BOOM ANGLE 30°		30°		30°		CRITICAL BOOM ANGLE 48°		48°		48°		48°	
23.6	30.0	450					CRITICAL BOOM ANGLE 30°		30°		30°		CRITICAL BOOM ANGLE 48°		48°		48°		48°	

A : BOOM LENGTH(m)
B : WORKING RADIUS (m)
C : PERMITTED LOAD(kg)



NOTES :

- 1.0 These capacities are based on condition that the crane is set on firm ground horizontally. Those above the bold lines are based on the crane's strength and those below on its stability.
- 2.0 Total rated loads below the bold lines do not exceed 75% of tipping load.
- 3.0 The weights of the lifting hooks are set out in the chart below, the weight of slings and all similarly used load handling devices must be added to the weight of the load.

CAPACITY OF HOOK	20,000kg	3,000kg
WEIGHT OF HOOK	230kg	60kg
- 4.0 The total rated loads shown are based on the actual working radius which includes any deflection of the boom. The boom operation and the working radius is determined in chart 1.
- 5.0 The working radius details shown in this chart refer to operations with 26.7metres of boom. For operations with other boom lengths such operations should be performed on the basis of boom angle only, regardless of boom length.
- 6.0 The outriggers may be extended and fixed at different settings i.e. fully extended 5.8m and two intermediate settings of 4.7m and 3.6m.
- 7.0 The crane's rated capacity is generally determined by the amount the outriggers are extended, particularly over the side. It is therefore necessary to refer to the relevant rated load charts prior to commencing work. Load ratings over the front and rear have been determined with fully extended outriggers.
- 8.0 Load ratings with the single top are the same as the main boom ratings but should not exceed 3,000kg.

- 9.0 If the boom length exceeds the specified value, refer to the rated lifting capacities for that boom length and the next highest boom length. The crane should be operated within the smaller lifting capacity.
- 10.0 Deduct 600kg from the rated lifting loads of the main boom when the jib is attached to the main boom head. The single top must not be used whilst the jib is in place.
- 11.0 With or without a load the boom angle must not be reduced to less than the number of degrees shown as the critical boom angle at the bottom of each load chart. In the event of such a reduction the crane will tip.
- 12.0 Standard number of part lines for each boom length are as shown below. Load per line should not surpass 3,000kg.

BOOM LENGTH	8.4m	14.5m	20.6m	26.7m	SINGLE TOP
NO. OF PART LINES	7	7	4	4	1

- 13.0 Free fall operation should be performed only without any load on the hook.
- 14.0 Special weather caution: Should wind gusts exceed 10m/sec postpone the operation. Refer to the operation and maintenance manual.

KATO KR-20H-3 ROUGH TERRAIN HYDRAULIC CRANE

CHART 3

TOTAL RATED LOAD IN KILOGRAMS

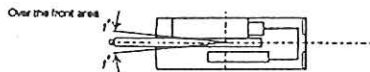
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WORKING RADIUS (m)	WITHOUT OUTRIGGERS															
	STATIONARY								PICK UP AND CARRY (SPEEDS UP TO 4km/h)							
	BOOM LENGTH															
	8.4m		14.5m		20.6m		26.7m		8.4m		14.5m		20.6m		26.7m	
	FRONT	360°	FRONT	360°	FRONT	360°	FRONT	360°	FRONT	360°	FRONT	360°	FRONT	360°	FRONT	360°
3.0	12,200	8,200	8,700	7,200					8,500	6,000	6,600	5,000				
3.5	10,700	7,200	8,700	7,000					8,250	5,000	5,600	4,800				
4.0	10,000	5,900	8,700	5,600	6,200	4,500			8,000	4,300	6,600	4,100	5,000	3,200		
4.5	8,800	4,800	8,000	4,500	6,200	4,500			6,800	3,600	6,000	3,400	5,000	3,200		
5.0	7,750	3,900	7,200	3,700	6,200	4,100	4,000	2,700	5,800	3,000	5,300	2,800	5,000	3,200	2,800	1,850
5.5	6,900	3,300	6,400	3,100	5,700	3,500	4,000	2,700	5,000	2,500	4,750	2,300	4,700	2,700	2,800	1,850
6.0	6,100	2,800	5,650	2,600	5,300	3,000	4,000	2,700	4,500	2,050	4,300	1,900	4,300	2,300	2,800	1,850
6.5	5,200	2,400	4,900	2,150	4,850	2,600	4,000	2,700	4,000	1,700	3,800	1,600	3,900	2,000	2,800	1,850
7.0			4,300	1,800	4,500	2,250	3,800	2,400			3,400	1,300	3,600	1,700	2,700	1,700
8.0			3,300	1,300	3,750	1,700	3,350	1,800			2,650	850	3,000	1,250	2,350	1,350
9.0			2,550	900	3,000	1,250	2,950	1,350			2,100		2,450	900	2,150	1,050
10.0			2,050	550	2,450	900	2,500	1,050			1,650		2,000	650	2,000	750
11.0			1,600		2,000	650	2,150	800			1,300		1,650		1,700	
12.0			1,250		1,600		1,850				1,000		1,350		1,450	
13.0					1,300		1,550						1,100		1,200	
14.0					1,100		1,300						900		1,050	
15.0					900		1,100						700		900	
16.0					750		900						550		750	
17.0					600		750									
18.0							600									
19.0							500									
CRITICAL BOOM ANGLE	-	-	-	33°	-	50°	35°	60°	-	-	-	45°	25°	53°	45°	62°

NOTES :

- These capacities are based on condition that the crane is set on a firm and level surface. Those above the bold lines are based on crane strength and those below on its stability. The tyres must be filled to the prescribed pneumatic pressure (8.0kg/cm²) and the suspension lock cylinders engaged.
- Total rated load for the crane while stationary on wheels does not exceed 75% of tipping load.
- Total rated load for the crane during pick up and carry operations does not exceed 66.7% of tipping load.
- The weights of the lifting hooks are set out in the chart below, the weight of silings and all similarly used load handling devices must be added to the weight of the load.

CAPACITY OF HOOK	20,000kg	3,000kg
WEIGHT OF HOOK	230kg	6kg
- The total rated loads shown are based on the actual working radius which includes any deflection of the boom.
- Over the front lifting performance is different to 360° lifting performance. Great care must be taken when transferring from one specific area to the other since there may be a distinct danger of overloading. Refer to rated load charts.



- Load ratings with the single top are the same as the main boom ratings but should not exceed 3,000kg.
- With or without a load the boom angle must not be reduced to less than the number of degrees shown as the critical boom angle at the bottom of each load chart. In the event of such a reduction the crane will tip.
- Free fall operation should be performed only without any load on the hook.
- The parking brake must be applied during lifting while the crane is stationary.
- Pick up and carry operations must be carried out in the low travel mode with the High/Low switch in the "LOW" position.
- During pick up and carry operations keep the load as low as possible and avoid it swaying. Do not exceed 4.0 km/h while travelling, take particular care while turning and avoid sudden acceleration and braking.
- Do not operate any of the crane functions while the crane is mobile.
- Standard number of part lines for each boom length are as shown below. Load per line should not surpass 3,000kg.

BOOM LENGTH	8.4m	14.5m	20.7m	SINGLE TOP
NO. OF PART LINES	7	4	4	1

- Special weather caution: Should wind gusts exceed 10m/sec postpone the operation. Refer to the operation and maintenance manual.
- In addition to the foregoing notes reference must also be made to the information provided on the other notices and charts.