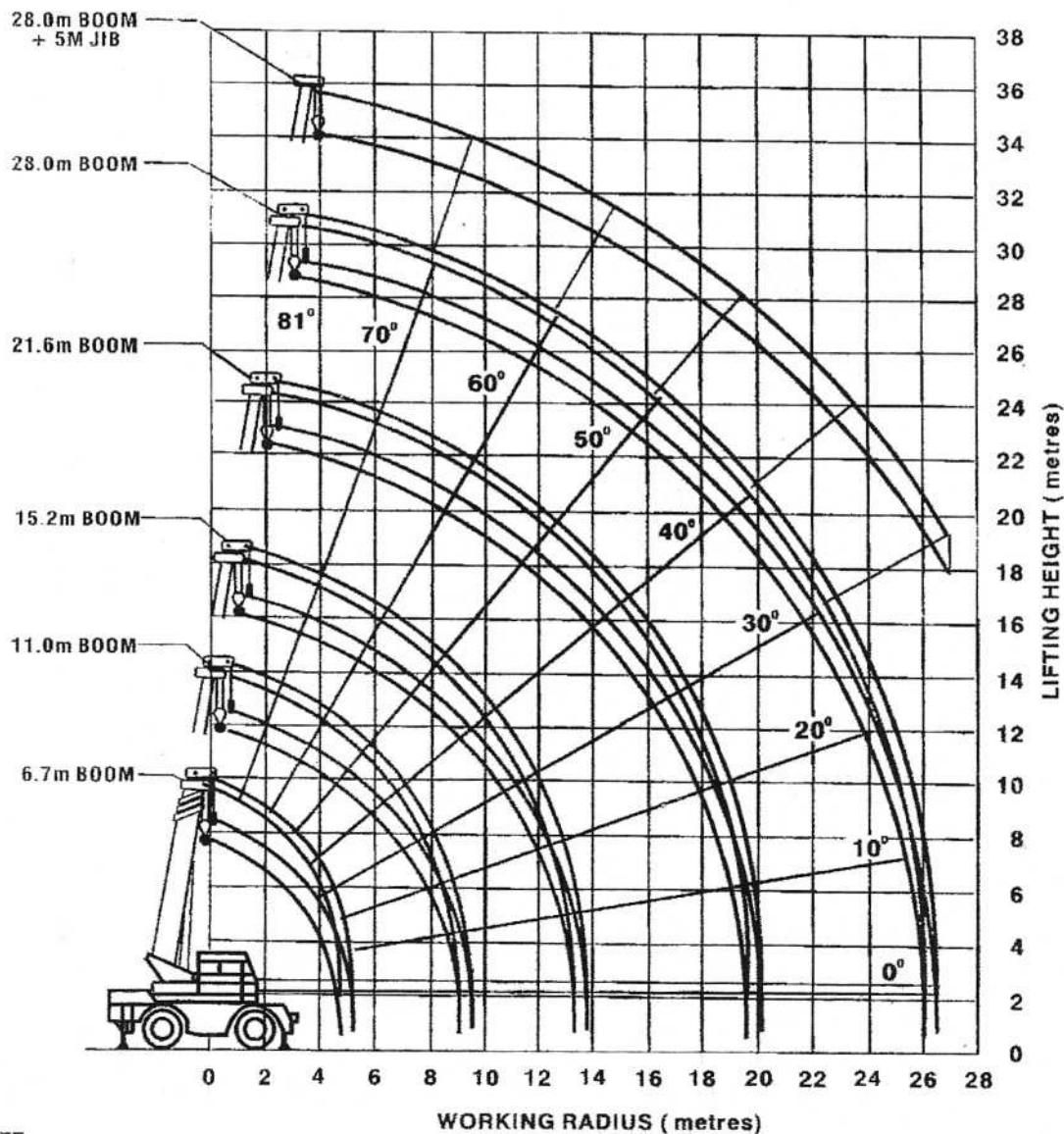


KATO KR-22H ROUGH TERRAIN HYDRAULIC CRANE

WORKING RADIUS - LIFTING HEIGHT DIAGRAM



NOTE:

1. This chart does not include any deflection of the jib or boom.
2. This chart only applies when the outriggers have been fully extended.

KATO KR-22H ROUGH TERRAIN HYDRAULIC CRANE

CHART 1

TOTAL RATED LOAD IN KILOGRAMS

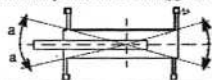
THIS DOCUMENT SHOULD BE READ IN CONJUNCTION WITH THE A.C.S.

Working Radius (m)	OUTRIGGERS AT MAXIMUM EXTENSION (5.8m) (360°)					OUTRIGGERS AT MEDIUM EXTENSION (4.6m) (OVER THE SIDE)					OUTRIGGERS AT MEDIUM EXTENSION (3.4m) (OVER THE SIDE)					OUTRIGGERS AT MEDIUM EXTENSION (2.04m) (OVER THE SIDE)				
	6.7m BOOM	11.0m BOOM	15.2m BOOM	21.6m BOOM	28.0m BOOM	6.7m BOOM	11.0m BOOM	15.2m BOOM	21.6m BOOM	28.0m BOOM	6.7m BOOM	11.0m BOOM	15.2m BOOM	21.6m BOOM	28.0m BOOM	6.7m BOOM	11.0m BOOM	15.2m BOOM	21.6m BOOM	28.0m BOOM
3.0	22,000	12,000	12,000	8,000		22,000	12,000	12,000	8,000		22,000	12,000	12,000	8,000		7,800	7,500	7,000	7,000	
3.5	20,000	12,000	12,000	8,000		20,000	12,000	12,000	8,000		15,200	12,000	12,000	8,000		6,100	5,800	5,400	5,600	
4.0	17,000	12,000	12,000	8,000	6,000	17,000	12,000	12,000	8,000	6,000	11,400	11,000	10,000	8,000	6,000	4,800	4,500	4,300	4,550	3,800
4.5	15,000	12,000	12,000	8,000	6,000	15,000	12,000	12,000	8,000	6,000	8,950	8,600	8,400	8,000	6,000	3,800	3,500	3,400	3,800	3,800
5.0		12,000	12,000	8,000	6,000		12,000	12,000	8,000	6,000		6,950	6,850	7,000	6,000		2,800	2,700	3,200	3,250
5.5		12,000	12,000	8,000	6,000		10,000	10,000	8,000	6,000		5,750	5,650	6,200	6,000		2,200	2,100	2,650	2,750
6.0		12,000	11,500	8,000	6,000		8,500	8,400	8,000	6,000		4,800	4,700	5,400	5,300		1,700	1,600	2,250	2,350
6.5		11,300	10,600	8,000	6,000		7,200	7,100	7,900	6,000		4,050	3,950	4,650	4,700		1,300	1,200	1,850	2,000
7.0		9,700	9,400	7,850	6,000		6,200	6,100	6,850	6,000		3,450	3,350	4,000	4,150		900	800	1,550	1,700
8.0		7,350	7,200	7,100	5,900		4,650	4,550	5,300	5,650		2,500	2,400	3,050	3,300				1,000	1,200
9.0		5,700	5,600	6,350	5,350		3,600	3,500	4,200	4,500		1,800	1,700	2,350	2,650					
10.0			4,500	5,250	4,800			2,700	3,400	3,700			1,100	1,850	2,100					
11.0			3,800	4,350	4,300			2,050	2,750	3,050			600	1,400	1,650					
12.0			2,900	3,650	3,850			1,500	2,250	2,550				1,000	1,300					
13.0			2,300	3,050	3,400			1,050	1,850	2,100				650	950					
14.0				2,600	2,900				1,450	1,750				500	700					
15.0				2,200	2,500				1,100	1,450				(13.5m)	450					
16.0				1,800	2,100				850	1,150										
17.0				1,500	1,800				600	900										
18.0				1,200	1,550				400	700										
19.0				1,000	1,300					500										
20.0				850	1,100					350										
21.0				(19.6m)	950															
22.0					800															
23.0					650															
24.0					500															
25.0					350															
CRITICAL ANGLE	-	-	-	-	-	-	-	-	18°	38°	-	-	30°	42°	53°	-	30°	55°	62°	69°
STANDARD HOOK	22t HOOK					22t HOOK					22t HOOK					22t HOOK				
HOOK WEIGHT	160kg					160kg					160kg					160kg				
NUMBER OF PARTS OF ROPE	7	4	4	3	2	7	4	4	3	2	7	4	4	3	2	7	4	4	3	2

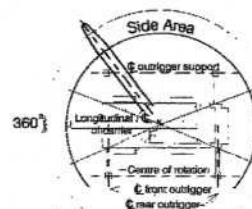
NOTES:

- These capacities are based on condition that the crane is set on firm ground horizontally. Those within the bold lines are based on the crane's strength and those below on its 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 similarly used load handling devices must be added to the weight of the load.

CAPACITY OF HOOK	22,000kg	3,400kg
WEIGHT OF HOOK	160kg	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 28.0 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 4.6m and 3.4m.
- 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.



Outrigger Extension	Medium Extension(4.6m)	Medium Extension(3.4m)	Minimum Extension
Region a°	35	20	3



WORKING RADIUS DIAGRAM

- 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.
- If operating the boom with either the jib or rooster sheave installed, the weights of the lifting equipment plus 440kg for the case of the jib or 90kg for the case of the rooster sheave will need to be subtracted from the rated load.
- 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 3,300kg.

BOOM LENGTH	6.7m	11.0m	15.2m	21.6m	28.0m	SINGLE TOP
NO. OF PART LINES	7	4	4	3	2	1

- The jib must not be used when the outriggers are at minimum extension.
- The rated load when using the rooster sheave is the boom rated load less the weight of the 22 ton hook (160kg) or 3,400kg, whichever is less.

- 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.

KATO KR-22H ROUGH TERRAIN HYDRAULIC CRANE

CHART 2

TOTAL RATED LOAD IN KILOGRAMS

THIS DOCUMENT SHOULD BE READ IN CONJUNCTION WITH THE A.C.S.

28.0m BOOM + 5.0m JIB								
OUTRIGGERS FULLY EXTENDED(5.8m) (360°)			OUTRIGGERS AT MEDIUM EXTENSION(4.6m) (OVER THE SIDE)			OUTRIGGERS AT MEDIUM EXTENSION(3.4m) (OVER THE SIDE)		
Boom Angle (Degrees)	Working Radius (m)	Rated Load (Kg)	Boom Angle (Degrees)	Working Radius (m)	Rated Load (Kg)	Boom Angle (Degrees)	Working Radius (m)	Rated Load (Kg)
81.0	4.0	3,100	81.0	4.0	3,100	81.0	4.0	3,100
73.0	8.5	3,100	73.0	8.5	3,100	73.0	8.5	3,100
68.8	11.0	3,100	68.8	11.0	3,100	68.8	10.8	1,900
65.0	13.0	2,650	65.0	13.0	2,300	65.0	12.7	1,250
60.0	15.5	2,200	60.0	15.4	1,550	60.0	15.0	650
57.0	17.0	2,000	57.0	16.8	1,200	57.0	16.5	350
56.0	17.4	1,850	56.0	17.2	1,100	56.0	16.9	300
50.0	20.1	1,250	50.0	19.9	600			
45.0	22.1	900	45.0	22.0	300			
40.0	23.9	650						
35.0	25.6	450						
30.0	27.1	300						
CRITICAL ANGLE		25°			42°			54°

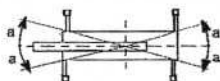
NOTES:

- These capacities are based on condition that the crane is set on firm ground horizontally. Those within 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 similarly used load handling devices must be added to the weight of the load.

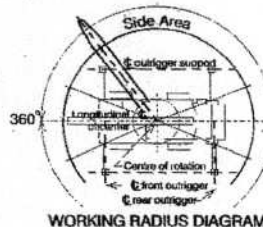
CAPACITY OF HOOK	22,000kg	3,400kg
WEIGHT OF HOOK	160kg	60kg

- 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 this chart refer to operations with 28.0 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 4.6m and 3.4m.
- 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.
- Although the rated loads for the "Over front" and "Over rear" ranges are the same as those of the "Outriggers fully extended" condition, the front and rear ranges (angles) will differ according to the width to which the outriggers are extended.

Outrigger Extension	Medium Extension(4.6m)	Medium Extension(3.4m)	Minimum Extension
Region a°	35	20	3



- The rated load when using the rooster sheave is the boom rated load less the weight of the 22 ton hook (160kg) or 3,400kg, which ever is less.



- 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.
- If operating the boom with either the jib or rooster sheave installed, the weights of the lifting equipment plus 440kg for the case of the jib or 90kg for the case of the rooster sheave will need to be subtracted from the rated load.
- 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 3,900kg.

BOOM LENGTH	6.7m	11.0m	15.2m	21.6m	28.0m	SINGLE TOP
NO. OF PART LINES	7	4	4	3	2	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.

KATO KR-22H ROUGH TERRAIN HYDRAULIC CRANE

CHART 3

TOTAL RATED LOAD IN KILOGRAMS

THIS DOCUMENT SHOULD BE READ IN CONJUNCTION WITH THE A.C.S.

WORKING RADIUS (m)	WITHOUT OUTRIGGERS											
	STATIONARY						PICK UP AND CARRY (SPEEDS UP TO 2km/h)					
	BOOM LENGTHS						BOOM LENGTHS					
	6.7m		11.0m		15.2m		6.7m		11.0m		15.2m	
	FRONT	360°	FRONT	360°	FRONT	360°	FRONT	360°	FRONT	360°	FRONT	360°
3.0		6,000		5,500		5,200		4,800		4,400		4,000
3.5	8,500	4,500	8,500	4,100	8,000	3,800	6,800	3,600	6,400	3,300	5,900	3,000
4.0	8,500	3,300	8,500	3,200	8,000	3,000	6,800	2,650	6,400	2,550	5,900	2,400
4.5	7,500	2,550	7,200	2,550	6,500	2,400	6,000	2,050	5,500	2,050	5,000	1,900
5.0			6,100	2,000	5,400	1,900			4,750	1,500	4,300	1,400
5.5			5,100	1,550	4,550	1,500			4,100	1,050	3,650	1,000
6.0			4,250	1,200	3,850	1,150			3,400	850	3,100	800
6.5			3,550	900	3,300	850			2,850		2,650	
7.0			3,000	650	2,800				2,400		2,250	
8.0			2,150		2,050				1,650		1,600	
9.0			1,550		1,500				1,000		1,000	
10.0					1,000						500	
11.0					600							
CRITICAL BOOM ANGLE	-	-	-	30°	30°	56°	-	-	-	42°	35°	60°

NOTES:

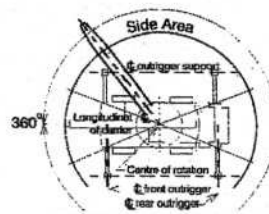
- These capacities are based on condition that the crane is set on a firm and level surface. Those within the bold lines are based on crane strength and those below on its stability. The tyres must be filled to the prescribed pneumatic pressure (9.0kg/cm²) and the suspension lock cylinders engaged.
- 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 slings and all similarly used load handling devices must be added to the weight of the load.

CAPACITY OF HOOK	22,000kg	3,400kg
WEIGHT OF HOOK	160kg	60kg

- The total rated loads shown are based on the actual working radius which includes any deflection of the boom.
- Over the front area 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 3,400kg or the boom length exceeds 15.2m.
- 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.



WORKING RADIUS DIAGRAM

- 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 2.0 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 3,300kg.
- 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.

BOOM LENGTH	6.7m	11.0m	15.2m	SINGLE TOP
NO. OF PART LINES	7	4	4	1

