

KATO MR-130R

LIFTING CAPACITIES (1) When outriggers are used

Based on ISO 4305
Not exceed 75% of static tipping loads

(Unit: Metric ton)

Working radius (m)	Outriggers fully extended (4.75m) - 360° full range			Outriggers intermediately extended (4.3m) - over side			Outriggers intermediately extended (3.7m) - over side			Outriggers intermediately extended (2.7m) - over side			Outriggers completely retracted (1.64m) - over side			Working radius (m)			
	5.3m Boom	9.04m Boom	12.78m Boom	5.3m Boom	9.04m Boom	12.78m Boom	5.3m Boom	9.04m Boom	12.78m Boom	5.3m Boom	9.04m Boom	12.78m Boom	5.3m Boom	9.04m Boom	12.78m Boom		16.52m Boom	20.26m Boom	24.0m Boom
1.5	13.00	6.00	6.00	13.00	6.00	6.00	12.00	6.00	6.00	12.00	6.00	6.00	8.00	6.00	6.00			1.5	
1.7	13.00	6.00	6.00	13.00	6.00	6.00	12.00	6.00	6.00	12.00	6.00	6.00	7.00	6.00	6.00			1.7	
2.0	12.00	6.00	6.00	12.00	6.00	6.00	12.00	6.00	6.00	12.00	6.00	6.00	5.60	5.40	5.00	4.70		2.0	
2.5	10.00	6.00	6.00	10.00	6.00	6.00	10.00	6.00	6.00	8.50	6.00	6.00	3.80	3.80	3.60	3.50		2.5	
3.0	8.20	6.00	6.00	8.20	6.00	6.00	8.20	6.00	6.00	6.00	6.00	6.00	2.80	2.80	2.70	2.70	2.60	3.0	
3.5	7.00	6.00	6.00	7.00	6.00	6.00	7.00	6.00	6.00	4.70	6.00	6.00	2.10	2.10	2.00	2.10	2.10	3.5	
4.0	6.10	6.00	6.00	6.10	6.00	6.00	6.10	6.00	6.00	4.70	6.00	6.00	1.60	1.60	1.55	1.70	1.75	4.0	
4.5	5.50	5.40	5.00	5.50	5.40	5.00	5.50	5.10	5.10	5.00	5.00	4.50	3.00	3.00	3.10	3.10	3.00	4.5	
5.0	5.00	4.90	4.60	5.00	4.90	4.60	5.00	4.40	4.40	4.50	4.05	4.05	2.40	2.40	2.60	2.70	2.70	5.0	
5.5	4.50	4.40	4.20	4.50	4.40	4.20	4.50	3.80	3.70	3.90	3.70	3.20	2.00	2.00	2.20	2.30	2.30	5.5	
6.0	4.10	4.00	3.80	4.10	4.00	3.80	4.10	3.20	3.20	3.40	3.40	3.00	1.70	1.70	1.85	2.00	2.05	6.0	
6.5	3.70	3.65	3.50	3.65	3.60	3.50	3.65	2.80	2.75	2.95	3.05	2.75	1.40	1.40	1.60	1.70	1.75	6.5	
7.0	3.35	3.30	3.20	3.20	3.15	3.20	3.20	2.40	2.35	2.55	2.70	2.50	1.20	1.20	1.40	1.50	1.55	7.0	
8.0	2.70 (7.7m)	2.90 (7.7m)	2.70 (7.7m)	2.65 (7.7m)	2.45 (7.7m)	2.60 (7.7m)	2.25 (7.7m)	1.95 (7.7m)	1.80 (7.7m)	2.00 (7.7m)	2.10 (7.7m)	2.15 (7.7m)	0.90 (7.7m)	0.25 (7.7m)	0.45 (7.7m)	0.55 (7.7m)	0.60 (7.7m)	8.0	
9.0	2.25	2.30	2.20	2.25	2.10	2.20	1.95	1.90	1.90	2.10	2.20	1.95	0.60	0.60	0.80	0.90	0.95	9.0	
10.0	1.80	2.05	1.95	1.75	1.50	1.70	1.85	1.50	1.05	1.25	1.35	1.45	0.35	0.35	0.55	0.65	0.75	10.0	
11.0	1.45	1.70	1.75	1.55	1.20	1.40	1.55	1.20	0.80	1.00	1.10	1.20	0.40	0.40	0.50	0.60	0.60	11.0	
12.0	1.35 (11.4m)	1.40 (11.4m)	1.50 (11.4m)	1.40 (11.4m)	1.10 (11.4m)	1.15 (11.4m)	1.30 (11.4m)	1.10 (11.4m)	0.70 (11.4m)	0.80 (11.4m)	0.90 (11.4m)	1.00 (11.4m)	0.25 (11.4m)	0.25 (11.4m)	0.35 (11.4m)	0.45 (11.4m)	0.45 (11.4m)	12.0	
13.0	1.15	1.30	1.25	1.15	0.95	1.10	1.15	0.95	0.65	0.75	0.85	0.85	0.20	0.20	0.30	0.30	0.30	13.0	
14.0	0.95	1.10	1.15	1.00	0.80	0.90	1.00	0.80	0.50	0.60	0.70	0.70	0.20	0.20	0.20	0.20	0.20	14.0	
15.0	0.80	0.90	1.00	0.85	0.65	0.75	0.85	0.65	0.40	0.50	0.55	0.55						15.0	
16.0	0.79	0.85	0.90	0.85	0.65	0.70	0.85	0.65	0.40	0.45	0.45	0.45						16.0	
17.0	0.68	0.74	0.80	0.74	0.55	0.60	0.80	0.55	0.30	0.35	0.35	0.35						17.0	
18.0	0.58	0.64	0.70	0.64	0.45	0.50	0.70	0.45	0.30	0.30	0.30	0.30						18.0	
19.0	0.51 (16.6m)	0.55 (16.6m)	0.65 (16.6m)	0.55 (16.6m)	0.35 (16.6m)	0.40 (16.6m)	0.55 (16.6m)	0.40 (16.6m)	0.25 (16.6m)	0.25 (16.6m)	0.25 (16.6m)	0.25 (16.6m)						19.0	
20.0	0.47	0.50	0.55	0.47	0.35	0.40	0.50	0.35	0.25	0.25	0.25	0.25						20.0	
21.0	0.41	0.45	0.50	0.41	0.30	0.35	0.45	0.30	0.25	0.25	0.25	0.25						21.0	
22.0	0.35	0.40	0.45	0.35	0.25	0.30	0.40	0.25	0.25	0.25	0.25	0.25						22.0	
22.5	0.32	0.35	0.40	0.32	0.25	0.30	0.35	0.25	0.25	0.25	0.25	0.25						22.5	
Critical boom angle	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Standard hook	for 13 ton			for 13 ton			for 13 ton			for 13 ton			for 13 ton			for 13 ton			Critical boom angle
Hook mass	90kg			90kg			90kg			90kg			90kg			90kg			Standard hook
Parts of line	8	4	4	4	4	4	4	8	4	4	4	4	8	4	4	4	4	4	Parts of line

LIFTING CAPACITIES (2)

When outriggers and power jib are used

Based on ISO 4305
Not exceed 75% of static tipping loads

(Unit: Metric ton)

24.0m Boom + 3.6m Jib [Hook in use: 1.8ton hook (mass: 25kg)]																										
Outriggers fully extended (4.75m) - 360° full range					Outriggers intermediately extended (4.3m) - over side					Outriggers intermediately extended (3.7m) - over side			Outriggers intermediately extended (2.7m) - over side													
Boom angle (°)	Offset 5°		Offset 25°		Offset 45°		Offset 60°		Boom angle (°)	Offset 5°		Offset 25°		Offset 45°		Offset 60°		Boom angle (°)	Offset 5°		Offset 25°		Offset 45°		Offset 60°	
	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)		Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)		Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)
82	4.4	1.60	5.8	1.50	6.5	1.00	6.8	0.65	82	4.4	1.60	5.8	1.50	6.5	1.00	6.8	0.65	82	4.4	1.60	5.8	1.50	6.5	1.00	6.8	0.65
80	5.2	1.60	6.4	1.50	7.2	1.00	7.4	0.65	80	5.2	1.60	6.4	1.50	7.2	1.00	7.4	0.65	80	5.2	1.60	6.4	1.50	7.2	1.00	7.4	0.65
75	7.8	1.60	8.7	1.17	9.5	0.93	9.6	0.65	75	7.8	1.60	8.7	1.17	9.5	0.93	9.6	0.65	75	7.8	1.20	8.7	1.05	9.5	0.93	9.6	0.65
70	10.1	1.25	11.1	0.98	11.6	0.85	11.8	0.65	70	10.1	1.25	11.1	0.98	11.6	0.85	11.8	0.65	70	10.0	0.72	10.9	0.65	11.5	0.62	11.7	0.56
65	12.3	1.05	13.1	0.88	13.6	0.77	13.8	0.65	65	12.2	0.90	13.1	0.77	13.6	0.77	13.8	0.65	65	11.9	0.41	12.9	0.35	13.4	0.34	13.6	0.33
60	14.3	0.90	15.1	0.76	15.6	0.70	15.6	0.65	60	14.2	0.59	15.0	0.54	15.5	0.54	15.5	0.54	60	14.2	0.59	15.0	0.54	15.5	0.54	15.5	0.54
55	16.3	0.72	17.0	0.64	17.4	0.64			55	16.0	0.37	16.8	0.33	17.2	0.33			55	16.0	0.37	16.8	0.33	17.2	0.33		
50	18.1	0.57	18.7	0.51	18.9	0.53			50	18.0	0.43	18.6	0.41	18.8	0.40			50	17.8	0.20	18.5	0.18	18.7	0.18		
45	19.7	0.42	20.4	0.40	20.3	0.40			45	19.6	0.30	20.2	0.27	20.3	0.27			45	19.6	0.30	20.2	0.27	20.3	0.27		
40	21.1	0.30	21.6	0.29					40	21.0	0.19	21.5	0.18					40	21.0	0.19	21.5	0.18				
35	22.3	0.22	22.7	0.20					35	22.3	0.19	22.7	0.18					35	22.3	0.19	22.7	0.18				
Critical angle	34°		34°		44°		59°		Critical angle	39°		39°		44°		59°		Critical angle	49°		49°		49°		59°	

24.0m Boom + 5.5m Jib [Hook in use: 1.8ton hook (mass: 25kg)]																										
Outriggers fully extended (4.75m) - 360° full range					Outriggers intermediately extended (4.3m) - over side					Outriggers intermediately extended (3.7m) - over side			Outriggers intermediately extended (2.7m) - over side													
Boom angle (°)	Offset 5°		Offset 25°		Offset 45°		Offset 60°		Boom angle (°)	Offset 5°		Offset 25°		Offset 45°		Offset 60°		Boom angle (°)	Offset 5°		Offset 25°		Offset 45°		Offset 60°	
	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)		Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)		Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)
82	4.8	1.00	6.9	1.00	8.2	0.65	8.6	0.40	82	4.8	1.00	6.9	1.00	8.2	0.65	8.6	0.40	82	4.8	1.00	6.9	1.00	8.2	0.65	8.6	0.40
80	5.6	1.00	7.6	1.00	8.9	0.65	9.2	0.40	80	5.6	1.00	7.6	1.00	8.9	0.65	9.2	0.40	80	5.6	1.00	7.6	1.00	8.9	0.65	9.2	0.40
75	8.4	1.00	10.1	0.85	11.2	0.63	11.5	0.40	75	8.4	1.00	10.1	0.85	11.2	0.63	11.5	0.40	75	8.4	1.00	10.1	0.85	11.2	0.63	11.5	0.40
70	11.1	1.00	12.4	0.72	13.4	0.58	13.6	0.40	70	11.1	1.00	12.4	0.72	13.4	0.58	13.6	0.40	70	10.8	0.66	12.3	0.55	13.3	0.48	13.6	0.40
65	13.4	0.81	14.7	0.61	15.6	0.52	15.6	0.40	65	13.4	0.81	14.7	0.61	15.6	0.52	15.6	0.40	65	12.9	0.36	14.4	0.30	15.3	0.26		
60	15.6	0.69	16.8	0.55	17.5	0.48	17.4	0.40	60	15.4	0.52	16.7	0.45	17.5	0.42	17.4	0.40	60	15.4	0.52	16.7	0.45	17.5	0.42	17.4	0.40
55	17.7	0.58	18.8	0.49	19.3	0.45			55	17.4	0.31	18.6	0.28	19.1	0.28			55	17.4	0.31	18.6	0.28	19.1	0.28		
50	19.6	0.49	20.5	0.44	20.8	0.41			50	19.5	0.38	20.4	0.36	20.7	0.35			50	18.5	0.22	19.5	0.21	20.0	0.20		
45	21.2	0.38	22.0	0.36	22.3	0.36			45	21.0	0.27	21.8	0.25	22.1	0.25			45	21.0	0.27	21.8	0.25	22.1	0.25		
40	22.9	0.26	23.4	0.26					40	22.9	0.26	23.4	0.26					40	22.9	0.26	23.4	0.26				
Critical angle	39°		39°		44°		59°		Critical angle	44°		44°		44°		59°		Critical angle	51°		51°		51°		59°	

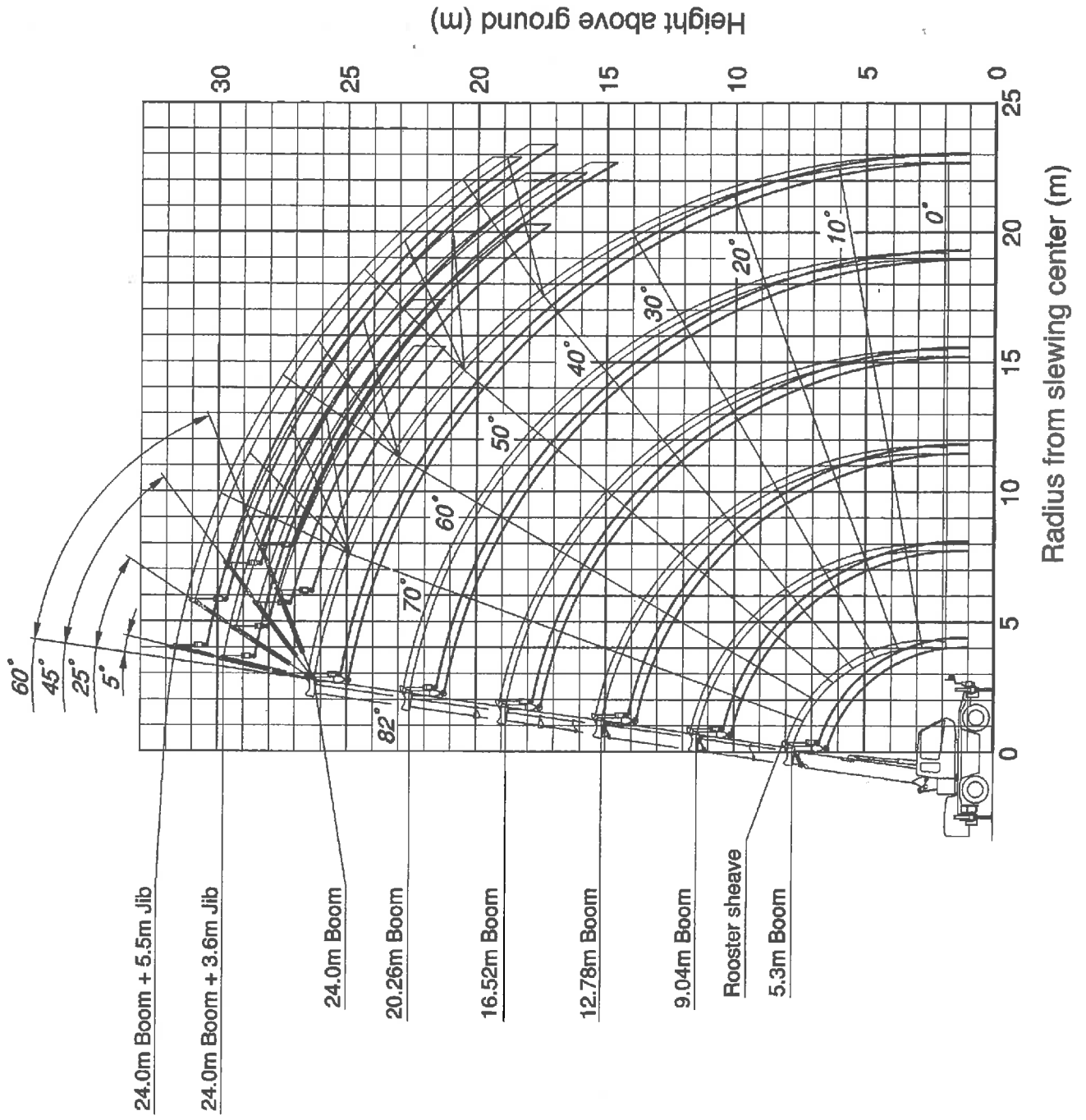
LIFTING CAPACITIES (3) When outriggers are not used

Based on ISO 4305
Not exceed 75% of static tipping loads

(Unit: Metric ton)

Working radius (m)	Stationary on rubber										Pick & Carry (less than 2 km/h)						Working radius (m)
	5.3m Boom		9.04m Boom		12.78m Boom		5.3m Boom		9.04m Boom		12.78m Boom		Working radius (m)				
	Over front	360° full range	Over front	360° full range	Over front	360° full range	Over front	360° full range	Over front	360° full range	Over front	360° full range					
1.5	3.60	2.80	3.60	2.80	3.60	2.80	3.20	2.00	3.20	2.00	3.20	2.00	1.5				
2.0	3.40	2.80	3.40	2.80	3.40	2.80	3.00	2.00	3.00	2.00	3.00	2.00	2.0				
2.5	3.10	2.15	3.10	2.10	3.10	2.05	2.80	1.55	2.75	1.50	2.65	1.45	2.5				
3.0	2.65	1.60	2.60	1.55	2.55	1.50	2.40	1.10	2.30	1.05	2.20	1.00	3.0				
3.5	2.30	1.25	2.20	1.20	2.10	1.10	2.00	0.85	1.90	0.75	1.80	0.65	3.5				
4.0	2.00	0.90	1.90	0.80	1.70	0.70	1.70	0.60	1.65	0.50	1.50	0.40	4.0				
4.5			1.60	0.50	1.40	0.40	1.40		1.40	0.30	1.25		4.5				
5.0			1.30		1.10		1.15		1.15		1.00		5.0				
5.5			1.10		0.95		0.95		0.95		0.85		5.5				
6.0			0.90		0.80		0.80		0.80		0.70		6.0				
7.0			0.50		0.50		0.45		0.45		0.45		7.0				
Critical boom angle			26°	54°	52°	66°	26°	54°	52°	68°	Critical boom angle						
Standard hook	for 13 ton												Standard hook				
Hook mass	90kg												Hook mass				
Parts of line	4												Parts of line				

WORKING RANGE



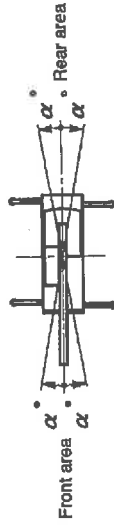
Note:

1. This diagram does not include deflection of boom and jib.
2. The outriggers are fully extended (360° full range).

Notes for the Lifting Capacity Chart

Lifting capacity charts (1) and (2) when outriggers are used.

- The lifting capacity chart indicates the maximum load which can be lifted by this crane provided it is level and standing on firm level ground. The values in the chart include the mass of the main hook and slings for boom operation, and auxiliary hook and slings for jib operation. [13 ton hook (mass: 90 kg), 1.8 ton hook (mass: 25 kg)]
Within the chart the figures in the area bordered with a thick line are based on structural limitations while other figures are determined by stability limitations.
- The working radii are the actual values allowing for boom and jib deflection. Therefore you must always operate the crane on the basis of working radius.
- The jib working radius is based on the jib mounted on the end of the 24.0 m boom. When operating at other boom lengths, use the boom angle alone as the criterion.
- Do not operate the jib when the outriggers are completely retracted.
- The lifting capacities for the over sides vary with the outriggers extension width. Therefore for each outriggers extension condition you should work according the lifting capacity chart. Use the lifting capacity chart of outriggers full extended for both front and rear areas lifting capacities.



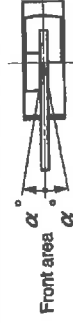
Outrigger extension status	Intermediate extension (4.3m)	Intermediate extension (5.7m)	Intermediate extension (2.7m)	Full retraction
Area α°	25	25	15	3

- The lifting capacity of the rooster sheave is the lifting capacity of the boom minus the mass of all attached hook, slings etc. to the boom, with an upper limit of 1,800 kg.
[The hook for use with the rooster sheave is the 1.8 ton hook (mass: 25 kg) with one part of line.]
- If the boom length, boom angle, working radius and/or jib angle exceeds the rated value, use the lifting capacity for the rated value or for the next one, whichever gives the smaller lifting capacity.
- If you are working with the boom while the jib is rigged, subtract 600 kg plus the mass of all attached hook, slings, etc. to the boom from the each lifting capacity of the boom, with an upper limit of 5 ton.
- Do not use the rooster sheave in this situation. And do not operate the boom while the jib is rigged, when the outriggers are completely retracted.
- In whatever working conditions the corresponding boom critical angle is shown in the chart. The crane can tip over if the boom is lowered below the critical angle even if unloaded. Therefore, never lower the boom below these angles.
- The standard parts of line for each boom length are as indicated in the chart. If you work with a non-standard number of parts of line, do not exceed 15.7 kN (1.6 tf) per wire rope respectively.

- High-speed lowering operation should only be performed to allow descent of the hook alone. Avoid sudden lever operation.
- Crane operation is permissible up to 10 m/s. Even in relatively light wind conditions, extra care should be taken when handling loads presenting large wind catching areas.
- Kato bears no liability whatsoever for crane tipping or damage caused by crane operations with a load in excess of the lifting capacity or incorrect procedure.

Lifting capacity chart (3) when outriggers are not used.

- The lifting capacity chart indicate the maximum load the crane can lift when its body is level on firm level ground with all tires inflated to the rated pressure and suspension cylinder completely retracted. The values in the chart include the mass of the main hook and slings. Within the chart the figures in the area bordered with a thick line are based on structural limitations while other figures are determined by stability limitations.
[Rated tire pressure: 875 kPa (8.75 kgf/cm²)]
The working radii are the actual values allowing for boom deflection. Therefore you must always operate the crane on the basis of working radius.
- The lifting capacity differs between the front area capacity and the full range capacity. When slewing from the front to the side, take care that the crane could not be over loaded.



Crane operation	Stationary crane-on-rubber operation	Pick and carry operation
Area α°	1	1


- Do not work with the jib or with a boom length of more than 12.78 m.
- For stationary crane-on-rubber operation, the parking brake and service brake lock device must be engaged.
- For pick and carry operation, the shift lever set to speed 1.
- For pick and carry operation, lower the load to just above the ground and keep your speed strictly below 2 km/h to avoid swinging the load.
Take particular care to avoid sharp turns, sudden starts and stops.
- Never operate the crane during pick and carry operation. The slewing brake must be applied.
- Other than the above precautions observe points (6), (7), (9), (10), (11), (12) and (13) of the section "Precautions on outrigger use".

Notes for the Crane Operation

Starting


1. The shift lever must always be in the "N" position when you start engine.
2. To start the engine turn the starter switch to the "ON" position and wait for the start-up check on the front panel to finish (the warning buzzer should stop).
Check that there is no problem then go on to start the engine.
3. After the engine starts, run it at idling speed for long enough to warm it.
4. Check that the hydraulic oil level is within the scale range on the level gauge. The crane should be in the driving position.
 - * If any malfunction remains indicated on the front panel or an error is indicated, stop the engine immediately and contact your authorized KATO dealer.

ACS preoperational checks

1. Fully extended the outriggers and check that the crane is placed on the level. Set the outrigger and boom configurations on the working status setting screen.
 - * The preoperational checks are impossible if the outriggers are set for stationary crane-on-rubber operation or for pick and carry operation, so always extend the outriggers fully.
 - * Set the boom status other than jib setting.
2. With the crane facing forward, press the  switch on the touch panel to call up the ACS preoperational check display.

3. Check that the actual values of the boom length and boom angle match the standard values on the check display. If you operate the jib or boom with jib, also check the jib offset angle. At this time, the hooks should be located a little below the top of the boom or jib. Check that the standard values displayed at this stage are "OK".

4. Derrick and lower the boom, hoist and lower the winch, extend and retract the boom and raise and lower the jib to check that crane will not move and that the control lever check display matches the real movement of the levers.

5. Press the  switch on the touch panel to cancel the automatic stop function.
Move the slewing lever left and right while "OK" is displayed. Check that the crane will not slew and that the control lever check display matches the real movements of the lever.

6. Press the  switch on the touch panel to cancel the automatic stop function.

7. Set the display mode to the ACS screen and check the outrigger setting status and boom operation status before starting work.

7. If you cannot clear the malfunction of the ACS, or if any points are unclear, contact your authorized KATO dealer to clarify the problem before you go on.

- * Make the above checks with the standard slings fitted and the machine set on the firm, level ground.

- * Refer to the ACS instruction manual for details of the ACS preoperational checks.

Outrigger operation

1. Before you extend the outriggers, move the suspension control switch to the "suspension retraction" side while the suspension operation OK lamp is lit to retract the suspension.
2. Before you extend the outriggers, the PTO switch must be in the "ON" position and the outrigger operation OK lamp must be lit.
3. Check the level gauge to ensure that the body of the crane is level to extend the outriggers and then insert the stopper pins without fail.

Slewing operation

1. Pay attention to the positions of any nearby obstacles when slewing.
2. Work the control lever carefully to avoid starting and stopping the slewing suddenly.
3. When slewing from the front or rear to the side, it could be overloaded due to difference in lifting capacity, so take special care.
4. Apply the slewing brake once the slewing operation is complete.

Winch operation

1. Do not work with excess loads, drag loads forward or sideways, or work the levers suddenly.
2. Use the high speed winch to lower the hook only. Do not hit the hook to the ground.

Extension, retraction, derricking and lowering of the boom or jib

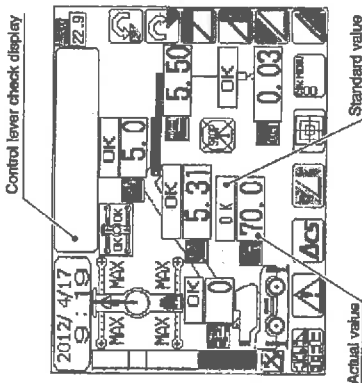
1. Lower the hook sufficiently before you extend and retract the boom, or derrick and lower the boom or jib.
2. Set the boom extension/retraction switch to the boom sections 4, 5 and 6 side to extend or retract the boom sections 4, 5 and 6.
3. Avoid sudden lever operations to extend, retract, derrick or lower the boom or jib.
4. Engage the lock for the jib you do not use to avoid incorrect operation.

Preparations for general drive

1. Fasten the boom, jib hooks, auxiliary hook overhoisting detector chain, outriggers etc. in their correct locations.
2. Stow the outriggers and insert their stopper pins without fail.
3. Engage the slewing brake.
4. Move the rear wheels to central position by the rear steering and set the steering mode selector switch to "rear steering lock" side. At that time, always check that the rear steering lock release indicator lamp is not lit.
5. Turn the PTO switch to "OFF" and set the suspension control switch to the "lock release" side.

Oiling and inspection

1. Check for low hydraulic oil, oil leakage, grease on the equipment, damage to the wire rope etc. thoroughly after you finish crane operation. Oil and grease or replace parts as necessary.



Read the instruction manual thoroughly and be sure you understand it before you start work.