

KATO NK-350E-III

FULLY HYDRAULIC TRUCK CRANE

CRANE SPECIFICATIONS

Maximum rated lifting capacities	: 35 metric tons x 3m
Boom length	: 10.75m — 34m (4 section)
Fly jib length	: 8.7m — 14.5m (2 section)
Boom derricking angle	: -3° — 80°
* Boom detracking time	: 58 sec. (-3° — 80°)
* Boom extending time	: 135 sec. (10.75m — 34m)
* Hoisting line speed	
Main winch	: 110m/min. (at the 4th layer)
Auxiliary winch	: 95m/min. (at the 2nd layer)
* Hoisting hook speed	
Main winch	
(parts of line; 12)	: 9.0m/min. (at the 4th layer)
Auxiliary winch	
(part of line; 1)	: 95m/min. (at the 2nd layer)
* Slewing speed	: 2.3 r.p.m.

Wire rope for hoisting

Main winch;	
Type	: 4 x F(a+40) (Non-rotating type)
Diameter	: 16mm
Length	: 190m
Auxiliary winch;	
Type	: 4 x F(a+40) (Non-rotating type)
Diameter	: 16mm
Length	: 105m

Hydraulic system

Oil pump	: 3 section gear type
Hoisting motor	: Axial plunger type
Slewing motor	: Axial plunger type
Cylinder	: Double acting type
Control valve	: 3 position 4 way double acting with integral check and relief valves
Oil reservoir capacity	: 420 lit.

Winch system

Main winch	}	: Driven by axial plunger type hoisting motor through built-in gear reduction. Controlled independently by respective operating lever. Equipped with automatic brake.
Crane cab		
Safety devices		: ACS (Automatic Crane Stopper)
		: Digital display of seven factors: Safety level, boom angle, working radius, boom length, critical load, actual load, maximum hook lift
		: Boom falling safety device
		: Overhoist prevention device
		: Drum lock device
		: Automatic winch brake
		: Irregular winding prevention device
		: Hydraulic safety valve
		: Outrigger lock device
		: Slewing lock device
* Speed		: Subject to no load

CARRIER SPECIFICATIONS

Maximum traveling speed	: 75km/h
Gradeability (tan θ)	: 34% (computed, @G.V.W. = 33,200kg)
Minimum turning radius (center of extreme outer tire):	11.5m

General dimensions

Overall length	: approx. 12,930mm
Overall width	: approx. 2,500mm
Overall height	: approx. 3,600mm
Wheel base	: 5,250mm
Treads;	
Front	: 2,040mm
Rear	: 1,845mm
Center to center of extended outriggers	: 6,050mm (Fully extended) 4,400mm (Intermediately extended)
Gross weight	: approx. 33,200kg
Front	: approx. 11,600kg
Rear	: approx. 21,600kg

Carrier

Maker	: MITSUBISHI
Model	: K354LK4
Drive system	: 8 x 4

Engine

Maker	: MITSUBISHI
Model	: 8DC8-2A
Type	: 4 cycle, water cooled, diesel
Number of cylinder	: 8 — 90° V
Piston displacement	: 14,886 cc
Max. output horsepower	: 290 PS/2,300 r.p.m. 213 KW/2,300 r.p.m.
Max. output torque	: 99 kg-m 1,400 r.p.m. 970 N.m/1,400 r.p.m.

NOTE: The output is in accordance with JIS D1004, 1976. Rated power output guaranteed within 5% at standard ambient condition.

Clutch	: Single dry plate, hydraulic control with air booster.
Transmission	: 10 forward & 2 reverse speed synchromesh and constantmesh gear.
Axes;	
Front	: Reverse "ELLIOT" type
Rear	: Full floating type
Steering	: Ball nut type with power booster
Suspension;	
Front	: Semi-elliptic leaf springs
Rear	: Equalizer beams and torque rods
Brake;	
Service brake	: 2 circuit air brake, 8 wheels internal expanding
Parking	} Spring loaded brake, acting on 4 rear
Emergency	
Auxiliary	: Exhaust brake
Electric system	: 24V
Battery	: 12V — 140 AH x 2
Fuel tank capacity	: 300 lit.
Driver's cab	: All steel welded construction 2 persons, low line type
Tire size;	
Front	: 11.00 — 20 — 14 PR
Rear (dual tire)	: 11.00 — 20 — 14 PR

OPTIONAL EQUIPMENT

Front jack, Oil cooler
Voice alarm, Radio, Fan, Heater, Air cooler Crane cab
Voice alarm: This system warns an operator in a voice to confirm the setting of ACS switches before an operation and gives an alarm in a voice when a crane reaches a dangerous situation.

* NOTE: KATO products and specifications are subject to improvements and changes without notice.

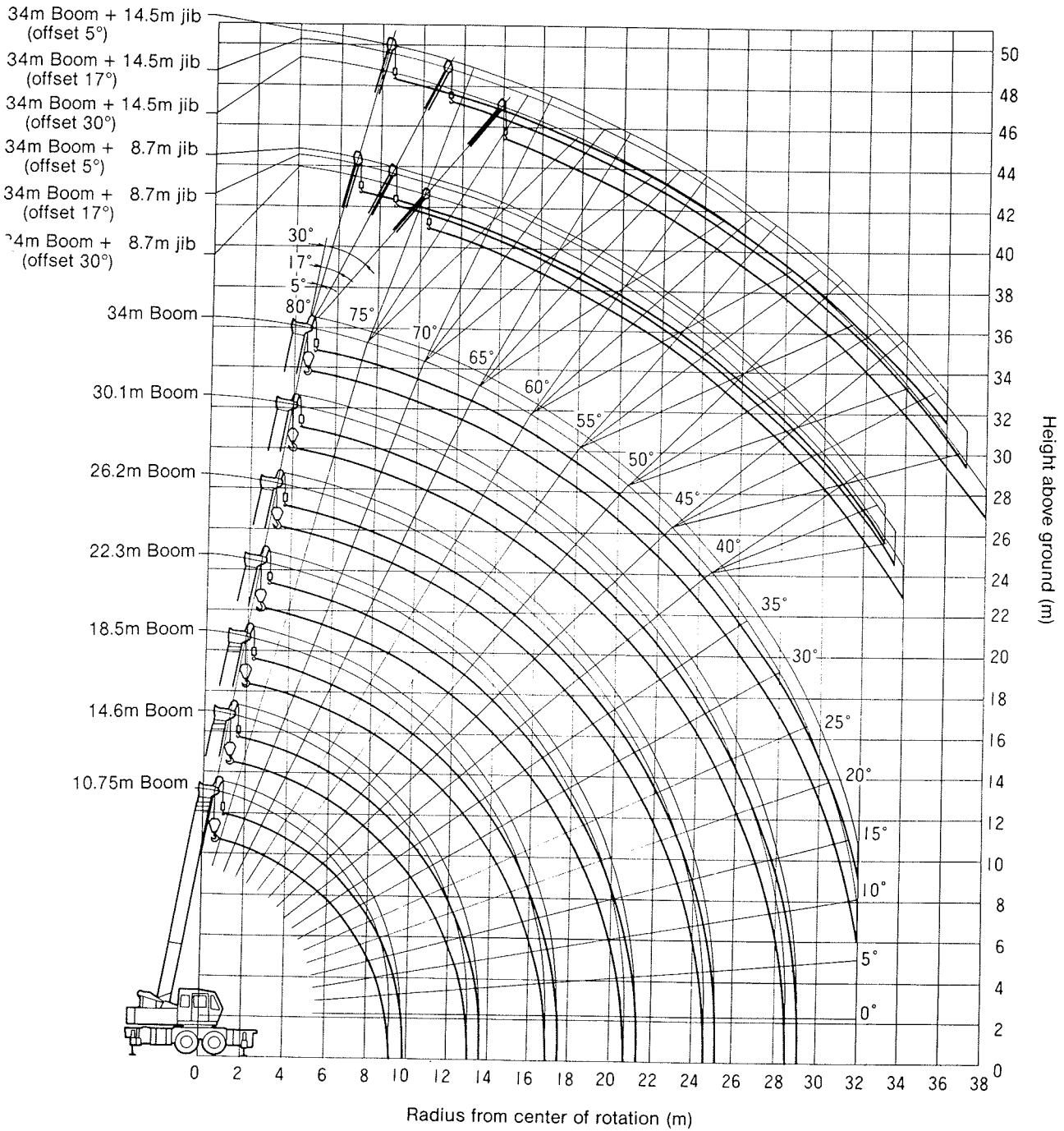


KATO WORKS CO., LTD.

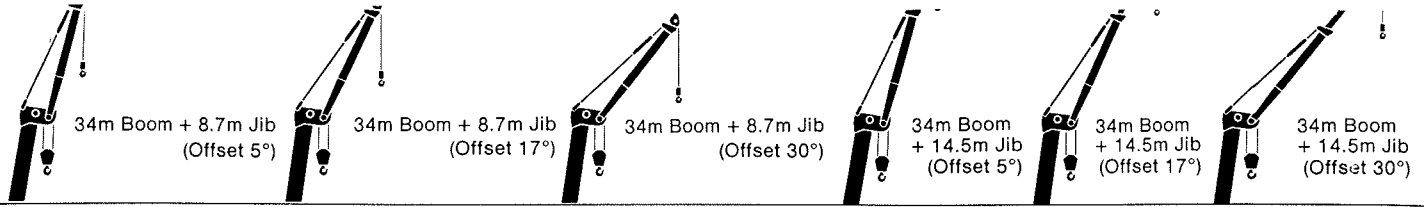
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MAIN BOOM

WORKING RANGES



Note: Deflection of boom and jib excluded.



■ 34m Boom + 8.7m Jib (Offset 5°, 17°, 30°)

Boom angle (°)	Outriggers fully extended with front jack – 360° full range Outriggers fully extended without front jack – over side and over rear					
	Offset 5°		Offset 17°		Offset 30°	
	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)
80.0	8.40	3.40	10.10	2.60	11.60	1.90
77.4	10.40	3.40	12.00	2.60	13.40	1.90
76.0	11.50	3.40	13.00	2.50	14.40	1.90
73.0	13.70	3.04	15.20	2.32	16.60	1.80
70.0	15.90	2.74	17.30	2.18	18.60	1.72
65.0	19.40	2.36	20.60	1.96	21.70	1.62
61.8	21.50	2.18	22.60	1.84	23.70	1.54
59.6	22.80	1.88	24.00	1.76	25.00	1.50
57.8	23.80	1.64	25.00	1.56	26.00	1.48
53.0	26.40	1.14	27.60	1.08	28.40	1.04
50.0	28.00	0.88	29.10	0.84	29.80	0.80
46.0	30.00	0.60	31.00	0.56	31.60	0.56
41.5	32.10	0.34	33.00	0.32	33.40	0.32

(Unit: metric ton)

■ 34m Boom + 14.5m Jib (Offset 5°, 17°, 30°)

Boom angle (°)	Outriggers fully extended with front jack – 360° full range Outriggers fully extended without front jack – over side and over rear					
	Offset 5°		Offset 17°		Offset 30°	
	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)
80.0	10.20	2.30	12.90	1.50	15.40	1.00
77.1	12.80	2.30	15.30	1.50	17.60	1.00
76.6	13.30	2.30	15.70	1.46	18.00	1.00
73.0	16.20	1.92	18.60	1.32	20.70	0.92
70.0	18.50	1.68	20.90	1.20	23.00	0.88
66.0	21.70	1.42	23.80	1.08	25.90	0.82
62.0	24.60	1.24	26.70	1.00	28.50	0.78
58.0	27.40	1.12	29.40	0.92	31.00	0.74
54.2	30.00	1.00	31.80	0.86	33.20	0.70
53.0	30.70	0.92	32.50	0.84	33.80	0.68
50.8	32.00	0.76	33.70	0.70	35.00	0.66
47.0	34.10	0.52	35.70	0.50	36.90	0.46
44.4	35.50	0.38	37.00	0.36	38.00	0.34
43.5	36.00	0.34				

(Unit: metric ton)

■ 34m Boom + 8.7m Jib (Offset 5°, 17°, 30°)

Boom angle (°)	Outriggers intermediately extended without front jack – 360° full range Outriggers fully extended without front jack – over front					
	Offset 5°		Offset 17°		Offset 30°	
	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)
80.0	8.40	3.40	10.10	2.60	11.60	1.90
77.4	10.40	3.40	12.00	2.60	13.40	1.90
76.0	11.50	3.40	13.00	2.50	14.40	1.90
74.6	12.50	3.20	14.00	2.42	15.40	1.86
73.2	13.50	2.68	15.00	2.34	16.40	1.82
71.8	14.50	2.22	16.00	1.94	17.40	1.76
68.1	16.80	1.42	18.30	1.24	19.60	1.12
64.4	18.90	0.88	20.50	0.74	21.70	0.68
60.7	21.20	0.42	22.70	0.32	23.80	0.30

(Unit: metric ton)

■ 34m Boom + 14.5m Jib (Offset 5°, 17°, 30°)

Boom angle (°)	Outriggers intermediately extended without front jack – 360° full range Outriggers fully extended without front jack – over front					
	Offset 5°		Offset 17°		Offset 30°	
	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)	Working radius (m)	Load (ton)
80.0	10.20	2.30	12.90	1.50	15.40	1.00
77.1	12.80	2.30	15.30	1.50	17.60	1.00
76.6	13.30	2.30	15.70	1.46	18.00	1.00
73.0	16.20	1.93	18.60	1.32	20.70	0.93
71.9	17.00	1.82	19.40	1.28	21.60	0.90
70.0	18.40	1.40	20.90	1.18	23.00	0.86
68.2	19.60	1.14	22.10	0.94	24.30	0.84
65.0	21.80	0.72	24.20	0.58	26.30	0.52
62.0	23.80	0.40	26.10	0.32	28.00	0.30

(Unit: metric ton)

6) The standard number of parts of line is shown in the table below. When the standard number of parts of line is not used, the minimum number of parts of line is determined so that weight per part will not exceed 3,100 kg.

Boom length	10.75m	14.6m	18.5m
Parts of line	12	8	6

Boom length	22.3m – 26.2m	30.1m – 34m	Jib/Rooster
Parts of line	5	4	1

7) Without front jack, over front lifting performance is inferior to over side and over rear lifting performance. Great care should be taken when transferring from over side to over front since there is a danger of overloading.

8) Critical boom angles for each boom length are shown in the table below. If the boom angle is lowered to less than the critical boom angle, the machine will tip over without load. Therefore, never lower the boom below these angles.

	Outriggers fully extended	Outriggers intermediately extended
22.3m Boom	–	30°
26.2m Boom	–	39°
30.1m Boom	–	45°
34.0m Boom	–	50°
34.0m Boom + 8.7m Jib	38°	59°
34.0m Boom + 14.5m Jib	40°	60°

9) Free fall is adopted in principle to lower the hook only. If it is necessary to lower a load by free fall, its weight should be less than 20 % of the rated lifting capacity and abrupt braking should not be allowed.

10) The machine will tip over or be damaged if operated with a load exceeding that specified in the rated lifting capacity table or not conforming to correct handling. If such trouble occurs, the machine will not be warranted.



10.75m~34.0m Boom

RATED LIFTING CAPACITY

* BS 1757:1981
Based on * DIN 15019-2
* 75% of tipping loads

NOTE:

1) The rated lifting capacities are the maximum load guaranteed on a firm level ground and include the weight of hook block and other lifting equipment. The capacities enclosed with bold lines are based on the structural strength of machine and the others are based on the stability of machine.

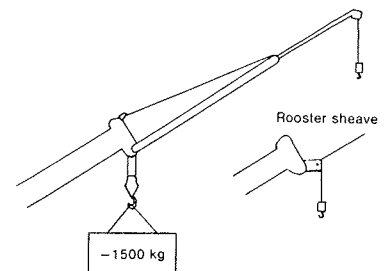
Hook	for 35 ton	for 15 ton	for 3.4 ton
Weight (kg)	320	180	60

2) The working radii as given in the table are the actual values including the deflection of the boom. Therefore operate the machine based on the working radius. However, the working radii shown for jib operations are based on the values obtained when the boom is fully extended (34m). Jib operations should be performed on the basis of boom angle only, regardless of boom length when the boom is not fully extended.

3) The rated lifting capacities for the rooster sheave are equivalent to the rated lifting capacities for the main boom to a maximum of 3300 kg. At all times the weight of all lifting equipment in use (including main hook block suspended from boom head) forms part of load and must be subtracted from the rated lifting capacity.

4) If the boom length exceeds the specified value, the rated lifting capacities for the boom length above and below the present boom length should be referred to, and the crane should be operated within the smaller lifting capacity.

5) When using the main boom with the jib installed, 1500 kg plus the weight of hook block and other lifting equipment, etc., should be subtracted from the rated lifting capacities. When performing the above operation, do not use the rooster sheave.



Working radius (m)	Outriggers fully extended with front jack – 360° full range						
	Outriggers fully extended without front jack – over side and over rear						
	10.75 m Boom	14.6 m Boom	18.5 m Boom	22.3 m Boom	26.2 m Boom	30.1 m Boom	34.0 m Boom
2.5	35.00						
3.0	35.00	23.50	18.50				
3.5	30.00	23.50	18.50	15.00			
4.0	26.40	23.50	18.50	15.00			
4.3	24.70	23.50	18.50	15.00	13.00		
5.0	21.40	20.80	18.50	15.00	13.00	10.00	
5.3	20.10	19.70	18.50	15.00	13.00	10.00	
6.2	17.05	16.90	16.30	15.00	13.00	10.00	8.00
6.5	16.20	16.00	15.60	14.45	13.00	10.00	8.00
7.0	14.80	14.60	14.60	13.55	12.25	10.00	8.00
8.0	12.40	12.35	12.20	11.95	10.95	10.00	8.00
9.0	10.40	10.05	9.95	10.30	9.75	8.90	8.00
9.2		9.70	9.55	9.95	9.50	8.70	8.00
10.0		8.40	8.25	8.65	8.75	8.10	7.40
11.0		7.05	6.90	7.30	7.60	7.40	6.70
12.0		5.95	5.80	6.20	6.50	6.80	6.20
13.0		5.00	4.85	5.30	5.60	5.80	5.70
14.0			4.10	4.55	4.85	5.05	5.30
16.0			2.90	3.35	3.65	3.85	4.05
16.5			2.65	3.10	3.40	3.65	3.80
18.0				2.50	2.75	3.00	3.15
20.0				1.80	2.10	2.30	2.45
20.5				1.65	1.95	2.15	2.30
22.0					1.55	1.75	1.90
24.0					1.10	1.30	1.45
24.5					1.00	1.20	1.35
26.0						0.95	1.10
28.0						0.65	0.75
28.5							0.70
30.0							0.50
30.5							0.45

(Unit: metric ton)

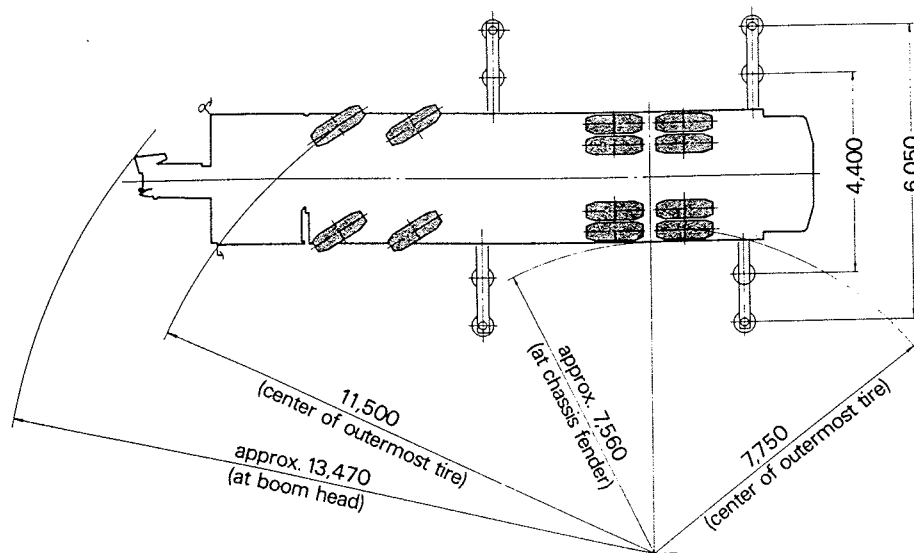
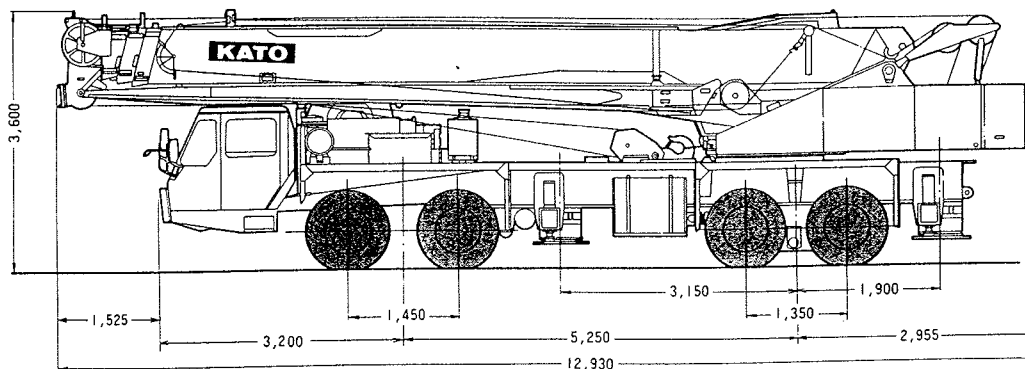
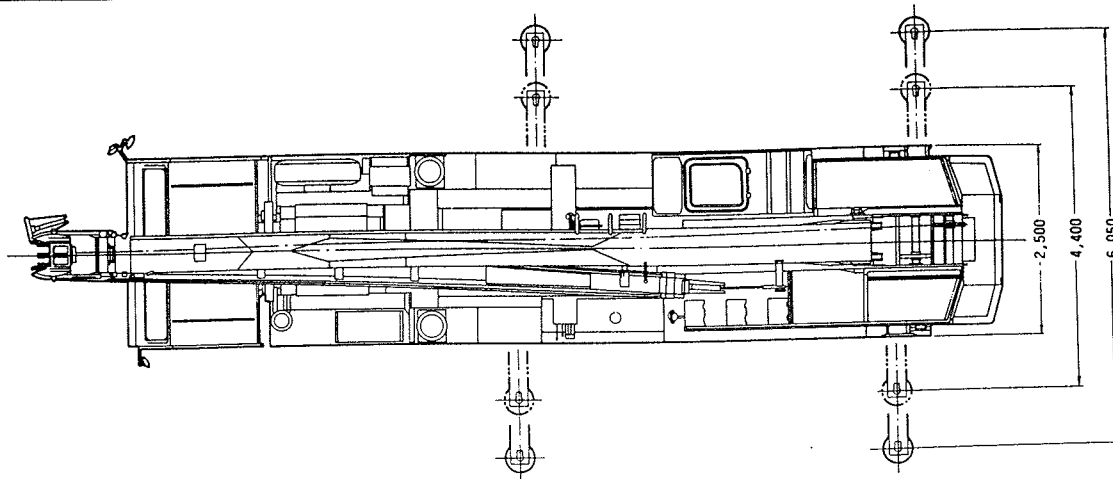
Working radius (m)	Outriggers intermediately extended without front jack – 360° full range						
	Outriggers fully extended without front jack – over front						
	10.75 m Boom	14.6 m Boom	18.5 m Boom	22.3 m Boom	26.2 m Boom	30.1 m Boom	34.0 m Boom
2.50	30.00						
3.00	30.00	23.50	18.50				
3.50	30.00	23.50	18.50	15.00			
4.00	26.40	23.50	18.50	15.00			
4.80	20.20	18.50	18.50	15.00	13.00		
5.50	15.30	14.60	14.65	15.00	13.00	10.00	
6.00	12.50	12.15	11.95	12.60	13.00	10.00	8.00
6.90	9.15	8.85	8.65	9.25	9.70	10.00	8.00
7.80	7.10	6.65	6.50	7.00	7.50	7.80	8.00
9.00	5.10	4.85	4.65	5.20	5.50	5.75	5.95
10.00		3.70	3.55	4.05	4.40	4.65	4.80
12.00		2.15	2.00	2.50	2.80	3.05	3.20
13.00		1.60	1.45	1.95	2.20	2.45	2.60
14.00			1.00	1.45	1.75	2.00	2.15
16.00				0.75	1.05	1.30	1.45
18.00					0.50	0.75	0.90
19.00						0.50	0.65
19.50							0.55

(Unit: metric ton)

NK-350E-III

FULLY HYDRAULIC TRUCK CRANE

DIMENSIONS



TAIL SWING 3515mm

NOTE: KATO PRODUCTS AND SPECIFICATIONS ARE SUBJECT TO IMPROVEMENTS AND CHANGES WITHOUT NOTICE.



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