NK-500E-v

FULLY HYDRAULIC TRUCK CRANE

- Maximum rated lifting capacity: 50.5t
- Maximum boom length: 40m
- Maximum jib length: 15m
- Maximum lifting height: 39.8m(boom), 54.7m(40m boom+15m jib offset 5°)

KATO

RATED LIFTING CAPACITY

Based on
* BS 1757 : 1986
* DIN 15019-2
* 75% of tipping loads

Note : Front jack is optional.

Outriggers fully extended with front jack — 360° full range
Outriggers fully extended without front jack — over side and over rear

Working radius (m)	10.8 m Boom	14.45 m Boom	18.1 m Boom	21.75 m Boom	25.4 m Boom	32.7 m Boom	40.0 m Boom
3.0	50.50	28.00	28.00	24.00			
3.5	42.20	28.00	28.00	24.00	18.00		
4.0	37.00	28.00	28.00	24.00	18.00		
4.5	33.00	28.00	28.00	24.00	18.00		
5.0	30.20	28.00	28.00	24.00	18.00	13.00	
5.5	27.50	26.50	25.60	23.20	18.00	13.00	
6.0	25.00	24.00	23.50	21.50	18.00	13.00	
6.5	22.70	22.30	21.80	19.90	18.00	13.00	7.50
7.0	20.70	20.30	20.00	18.40	16.80	13.00	7.50
7.5	18.90	18.60	18.50	17.10	15.70	13.00	7.50
8.0	17.40	17.10	17.00	15.90	14.80	12.30	7.50
8.5	15.95	15.70	15.60	14.65	14.00	11.60	7.50
9.0	14.35	14.20	14.10	13.50	13.20	11.00	7.50
9.5		12.85	12.70	12.55	12.45	10.50	7.50
10.0		11.70	11.55	11.45	11.40	10.00	7.30
11.0		9.75	9.60	9.50	9.45	9.10	6.80
12.0		8.20	8.10	8.00	7.95	8.30	6.30
13.0		7.00	6.85	6.75	6.70	7.55	5.90
14.0			5.85	5.75	5.70	6.50	5.50
16.0			4.25	4.15	4.10	4.95	4.70
18.0				3.00	2.95	3.75	4.00
20.0				2.10	2.05	2.80	3.30
22.0					1.30	2.10	2.55
23.0					1.00	1.80	2.25
24.0						1.50	2.00
26.0						1.05	1.50
28.0						0.65	1.10
30.0							0.75
31.0							0.60
Standard hook	for 50.5 ton				for 20 ton		
Hook weight	500 kg				270 kg		
Parts of line	12	7	7	6	5	4	3
Critical boom angle	—	—	—	—	—	25°	35°

(Unit: Metric ton)

Outriggers fully extended with front jack — 360° full range
Outriggers fully extended without front jack — over side and over rear

Boom angle (°)	40 m Boom + 9.2 m Jib						Boom angle (°)	40 m Boom + 15 m Jib					
	Offset 5°		Offset 17°		Offset 30°			Offset 5°		Offset 17°		Offset 30°	
	Working radius (m)	Load (t)	Working radius (m)	Load (t)	Working radius (m)	Load (t)		Working radius (m)	Load (t)	Working radius (m)	Load (t)	Working radius (m)	Load (t)
81	9.00	3.50	10.75	2.70	12.25	2.00	81	10.60	2.50	13.45	1.60	16.05	1.00
80	9.95	3.50	11.75	2.70	13.15	2.00	79	12.85	2.50	15.50	1.60	18.00	1.00
79	10.90	3.50	12.50	2.66	14.00	2.00	78	14.00	2.50	16.45	1.55	18.85	1.00
78	11.80	3.50	13.40	2.54	14.85	2.00	77	15.00	2.35	17.40	1.48	19.80	1.00
77	12.70	3.32	14.20	2.42	15.70	1.94	76	15.95	2.22	18.35	1.42	20.75	0.97
76	13.50	3.13	15.00	2.32	16.50	1.88	75	16.90	2.10	19.30	1.36	21.65	0.96
75	14.40	2.97	15.90	2.22	17.30	1.83	74	17.85	1.98	20.20	1.31	22.50	0.94
74	15.25	2.82	16.70	2.13	18.15	1.78	72	19.75	1.78	22.00	1.22	24.25	0.90
72	16.85	2.55	18.30	1.95	19.70	1.67	70	21.50	1.61	23.80	1.14	25.95	0.87
70	18.50	2.33	19.90	1.81	21.25	1.58	68	23.40	1.48	25.45	1.07	27.55	0.83
68	20.05	2.14	21.40	1.69	22.70	1.48	66	25.10	1.36	27.15	1.00	29.10	0.81
66	21.60	1.97	23.00	1.58	24.20	1.40	64	26.85	1.26	28.75	0.95	30.70	0.78
64	23.15	1.83	24.55	1.48	25.65	1.31	62	28.45	1.16	30.40	0.90	32.20	0.75
62	24.65	1.71	26.05	1.40	27.10	1.24	60	30.05	1.08	31.95	0.86	33.65	0.73
60	26.15	1.51	27.45	1.32	28.40	1.17	58	31.70	1.01	33.45	0.82	35.05	0.72
59	26.85	1.38	28.10	1.28	29.15	1.14	57	32.40	0.90	34.20	0.79	35.80	0.71
58	27.45	1.23	28.75	1.18	29.80	1.10	56	33.05	0.80	34.95	0.74	36.45	0.70
56	28.75	1.02	30.05	0.95	30.95	0.90	54	34.40	0.60	36.30	0.55	37.75	0.52
54	30.00	0.80	31.25	0.72	32.10	0.69							
52	31.15	0.60	32.50	0.52	33.30	0.50							
Standard hook	for 4 ton						Standard hook	for 4 ton					
Hook weight	120 kg						Hook weight	120 kg					
Parts of line	1						Parts of line	1					
Critical boom angle	51°						Critical boom angle	53°					

(Unit: Metric ton)

Outriggers intermediately extended without front jack — 360° full range
Outriggers fully extended without front jack — over front

Working radius (m)	10.8 m Boom	14.45 m Boom	18.1 m Boom	21.75 m Boom	25.4 m Boom	32.7 m Boom	40.0 m Boom
3.0	32.00	28.00	28.00	24.00			
3.5	32.00	28.00	28.00	24.00	18.00		
4.0	32.00	28.00	28.00	24.00	18.00		
4.5	26.30	25.00	24.00	22.00	18.00		
5.0	19.90	19.70	19.40	18.00	16.50	13.00	
5.5	15.75	15.55	15.30	15.20	15.00	13.00	
6.0	12.80	12.60	12.40	12.30	12.25	11.80	
6.5	10.60	10.45	10.25	10.15	10.10	10.60	7.50
7.0	8.95	8.75	8.60	8.50	8.45	9.45	7.50
7.5	7.60	7.45	7.25	7.15	7.10	8.10	7.50
8.0	6.50	6.35	6.20	6.10	6.05	7.00	7.50
9.0	4.80	4.70	4.55	4.45	4.40	5.30	6.00
10.0		3.50	3.35	3.25	3.20	4.10	4.70
11.0		2.55	2.40	2.35	2.30	3.15	3.75
12.0		1.80	1.70	1.60	1.60	2.40	2.95
13.0						1.80	2.35
14.0						1.30	1.85
15.0							1.40
Standard hook	for 50.5 ton				for 20 ton		
Hook weight	500 kg				270 kg		
Parts of line	12	7	7	6	5	4	3
Critical boom angle	—	—	40°	51°	58°	62°	66°

(Unit: Metric ton)

Outriggers intermediately extended without front jack — 360° full range
Outriggers fully extended without front jack — over front

Boom angle (°)	40 m Boom + 9.2 m Jib						Boom angle (°)	40 m Boom + 15 m Jib					
	Offset 5°		Offset 17°		Offset 30°			Offset 5°		Offset 17°		Offset 30°	
	Working radius (m)	Load (t)	Working radius (m)	Load (t)	Working radius (m)	Load (t)		Working radius (m)	Load (t)	Working radius (m)	Load (t)	Working radius (m)	Load (t)
81	9.00	3.50	10.75	2.70	12.25	2.00	81	10.60	2.50	13.45	1.60	16.05	1.00
80	9.95	3.50	11.75	2.70	13.15	2.00	79	12.85	2.50	15.50	1.60	18.00	1.00
79	10.90	3.50	12.50	2.66	14.00	2.00	78	14.00	2.50	16.45	1.55	18.85	1.00
78	11.80	3.43	13.40	2.54	14.85	2.00	77	14.90	2.20	17.40	1.48	19.80	1.00
77	12.45	2.88	14.20	2.42	15.70	1.94	76	15.70	1.87	18.35	1.42		
76	13.20	2.44	15.00	2.11	16.50	1.81	75	16.60	1.58				
75	13.95	2.06	15.70	1.75									
74	14.80	1.73											
Standard hook	for 4 ton						Standard hook	for 4 ton					
Hook weight	120 kg						Hook weight	120 kg					
Parts of line	1						Parts of line	1					
Critical boom angle	73°		74°		75°		Critical boom angle	74°		75°		76°	

(Unit: Metric ton)

Outriggers fully retracted — 360° full range (blocked on vertical cyls.)

Working radius (m)	10.8 m Boom
3.0	8.00
3.5	6.40
4.0	5.10
4.5	4.20
5.0	3.40
5.5	2.80
6.0	2.30
6.5	1.90
7.0	1.60
7.5	1.25
8.0	1.00
Standard hook	for 50.5 ton
Hook weight	500 kg
Parts of line	12

(Unit: Metric ton)

NOTES:

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.

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 (40m). 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 4000kg. At all times the weight of all lifting equipment in use (including main hook block suspended from boom head) forms part of the 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, 2,000kg 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.

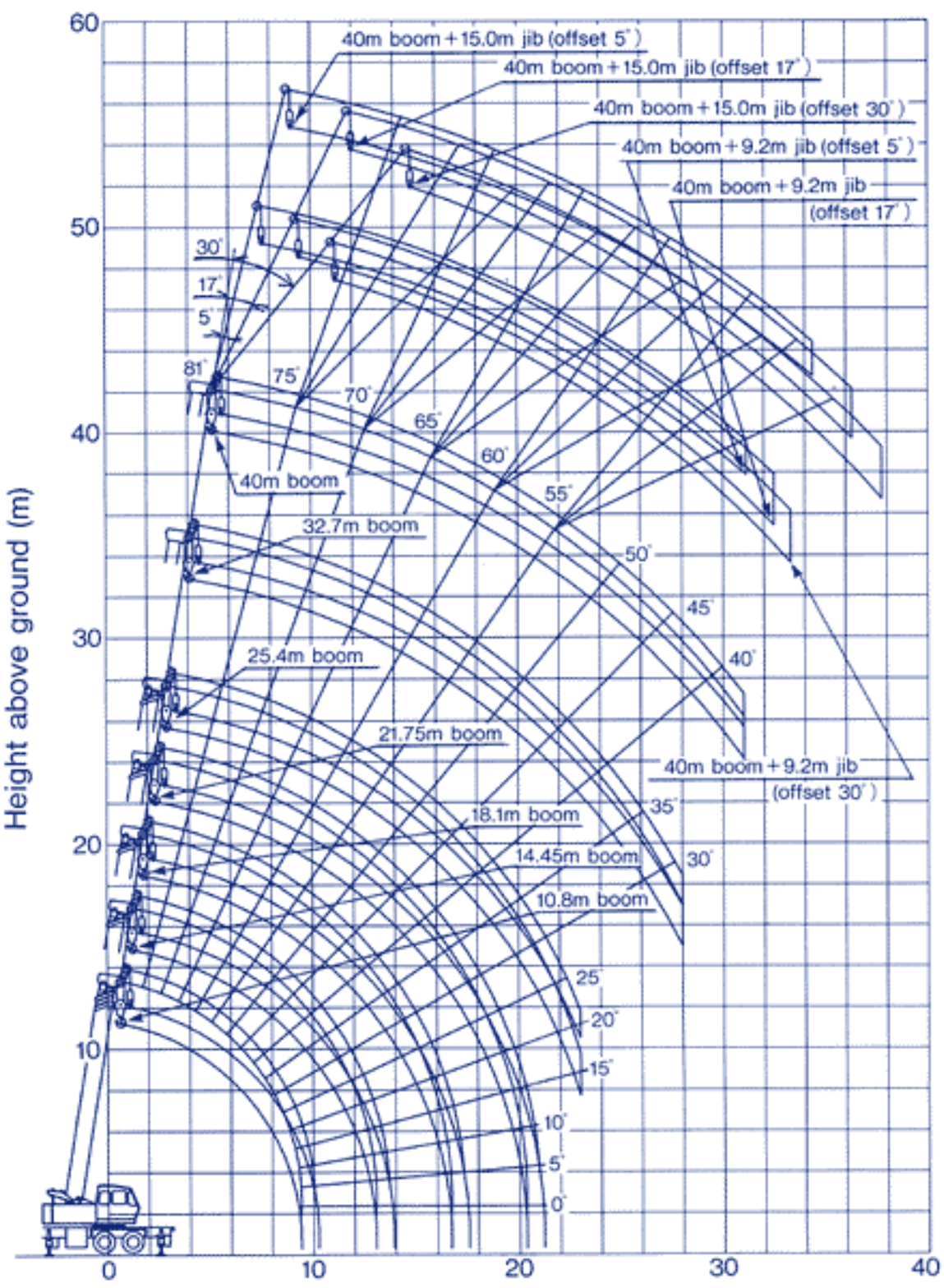
6) Critical boom angles for each boom length are shown on bottommost line of lifting capacity table. If the boom angle is lowered to less than the critical boom angle, the machine will tip over without load. Therefore, never lower the boom below these angles.

7) The standard number of parts of line is shown in the rated lifting capacity table. 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 4,000kg.

8) 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.

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.

WORKING RANGE



Radius from center of rotation (m)

Note: Deflection of boom and jib is excluded

10) The rated lifting capacities do not account for wind on lifted load or boom. Do not operate this machine at wind speed of 10m/sec. or more.

11) 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 guaranteed.

CRANE SPECIFICATIONS

Name and Type; KATO NK-500E-v FULLY HYDRALIC TRUCK CRANE

Performance

Maximum rated lifting capacity:	50.5 metric tons×3.0m
Boom length:	10.8m-40.0m (5 section)
Fly jib length:	9.2m-15.0m (2 section)
Boom derricking angle:	-2°−81°
Boom derricking time:	63sec. (-2°−81°)
Boom extending time:	132sec. (10.8m−40.0m)
Hoisting line speed	
Main winch:	115m/min. (at 3rd layer)
Auxiliary winch:	100m/min. (at 2nd layer)
Hoisting hook speed	
Main winch (part of line; 12):	9.58m/min. (at 3rd layer)
Auxiliary winch (part of line; 1):	100m/min. (at 2nd layer)
Slewing speed:	2.4rpm
Crane cab:	All steel welded construction
*Speed:	Subject to no load

Wire rope for hoisting

Main winch;	Type:	4×F (40) (Non-rotating type)
	Diameter:	18mm
	Length:	180m
Auxiliary winch;		
	Type:	4×F (40) (Non-rotating type)
	Diameter:	18mm
	Length:	120m

Hydraulic system

Oil pump:	4 section gear type
Hoisting motor:	Axial piston type
Slewing motor:	Axial piston type
Cylinder:	Double acting type
Control valve:	3 position 4 way double acting with integral check and relief valves
Oil reservoir capacity:	650 lit.

Winch system

Main and auxiliary winches:

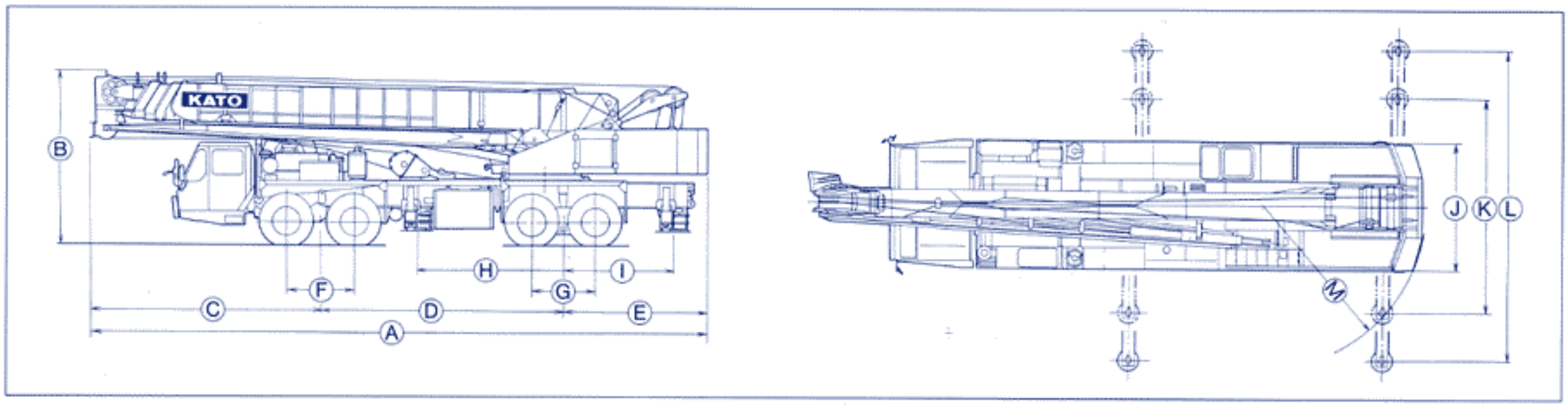
Driven by axial plunger type hoisting motor through planetary gear reduction.
Controlled independently by respective operating lever.
Equipped with automatic brake.
With FREE FALL DEVICE

Safety devices

ACS (Automatic crane stopper)
Boom falling prevention device
Overhoist prevention device
Drum lock device
Drum turning indicator
Automatic winch brake
Irregular winding prevention device
Hydraulic safety valve
Outrigger lock device

Optional equipment

Cooler, heater, fan, radio
for crane cabin, front jack



Carrier name Model	A	B	C	D	E	F	G	H	I	J	K	L	M
MITSUBISHI KJ505S	13,300	3,800	4,990	5,250	3,060	1,450	1,350	3,150	2,450	2,750	4,850	7,200	3,520
NISSAN DIESEL KG54T	13,300	3,800	5,125	5,215	2,960	1,470	1,400	3,340	2,350	2,820	4,850	7,200	3,520

(Unit: mm)