KATO

NK-250E-v

FULLY HYDRAULIC TRUCK CRANE

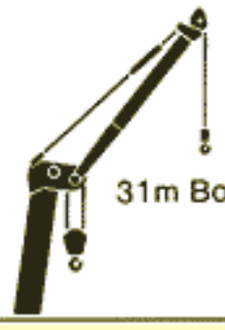
SPECIFICATION

KATO WORKS CO.,LTD.

• 10 m ~ 31 m Boom

31m Boom + 8m Jib
(Offset 5°)

31m Boom + 8m Jib
(Offset 17°)



31m Boom + 8m Jib
(Offset 30°)

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 m Boom	13.5 m Boom	17 m Boom	20.5 m Boom	24 m Boom	27.5 m Boom	31 m Boom
2.5	25.00	17.50	14.50				
3.0	25.00	17.50	14.50	9.50			
3.5	20.60	17.50	14.50	9.50	7.50		
4.0	18.00	17.50	14.50	9.50	7.50	6.50	
4.5	16.30	15.80	14.50	9.50	7.50	6.50	
5.0	14.85	14.40	13.25	9.50	7.50	6.50	6.00
5.5	13.65	13.25	12.20	9.50	7.50	6.50	6.00
6.0	12.30	12.20	11.30	9.50	7.50	6.50	6.00
6.5	11.20	11.00	10.50	9.50	7.50	6.50	6.00
7.0	10.25	10.00	9.80	8.80	7.50	6.50	6.00
7.5	9.40	9.20	9.10	8.30	7.50	6.50	6.00
8.0	8.65	8.45	8.35	7.80	7.00	6.10	5.65
8.3	8.25	8.05	7.95	7.50	6.75	5.90	5.45
9.0		7.20	7.10	6.95	6.25	5.45	5.05
9.5		6.65	6.50	6.55	5.90	5.20	4.80
10.0		6.00	5.90	6.20	5.60	4.95	4.60
11.0		5.00	4.85	5.25	5.00	4.50	4.20
11.8		4.30	4.20	4.60	4.65	4.15	3.95
12.0			4.10	4.45	4.60	4.10	3.90
14.0			2.90	3.25	3.40	3.50	3.35
15.3			2.30	2.70	2.85	3.00	3.00
16.0				2.40	2.60	2.75	2.85
18.0				1.75	1.95	2.10	2.15
18.8				1.50	1.75	1.90	1.95
20.0					1.45	1.60	1.70
22.0					1.10	1.20	1.30
22.3					1.00	1.15	1.25
24.0						0.90	0.95
25.8						0.65	0.75
28.0							0.50
29.3							0.40
Standard hook	for 25 ton						
Hook weight	280 kg						
Parts line	8			4			
Critical boom angle	—	—	—	—	—	—	—

(Unit: Metric ton)

Outriggers intermediately extended without front jack – 360° full range Outriggers fully extended without front jack – over front							
Working radius (m)	10 m Boom	13.5 m Boom	17 m Boom	20.5 m Boom	24 m Boom	27.5 m Boom	31 m Boom
2.5	20.00	17.50	14.50				
3.0	20.00	17.50	14.50	9.50			
3.5	20.00	17.50	14.50	9.50	7.50		
4.0	16.50	17.50	14.50	9.50	7.50	6.50	
4.3	14.40	14.85	14.50	9.50	7.50	6.50	
5.0	10.50	10.50	10.20	9.50	7.50	6.50	6.00
5.7	7.90	7.80	7.60	7.40	7.50	6.50	6.00
6.0	7.10	7.00	6.80	6.80	7.00	6.50	6.00
6.5	6.00	5.90	5.65	5.85	6.15	6.50	6.00
6.6	5.85	5.70	5.45	5.70	6.00	6.30	6.00
7.0	5.20	5.00	4.80	5.10	5.35	5.60	5.50
8.3	3.60	3.40	3.20	3.60	3.85	4.00	4.10
9.0		2.80	2.65	3.00	3.25	3.40	3.50
10.0		2.10	1.95	2.30	2.55	2.75	2.80
11.0		1.50	1.35	1.75	2.00	2.20	2.30
11.8		1.15	1.05	1.40	1.65	1.85	1.90
13.0			0.65	0.95	1.20	1.35	1.50
13.5			0.50	0.80	1.05	1.20	1.30
14.5				0.50	0.80	0.90	1.05
15.0					0.70	0.80	0.90
16.0					0.45	0.55	0.70
16.5						0.45	0.60
17.5							0.40
Standard hook	for 25 ton						
Hook weight	280 kg						
Parts line	8			4			
Critical boom angle	—	—	20°	35°	42°	48°	52°

(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 (°)	31 m Boom + 8 m Jib					
	Offset 5°		Offset 17°		Offset 30°	
	Working radius (m)	Load (t)	Working radius (m)	Load (t)	Working radius (m)	Load (t)
80.0	7.7	2.75	9.1	1.95	10.4	1.35
76.0	10.1	2.75	11.5	1.95	12.7	1.35
75.0	10.5	2.75	12.1	1.88	13.5	1.35
70.0	14.0	2.15	15.2	1.60	16.4	1.18
65.0	17.2	1.78	18.2	1.35	19.3	1.04
60.0	20.2	1.52	21.2	1.18	22.1	0.92
53.0	23.8	1.28	24.8	1.00	25.7	0.80
50.0	25.4	1.00	26.3	0.95	26.9	0.76
48.0	26.3	0.85	27.2	0.82	28.0	0.72
44.0	28.1	0.65	28.9	0.62	29.4	0.60
39.5	30.0	0.48	30.6	0.45	31.2	0.45
Standard hook	for 3 ton					
Hook weight	60 kg					
Parts line	1					
Critical boom angle	35°					

(Unit: Metric ton)

Outriggers intermediately extended without front jack – 360° full range Outriggers fully extended without front jack – over front						
Boom angle (°)	31 m Boom + 8 m Jib					
	Offset 5°		Offset 17°		Offset 30°	
	Working radius (m)	Load (t)	Working radius (m)	Load (t)	Working radius (m)	Load (t)
80.0	7.7	2.75	9.1	1.95	10.4	1.35
76.0	10.1	2.75	11.5	1.95	12.7	1.35
75.0	10.5	2.75	12.1	1.88	13.5	1.35
72.0	12.5	1.90	14.0	1.60	15.0	1.25
69.0	14.3	1.35	15.6	1.20	16.7	1.07
65.0	16.7	0.80	18.0	0.70	19.0	0.65
60.5	19.1	0.35	20.3	0.32	21.5	0.30
Standard hook	for 3 ton					
Hook weight	60 kg					
Parts line	1					
Critical boom angle	59°					

(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 incluing 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 (31 m).
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 3000 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, 650 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.

(6) 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 3125 kg.

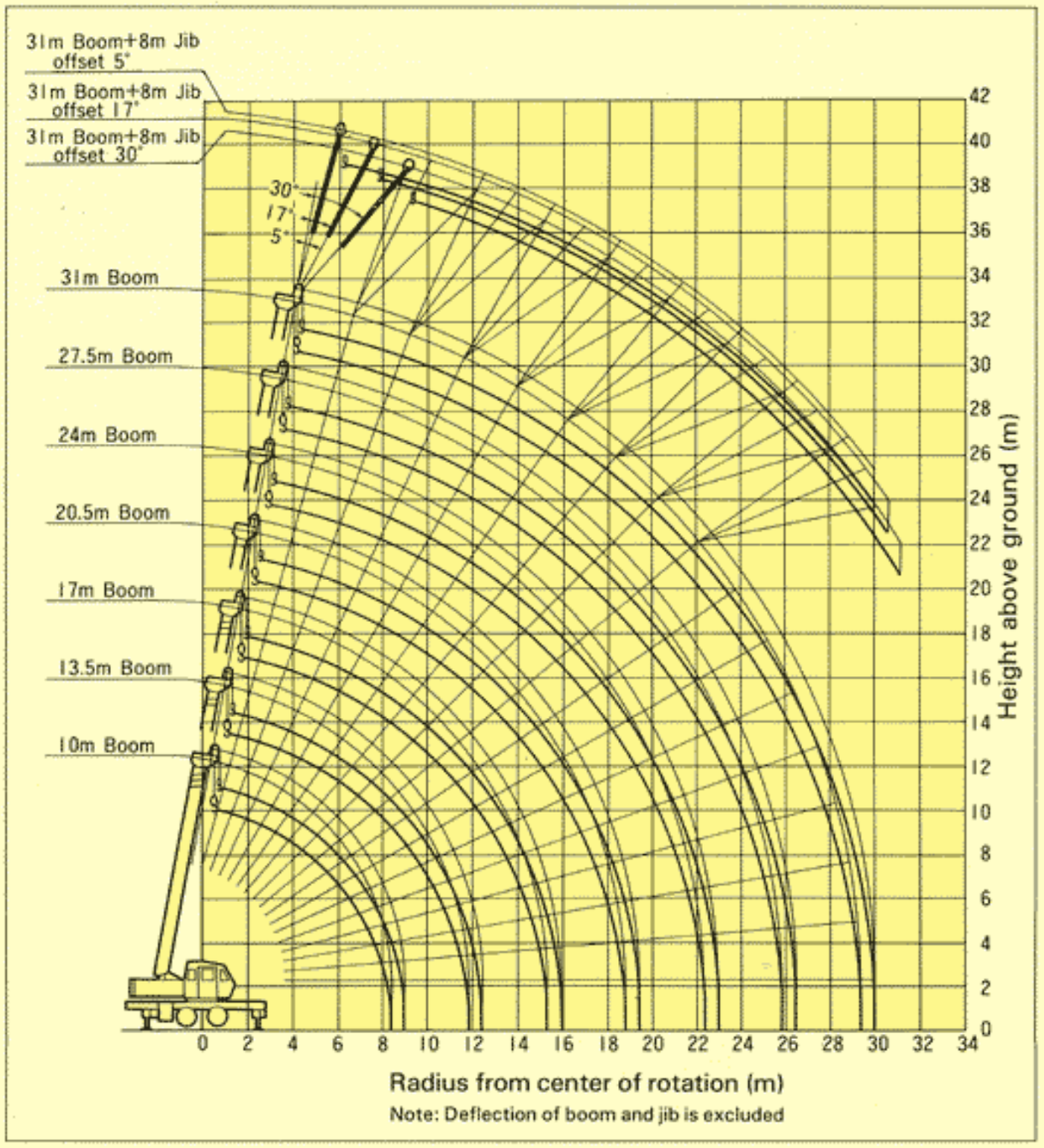
(7) Without front jack, over front lifting performance is inferior to over side and over rear lifting performance. Great care should be taken when transferring from over side to over front since there is a danger of overloading.

(8) Critical boom angles for each boom length are shown 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.

(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.

WORKING RANGE



Note: Deflection of boom and jib is excluded

SUPERSTRUCTURE SPECIFICATION

Name and Type:	KATO NK-250E-v FULLY HYDRAULIC TRUCK CRANE

Performance

Crane capacity:	25.0t × 3.0m, 10.0m Boom with outriggers	
	17.5t × 4.0m, 13.5m Boom with outriggers	
	14.5t × 4.5m, 17.0m Boom with outriggers	
	9.5t × 6.5m, 20.5m Boom with outriggers	
	7.5t × 7.5m, 24.0m Boom with outriggers	
	6.5t × 7.5m, 27.5m Boom with outriggers	
	6.0t × 7.5m, 31.0m Boom with outriggers	
	3.00t × 14.0m,10m ~ 31m Boom Rooster sheave with outriggers	
	2.75t × 10.5m,31m Boom + 8m Jib (Offset 5°) with outriggers	
	1.95t × 11.5m,31m Boom + 8m Jib (Offset 17°) with outriggers	
	1.35t × 13.5m,31m Boom + 8m Jib (Offset 30°) with outriggers	
Boom length:	Basic	10m
	Maximum	31m
Jib length:		8m
Max. lifting height:		30.8m (Boom)
		39.2m (31.0m Boom + 8m Jib Offset 5°)
Main hoisting line speed:		110m/min (4th layer)
Auxiliary hoisting line speed:		95m/min (2nd layer)
Main hook hoisting speed:		13.75m/min (4th layer of wire rope) (8-part line)
Auxiliary hook hoisting speed:		95m/min (2nd layer of wire rope) (1-part line)
Boom derricking time:		44sec (−3° ~ 80°)
Boom derricking angle		−3° ~ 80°
Slewing speed:		2.6 r.p.m.
		* speed: subject to no load

Hydraulic System

Oil pump:	4 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:	380 lit.

Superstructure

Hoisting mechanism:	Hydraulic motor-driven, gear reduction type (automatic brake system) single winch × 2
Slewing mechanism:	Ball bearing type
Boom derricking mechanism:	Direct-acting clynder type
Outrigger system:	Hydraulic, vertically supporting with float and vertical cylinder in single unit
Front jack (option):	Hydraulic, vertically supporting with float and vertical cylinder in single unit

Hoisting Ropes

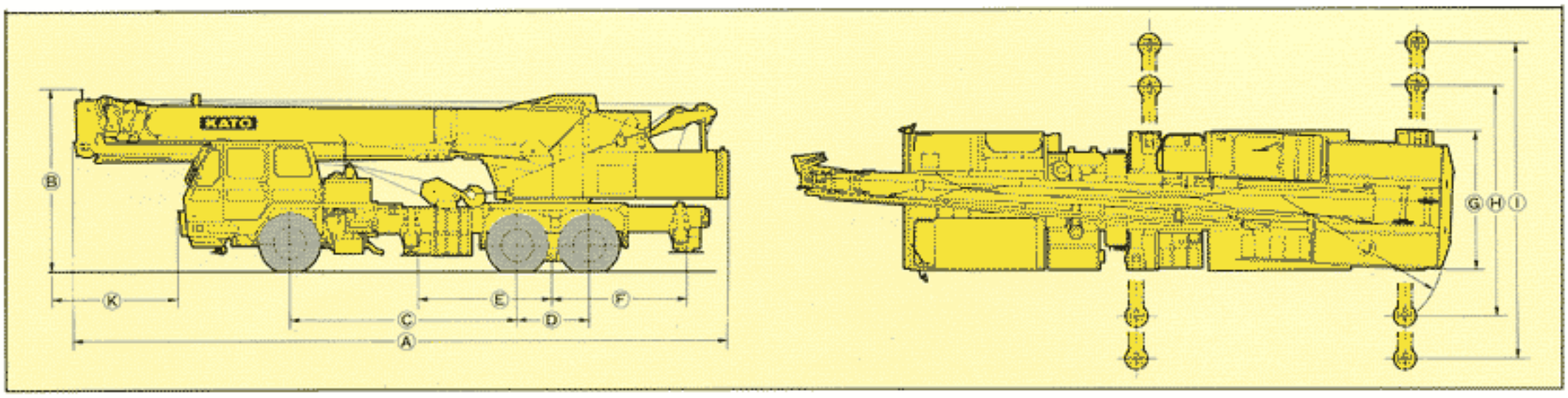
Main:	4 × F(a + 40)ϕ16 × 175m Non-rotating wire rope
Auxiliary:	4 × F(a + 40)ϕ16 × 90m Non-rotating wire rope

Safety Device

Microcomputer type ACS fully automatic overload protection device (Moment Limiter)
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

Option

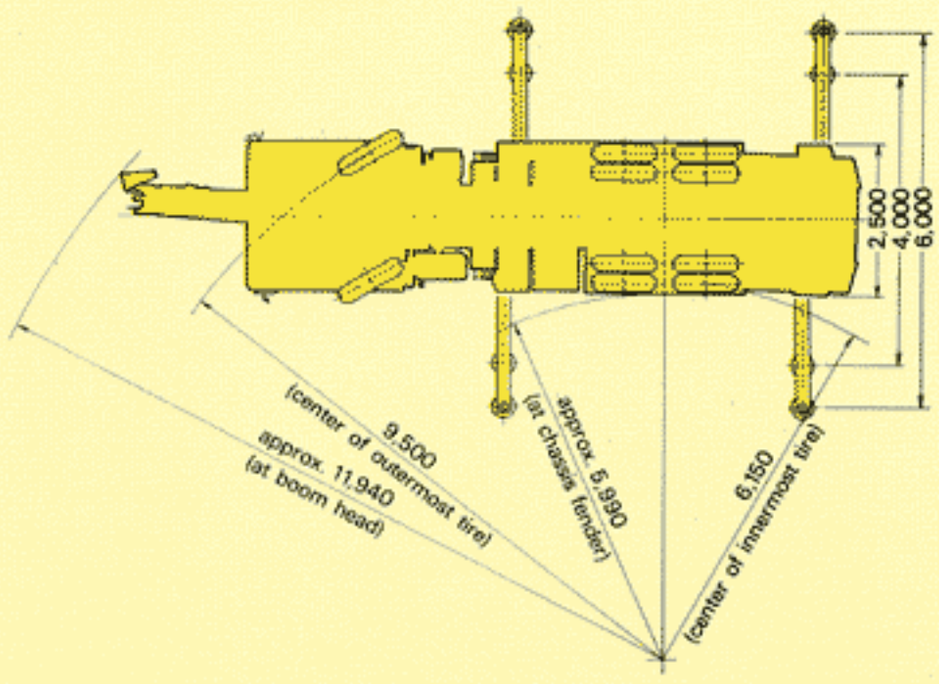
Oil cooler, Front jack, Voice alarm device for ACS, Heater, fan and radio for crane cabin



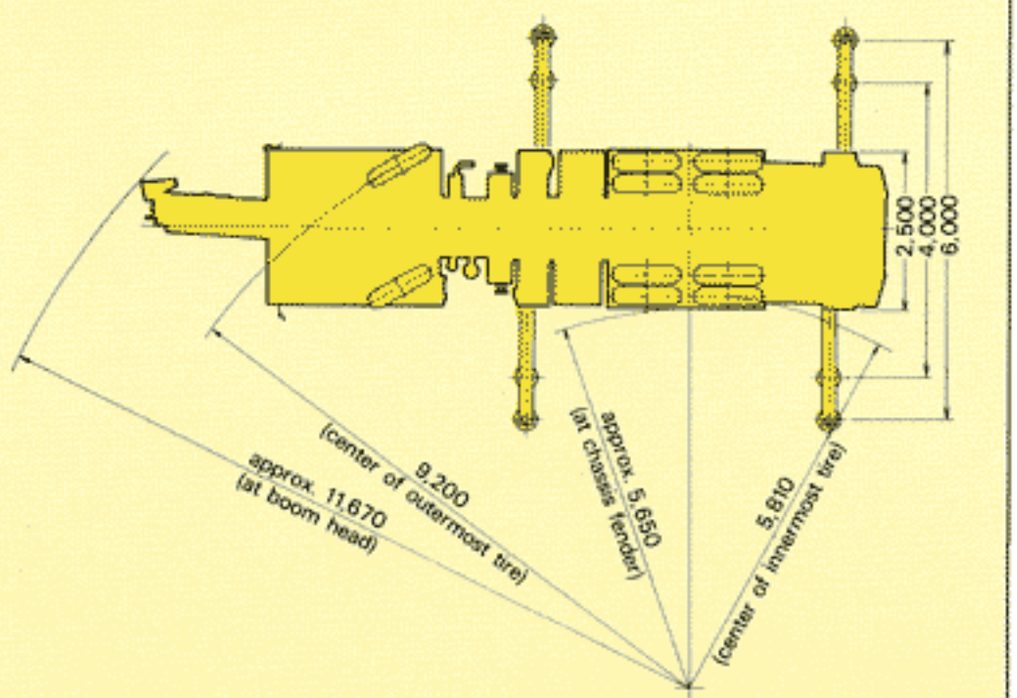
Carrier name and model	A	B	C	D	E	F	G	H	I	J	K
Mitsubishi K203LA	11,930	3,300	4,700	1,300	2,400	2,400	2,500	4,000	6,000	3,240	2,100
Nissan Diesel KW31MXL	11,930	3,300	4,700	1,300	2,450	2,450	2,500	4,000	6,000	3,240	1,850

(Uni: mm)

Mitsubishi K203LA



Nissan Diesel KW31MXL



CARRIER SPECIFICATION

MITSUBISHI K203LA

Maximum traveling speed:	65km/h
Gradeability (tanθ):	26.5% (computed, @G.V.W. = 24,600kg)
Minimum turning radius (center of extreme outer tire):	9.5m

General dimensions

Overall length:		approx. 11,930mm
Overall width:		approx. 2,500mm
Overall height:		approx. 3,300mm
Wheel base:		4,700mm
Treads:	Front	2,040mm
	Rear	1,845mm
Center to center of extended outriggers:		6,000mm (Fully extended) 4,000mm (Intermediately extended)
Gross vehicle weight:		approx. 24,600kg
	Front	approx. 6,100kg
	Rear	approx. 18,500kg

Carrier

Maker:	MITSUBISHI
Model:	K203LA
Drive system:	6 × 4

Engine

Maker:	MITSUBISHI
Model:	6D22-1A
Type:	4 cycle, water cooled, diesel
No. of cylinder:	6-inline
Piston displacement:	11,149cc
Max. output horsepower:	225 PS/2,200 r.p.m. 165 KW/2,200 r.p.m.
Max. output torque:	78 kg·m/1,400 r.p.m. 764 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:		5 forward & 1 reverse speed, synchromesh and constantmesh gear
Axles:	Front	Reverse "ELLIOT" type
	Rear	Full floating type
Steering:		Ball nut type with power booster
Suspension:	Front	Semi-elliptic leaf springs with shock absorber
	Rear	Equalizer beams and torque rods
Brake:	Servie	2 circuit air brake, 6 wheels internal expanding type
	Parking & Emergency	Spring loaded brake, acting on 4 rear wheels, variable air operated
	Auxiliary	Exhaust brake
Electric system:		24V
Battery:		12V—115F51 × 2
Fuel tank capacity:		200 lit
Driver's cab:		All steel welded construction, 2 persons, low line type, offset left hand side
Tire size:	Front	11.00—20—14PR
	Rear (dual)	11.00—20—14PR

NISSAN DIESEL KW31MAL

Maximum traveling speed:	71km/h
Gradeability (tanθ):	31% (computed, @G.V.W. = 24,300kg)
Minimum turning radius (center of extreme outer tire):	9.2m

General dimensions

Overall length:		approx. 11,930mm
Overall width:		approx. 2,500mm
Overall height:		approx. 3,300mm
Wheel base:		4,700mm
Treads:	Front	2,025mm
	Rear	1,860mm
Center to center of extended outriggers:		6,000mm (Fully extended) 4,000mm (Intermediately extended)
Gross vehicle weight:		approx. 24,300kg
	Front	approx. 5,850kg
	Rear	approx. 18,450kg

Carrier

Maker:	NISSAN DIESEL
Model:	KW31MAL
Drive system:	6 × 4

Engine

Maker:	NISSAN DIESEL
Model:	PE6
Type:	4 cycle, water cooled, diesel
No. of cylinder:	6-inline
Piston displacement:	11,670cc
Max. output horsepower:	230 PS /2,200 r.p.m. 169 KW /2,200 r.p.m.
Max. output torque:	83 kg·m /1,300 r.p.m. 813 N·m/1,300 r.p.m.

NOTE: The output is in accordance with JIS D1004, 1976.

Clutch:		Single dry plate
Transmission:		6 forward & 1 reverse speed,
Axles:	Front	Reverse "ELLIOT" type
	Rear	Full floating type
Steering:		Ball nut type with power booster
Suspension:	Front	Semi-elliptic leaf springs with shock absorber
	Rear	Equalizer beams and torque rods
Brake:	Servie	2 circuit air brake, 6 wheels internal expanding type
	Parking	Mechanical, acting on propeller shaft
	Auxiliary	Exhaust brake
Electric system:		24V
Battery:		12V—115F51 × 2
Fuel tank capacity:		200 lit
Driver's cab:		Steel, two men, semi under floor type one side cab
Tire size:	Front	10.00—20—16PR
	Rear (dual)	10.00—20—16PR

NK-250E-v

FULLY HYDRAULIC TRUCK CRANE

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

KATO

QUALITY & EXPERIENCE
SINCE 1895

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