

KATO

**FULLY HYDRAULIC
TRUCK CRANE**

NK-1600

ACS

Moment Limiter

Lifting Capacity **160** Ton
Metric



KATO WORKS CO.,LTD.

NK-1600 Fully Hydraulic Truck Crane

Maximum lifting capacity: 160 metric ton
Maximum boom length: 50.0 m



Excellent capacity

Kato's advanced technology has been concentrated in a search to devise characteristics appropriate to large-capacity machines. The result is the Kato NK-1600 with a 160 ton lifting capacity.

Designed to provide an answer to diverse on-site needs, this crane is ideally suited to heavy lifting jobs and other work entailed in the construction of increasingly large-scale and high-rise buildings, harbor, bridges, industrial plants, etc.

We at Kato Works Co., Ltd. are confident that the NK-1600 will prove to be a powerful workhorse for large-scale projects.



LONG BOOM FOR GREATER REACH AND PERFORMANCE WHEN WORKING AT HEIGHT, OVER OBSTRUCTIONS OR AT SHORT RADIUS.

The 50-meter boom permits rated lifting capacities of 30 tons at 11m radius and 21 tons at 16m radius.

The fully powered boom is designed to reduce vertical and lateral deflection during operation, and provides high speed telescopic extension from 13.6m to 50m.

The derricking system combines main boom actuated by forward-acting derrick cylinder for wider derricking angle, with luffing jib or heavy-lift jib continuously offsetable by means of pendant rope. These innovations enable the NK-1600 to do easily things which mechanical cranes have never achieved in the past, particularly when working at height, at short radius and in cramped sites.



achieved by a combination of high lifting performance



MICROCOMPUTER-CONTROLLED ACS MOMENT LIMITER

The ACS moment limiter is an automatic overload prevention device incorporating calculation functions based on state-of-the-art electronics technology to monitor all safety factors. It provides accurate information on up to 8 safety factors: namely safety levels, luffing jib angle, boom angle, working radius, boom length, critical load, actual load, and maximum hook lift.

Information on jib angle, actual load during jib operation and back stopper angle is transmitted via optical fiber from the boom head to a computer housed in the cab. The use of optical fiber has made it possible not only to increase the various kinds of information involving each function but also to eliminate radio wave interference.

The optional voice alarm will remind the operator to make preliminary checks or give warning of overloads and other operational instructions.



SPACIOUS DELUXE CAB

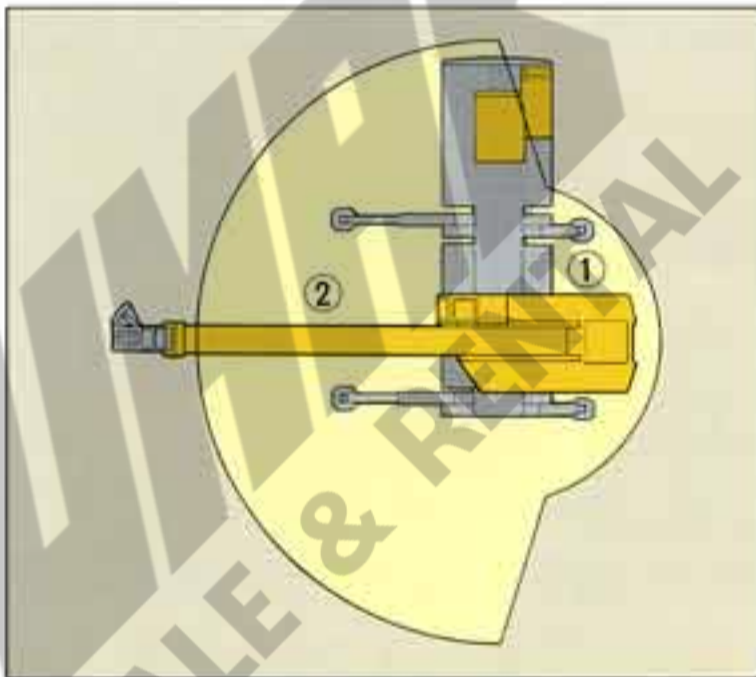
The roomy 900 mm wide cab was designed and built with full sound-proofing and vibration insulation for vastly improved operator comfort and includes sliding cab door, reclining seat, ACS moment limiter, and other instruments.



ACS MONITORS EXTENSION OF OUTRIGGERS

The outriggers, which can be extended to either 8.6 or 5.75 meters, depending on operating needs and site conditions, are linked by optical fiber to a micro-computer that responds to various operating conditions in order to guarantee safe operation at all times. This takes the danger out of heavy lift operations and high-lift work.

Even when left and right outriggers are extended to different lengths, The ACS moment limiter automatically compensates for the varying safe working loads.



- ① Working range at intermittent stroke
- ② Working range at maximum stroke



DUAL WINCH OPERATION

The two independently driven winches are equipped with automatic brakes. The main and auxiliary winches are operated by separate control levers and hoisting and lowering operations can be carried out simultaneously.

The use of large diameter winch drums with winding regulators ensures less stress on ropes and prevents ropes interwinding and tangling. This reduces wear and boosts rope life.



SLEWING SYSTEM WITH FREE LOCK SWITCHING

The operator can select a free slewing stop for normal repeat work, or lock slewing stop for high-lift operations or heavy work. A hydraulic slew-brake is also provided for safety.



Performance and wide range of applications.



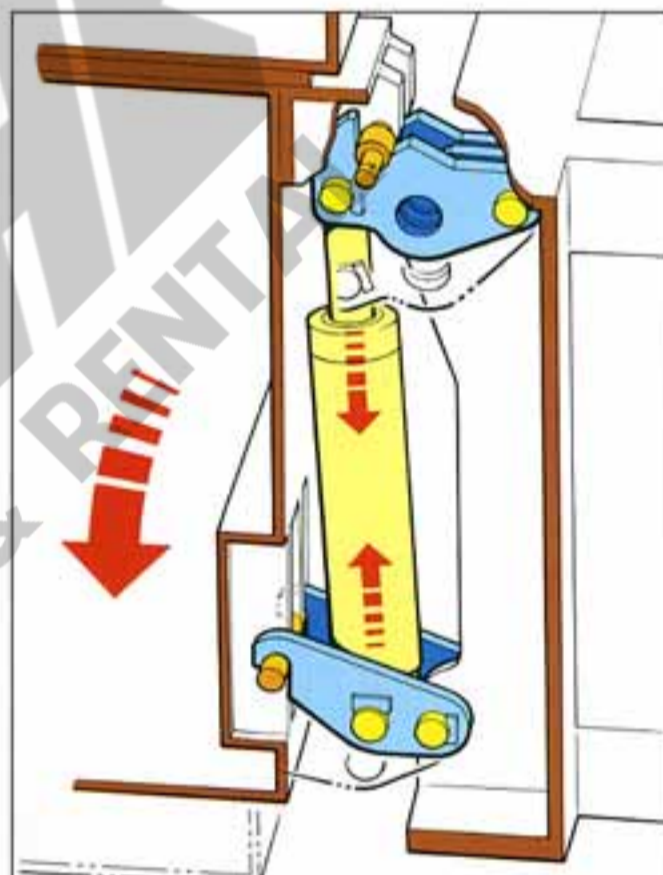
Operator's cab



Linkage-type counterweight removal device



Microcomputer controlled ACS moment limiter



Widespread outriggers



Front jack

COUNTERWEIGHT THAT CAN BE EASILY ATTACHED/DETACHED

The counterweight can be easily removed or attached in its working position by linkage-type actuation and pin-lock for safe operation.

MINIMIZED TAIL-SWING

Since the tail swing of the superstructure is only 5.21m from slewing center (with counterweight). The crane can slew easily and efficiently in restricted working areas and congested places.



CAREFULLY DESIGNED SAFETY DEVICES

The most important hydraulic and hoisting systems are equipped with safety devices such as over-hoist prevention system, drum lock and drum hold safety devices, automatic winch brake, hydraulic safety valves, outrigger locks, and slewing locks.



The installation of extra large load using the main boom and heavy lift jib. (Domestic model)

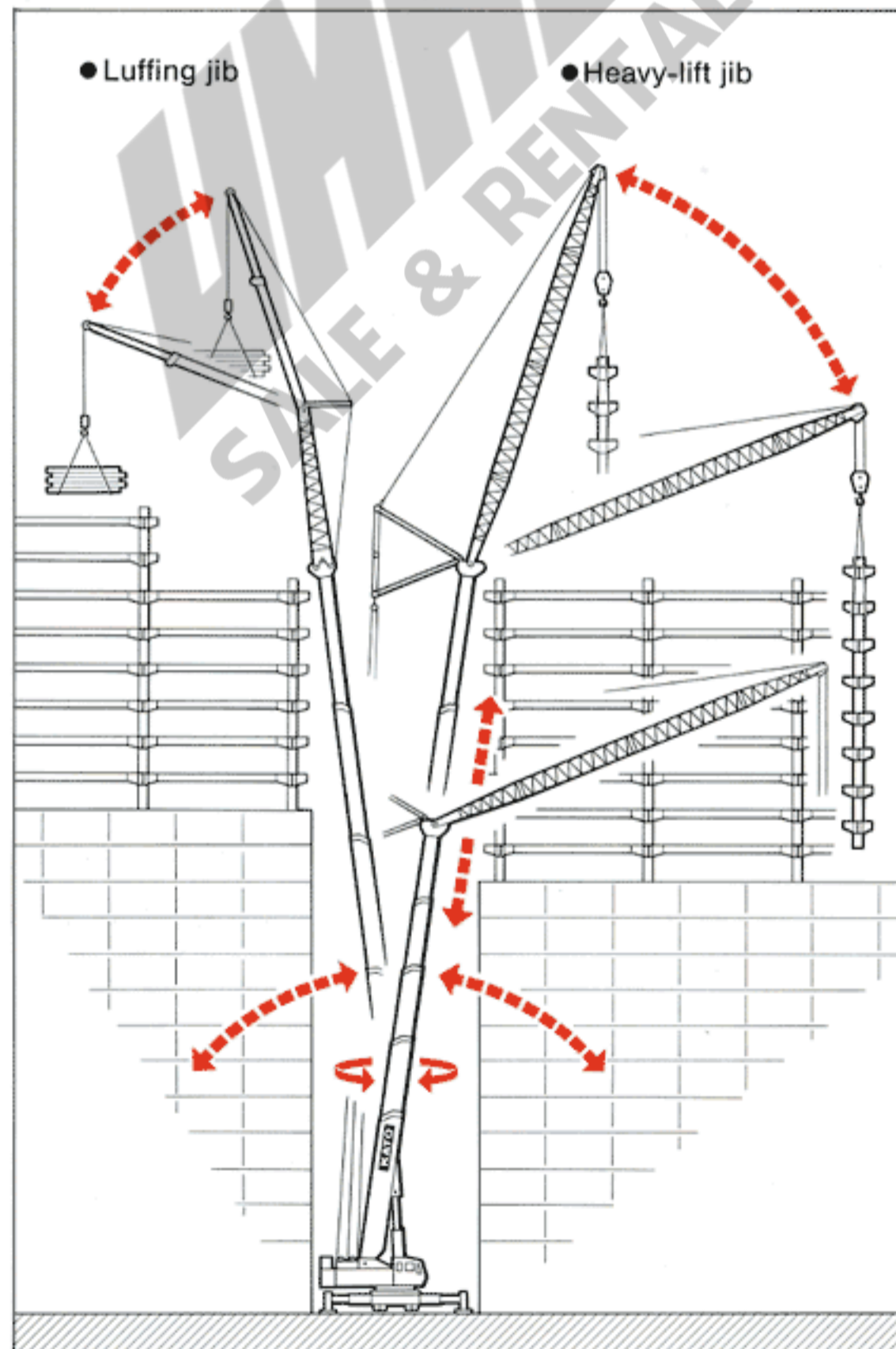
NEW TECHNOLOGY FOR LUFFING SYSTEM

The unique luffing and heavy – lift jib arrangement makes it possible to luff at infinitely variable positions between 10 degrees and 60 degrees, whilst derricking basic boom at the same time. This facilitates work at close quarters on restricted sites, as well as giving height and remote operation capabilities.

The ACS moment limiter automatically compensates for the angle and length of boom and the angle of jib, and computes back to the digital readout to advise of lifting capability.

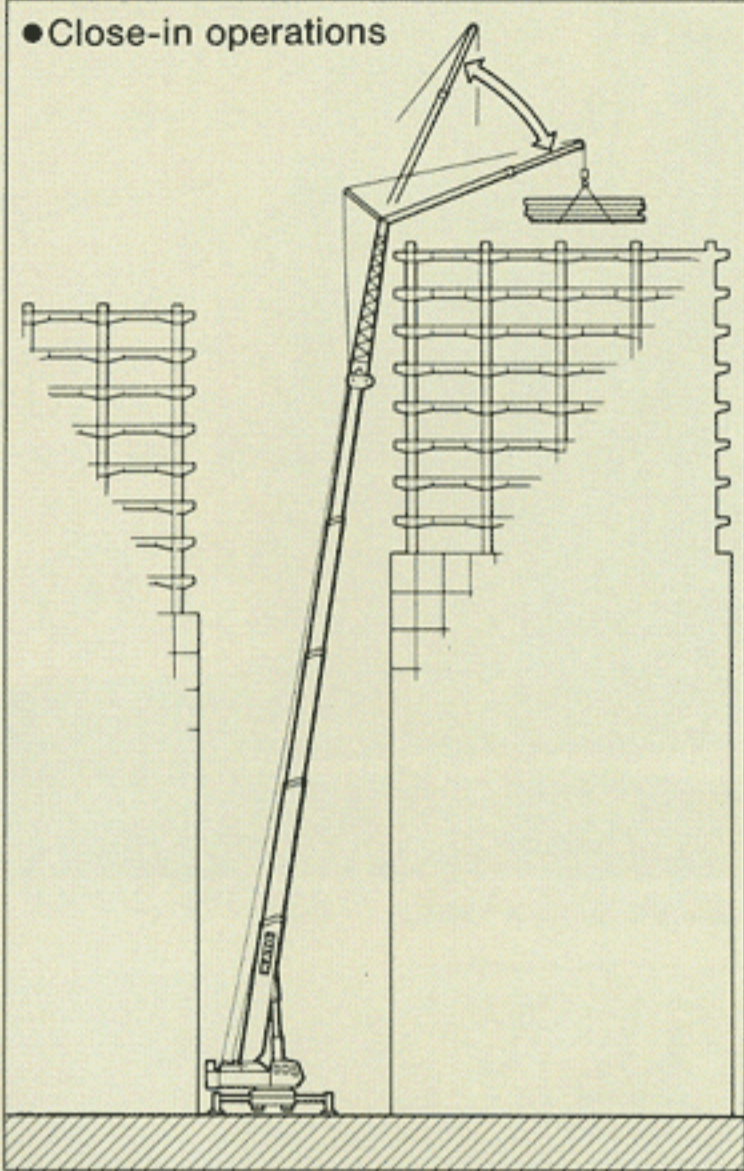
EXTREMELY HEAVY LOADS CAN BE LIFTED HIGHER AND FURTHER.

The optional heavy-lift jib is extendable in lengths of 12m, 21m, and 30m, with lifting capacities of 75 tons at 7m radius, and 2 tons at 55m radius. This jib also features a continuous offset giving greater working capabilities, and gives the full amount of lifting capacity for heavy duty lifts, such as the construction of bridges, industrial plant and high-rise buildings as well as for high-lift, close-in and remote-lift operations on rooftops and over buildings and factories.

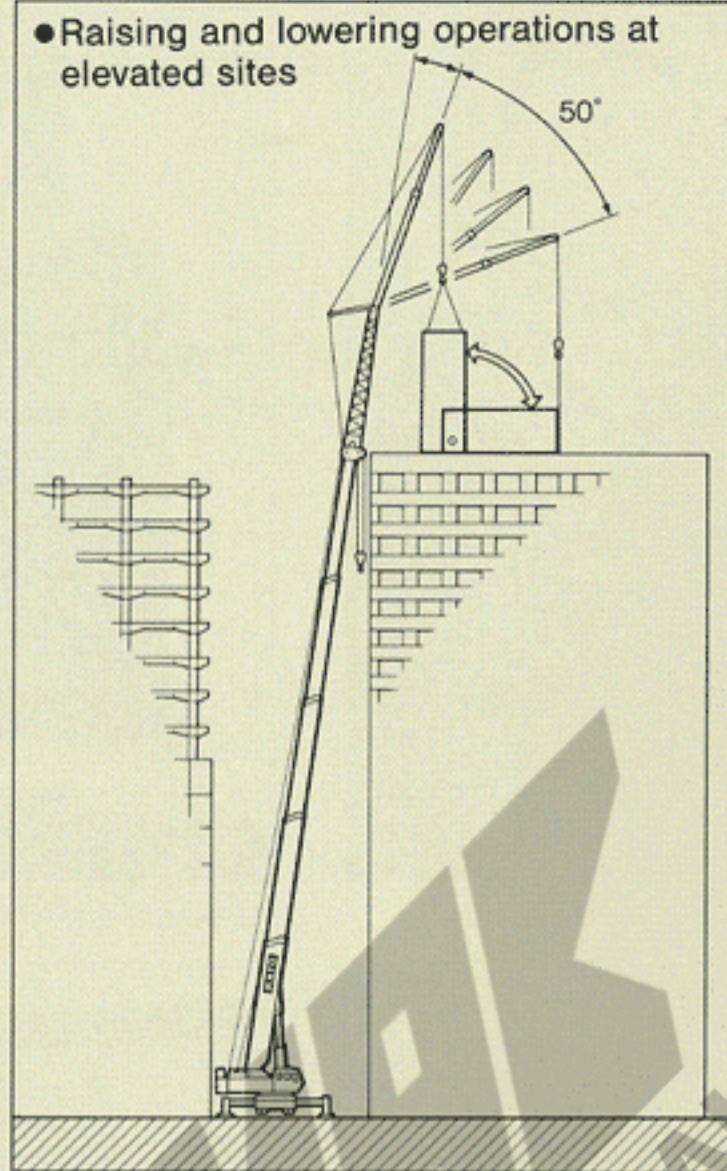


LUFFING JIB

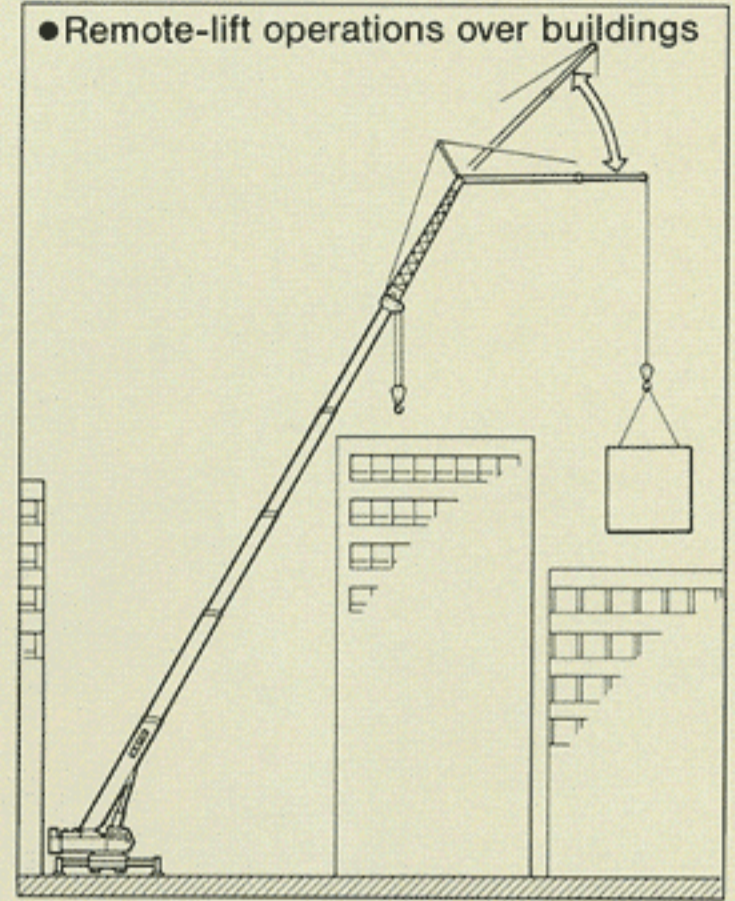
- Close-in operations



- Raising and lowering operations at elevated sites

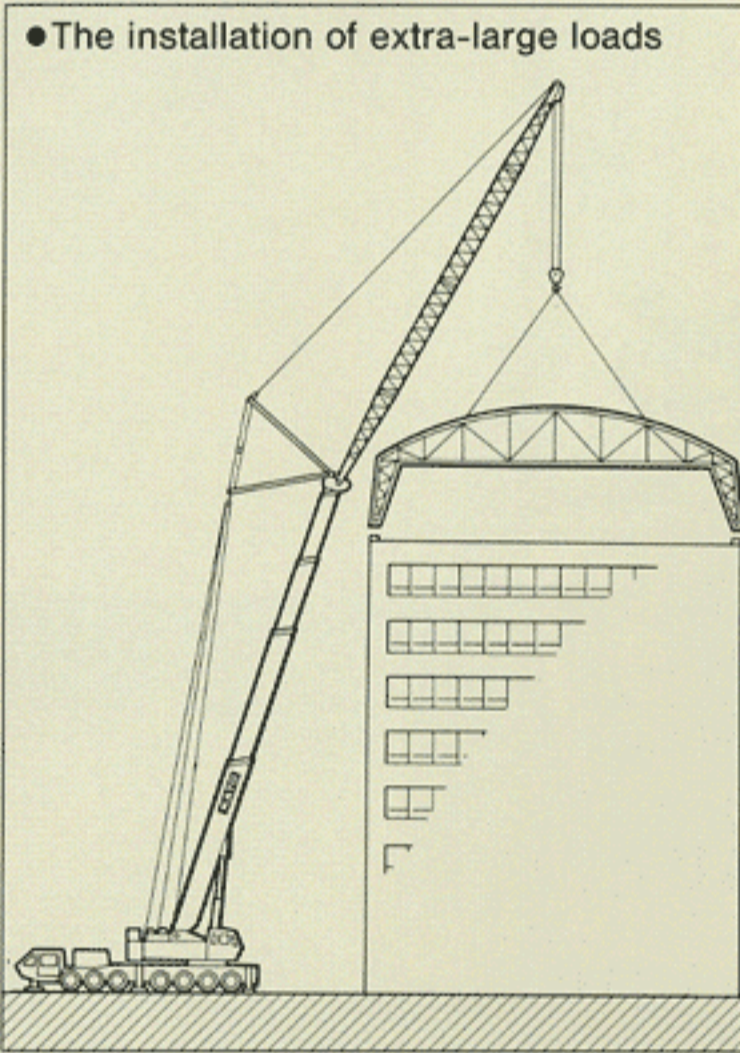


- Remote-lift operations over buildings

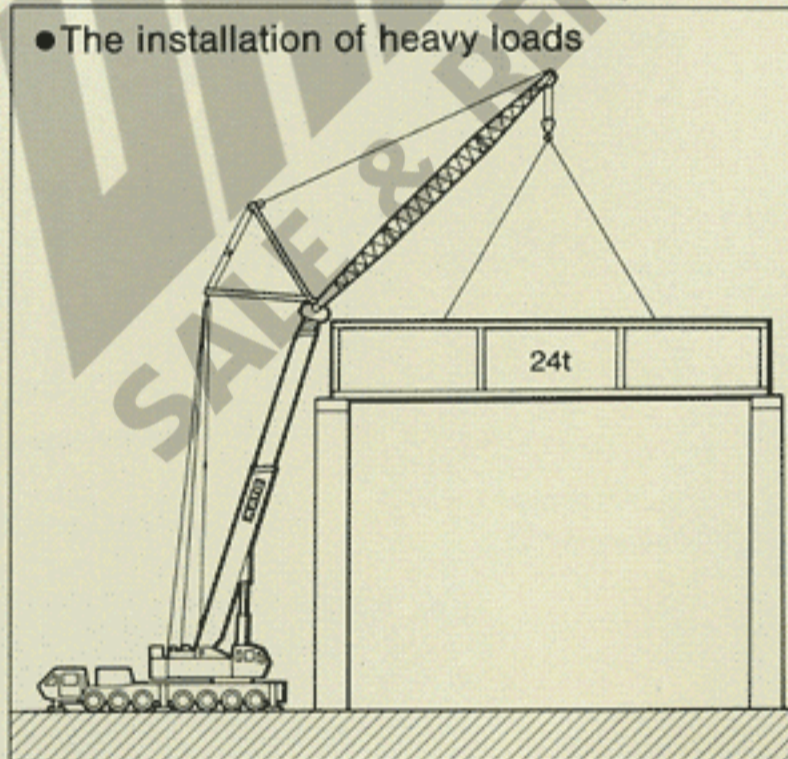


HEAVY-LIFT JIB

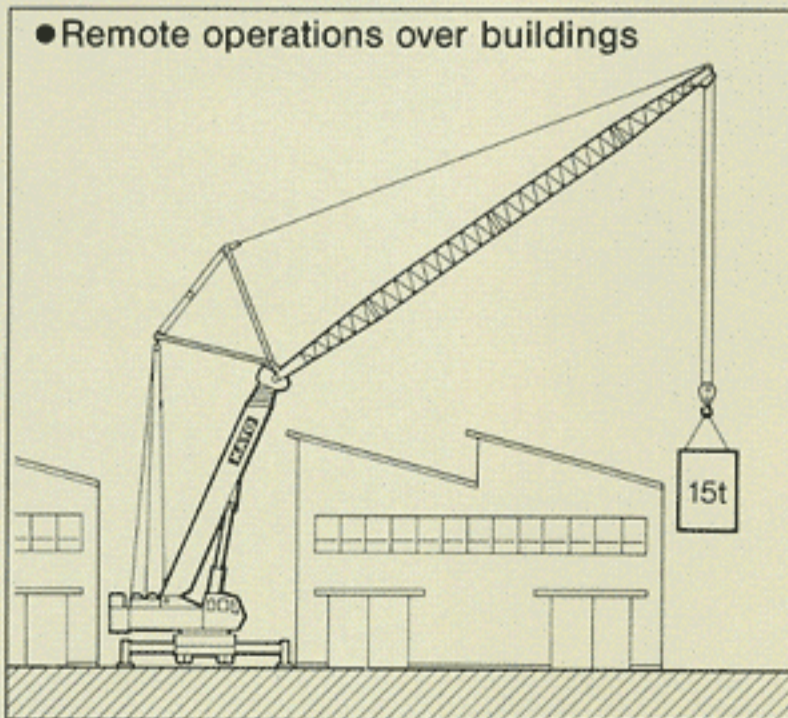
- The installation of extra-large loads



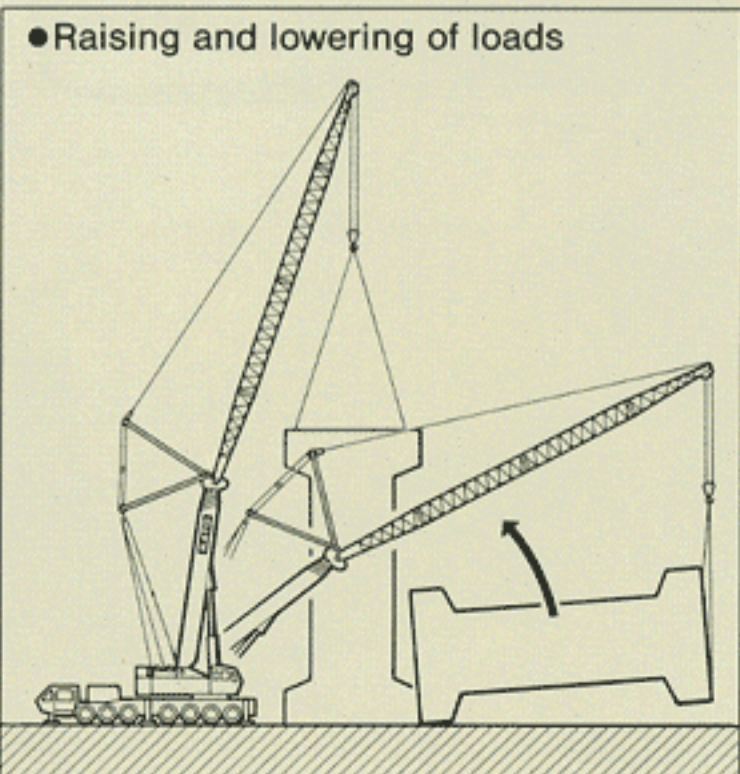
- The installation of heavy loads



- Remote operations over buildings

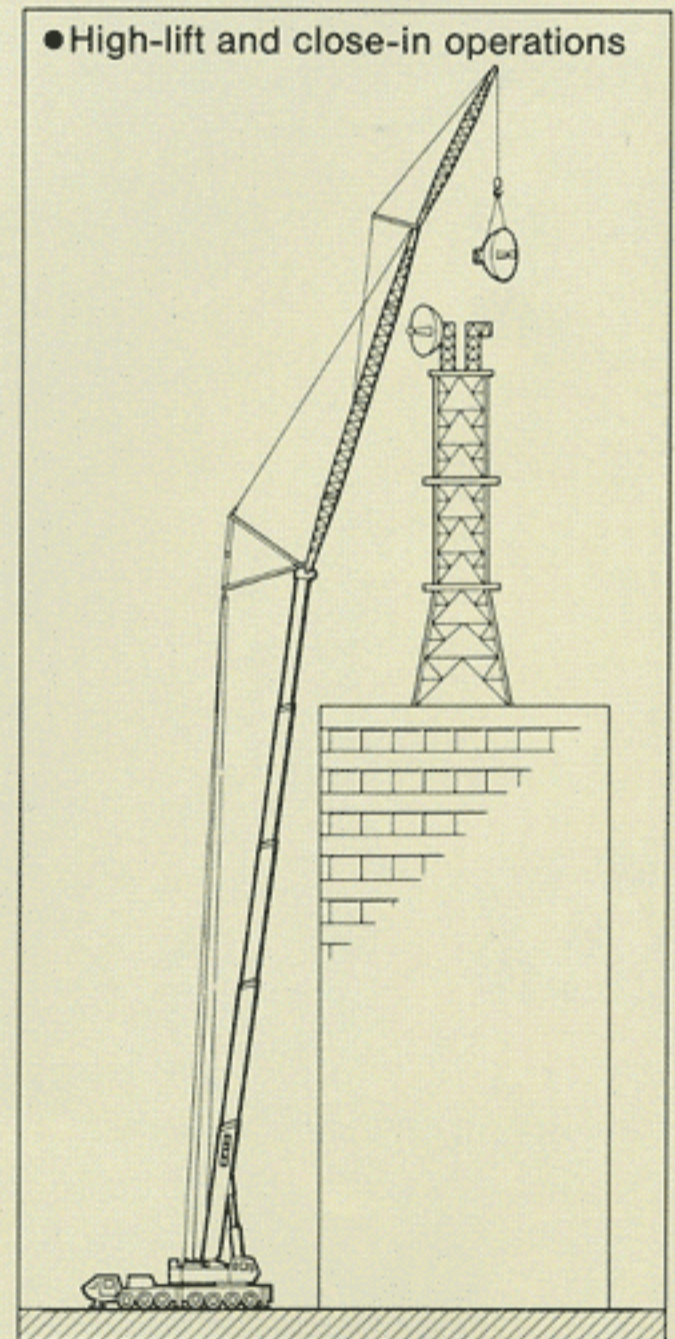


- Raising and lowering of loads



HEAVY-LIFT JIB + EXTENSION JIB

- High-lift and close-in operations



NK-1600

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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KATO

NK-1600

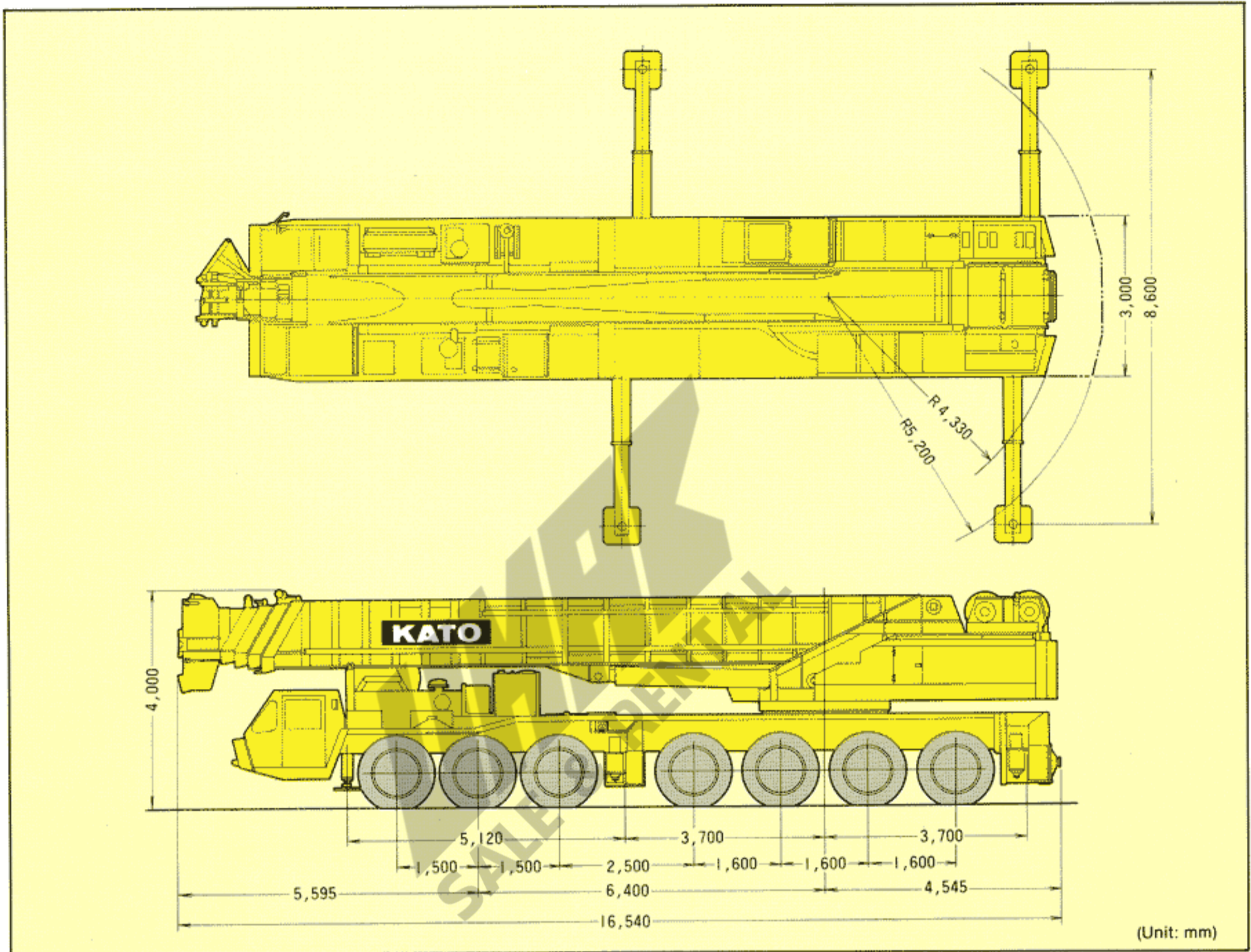
FULLY HYDRAULIC TRUCK CRANE

SPECIFICATION



KATO WORKS CO.,LTD.

DIMENSIONS



(Unit: mm)

CARRIER SPECIFICATIONS

Model: KATO 7200

GENERAL DIMENSIONS

Gross vehicle weight:	approx. 84000 kg	Traveling condition (with main boom and superstructure excluding counterweight)
Overall length:	approx. 16540 mm	
Overall width:	approx. 3000 mm	
Overall height:	approx. 4000 mm	
Wheel base:	6400 mm	
Treads:	1st, 2nd, 3rd, and 4th axle: 2490 mm	
	5th and 6th axle: 2167 mm	
	7th axle: 2502 mm	

Engine

Model: Mitsubishi 8DC9-TL
 Type: 4 cycle, water cooled, V8 with turbocharger and intercooler
 Piston displacement: 16031 cc
 Carrier engine

	horsepower	torque
JIS	430 PS/2200 r.p.m.	160 kgf-m/1400 r.p.m.
	316 kW/2200 r.p.m.	1568 N-m/1400 r.p.m.
DIN	417 PS/2200 r.p.m.	157 kgf-m/1400 r.p.m.
	307 kW/2200 r.p.m.	1537 N-m/1400 r.p.m.
SAE	432 HP/2200 r.p.m.	1162 ft-lbf/1400 r.p.m.
	322 kW/2200 r.p.m.	1575 N-m/1400 r.p.m.

Max. Traveling speed:	77 km/h (at Engine 2,300 r.p.m.)
Gradeability (tan θ):	30 %
Min. turning radius: (center of extreme outer tire)	13.8 m (approx.)
Clutch:	Two dry disc
Transmission:	10 forward & 3 reverse
Axes:	Steering axle: 1st, 2nd, 3rd, 4th, and 7th Driving axle: 5th, 6th, and 7th
Steering:	Power assisted
Suspension:	1st, 2nd, and 3rd axle: Reyco type 4th and 7th axle: Hydropneumatic type 5th and 6th axle: Walking beam type

Brake

Service:	2 circuit air brake
Parking & Emergency:	Spring loaded type
Auxiliary:	Exhaust brake
Electric system:	24 V
Battery:	12 V - 200 AH x 2
Fuel tank capacity:	400 lit.
Driver's cab:	All steel, welded construction, 2 persons, low line type
Tire size:	1st, 2nd, 3rd, 4th and 7th axle: 14.00 - 24 - 24 PR (single) 5th and 6th axle: 14.00 - 24 - 24 PR (dual)

SUPERSTRUCTURE SPECIFICATIONS

Model: NK-1600 Fully Hydraulic Truck Crane

PERFORMANCE

Lifting capacity:	360° full working range with outriggers
	160 ton × 3.2 m 13.6 m Boom
	110 ton × 4.5 m 18.15 m Boom
	100 ton × 5 m 22.7 m Boom
	65 ton × 6 m 31.8 m Boom
	45 ton × 8 m 40.9 m Boom
	30 ton × 11 m 50.0 m Boom
	8 ton × 32 m Rooster sheave
Boom length:	13.6 m (Basic)
	50.0 m (Fully extended)
Max. lift above ground:	51.0 m (With fully extended boom)
Hoisting line speed	
Main winch:	114 m/min. (at 3rd layer)
Auxiliary winch:	114 m/min. (at 3rd layer)
Boom derricking angle:	-2° ~ 82°
Boom derricking time:	80 sec. (-2° ~ 82°)
Slewing speed:	1.4 r.p.m.
Crane engine	
Maker:	Mitsubishi
Model:	8DC9

Upper unit engine (superstructure)

	horsepower	torque
JIS	282 PS/1950 r.p.m.	107 kgf-m/1400 r.p.m.
	207 kW/1950 r.p.m.	1048 N-m/1400 r.p.m.
DIN	266 PS/1950 r.p.m.	101 kgf-m/1400 r.p.m.
	196 kW/1950 r.p.m.	990 N-m/1400 r.p.m.
SAE	279 HP/1950 r.p.m.	773 ft-lbf/1400 r.p.m.
	208 kW/1950 r.p.m.	1047 N-m/1400 r.p.m.

HYDRAULIC SYSTEM

Oil pump:	Variable displacement type 2 section axial piston pump + 3 section gear pump
Hoisting motor:	Variable displacement type axial piston motor
Slewing motor:	Axial piston motor
Control valve:	Multiple, self-return type
Cylinder:	Double acting type
Oil reservoir capacity:	1350 lit.

SUPERSTRUCTURE

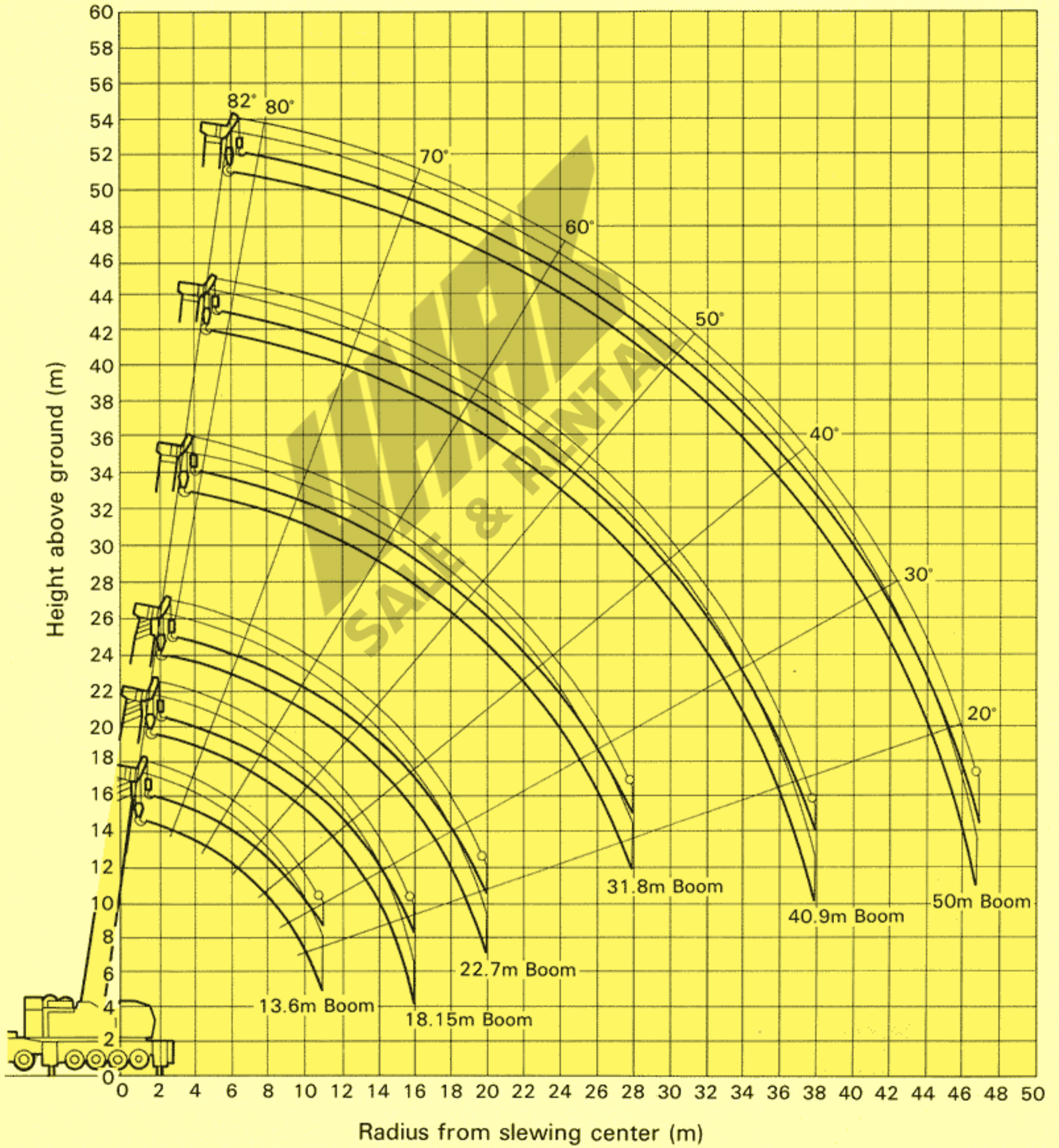
Boom:	5 section, full power
Hoisting system:	Driven by hydraulic motor through planetary gear reduction (High-low two speed system, with automatic brake) Two independent single winches
Slewing system:	Driven by hydraulic motor through planetary gear reduction (with built-in disc brake, Free/lock selector switch)
Slewing bearing:	Ball bearing type
Boom derricking system:	Twin hydraulic cylinders
Boom telescoping system:	Hydraulic cylinders
Outrigger system:	Hydraulic, vertical support type (with front jack)
Outrigger width:	8600 mm (center to center)
Counterweight removal device:	Mechanical linkage type with lock, powered by hydraulic cylinders 37 ton (separate block type)
Counterweight:	
Hoisting wire rope	
Main winch:	24 mm × 350 m
Auxiliary winch:	24 mm × 300 m
Hook block	
160 ton:	No. of parts of line 20 (14+6)
110 ton:	13
50 ton:	6
16 ton:	2
8 ton:	1

SAFETY DEVICES

ACS (Automatic Crane Stopper), Outrigger width automatic detecting system, Slewing position detecting system, Boom falling prevention device, Overhoist prevention device, Drum lock device, Drum hold safety device, Drum turning indicator, Automatic winch brake, Irregular winding prevention device, Hydraulic safety valve, Outrigger lock device, Boom angle indicator, Slewing lock device

MAIN BOOM

WORKING RANGES





RATED LIFTING CAPACITY

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

Counterweight - 37 ton
 Outrigger width - 8.6 m
 Front jack - extended

(Unit: metric ton)

Working radius (m)	360° full range					
	13.6 m Boom	18.15 m Boom	22.7 m Boom	31.8 m Boom	40.9 m Boom	50.0 m Boom
3.2	160.0					
3.5	149.0					
4.0	136.0	110.0				
4.5	123.0	110.0	100.0			
5.0	113.0	106.0	100.0			
6.0	95.5	89.5	84.0	65.0		
7.0	81.0	76.5	72.5	60.0		
8.0	70.0	66.5	63.5	55.0	45.0	
9.0	61.0	58.5	56.0	49.0	41.0	
10.0	54.0	52.0	50.5	44.0	37.0	
11.0	48.5	47.0	45.5	40.0	34.0	30.0
12.0		34.0	41.5	37.0	31.0	28.0
14.0		25.0	34.0	31.5	26.5	24.0
16.0		21.0	28.0	27.5	23.0	21.0
18.0			23.5	24.4	20.4	18.5
20.0			19.1	21.0	18.0	16.5
22.0				17.3	16.3	15.0
24.0				14.4	14.8	13.5
26.0				12.1	13.0	12.5
28.0				10.1	11.0	11.2
30.0					9.3	9.9
32.0					7.8	8.4
34.0					6.6	7.2
36.0					5.6	6.1
38.0					4.7	5.1
40.0						4.2
42.0						3.5
44.0						2.8
46.0						2.2
47.0						2.0

[NOTE]

- 1) The rated lifting capacities are the maximum loads guaranteed on a firm level ground when the outriggers, front jack and axle lock are set properly.
- 2) The rated lifting capacities include the weight of hook block and other lifting equipment. The capacities in the white area are based on the structural strength.
- 3) The working radii given in the table for main boom operation are the actual values including the deflection of the boom. Therefore operate the crane based on the working radius.

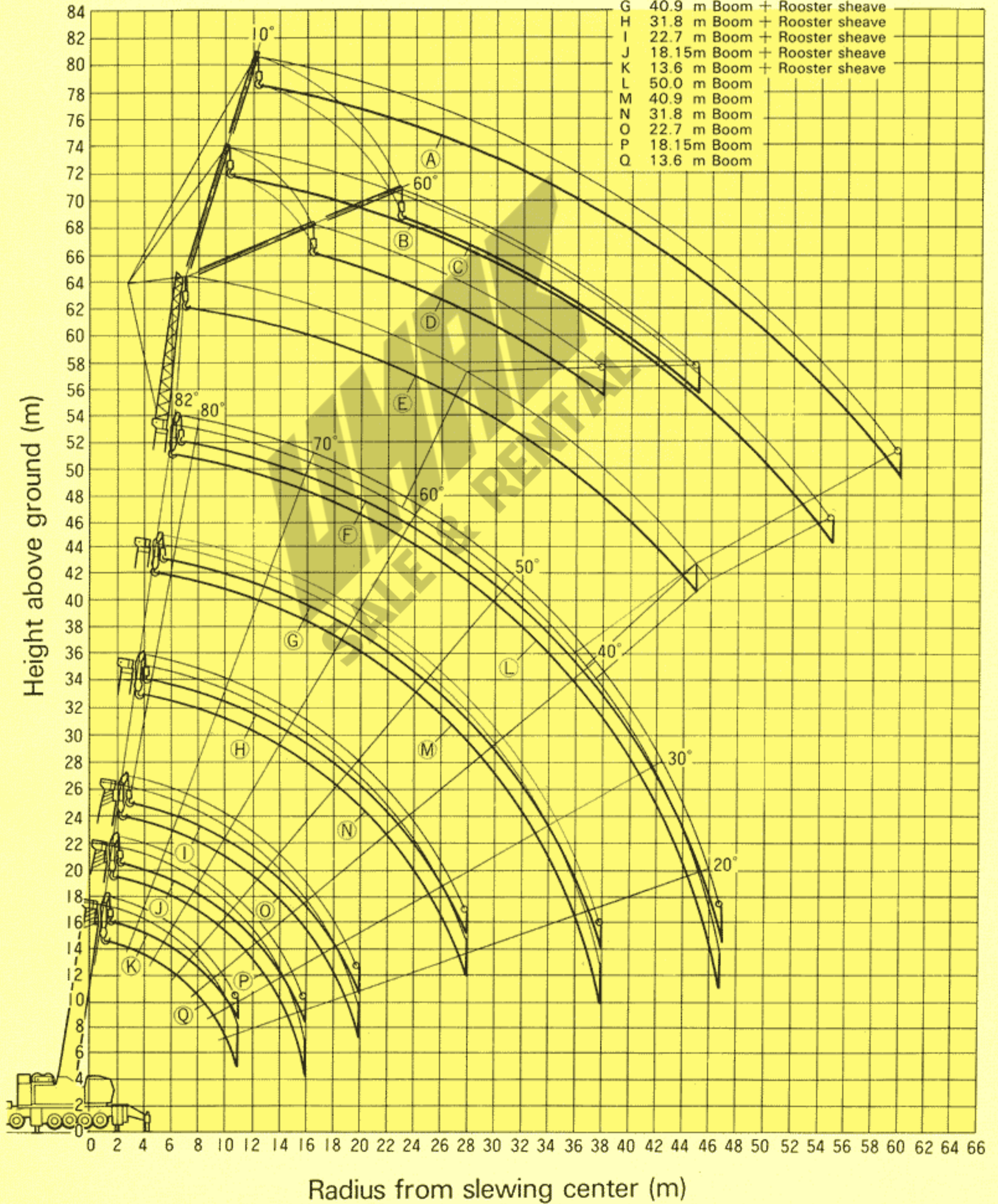
Rated lifting capacity of rooster sheave

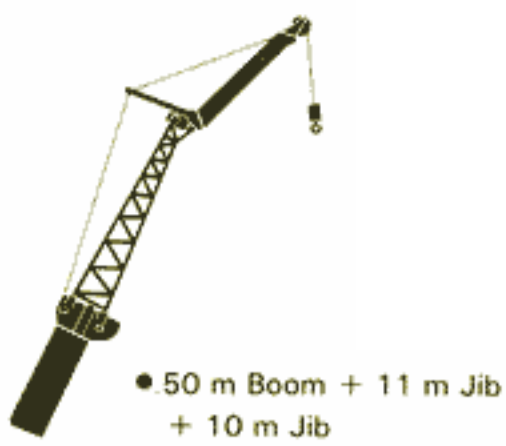
The rated lifting capacities of the rooster sheave are equal to those of main boom subtracted the weight of main hook block, but the maximum rated lifting capacity is 8 ton.

LUFFING JIB

WORKING RANGES

- A 50.0 m Boom + 11m Jib + 17m Jib (offset 10°)
- B 50.0 m Boom + 11m Jib + 10m Jib (offset 10°)
- C 50.0 m Boom + 11m Jib + 17m Jib (offset 60°)
- D 50.0 m Boom + 11m Jib + 10m Jib (offset 60°)
- E 50.0 m Boom + 11m Jib
- F 50.0 m Boom + Rooster sheave
- G 40.9 m Boom + Rooster sheave
- H 31.8 m Boom + Rooster sheave
- I 22.7 m Boom + Rooster sheave
- J 18.15m Boom + Rooster sheave
- K 13.6 m Boom + Rooster sheave
- L 50.0 m Boom
- M 40.9 m Boom
- N 31.8 m Boom
- O 22.7 m Boom
- P 18.15m Boom
- Q 13.6 m Boom





RATED LIFTING CAPACITY

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

Counterweight - 37 ton
Outrigger width - 8.6 m
Front jack - extended

(Unit: metric ton)

■ 50m Boom + 11 m Jib + 10 m Jib

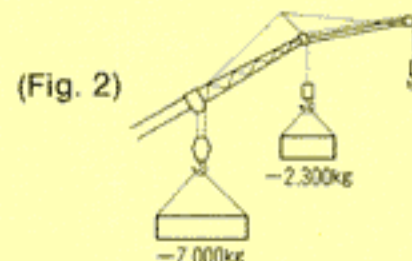
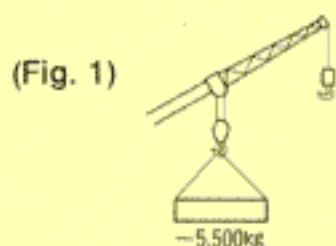
50 m Boom + 11 m Jib + 10 m Jib												
360° full range												
Working radius (m)	Jib angle 10°		Jib angle 20°		Jib angle 30°		Jib angle 40°		Jib angle 50°		Jib angle 60°	
	Boom angle (°)	Load	Boom angle (°)	Load	Boom angle (°)	Load	Boom angle (°)	Load	Boom angle (°)	Load	Boom angle (°)	Load
16	79.0	8.0	79.8	7.0	80.5	6.5						
18	77.0	7.9	78.0	6.9	78.5	6.5	80.0	5.2	80.6	4.5	81.0	3.8
20	75.2	7.5	76.6	6.8	77.5	6.2	78.5	5.2	79.0	4.5	79.5	3.8
22	73.7	7.2	75.0	6.4	75.9	5.9	76.9	5.1	77.4	4.4	77.9	3.8
24	72.0	6.7	73.2	6.0	74.4	5.5	75.3	4.9	76.0	4.3	76.1	3.8
26	70.5	6.2	71.6	5.7	72.7	5.3	73.6	4.8	74.2	4.3	74.5	3.7
28	69.0	5.8	70.0	5.3	71.1	5.0	72.0	4.7	72.5	4.2	72.8	3.7
30	67.0	5.5	68.3	5.0	69.3	4.7	70.2	4.5	70.6	4.1	71.0	3.7
32	65.2	5.0	66.5	4.8	67.6	4.5	68.4	4.3	68.9	4.1	69.1	3.6
34	63.5	4.6	64.7	4.5	65.9	4.3	66.6	4.1	67.0	4.0	67.2	3.6
36	61.7	4.3	62.9	4.2	63.8	4.0	64.7	3.9	65.2	3.8	65.2	3.6
38	59.8	4.0	61.0	3.9	62.0	3.8	62.7	3.7	63.0	3.7	63.2	3.6
40	57.9	3.7	59.1	3.6	60.0	3.5	60.8	3.5	61.1	3.5		
45	52.9	3.2	54.1	3.1	54.8	3.0	55.5	3.0	55.6	3.0		
50	47.2	2.2	48.2	2.3	49.0	2.4	49.4	2.5				
55	40.5	1.1	41.5	1.2	42.3	1.3	42.5	1.3				

■ 50 m Boom + 11 m Jib + 17 m Jib

50 m Boom + 11 m Jib + 17 m Jib												
360° full range												
Working radius (m)	Jib angle 10°		Jib angle 20°		Jib angle 30°		Jib angle 40°		Jib angle 50°		Jib angle 60°	
	Boom angle (°)	Load	Boom angle (°)	Load	Boom angle (°)	Load	Boom angle (°)	Load	Boom angle (°)	Load	Boom angle (°)	Load
16	80.5	5.5										
18	78.8	5.5	80.0	4.5								
20	77.5	5.5	78.5	4.5	80.8	3.7						
22	76.0	5.2	77.5	4.5	79.4	3.7	80.6	3.1				
24	74.6	5.0	76.0	4.3	78.0	3.7	79.1	3.0	79.9	2.4		
26	73.2	4.8	74.6	4.2	76.6	3.5	77.6	2.9	78.4	2.4	79.9	1.8
28	71.7	4.6	73.2	4.1	75.2	3.4	76.0	2.9	77.0	2.3	78.2	1.8
30	70.2	4.4	71.7	3.9	73.8	3.3	74.6	2.8	75.5	2.3	76.5	1.8
32	68.8	4.1	70.2	3.7	72.2	3.2	73.1	2.7	74.0	2.2	74.8	1.8
34	67.2	3.9	68.6	3.5	70.7	3.1	71.6	2.6	72.5	2.2	73.1	1.7
36	65.6	3.7	67.0	3.3	69.1	3.0	69.9	2.6	70.7	2.1	71.4	1.7
38	64.0	3.5	65.4	3.2	67.3	2.9	68.3	2.5	69.1	2.1	69.5	1.7
40	62.0	3.3	63.6	3.0	65.7	2.8	66.5	2.5	67.2	2.1	67.8	1.7
45	57.8	2.8	59.3	2.7	61.3	2.5	62.1	2.4	62.5	2.0	62.7	1.7
50	53.4	2.4	54.6	2.3	56.4	2.3	57.0	2.2	57.6	2.0		
55	48.1	2.0	49.4	2.0	51.1	2.0	51.5	1.9	52.0	1.9		
60	42.2	1.0	43.3	1.3	45.0	1.4	45.1	1.5				

Note

- Refer to lifting capacity tables for luffing jib.
The working radii are based on the values obtained when the boom is fully extended (50 m). Jib operations should be performed on the basis of boom angle only, regardless of boom length when the boom is not fully extended.
- Refer to lifting capacity table for main boom.
When using the main boom with 11 m jib (or luffing jib) installed, 5500 kg (or 7000 kg) plus the weight of hook block and other lifting equipment, etc., should be subtracted from the rated lifting capacities for main boom. (Fig. 1 and 2)
- Refer to lifting capacity tables for luffing jib.
When using 11 m jib with luffing jib installed, 2300 kg plus the weight of hook block and other lifting equipment, etc., should be subtracted from the rated lifting capacities for 11 m jib. (Fig. 2)



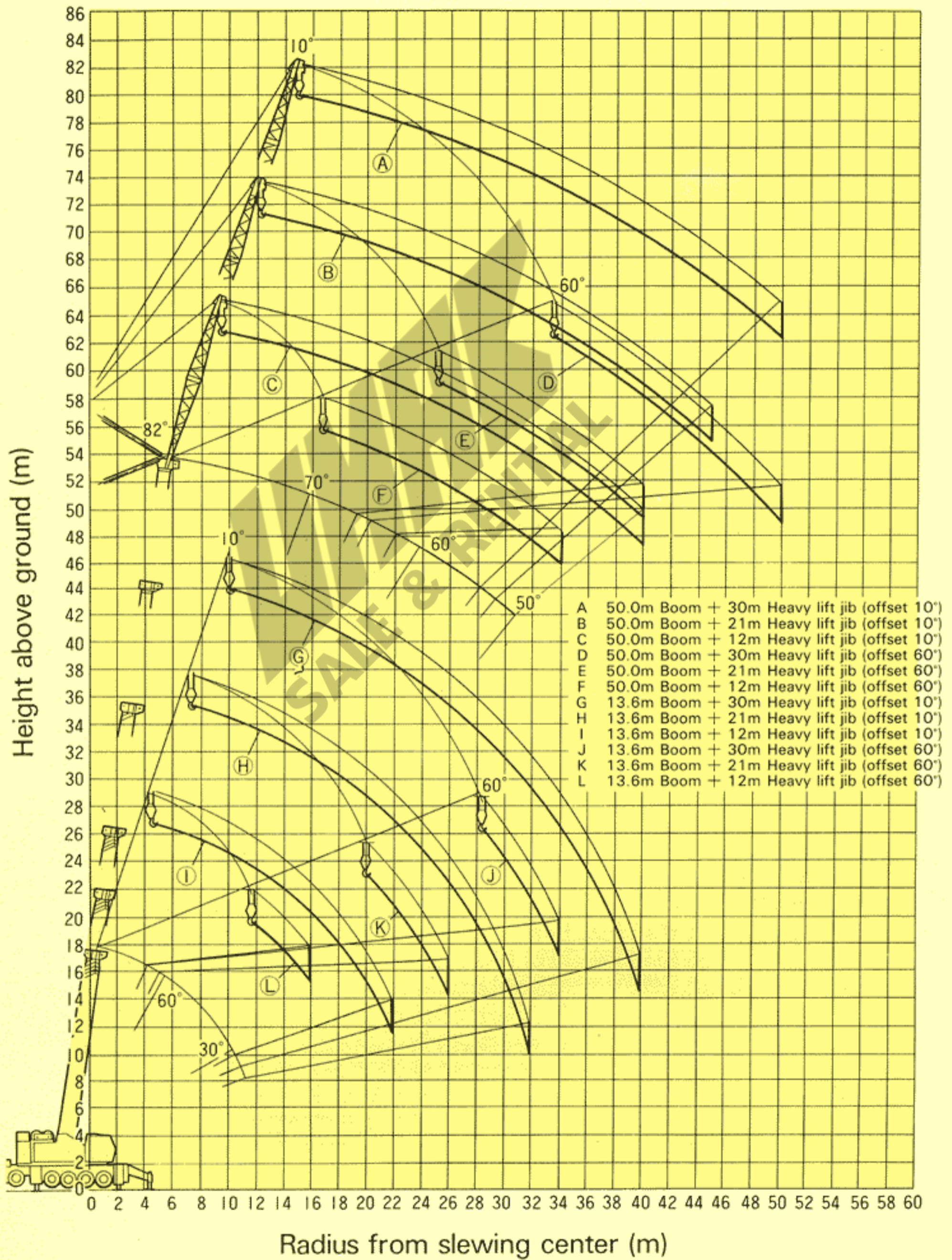
SPECIFICATION OF LUFFING JIB

- Jib length:
11 m
11 m + 10 m
11 m + 17 m
- Jib offset angle:
10° ~ 60°
(Jib angle against main boom)
- Jib offset device:
By double acting hydraulic cylinder

50 m Boom + 11 m Jib		
360° full range		
Working radius (m)	Boom angle (°)	Load
14	77.0	16.0
16	75.1	14.5
18	73.3	12.8
20	71.3	11.5
22	69.1	10.4
24	67.0	9.3
26	64.8	8.5
28	62.8	7.6
30	60.8	6.8
32	58.9	6.0
34	56.3	5.2
36	54.0	4.5
38	51.5	4.0
40	48.8	3.4
45	42.1	2.0

HEAVY LIFT JIB

WORKING RANGES





● 12 m Heavy Lift Jib

RATED LIFTING CAPACITY

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

Counterweight – 37 ton
Outrigger width – 8.6 m
Front jack – extended

(Unit: metric ton)

■ 13.6 m Boom + 12 m Heavy Lift Jib

13.6 m Boom + 12 m Heavy Lift Jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
6.0	75.0				
7.0	75.0				
8.0	71.5	58.2			
9.0	65.5	55.2			
10.0	60.4	52.7	45.0		
11.0	54.2	48.8	43.4		
12.0	49.1	45.2	41.4	35.0	
14.0	40.8	39.4	38.1	33.6	25.0
16.0	34.6	35.0	35.4	31.9	25.0
18.0	29.7	30.2	30.8	30.7	
20.0	25.8	26.1	26.5	26.7	
22.0	22.6	22.6	22.7		

■ 31.8 m Boom + 12 m Heavy Lift Jib

31.8 m Boom + 12 m Heavy Lift Jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
10.0	35.0				
11.0	35.0				
12.0	33.0	29.5			
14.0	29.0	27.5	26.0		
16.0	26.0	26.0	26.0	24.0	
18.0	23.0	23.5	24.0	24.0	24.0
20.0	20.5	21.2	22.0	23.0	24.0
22.0	18.5	19.2	20.0	20.9	21.8
24.0	16.4	17.0	17.6	18.2	18.5
26.0	13.9	14.4	14.9	15.5	15.7
28.0	11.7	12.2	12.7	13.1	
30.0	9.7	10.2	10.7	11.0	
32.0	7.9	8.3	8.7	8.9	
34.0	6.4	6.7	7.0		
36.0	5.1	5.3	5.5		
38.0	3.9	4.0	4.1		
40.0	2.7	2.7			

■ 18.15 m Boom + 12 m Heavy Lift Jib

18.15 m Boom + 12 m Heavy Lift Jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
7.0	57.0				
8.0	57.0				
9.0	57.0	52.5			
10.0	53.0	50.5			
11.0	49.5	48.7	43.4		
12.0	46.0	45.2	41.4	35.0	
14.0	37.7	39.0	38.1	33.6	25.0
16.0	31.5	32.6	33.7	31.9	25.0
18.0	26.5	27.4	28.4	29.4	24.9
20.0	22.6	23.3	24.1	25.0	
22.0	19.3	19.9	20.5	21.0	
24.0	12.0	12.0	12.0		

■ 40.9 m Boom + 12 m Heavy Lift Jib

40.9 m Boom + 12 m Heavy Lift Jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
12.0	16.0				
14.0	16.0	14.5			
16.0	16.0	14.5	13.0		
18.0	15.7	14.3	12.9	11.0	9.5
20.0	15.4	14.0	12.7	11.0	9.5
22.0	14.1	13.3	12.6	11.0	9.5
24.0	12.6	12.5	12.5	11.0	9.5
26.0	11.2	11.8	12.4	11.0	9.5
28.0	10.1	10.7	11.3	11.0	9.5
30.0	9.0	9.5	10.0	10.4	9.5
32.0	8.0	8.4	8.9	9.0	
34.0	6.2	6.7	7.3	7.8	
36.0	5.0	5.4	5.9	6.2	
38.0	3.8	4.2	4.6	4.7	
40.0	2.7	3.0	3.4		

■ 22.7 m Boom + 12 m Heavy Lift Jib

22.7 m Boom + 12 m Heavy Lift Jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
8.0	57.0				
9.0	57.0				
10.0	53.0	50.5			
11.0	49.5	48.7	48.0		
12.0	46.0	46.4	46.9		
14.0	37.7	39.0	40.4	35.0	
16.0	31.5	32.6	33.7	35.0	28.0
18.0	26.5	27.4	28.4	29.4	28.0
20.0	22.6	23.3	24.1	25.0	25.3
22.0	19.3	19.9	20.5	21.0	
24.0	16.2	16.7	17.3	17.8	
26.0	13.7	14.0	14.4	14.7	
28.0	11.5	11.7	12.0		
30.0	9.7	9.7	9.8		
32.0	7.6				

■ 50 m Boom + 12 m Heavy Lift Jib

50 m Boom + 12 m Heavy Lift Jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
14.0	12.0				
16.0	12.0	11.0			
18.0	12.0	11.0	10.0		
20.0	12.0	11.0	10.0	8.8	7.5
22.0	11.7	11.0	10.0	8.8	7.5
24.0	10.4	10.3	9.9	8.8	7.5
26.0	9.4	9.6	9.8	8.8	7.5
28.0	8.3	8.8	9.2	8.8	7.5
30.0	7.4	7.8	8.2	8.7	7.5
32.0	6.6	7.0	7.3	7.8	7.5
34.0	5.9	6.2	6.5	7.0	7.3
36.0	5.3	5.5	5.8	6.2	
38.0	4.5	4.9	5.2	5.5	
40.0	3.4	3.7	4.1	4.4	
45.0			1.7	1.8	



● 21 m Heavy Lift Jib

■ 13.6 m Boom + 21 m Heavy Lift Jib

13.6 m Boom + 21 m Heavy Lift Jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
9.0	45.0				
10.0	45.0				
11.0	44.4				
12.0	43.0				
14.0	38.7	32.8			
16.0	34.3	30.6	27.0		
18.0	30.8	27.9	25.0		
20.0	28.0	25.6	23.2	19.0	
22.0	24.6	23.1	21.7	18.3	14.0
24.0	21.6	21.0	20.5	17.5	13.7
26.0	19.1	19.3	19.5	16.8	13.4
28.0	17.0	17.3	17.7	16.3	
30.0	15.1	15.4	15.7		
32.0	13.0	13.1			

■ 31.8 m Boom + 21 m Heavy Lift Jib

31.8 m Boom + 21 m Heavy Lift Jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
14.0	25.0				
16.0	25.0	22.5			
18.0	22.8	21.4			
20.0	20.6	20.3	20.0		
22.0	18.7	19.3	20.0		
24.0	17.0	17.7	18.5	18.0	
26.0	15.5	16.2	17.0	18.0	15.0
28.0	13.8	14.6	15.5	16.6	15.0
30.0	11.9	12.7	13.6	14.5	15.0
32.0	10.3	11.0	11.8	12.6	13.1
34.0	8.8	9.5	10.3	10.9	11.3
36.0	7.3	8.0	8.8	9.5	
38.0	6.1	6.7	7.3	7.9	
40.0	5.0	5.5	6.1	6.5	
45.0	2.7	2.9	3.2		

■ 18.15 m Boom + 21 m Heavy Lift Jib

18.15 m Boom + 21 m Heavy Lift Jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
10.0	40.0				
11.0	40.0				
12.0	40.0				
14.0	38.0	32.5			
16.0	34.1	30.5	27.0		
18.0	29.1	27.9	25.0		
20.0	25.1	25.3	23.2	19.0	
22.0	21.8	22.9	21.7	18.3	14.0
24.0	18.8	19.8	20.5	17.5	13.7
26.0	16.2	17.1	18.0	16.8	13.4
28.0	14.0	14.8	15.6	16.3	13.4
30.0	12.1	12.8	13.5	14.3	
32.0	10.5	11.1	11.7	12.3	
34.0	3.5	6.9	10.0		

■ 40.9 m Boom + 21 m Heavy Lift Jib

40.9 m Boom + 21 m Heavy Lift Jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
16.0	11.0				
18.0	11.0	9.5			
20.0	11.0	9.5			
22.0	10.5	9.2	8.0		
24.0	10.0	9.0	8.0	6.5	
26.0	9.9	8.9	7.9	6.5	
28.0	9.6	8.7	7.8	6.5	5.4
30.0	8.8	8.2	7.7	6.5	5.4
32.0	8.0	7.8	7.6	6.5	5.4
34.0	7.3	7.4	7.5	6.5	5.4
36.0	6.6	7.0	7.4	6.5	5.4
38.0	5.7	6.3	6.9	6.5	5.4
40.0	4.5	5.2	5.9	6.5	5.4
45.0	2.2	2.7	3.2	3.6	3.7

■ 22.7 m Boom + 21 m Heavy Lift Jib

22.7 m Boom + 21 m Heavy Lift Jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
11.0	40.0				
12.0	40.0				
14.0	38.0	32.5			
16.0	34.1	30.5			
18.0	29.1	28.0	27.0		
20.0	25.1	25.3	25.5		
22.0	21.8	22.9	24.1	20.0	
24.0	18.8	19.8	20.8	20.0	16.0
26.0	16.2	17.1	18.0	19.1	15.6
28.0	14.0	14.8	15.6	16.6	15.2
30.0	12.1	12.8	13.5	14.3	14.8
32.0	10.5	11.1	11.7	12.3	
34.0	9.0	9.5	10.0	10.5	
36.0	7.6	8.0	8.5		
38.0	6.2	6.6	7.0		
40.0	5.2	5.2			

■ 50 m Boom + 21 m Heavy Lift Jib

50 m Boom + 21 m Heavy Lift Jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
16.0	9.5				
18.0	9.2				
20.0	8.8	7.4			
22.0	8.5	7.2	6.0		
24.0	8.3	7.1	6.0		
26.0	8.0	7.0	6.0	5.0	
28.0	7.7	6.8	6.0	5.0	
30.0	6.9	6.4	6.0	5.0	4.0
32.0	6.3	6.1	6.0	5.0	4.0
34.0	5.6	5.8	6.0	5.0	4.0
36.0	5.1	5.5	5.9	5.0	4.0
38.0	4.5	4.9	5.3	5.0	4.0
40.0	4.0	4.4	4.8	5.0	4.0
45.0	2.5	3.0	3.5	4.0	
50.0			1.6	2.0	



● 30 m Heavy Lift Jib

■ 13.6 m Boom + 30 m Heavy Lift Jib

13.6 m Boom + 30 m Heavy Lift Jib 360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
14.0	24.0				
16.0	23.0				
18.0	21.7	19.8			
20.0	20.5	19.2	18.0		
22.0	19.3	18.3	17.4		
24.0	18.2	17.4	16.7		
26.0	17.2	16.6	16.1		
28.0	16.4	15.8	15.2	12.0	
30.0	15.6	14.9	14.3	12.0	9.0
32.0	14.6	14.1	13.6	11.5	9.0
34.0	13.3	13.1	13.0	11.0	8.7
36.0	12.0	12.2	12.4	10.7	
38.0	10.9	11.2	11.5	10.5	
40.0	9.9	10.0	10.2		

■ 40.9 m Boom + 30 m Heavy Lift Jib

40.9 m Boom + 30 m Heavy Lift Jib 360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
18.0	8.0				
20.0	8.0				
22.0	8.0				
24.0	8.0	6.7			
26.0	7.7	6.6			
28.0	7.4	6.4	5.5		
30.0	7.2	6.3	5.5		
32.0	6.9	6.2	5.5	4.2	
34.0	6.4	5.8	5.3	4.2	
36.0	5.8	5.5	5.2	4.2	3.3
38.0	5.3	5.2	5.1	4.2	3.3
40.0	4.9	4.9	5.0	4.2	3.3
45.0	3.8	4.2	4.7	4.1	3.3
50.0	1.8	2.5	3.2	3.9	
55.0				1.7	

■ 18.15 m Boom + 30 m Heavy Lift Jib

18.15 m Boom + 30 m Heavy Lift Jib 360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
14.0	24.0				
16.0	23.0				
18.0	21.7	19.8			
20.0	20.5	19.2			
22.0	19.3	18.3	17.0		
24.0	18.2	17.4	16.7		
26.0	17.2	16.6	16.1		
28.0	15.6	15.7	15.2	12.0	
30.0	13.7	14.5	14.3	12.0	
32.0	12.0	13.0	13.6	11.5	9.0
34.0	10.6	11.4	12.2	11.0	8.7
36.0	9.3	10.1	10.9	10.7	8.6
38.0	8.2	8.9	9.6	10.4	
40.0	7.0	7.7	8.4	9.1	

■ 50 m Boom + 30 m Heavy Lift Jib

50 m Boom + 30 m Heavy Lift Jib 360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
20.0	6.6				
22.0	6.3				
24.0	6.1	5.1			
26.0	5.8	4.9			
28.0	5.6	4.8	4.1		
30.0	5.4	4.7	4.0		
32.0	5.2	4.5	3.9		
34.0	4.9	4.3	3.8	2.8	
36.0	4.4	4.0	3.7	2.8	
38.0	3.9	3.7	3.6	2.8	2.2
40.0	3.5	3.5	3.6	2.8	2.2
45.0	2.6	3.0	3.4	2.8	2.2
50.0	1.6	2.0	2.5	2.8	2.2
55.0				2.0	

■ 22.7 m Boom + 30 m Heavy Lift Jib

22.7 m Boom + 30 m Heavy Lift Jib 360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
14.0	24.0				
16.0	23.5				
18.0	23.0				
20.0	21.6	19.3			
22.0	20.3	18.6			
24.0	19.2	18.1	17.0		
26.0	17.8	17.2	16.6		
28.0	15.6	15.7	15.9	14.0	
30.0	13.7	14.5	15.3	13.9	
32.0	12.0	13.0	14.0	13.1	10.0
34.0	10.6	11.4	12.2	12.5	10.0
36.0	9.3	10.1	10.9	11.8	10.0
38.0	8.2	8.9	9.6	10.4	9.8
40.0	7.0	7.7	8.4	9.1	
45.0	4.6	5.0	5.5		
50.0	2.6				

■ 31.8 m Boom + 30 m Heavy Lift Jib

31.8 m Boom + 30 m Heavy Lift Jib 360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
16.0	16.0				
18.0	16.0				
20.0	16.0				
22.0	16.0	16.0			
24.0	16.0	16.0			
26.0	14.5	15.2	16.0		
28.0	13.2	14.0	14.8		
30.0	12.1	12.8	13.6	13.0	
32.0	11.2	11.8	12.5	13.0	
34.0	10.1	10.8	11.6	12.7	10.0
36.0	8.7	9.6	10.6	11.7	10.0
38.0	7.5	8.4	9.3	10.3	10.0
40.0	6.3	7.2	8.1	9.1	9.7
45.0	4.0	4.7	5.4	6.2	
50.0	2.1	2.6	3.1	3.5	

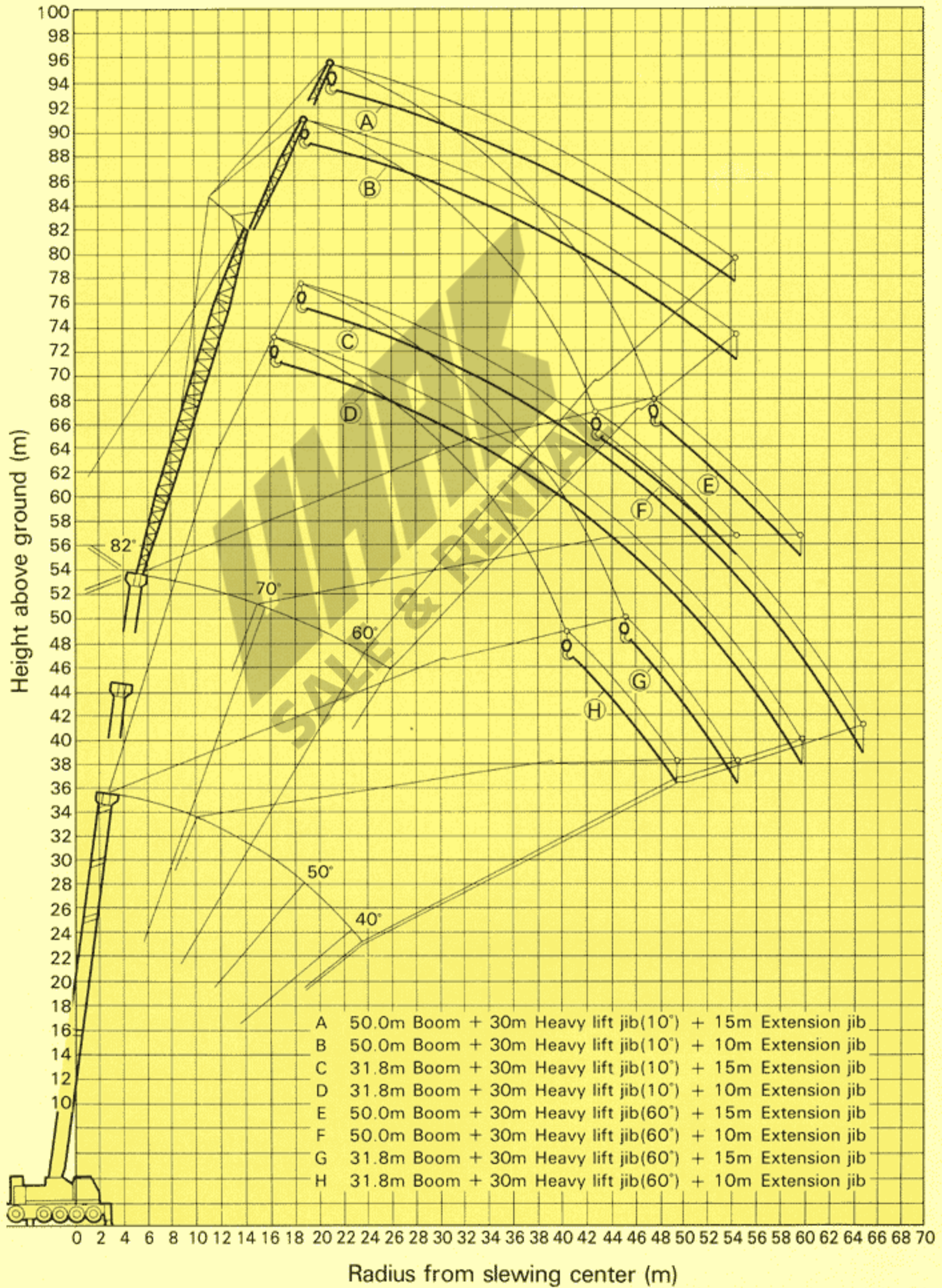
SPECIFICATION OF HEAVY LIFT JIB

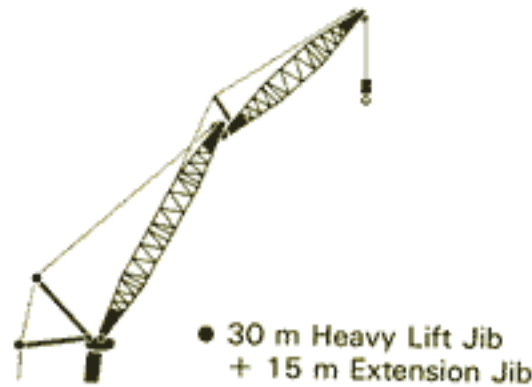
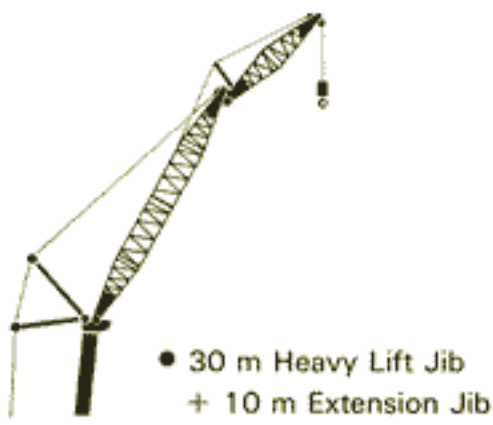
- Jib length: 12 m, 21 m, 30m
- Jib offset angle: 10° ~ 60°
(Jib angle against main boom)
- Jib offset device: By auxiliary winch
- Jib back stopper: By double acting hydraulic cylinder

Max. lifting capacities			
Boom length (m)	Jib length (m)	Lifting load (ton)	Working radius (m)
13.6	12	75.0	7.0
	21	45.0	10.0
	30	24.0	14.0
18.15	12	57.0	9.0
	21	40.0	12.0
	30	24.0	14.0
22.7	12	57.0	9.0
	21	40.0	12.0
	30	24.0	14.0
31.8	12	35.0	11.0
	21	25.0	16.0
	30	16.0	24.0
40.9	12	16.0	16.0
	21	11.0	20.0
	30	8.0	24.0
50.0	12	12.0	20.0
	21	9.5	16.0
	30	6.6	20.0

EXTENSION JIB

WORKING RANGES





RATED LIFTING CAPACITY

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

Counterweight – 37 ton
Outrigger width – 8.6 m
Front jack – extended

(Unit: metric ton)

■ 31.8 m Boom + 30 m Heavy lift jib + 10 m Extension jib

31.8 m Boom + 30 m Heavy lift jib + 10 m Extension jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
20	7.50				
25	7.50	7.00			
30	7.50	7.00			
35	7.50	7.00	6.50		
40	7.50	6.70	6.50	5.50	
45	6.10	6.35	5.80	5.50	5.00
50	4.70	5.30	5.10	5.05	5.00
55	3.30	3.95	4.40	4.60	
60	1.90	2.40	2.70		

■ 40.9 m Boom + 30 m Heavy lift jib + 15 m Extension jib

40.9 m Boom + 30 m Heavy lift jib + 15 m Extension jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
25	4.00				
30	4.00	3.50			
35	4.00	3.50			
40	4.00	3.50	3.00		
45	4.00	3.40	3.00	2.50	
50	3.20	3.30	2.80	2.35	1.60
55	2.40	2.85	2.60	2.20	1.60
60	1.60	2.05	2.40	2.05	
65		1.25	1.50	1.90	

■ 40.9 m Boom + 30 m Heavy lift jib + 10 m Extension jib

40.9 m Boom + 30 m Heavy lift jib + 10 m Extension jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
25	5.20				
30	5.20	4.85			
35	5.20	4.85	4.50		
40	5.20	4.60	4.50	3.40	
45	4.20	4.40	4.00	3.10	2.00
50	3.20	3.65	3.50	2.80	2.00
55	2.20	2.60	3.00	2.50	
60	1.20	1.55	1.80	2.20	

■ 50 m Boom + 30 m Heavy lift jib + 15 m Extension jib

50 m Boom + 30 m Heavy lift jib + 15 m Extension jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
25	2.00				
30	2.00				
35	2.00	2.00			
40	2.00	2.00	2.00		
45	2.00	1.90	2.00	1.50	
50	1.60	1.80	1.80	1.50	1.00
55	1.20	1.50	1.60	1.50	1.00
60		1.00	1.40	1.50	1.00
65				1.50	

■ 50 m Boom + 30 m Heavy lift jib + 10 m Extension jib

50 m Boom + 30 m Heavy lift jib + 10 m Extension jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
25	2.50				
30	2.50	2.50			
35	2.50	2.50	2.50		
40	2.50	2.50	2.50	1.60	
45	2.50	2.20	2.20	1.60	1.10
50	1.80	2.10	1.90	1.60	1.10
55	1.10	1.45	1.60	1.60	1.10
60			1.00	1.60	
65				1.0	

■ 31.8 m Boom + 30 m Heavy lift jib + 15 m Extension jib

31.8 m Boom + 30 m Heavy lift jib + 15 m Extension jib					
360° full range					
Working radius (m)	Jib angle 10°	Jib angle 20°	Jib angle 30°	Jib angle 45°	Jib angle 60°
25	5.20	4.55			
30	5.20	4.55			
35	5.20	4.55	3.90		
40	5.20	4.55	3.90	3.60	
45	4.70	4.45	3.90	3.60	3.20
50	4.20	4.15	3.70	3.40	3.20
55	3.70	3.55	3.50	3.20	3.20
60	2.60	3.00	3.30	3.00	
65	1.50	1.85	2.10		

SPECIFICATION OF EXTENSION JIB

- Jib length: 30m Heavy lift jib + 10m, 15m
- Jib offset angle: 10° ~ 60°
(Heavy lift jib) (Heavy lift jib angle against main boom)
- Jib offset device: By auxiliary winch
(Heavy lift jib)
- Extension jib is attached 30m heavy lift jib and used with main boom extended to 31.8m or longer.

NK-1600

FULLY HYDRAULIC TRUCK CRANE

WMAK
SALE & RENTAL

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

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QUALITY & EXPERIENCE
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