

# NK-800

## FULLY HYDRAULIC TRUCK CRANE

- Maximum rated lifting capacity : 80t ● Maximum boom length : 44m
- Maximum jib length : 15m
- Maximum lifting height : 44.0m(boom), 59.0m(44m boom+15m jib offset 5°)

**KATO**



## **COMBINING LIFTING POWER, RELIABILITY AND VERSATILITY-THE KATO NK-800**

Powerful, reliable, efficient, the KATO NK-800 is a tried and tested workhorse for numerous tasks in construction and freight handling.

Built by KATO, the world renowned pioneer of truck cranes, this 80 ton mobile hydraulic crane benefits from years of experience in crane design.

As well as mechanical efficiency, it boasts comprehensive safety features and an operator-friendly environment.



# ALLROUND HIGH PERFORMANCE

## STURDY 5 SECTION BOOM

The "Fullpower" boom system allows extension of all five sections of the robust boom, through the use of a single lever.

## MAXIMUM 59.0m

NK-800's 44.0m main boom is the longest in its class. With the addition of the 2 section 15.0m fly jib, 59.0m boom length and the maximum lifting height are attained.

## TOUGH LIGHT WEIGHT BOOM

This exceptional boom is strong, durable and light weight. Its well balanced, superior design with high tension steel plates makes it easy to handle for even the trickiest of jobs.

## 5° and 30° OFFSET - GREATER WORKING RANGE

In addition to the 5° offset angle, the NK-800 jib can also be set at 30°. To change the offset angle, pins for the tension rod are simply removed and replaced. Thus, access to restricted high level sites is greatly improved.

## SAFETY & EFFICIENCY

KATO's ACS moment limiter prevents overload, computing the safety limits and keeping the crane within them at all boom lengths and angles.

## ROOSTER SHEAVE CUTS JOB TIME

For lifting or lowering light weight loads with the maximum efficiency, the rooster sheave takes care of it. The rooster sheave is set in a matter of moments by a simple manual operation.



# FULL RANGE OF SAFETY DEVICES

## PLEASANT WORKING ENVIRONMENT

The spacious and comfortable cab provides pleasant working conditions, reducing operator fatigue. Large windows give good allround visibility and a large wiper for the roof window enables crane work regardless of the weather.

## RELIABLE VARIABLE SPEED WINCH OPERATION WITH AUTOMATIC BRAKING

Great efficiency can be attained in switching smoothly between low and high speed operation and free-fall. The linked hydraulic circuit gives stepless speed control as desired. The fail-safe automatic brake prevents accidents resulting from incorrect operation, when using either winch.

## LONG-LIVED DRUM MECHANISM

The grooved drum and an irregular-winding prevention device work in concert to give the wire rope a longer life span.

## STABLE, SPREADS THE LOAD

The NK-800's six-axle carrier distributes its weight more evenly. Its low centre of gravity provides stability at work and when travelling.



## SIMULTANEOUS OPERATION FOR ALL FUNCTIONS

The NK-800 utilizes a 3 section, gear type, hydraulic pump to extend/retract, derrick/lower the boom, slew the crane and to hoist/lower. This capacity for simultaneous operation greatly increases speed and efficiency.

## AUTOMATIC SEVEN-POINT DETECTION

The advanced ACS Moment Limiter is a fully automatic overload prevention device incorporating calculation functions based on the latest electronic know-how. It provides precise output on up to seven safety factors: Safety level (total moment), boom angle, working radius, boom length, critical load, actual load and maximum hook lift. These factors are displayed on a graphic display panel. This arrangement permits easy readout without eye fatigue and facilitates a constant and accurate appraisal of changes in the safety factors, thereby enhancing the safety of crane operation.

## CONSTANT FIVE-POINT DISPLAY OF OPERATING CONDITION

● The ACS has digital displays that show safety level, boom angle, boom length, working radius and critical load at all times, without troublesome button operation. For further safety the display of safety level is color-zoned to enable the operator to take in the condition of the load at a glance.

● **Protection against breakdowns and malfunctions...**For double protection in the unlikely event of a malfunction in the ACS Moment Limiter or any other problems, a trouble indicator has been provided to generate an emergency signal in the appropriate display to warn the operator.



# STABLE & DURABLE

## 200PS DIESEL ENGINE

A tough, durable 200PS engine is separately mounted, exclusively for crane use.

This engine preserves power even during extended periods of operation with heavy loads.

## SMOOTH SLEWING

The unique brake valve on the slewing motor cushions the shocks involved in inching and prevents any sudden jolts due to misoperation of levers, while a powerful disc brake can be relied on to safely bring slewing motion to a smooth stop.



## WIDE & STABLE OUTRIGGERS 7.6m !

A 7.6m span gives excellent stability and variable vertical height can keep the crane on the level even on a slope or uneven site.

The front jack allows the NK-800 to operate at full capacity over 360°.



# CRANE SPECIFICATIONS

Name and type KATO FULLY HYDRAULIC TRUCK CRANE NK-800

## Performance

Crane capacity:	80.0t×3.5m 12m boom with outriggers 360° 45.0t×5.3m 18m boom with outriggers 360° 35.0t×5.4m 24m boom with outriggers 360° 27.0t×5.8m 30m boom with outriggers 360° 22.0t×6.9m 36m boom with outriggers 360° 18.0t×7.9m 40m boom with outriggers 360° 12.0t×11.3m 44m boom with outriggers 360° 6.0t Rooster sheave with outriggers 360° 6.0t×11.0m 44m boom+9.5m jib (offset 5°) with outriggers 360° 2.5t×15.0m 44m boom+9.5m jib (offset 30°) with outriggers 360° 4.0t×13.0m 44m boom+15m jib (offset 5°) with outriggers 360° 1.3t×18.6m 44m boom+15m jib (offset 30°) with outriggers 360° 15.0t×3.5m 12m boom without outriggers 360°
Boom length:	Basic 12m Maximum 44m (5 section)
Jib length:	9.5m—15m (2 section)
Max lifting height:	44.0m (boom) 59.0m (44m boom+15m jib offset 5°) 56.0m (44m boom+15m jib offset 30°)
Main hoisting line speed:	High 108m/min Low 54m/min (1st layer)
Auxiliary hoisting line speed:	High 108m/min Low 54m/min (1st layer)
Main hook hoisting speed:	High 9m/min Low 4.5m/min (1st layer) Parts of line 12
Auxiliary hook hoisting speed:	High 108m/min Low 54m/min (1st layer) Parts of line 1
Boom derricking angle:	-2°~82°
Boom derricking time:	High 64sec. Low 125sec. (0°~82°)
Boom telescoping speed (extension):	0.18m/sec. (12m~36m)
Slewing speed:	1.6rpm

## Engine

Maker:	Mitsubishi
Model:	8DC8
Type:	4 cycle, water cooled, diesel
Number of cylinders:	8-90°V
piston displacement:	14888cc
Max output horsepower:	200PS/2000rpm 147KW/2000rpm
Max. output torque	80kg·m/1400rpm 784N·m/1400rpm

Note. The output is in accordance with JIS D 1005, 1956. Rated power output guaranteed within 5% at standard ambient condition.

## Hydraulic System

Hydraulic pump:	3 section gear type
Hoisting motor:	Axial plunger type
Slewing motor:	Radial piston type
Control valve:	Multiple, automatic return type
Cylinder:	Double acting type

## Superstructure System

Hoisting device:	Hydraulic motor drive, spur gear reduction type (with free fall device and automatic brake)
Slewing device:	Hydraulic motor drive, planetary gear reduction type, installed disc brake
Slewing circle:	Ball bearing type
Boom derricking device:	Hydraulic cylinder, direct pushing type
Boom extension/retraction device:	Hydraulic cylinder
Outrigger device:	Hydraulic cylinder, vertical support type

## Hoisting Rope

Main:	φ22 × 240m U4 × SeS(39) Non-rotating type
Auxiliary:	φ22 × 130m U4 × SeS(39) Non-rotating type

## Safety Device

Microcomputer type ACS fully automatic overload protection device (Moment Limiter), Boom falling prevention device, Overhoist prevention device, Drum locking device, Drum turning indicator, Automatic winch brake, Irregular winding prevention device, Hydraulic safety valve, Outrigger locking device, Slewing lock device.

NOTE \*Speed: Subject to no load.

# CARRIER SPECIFICATIONS

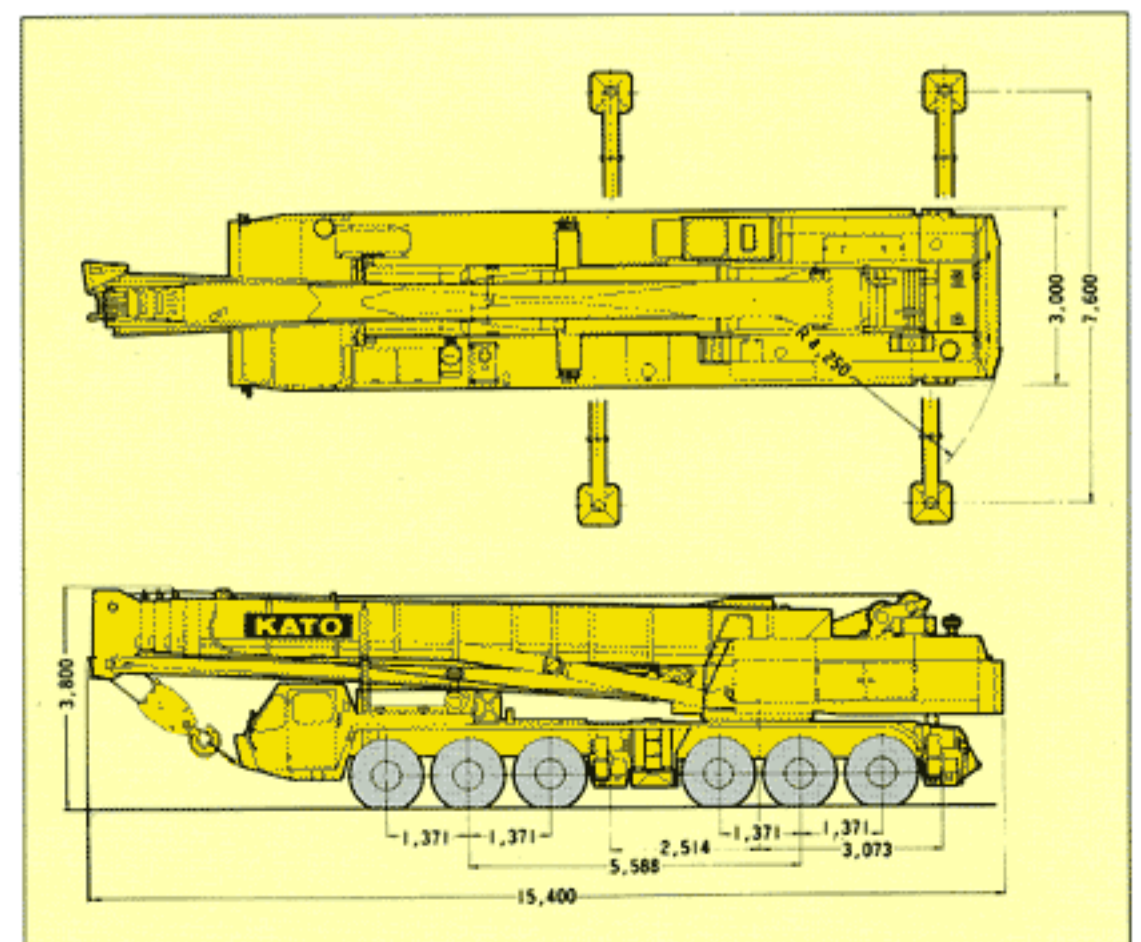
Maximum traveling speed	: 55km/h
Gradeability (tanθ)	: 30%(computed @G.V.W.=60,100kg)
Minimum turning radius (center of extreme outer tire)	: 15.4m

## General dimensions

Overall length	: approx. 15400mm
Overall width	: approx. 3000mm
Overall height	: approx. 3800mm
Wheel base	: 5588mm
Treads;	Front : 2540mm
Rear	: 2159mm
Center to center of extended outriggers	: 7600mm
Gross weight	: approx. 60100kg
Front	: approx. 24170kg
Rear	: approx. 35930kg

## Carrier

Maker	: KATO
Model	: 12680
Drive system	: 12 × 6
Engine	
Maker	: Mitsubishi
Model	: 8DC9-1A
Type	: 4 cycle, water cooled, diesel
Number of cylinders	: 8-90°V
Piston displacement	: 16031cc
Max. output horsepower	: 320PS/2200rpm 235KW/2200rpm
Max. output torque	: 110kg·m/1400rpm 1078N·m/1400rpm
Note: The output is in accordance with JIS D 1004, 1976. Rated power output guaranteed within 5% of standard ambient condition.	
Clutch	: 2 dry, plate, hydraulic control with air booster
Transmission	: 9 forward & 2 reverse speed
Axle	
Front	: Reverse "ELLIOT" type
Rear	: Full floating type
Steering	: Left hand steering with power booster
Suspension:	
Front	: Underslung tridem walking beams and torque rods
Rear	: Underslung tridem walking beams and torque rods
Brake	
Service	: 2 circuit air brake, 12 wheels internal expanding type
Parking	: Spring loaded brake
Auxiliary	: Exhaust brake
Electric system	: 24V
Battery	: 12V-200AH × 2
Fuel tank capacity	: 300 lit.
Driver's cab	: All steel welded construction, 2 persons, low line type
Tyre size	
Front	: 14.00-20-18PR
Rear	: 14.00-20-18PR



# RATED LIFTING CAPACITY

Based on [ \*BS 1757 : 1986  
\*DIN 15019-2

(in metric ton)

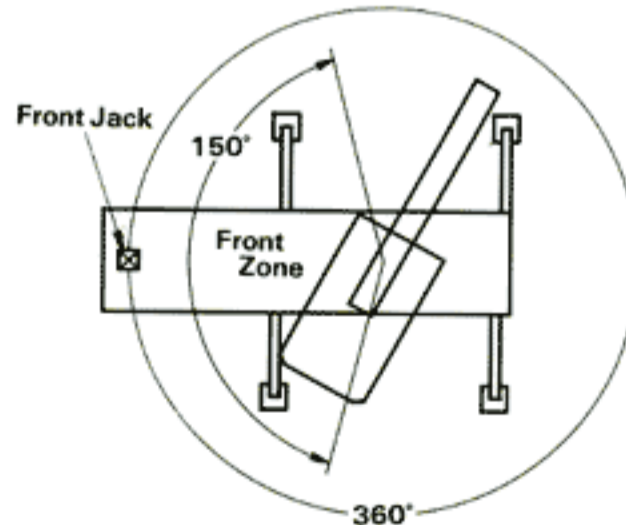
Working radius (m)	Outriggers fully extended with front jack - 360° full range Outriggers fully extended without front jack - over side and over rear							Without outriggers 360° full range 12m Boom
	12m Boom	18m Boom	24m Boom	30m Boom	36m Boom	40m Boom	44m Boom	
2.5	80.0	45.0						15.0
3.0	80.0	45.0	35.0					15.0
3.5	80.0	45.0	35.0					15.0
4.0	70.0	45.0	35.0	27.0				11.7
4.5	62.0	45.0	35.0	27.0				9.5
5.0	56.0	45.0	35.0	27.0				8.0
5.3	52.0	45.0	35.0	27.0				7.2
5.4	51.0	44.5	35.0	27.0	22.0			7.0
5.8	47.0	41.8	33.5	27.0	22.0			6.2
6.0	45.0	40.0	32.5	26.3	22.0			5.8
6.5	41.0	36.9	30.5	24.8	22.0	18.0		5.0
6.9	38.0	34.6	29.0	23.8	22.0	18.0		4.4
7.0	37.1	34.2	28.6	23.5	21.8	18.0		4.3
7.9	31.5	30.5	25.5	21.3	20.1	18.0	12.0	3.3
8.5	28.6	27.5	24.0	20.1	19.0	17.1	12.0	2.7
9.5	24.0	23.5	21.5	18.2	17.2	15.7	12.0	2.0
10.0	22.0	21.7	20.4	17.4	16.4	15.1	12.0	1.7
11.0		18.8	18.0	15.9	15.0	14.0	12.0	
11.3		18.0	17.4	15.4	14.6	13.6	12.0	
12.0		16.1	15.9	14.5	13.8	12.8	11.3	
13.0		14.0	14.0	12.6	12.7	11.7	10.5	
14.0		12.0	12.2	11.3	11.2	10.8	9.7	
15.0		10.5	10.7	10.1	10.0	9.8	9.0	
16.0			9.4	9.1	9.0	8.9	8.4	
18.0			7.2	7.1	7.1	7.3	7.4	
20.0			5.5	5.5	5.6	6.0	6.2	
22.0				4.3	4.4	4.8	5.1	
23.0				3.7	3.8	4.3	4.6	
24.0					3.3	3.8	4.2	
26.0					2.4	3.0	3.3	
28.0						2.2	2.6	
30.0						1.6	2.0	
31.0							1.7	
Standard hook	for 80 ton			for 35 ton				
Hook weight	1000 kg			500 kg				
Parts of line	12	8	6			4		
Min. boom angle				25°	35°	40°		

(in metric ton)

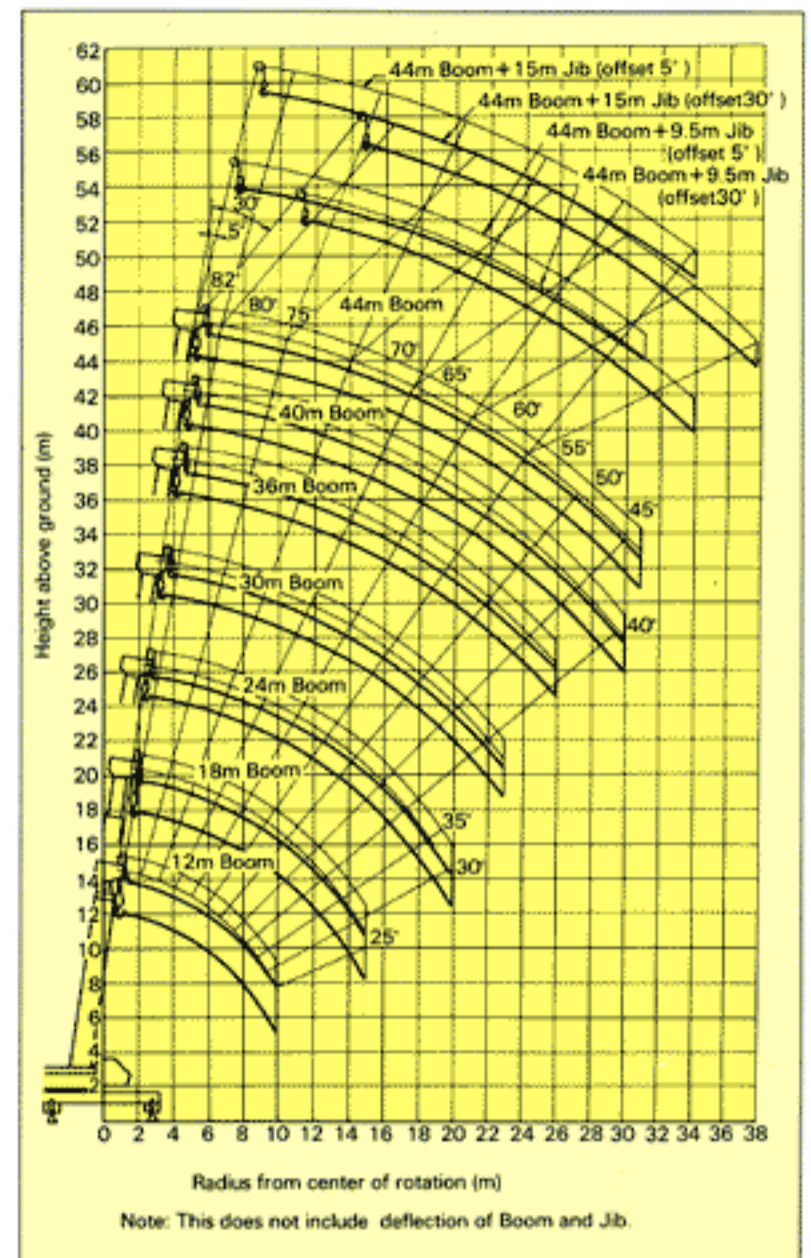
Boom angle (°)	Outriggers fully extended with front jack - 360° full range Outriggers fully extended without front jack - over side and over rear							
	Offset 5°				Offset 30°			
	44m Boom + 9.5m jib		44m Boom + 15m jib		44m Boom + 9.5m jib		44m Boom + 15m jib	
Working radius(m)	Load (t)	Working radius(m)	Load (t)	Working radius(m)	Load (t)	Working radius(m)	Load (t)	
80.4	11.00	6.00	11.50	4.00	14.50	2.50	18.00	1.30
80.0	11.45	5.80	13.00	4.00	15.00	2.50	18.60	1.30
78.0	13.70	4.95	15.25	3.60	17.10	2.35	20.50	1.20
76.0	15.70	4.45	17.25	3.20	18.80	2.25	22.50	1.15
74.0	17.30	4.10	19.35	2.90	20.40	2.15	24.40	1.10
72.0	19.15	3.75	21.55	2.65	22.30	2.05	26.20	1.05
70.0	20.70	3.50	23.15	2.50	23.60	2.00	28.00	1.00
68.0	22.30	3.25	25.10	2.35	25.50	1.90	29.80	0.95
66.0	24.10	3.00	27.20	2.20	26.80	1.85	31.50	0.90
64.0	25.70	2.80	29.00	2.10	28.30	1.80	33.20	0.85
62.0	27.40	2.20	30.80	1.75	29.65	1.75	34.80	0.80
60.0	28.90	1.80	32.45	1.45	31.20	1.70	36.30	0.75
58.0	30.30	1.50	34.05	1.20	32.60	1.45	37.80	0.70
56.0	31.70	1.25			34.00	1.30		
Use hook	for 6 tons (weight: 250kg)							
Min. boom angle	53°		55°		53°		55°	

## NOTE

- The rated lifting capacities are the maximum load guaranteed on firm level ground including the weight of the hook block and other lifting equipment. The capacities enclosed with the bold line are based on the structural strength of machine and the others are based on the stability of machine.
- 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 (44m). Jib operation should be performed on the basis of boom angle only, regardless of boom length when the boom is not fully extended.
- Lifting over front (a zone 150° in front of carrier) is not permitted if front jack is not used.
- The rated lifting capacities for the rooster sheave are equivalent to the rated lifting capacities for the main boom to a maximum of 6000 kg. 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.
- 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.



## WORKING RANGE



- When using the main boom with the jib installed, 2700 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.
- 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 even without load. Therefore, never lower the boom below this angle.
- 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 should be determined so that weight per part will not exceed 6700 kg.
- In principle, free fall is adopted 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 be avoided.
- The machine may tip over or be damaged if operated with a load exceeding that specified in the rated lifting capacity table, or otherwise operated incorrectly. In such a case, the machine will not be covered by the warranty.



Address inquiries to:

• NOTE: Illustrations may include optional equipment. KATO products and specifications are subject to improvements and changes without notice.

**KATO**

QUALITY & EXPERIENCE  
SINCE 1895

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