

KATO **NK-800**

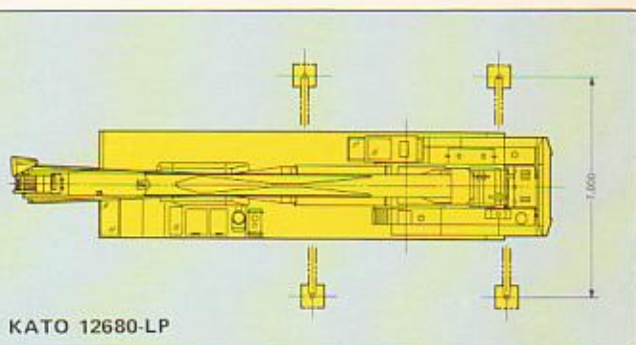
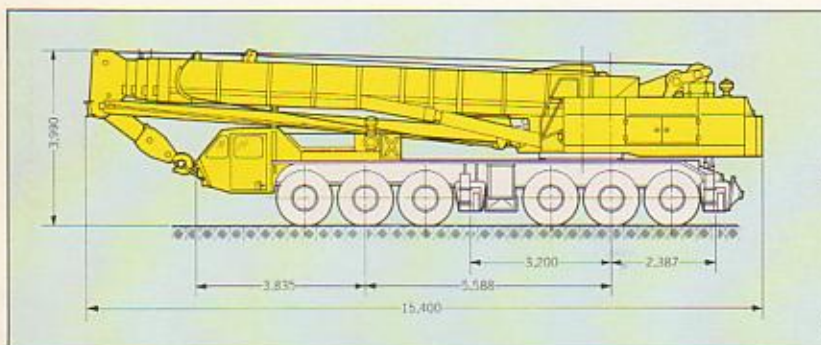
**FULLY HYDRAULIC
TRUCK CRANE**

Lifting Capacity **80t**

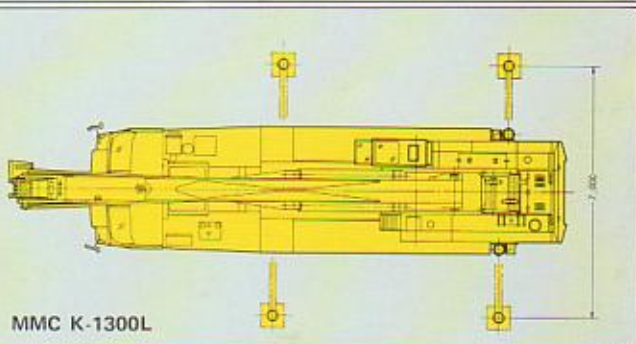
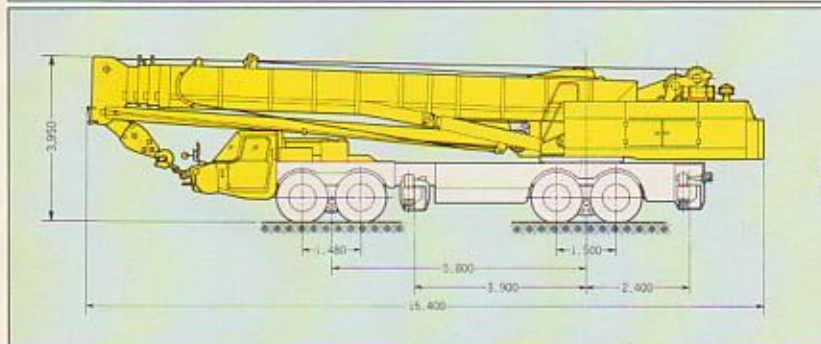


KATO WORKS CO.,LTD.

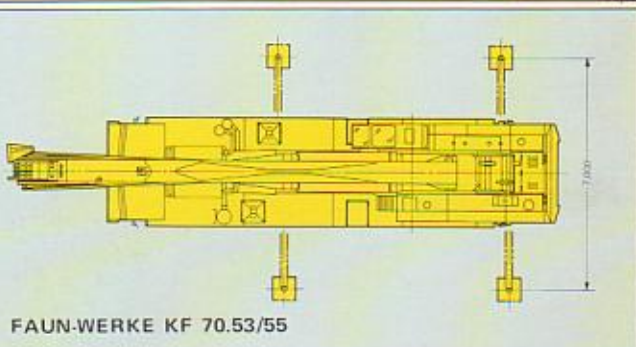
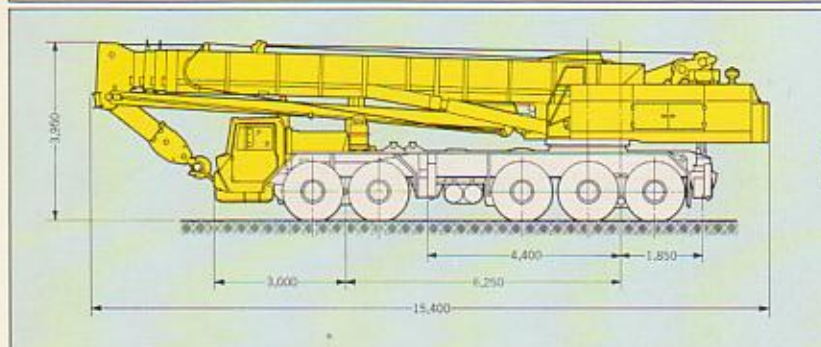
<http://www.hydro-crane.com/>



KATO 12680-LP



MMC K-1300L



FAUN-WERKE KF 70.53/55

KATO
 QUALITY & EXPERIENCE
 SINCE 1895

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THE NEWEST POWERFULNESS OF THE KATO FLEET OF TRUCK-CRANES!

KATO
NK-800

**FULLY-HYDRAULIC
FULL-SLEWING
TRUCK CRANE**



• CARRIER MODEL: KATO 12680



• CARRIER MODEL: MMC K1300L



• CARRIER MODEL: FAUN-WERKE KF70.53/55

Here is the newest and finest efficiency to the construction of structures, highways, railroads, bridges and harbor cargo work—the KATO NK-800 80 tons truck crane that is movable to various locations.

KATO, a famous pioneer of truck cranes, now presents a historical achievement in the practicality of fully hydraulic truck cranes. It is the KATO NK-800 80 tons truck crane that brings you new dimensional uses in truck crane utility. This powerful truck crane is the result of years of truck crane studies in design and structures of truck cranes, experiences and an abundance of achievements that are combined with the newest of technical accomplishments. It has the newest of designs and a mechanism that other machines never had and that out-rival any competitor's to this date. It fully incorporates the latest merits of hydraulics and assures the operator's safety.

The NK-800 is superior in function and is smoothly combined with complete safety features so that it can be used in a more diversified field of work. Utilize this newest of efficient truck-cranes and realize a larger profit from it.

OPERATOR'S CONVENIENCES AND COMFORTABLE CAB

- Operator may enjoy his conveniences in the cab.
- One easy observable position of all levers and instruments.
- A heater is standard cab equipment and a cooler is optional.
- A deluxe soft fully reclinable seat that is re-adjustable to various positions to cause the operator no fatigue during many hours of usage.
- Heat absorbant glass is glazed and clear to refract heat and to filter out the ultra-violet light which causes general fatigue. The glazed heat absorbant glass has a large water wiper blade adequately mounted to use in high lift operations and during rainy inclement weather.
- The maximized glass portions are large so as to give the operator a necessary view of all surroundable areas.



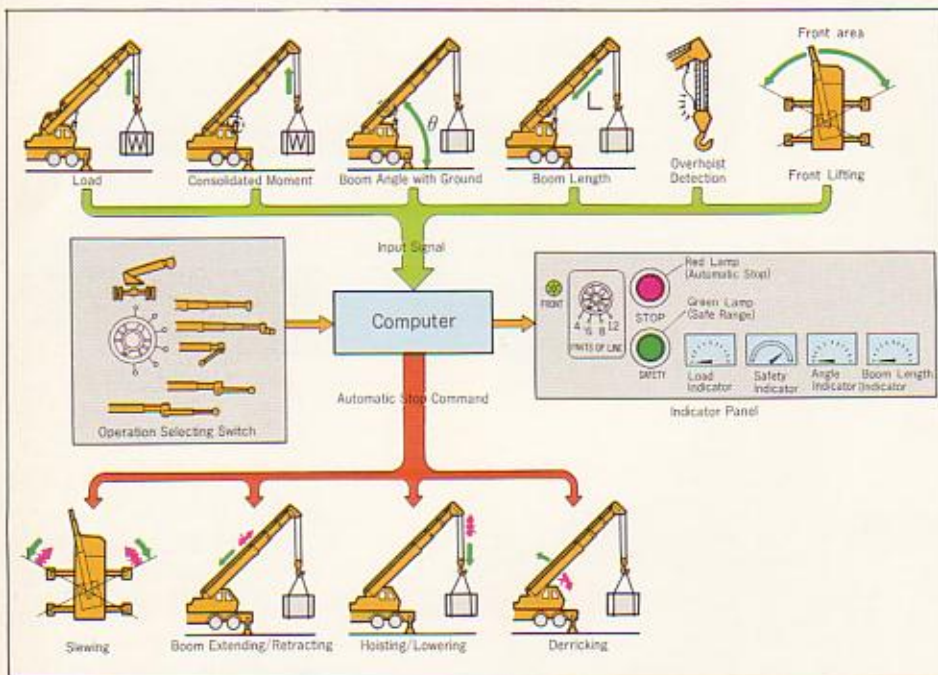
RAPID TRANSPORTATION IN AND OUT OF NARROW SITES

- The independently mounted engine enables a crane operation while traveling. Also, while traveling to and from a limited site, the jib can be mounted thereon.



SUPERIOR RELIABLE ELECTRONICAL MOMENT LIMITTER

- In conventional machines, crane operations depends upon experience of eye measurement, and the intuition of the operator but NOW THE OPERATIONS ARE CONTROLABLE RATIONAL SAFETY DEVICES.
- Unique high accuracy of fully automatic overload protection device that prevents tipping and fracture of the crane.
- Most reliable moment limiter—of which KATO is proud—that promotes an operator's self confidence and a feeling of a full command of his machine enabling him to operate the crane while confirming the safety work range as indicated on the moment comparator meter.
- Also, it is equipped with other highly accurate safety devices such as a boom length meter, boom angle meter, load meter and etc.
- The total moment, produced by a lifted load and a dead weight of the boom, is detected by the accurate detector. A buzzer alarm is sounded just as the total moment arrives at the 5% below the limit moment where a red lamp lights as it arrives at the limit moment thereby stopping the derricking, extension of the boom and the hoisting of the winch, automatically.



SPLENDID MECHANISM OF WEIGHT DISTRIBUTION

- The ideal weight distribution and low center of gravity provide a superior operation and an excellent stability as well as excellent travelability and maneuverability.

4 INDEPENDENT HYDRAULICAL SYSTEMS

- There are 4 independent hydraulic systems that enable easy complex operations.
- Three powerful hydraulic pumps and a special hydraulic system enable simultaneous operations of the winch, slewing, derricking and lowering of the boom, and extending and retracting of the boom.

FREE SPEED CHANGE FROM SUPER-LOW SPEED TO HIGH SPEED.

FINE SPEED CONTROL.

Powerful Freomatic Winch

- Smooth and continuous free high lifting operations as well as fine inching operations, using the levers and functioning of the flow controllable system, are achieved through the use of the super-low to high speed functioning of the powerful non-step controllable main and sub-winch.
- An automatic brake functions, automatically, when a lever is returned to the neutral position. The free fall pedal significantly improves the operational efficiency, and the triple safety structure contains a counter balancing valve, drum, drum lock and etc. that prevents danger and gives a precise safety operation.
- The grooved drum has a non-alignment rope winder prevention device that prevents non-aligned winding of the rope and, significantly, lengthens the life span of the rope.



IDEALLY UNIQUE 'FULL POWER' SYSTEM BOOM

- The NK-800's rational boom controllable system (a sequential boom controllable system of extension and retraction and in which one lever operation controls the extension and the retraction of the boom within the range of 12 m to 44 m) prevents erroneous operation and provides safety and precise operation, irrespectively of the load variation.
- ACS moment limiter, of which KATO is proud, provides an appropriate total rating load and safety crane control at any boom length.
- The jib is easily attachable because the boom can be tilted to -2° .
- The balanced design of the boom is highly durable because of the balanced super high tensile strength of the sheet-steel.
- The jib boom is mounted at the underside of the main boom where it can be set into workable position from removal and re-positioning of one pin, within several minutes.
- Extension and retraction of the jib boom can be easily done manually and by winch, respectively.

AUXILIARY SHEAVE

- The auxiliary sheave that is mounted at the edge of the boom enables an easy single rope operation while housing the jib boom as it is, thus, enabling effective crane operation.



STABLE OPERATION

Outriggers have high holding strength.

- The rugged box structure H-type hydraulic outriggers with long out stretched length and high holdable strength assures safety and stable operations.
- The long vertical cylinder stroke of the outriggers, in conjunction with the level vial, assures a horizontal settling of the crane at not only leveled land, but, also, non-leveled land such as sloped land or uneven land to cause a stable operation.

A TOUGH 200 PS DIESEL ENGINE

A tough 200 PS engine is exclusively used for the crane.

- An independently mounted tough and durable 200 PS diesel engine is, exclusively, used for the crane. It is separate from the carrier engine and preserves power during severe continuous operation of heavy loads and while high lifting as well as lifting of light loads that is done without any difficulty.

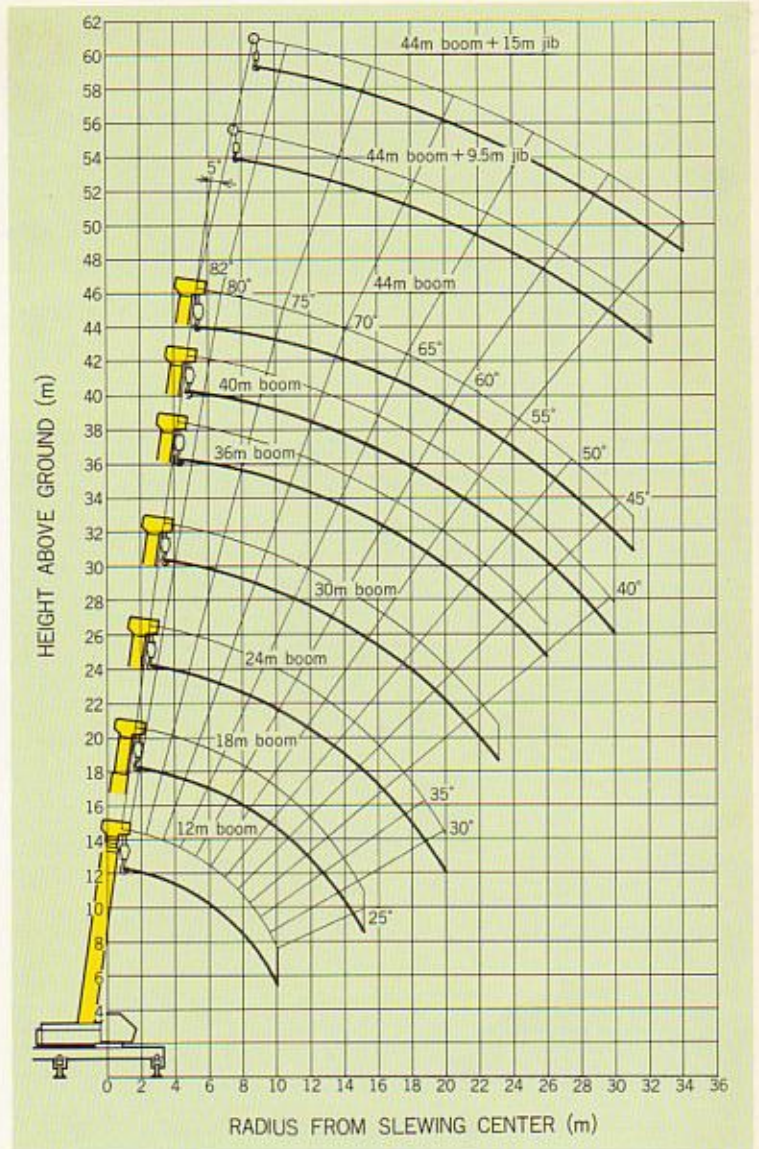
CONTINUOUSLY SMOOTH CRANE SLEWING

During a continuous crane slewing, the slewing mechanism remains stable all of the time.

- The crane's slewing is quite smooth because the slewing system contains an anti-shock brake valve in its mechanism.
- Smoothly fine slewing is obtained from the functioning of the cushion valve which weakens the shock that is generated during the starting and the stopping time.
- Abnormal shock that is generated by the counter lever operation is, also, prevented to assure a safety operation.



■ WORKING RANGES



■ RATED LIFTING CAPACITIES

Working radius (m)	Over side and over rear						
	With outriggers						
	12m boom	18m boom	24m boom	30m boom	36m boom	40m boom	44m boom
2.5	80.0	45.0					
3.0	80.0	45.0	35.0				
3.5	80.0	45.0	35.0				
4.0	70.0	45.0	35.0	27.0			
4.5	62.0	45.0	35.0	27.0			
5.0	56.0	40.0	32.0	27.0			
5.5	50.0	37.0	29.2	27.0	22.0		
6.0	45.0	34.3	27.2	25.0	22.0		
6.5	39.4	31.5	25.3	23.2	22.0	18.0	
7.0	35.6	29.1	23.7	21.5	20.3	18.0	
8.0	27.8	25.4	21.0	18.8	17.7	15.7	12.0
9.5	20.8	20.8	17.8	15.7	14.6	13.2	12.0
10.0	19.2	19.2	17.0	15.0	13.8	12.6	11.4
11.0		16.5	15.6	13.5	12.4	11.4	10.4
11.8		14.7	14.7	12.6	11.4	10.6	9.7
12.0		14.2	14.2	12.4	11.2	10.4	9.5
13.0		12.5	12.5	11.3	10.2	9.6	8.8
14.6		10.0	10.0	10.0	9.0	8.5	7.8
15.0		9.4	9.4	9.4	8.7	8.2	7.6
16.0			8.1	8.1	8.1	7.7	7.1
17.8			6.2	6.2	6.2	6.8	6.3
20.0			4.5	4.5	4.5	5.1	5.6
22.0				3.4	3.4	4.0	4.4
23.0				3.0	3.0	3.5	3.9
26.0					1.7	2.2	2.6
27.0						1.9	2.2
28.0						1.6	1.9
30.0						1.0	1.3
31.0							1.1

(in metric ton)

Boom angle	Over side and over rear			
	With outriggers			
	44m - 9.5m Jib. Jib off set 5°		44m - 15m Jib. Jib off set 5°	
	Working radius (m)	Working radius (m)	Working radius (m)	Working radius (m)
81.3°	10.0	6.0	11.5	4.0
80.4°	11.0	6.0	12.6	4.0
80.1°	11.3	5.9	13.0	4.0
78.6°	13.0	5.2	14.6	3.75
75.2°	16.0	4.4	18.2	3.05
70.8°	20.0	3.6	22.5	2.55
66.0°	24.0	3.0	27.2	2.1
63.8°	26.0	2.75	29.1	2.05
58.0°	30.3	1.5	34.0	1.2
55.4°	32.0	1.2		

(in metric ton)

[NOTE]

1. This table is for a crane mounted on KATO 12680 carrier.
2. The table shall have a little difference when a crane is mounted on the other carrier.

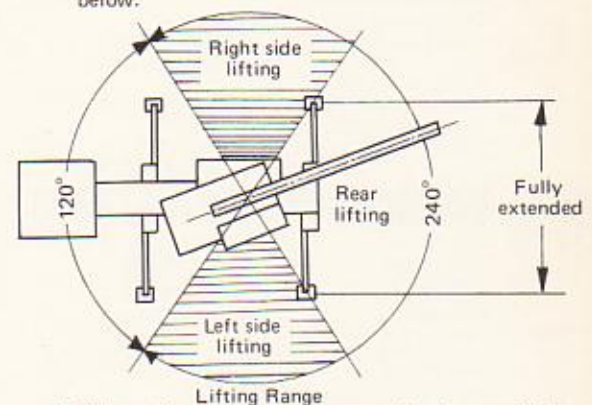
NOTES

- 1) The rated lifting capacities are the maximum loads guaranteed on a firm level ground and include the weight of hook block and other lifting equipments. The capacities in the green area are based on the structural strength.

Hook	for 80 ton	for 26 ton	for 6 ton
Weight	1000 kg	500 kg	250 kg

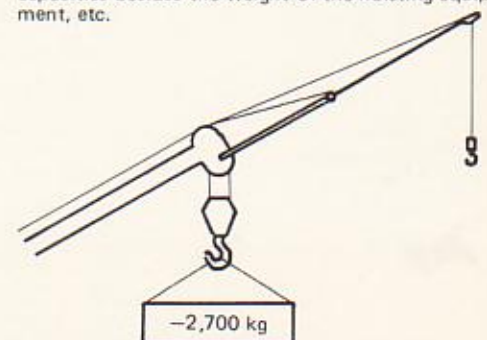
- 2) The working radii as given in table are the actual values including the deflection of the booms. Therefore, operate the crane based on the working radius. But working radius for operation with the jib should be the one for operation with the fully extended boom (44m). Only boom angle has an effect on operation with the jib when the boom is not fully extended.

- 3) The rated lifting capacities for operation with outriggers are based on use of outriggers fully extended, the machine set horizontal and the load lifted at either of the rear and sides as shown below.



Lifting Range

- 4) When the boom length exceeds the specified value, the rated lifting capacities for the boom lengths adjacent to the present boom length should be referred to, and the crane should be operated with the smaller lifting capacities.
- 5) When using the boom with the jib installed, 2700kg should be subtracted from rated lifting capacities besides the weight of the hoisting equipment, etc.



- 6) Tipover angles at each boom are as given in the below table. Don't reduce boom angles smaller than given therein.

30m Boom	25°
36m Boom	35°
40m Boom	35°
44m Boom (Fully extended)	40°
44m Boom + 9.5m Jib	53°
44m Boom + 15m Jib	55°

- 7) The minimum number of parts of line is determined so that weight per part will not exceed 6700kg. The number of parts of line in terms of the boom length is as shown below.

Boom length	12m	12m ~ 18m	18m ~ 30m	30m ~ 44m
Parts line	12	8	6	4

- 8) The crane will tipover or damaged if operated with a load other than specified in the rated lifting capacity table or not conforming to correct handling.

SUPERSTRUCTURE SPECIFICATIONS

CRANE PERFORMANCE

Rated lifting capacities:	80,000kg x 3.5m with 12m boom
	45,000kg x 4.5m with 18m boom
	35,000kg x 4.5m with 24m boom
	27,000kg x 5.5m with 30m boom
	22,000kg x 6.5m with 36m boom
	18,000kg x 7m with 40m boom
	12,000kg x 9.5m with 44m boom
	6,000kg x 11m with 44m boom
	+ 9.5m fly jib
	4,000kg x 13m with 44m boom
	+ 15m fly jib

NOTE: Over side and over rear with outriggers
 Test load = 1.25 x lifting load + 0.1 x dead weight
 of boom reduced to the boom point.

Maximum rated lifting capacity:	80 metric tons
Maximum moment:	280 t-m (at 80ton x 3.5m)
Boom length:	12m ~ 44m (5 section full power) (4 sections boom is available)
Fly jib length:	9.5m ~ 15m (2 section)
Boom derricking angle:	-2° ~ 82°
Boom derricking times:	High, 60 sec. (0° ~ 82°) Low, 125 sec. (0° ~ 82°)
Boom telescoping speed:	Extension 0.18m/sec.
Hoisting and lowering rope speed (Main and auxiliary winches):	High, 108m/min. Low, 54m/min.
Hoisting and lowering hook speed	
Main winch (parts of line: 12):	High, 9m/min. Low, 4.5m/min.

Auxiliary winch (Parts of line: 1):	High, 108m/min. Low, 54m/min. 1.6 r.p.m.
Slewing speed:	

WIRE ROPE FOR HOISTING

Main hoist:	Type 6 x Fi(29) I.W.R.C. Diameter 22mmφ Length 240m
Auxiliary hoist:	Type 6 x Fi(29) I.W.R.C. Diameter 22mmφ Length 130m

HYDRAULIC SYSTEM

Hydraulic pump:	3 section gear type
Hoisting motor:	Axial plunger type
Slewing motor:	Radial piston type
Cylinder:	Double acting type
Control valve:	3 position 4 way double acting with integral check, and relief valves

Fluid reservoir capacity: 900 lit.

CRANE CAB:

All steel welded construction

SAFETY DEVICE:

Outrigger lock device, Boom derricking safety device, Boom extending & retracting safety device, Over winding alarm device, Boom angle indicator, Hydraulic circuit safety valve (relief valve), Hoisting drum lock device, Hoisting drum turn indicator, Automatic crane stopper (A.C.S.)

CARRIER SPECIFICATIONS

MODEL	KATO 12680
Total Length	15,400mm
Total Width	3,000mm
Total Height	3,990mm
Wheel Base	5,588mm
Tread Front	2,540mm
Tread Rear	2,159mm
Gross Weight	Approx. 61,000kg

MITSUBISHI K-1300L
15,400mm
3,000mm
3,950mm
5,800mm
2,730mm
2,540mm
Approx. 62,500kg

FAUN-WERKE KF70.53/55
15,400mm
3,000mm
3,950mm
5,500mm
2,503mm
2,171mm
Approx. 60,000kg

ENGINE

Maker, Model Type	MITSUBISHI 8DC60A 4 cycle, water cooled, V type diesel engine
Number of Cylinders	8
Bore x Stroke	135mm x 130mm
Total Piston Displacement	14,886 lit.
Max. Output	300 PS/2,500 rpm (JIS)
Max. Torque	103kg-m/1,200 rpm (JIS)
Fuel Tank	300 lit.
Axles Front	Reverse "ELLIOT" Type
Rear	Full floating type

MITSUBISHI 8DC60A
4 cycle, water cooled V type diesel engine
8
135mm x 130mm
14,886 lit.
300 PS/2,500 rpm (JIS)
103kg-m/1,200 rpm (JIS)
400 lit.
Reverse "ELLIOT" Type
Full floating type

CLUTCH

2 dry plates, hydraulic control

1 dry plate, hydraulic control

TRANSMISSION

Type	9 forward & 2 reverse
Ratio	Low - 12.31 1st - 7.40 2nd - 5.19 3rd - 3.76 4th - 2.75 5th - 1.97 6th - 1.38 7th - 1.00 8th - 0.73 High Reverse - 3.43 Low Reverse - 12.87

Synchromesh (2nd ~ 5th) & constantmesh (1st & Rev.)
1st - 4.629
2nd - 2.553
3rd - 1.394
4th - 1.000
5th - 0.812
Reverse - 4.698
Transfer
High-High 0.914
High-Low 1.810
Low-High 3.031
Low-Low 6.000

STEERING

Left hand steering with power booster

Ball and nut type with power booster

SUSPENSION

Front	Underslung tridem walking beams and torque rods
Rear	Underslung tridem walking beams and torque rods

Semi-elliptic leaf springs and torque rods
 Equalizer beams and torque rods

BRAKES

Service brake	Air brake, 12 wheels internal expanding
Parking brake	Spring loaded brake

Dual circuit air brake

Mechanical, internal expanding type on propeller shaft

DRIVER'S CAB

All steel welded, construction low line type

All steel welded construction 2 persons, low line type

TIRE SIZE

Front	14.00-20-18PR x 6
Rear	14.00-20-18PR x 12

14.00-24-24PR x 4
14.00-24-24PR x 8

- MACHINE is subject to the user's specifications and any chassis having proper capacity and dimension are applicable.
- In order that product improvement may be introduced at any time, specifications are subject to change without prior notice.