

# 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**

شرکت ایمن مرکزی اروند (سهامی خاص)

نمایندگی رسمی فروش و خدمات پس از فروش  
جرثقیل های کاتو و هیلتاچی سومیتومو در ایران





## Power That Won't Quit



شرکت پیمان مرکزی اروندرود (سومین شهر)

تعمیرات و نگهداری ماشین های سنگین و ماشین های کشاورزی  
چاپ و نصب تابلو های تبلیغاتی و تابلو های راهنمایی



**THE CRYSTALLIZATION OF ADVANCED TECHNOLOGY. THE STURDY FULLPOWER BOOM CUTS DEFLECTION WAY DOWN**

- For greater ease of use, operability and safety, the boom is of a robust construction that reduces vertical deflection and lateral bending during operations.
- The tough Fullpower boom utilizes a sequential, synchronized extension/retraction control system that permits single-lever control and speeds up operations at all boom lengths from low lifts at 10.8m (fully retracted) to high lifts at 40.0m (fully extended).



**ALL-ROUND COMFORT! SPACIOUS CAB GUARANTEES A PLEASANT WORKING ENVIRONMENT**

- The spacious cabin is finished in relaxing colour tones and comes with a sliding door that facilitates ingress and egress and can be left open without getting in the operator's way. A push-up type window is incorporated in the roof for better ventilation. Careful consideration has been given to human engineering for maximum operator comfort; the lengths of the levers can be adjusted and the highbacked seat can be moved forward or backward, raised or lowered to suit any physique. The result is a comfortable, roomy cabin that helps banish fatigue even during extended periods of operation.



Extra long boom boosts high and remote lift capabilities

- Boom length 10.8~40m
- Jib length 9.2m, 15m
- Jib offset (3-stage: 5°, 17°, 30°)

(5°, 25°, 45° jib offset is available as an option)

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# Exceptionally Wide Operating Range



## ACS CONTROLS PERFORMANCE ACCORDING TO OUTRIGGER STATUS

● **Sturdy, fully hydraulic outriggers...** The outriggers are designed for 2-stage extension, 7.2m at maximum stroke and 4.85m at intermediate stroke for greater stability during operations on restricted sites. Float mounting and dismounting operations have been eliminated by incorporating them into a single unit with the vertical cylinders, thus helping to reduce operation times.

## OPTIONAL HYDRAULIC FRONT JACK PROVIDES EXCELLENT 360° LIFTING CAPABILITIES

● A hydraulic jack installed under the front extremity of the carrier chassis enables the crane to offer the same lifting performance in all directions. This means that there are fewer limitations caused by the orientation of the crane when it enters a site, so the crane has a greater operational range.



● Hydraulic front jack (option)



intermediate stroke 4.85m

maximum stroke 7.20m



## 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 colour-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.



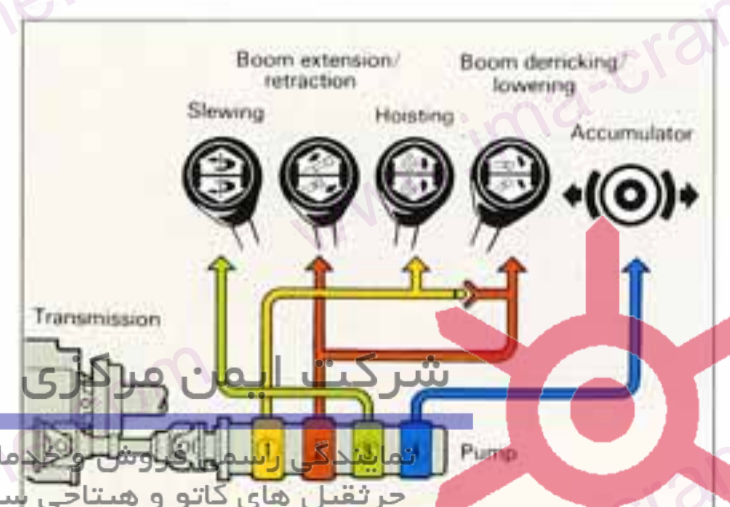
## JUST THE JOB FOR COMPOUND OPERATIONS!

● The NK-500E-v features 2 independently-driven winches. This feature is particularly useful in compound operations because the main and auxiliary winches are controlled by separate levers that permit them to perform hoisting and lowering operations independently yet at the same time. The result is faster operations and greater efficiency.



## 4-PUMP SYSTEM FOR SMOOTH COMPOUND OPERATION

● The use of 4 separate pumps enables the NK500E-v to perform 3 operation simultaneously, such as winch (hoisting, lowering), boom (derricking, telescoping) and slewing, without these operations affecting each other. This makes operation smoother and more efficient.



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RATED LIFTING CAPACITY

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

Note : Front jack is optional.

Table with columns for Working radius (m) and Boom lengths (10.8m to 40.0m). Rows show lifting capacity data for various radii and boom configurations.

(Unit: Metric ton)

Table with columns for Working radius (m) and Boom lengths. Rows show lifting capacity data for configurations with and without front jack.

(Unit: Metric ton)

Large table with columns for Boom angle, Working radius, and Load. Rows show lifting capacity data for 40m and 45m boom configurations with jibs.

(Unit: Metric ton)

Table with columns for Boom angle, Working radius, and Load. Rows show lifting capacity data for 40m boom and 15m jib configurations.

(Unit: Metric ton)

Table with columns for Working radius (m) and Boom length (10.8m). Rows show lifting capacity data for fully retracted configurations.

(Unit: Metric ton)

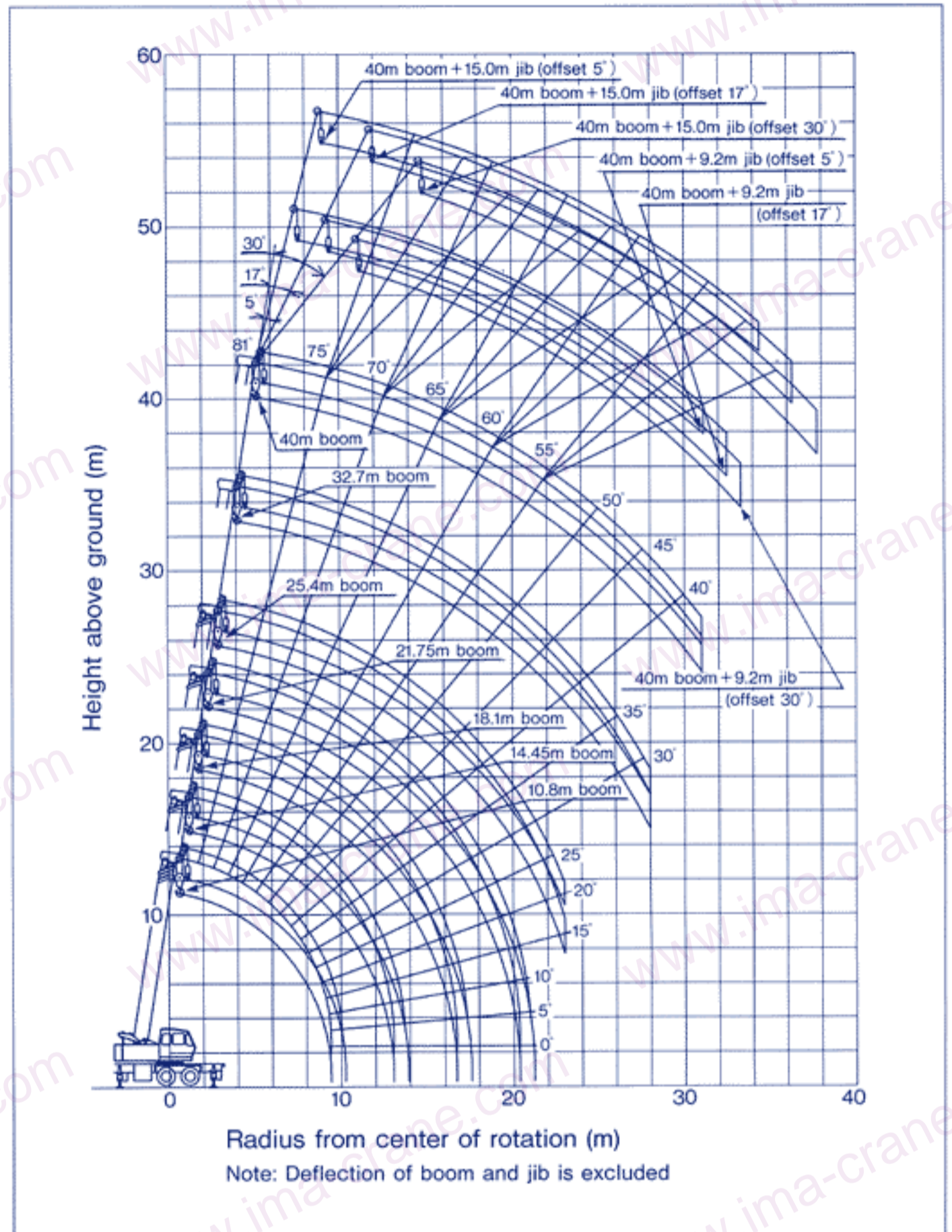
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**NOTES:**

- 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.

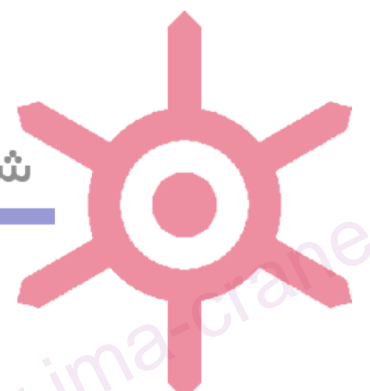
**WORKING RANGE**



- 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.

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# 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

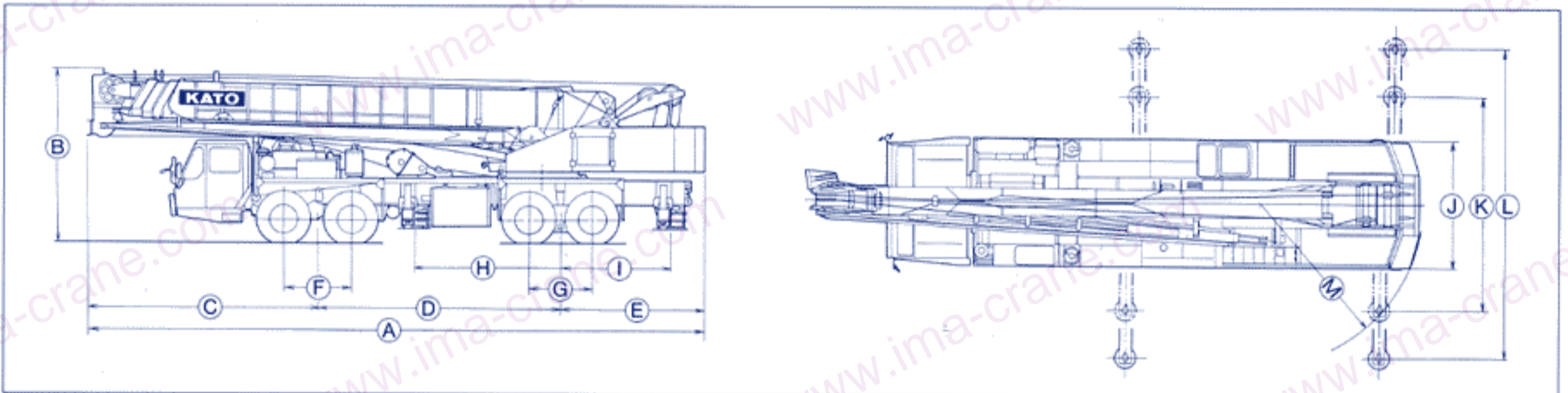
Main and auxiliary winches:  
 Driven by axial plunger type hoisting motor through planetary gear reduction. Controlled independently by respective operating lever. Equipped with automatic brake. With FREE FALL DEVICE

## 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

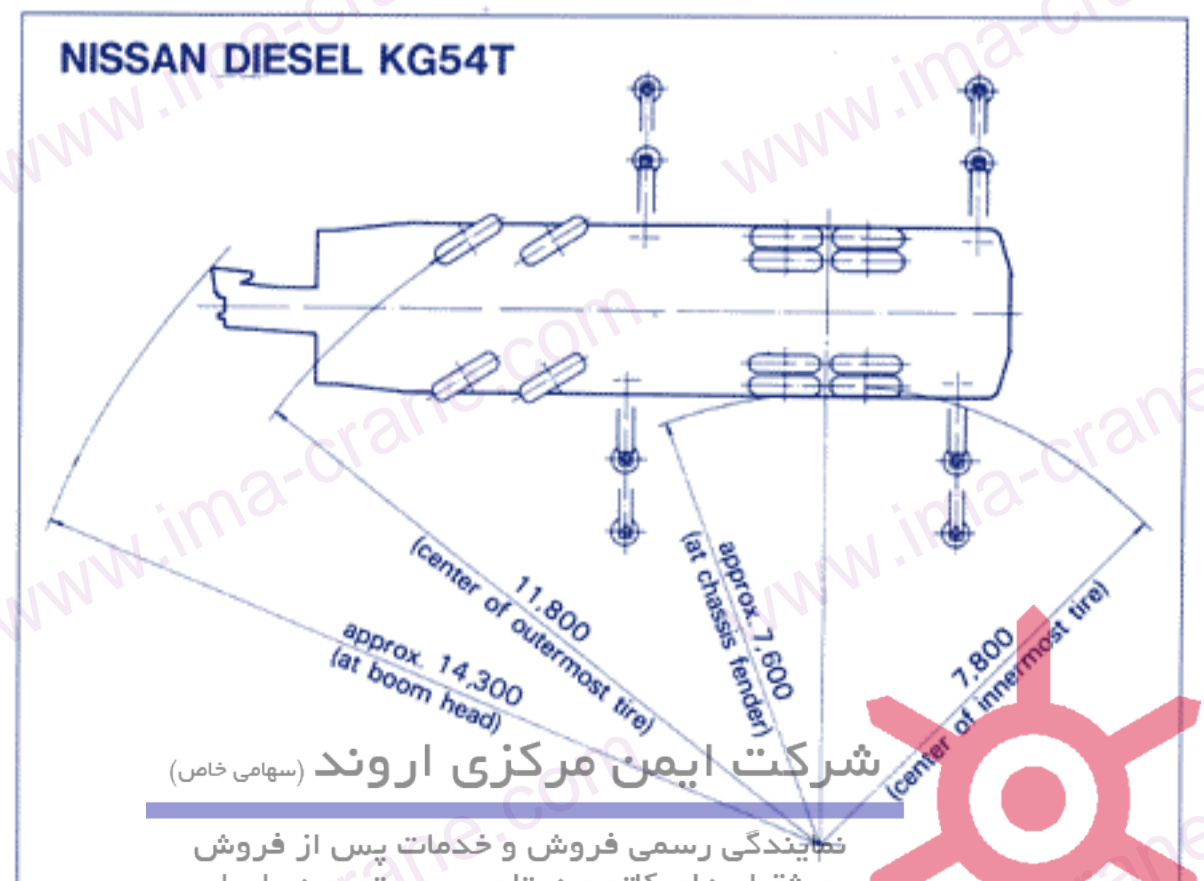
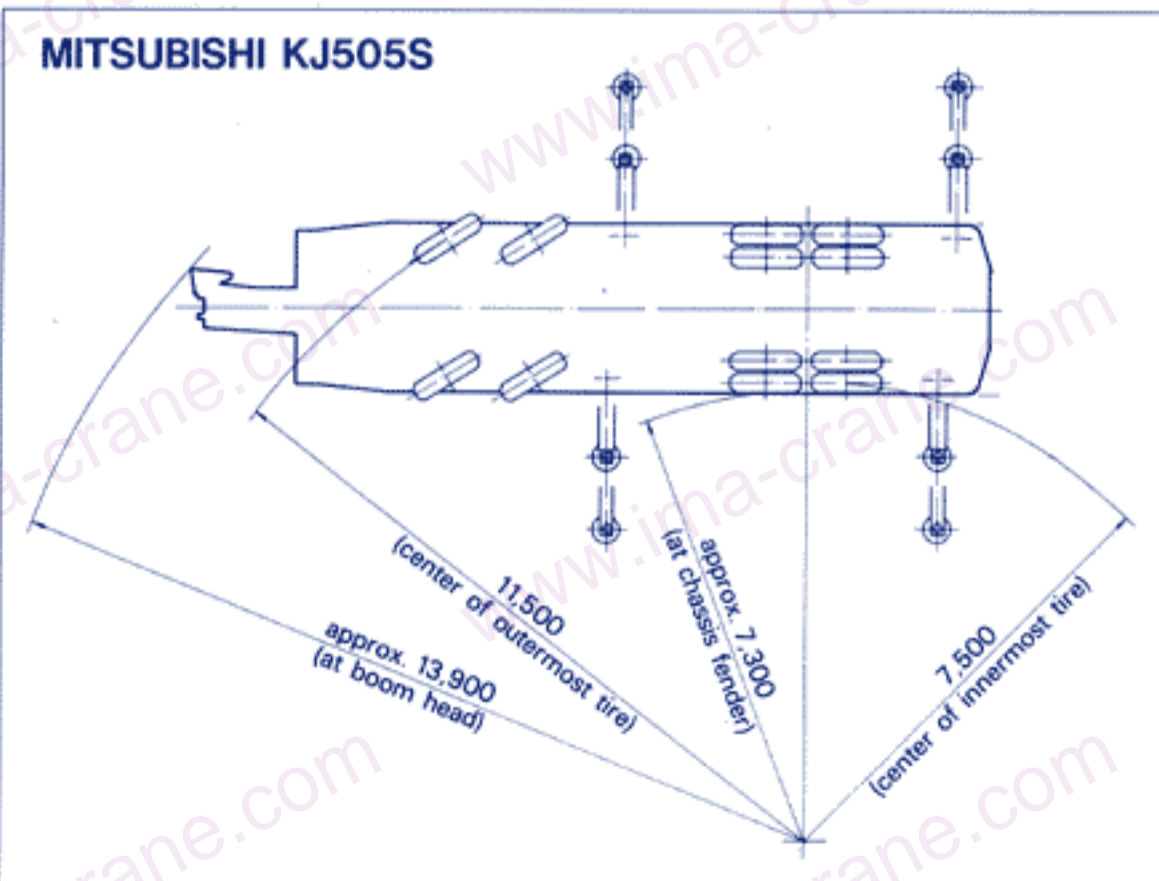
## Optional equipment

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)



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## CARRIER SPECIFICATIONS

### Carrier model MITSUBISHI KJ505S

Maximum travelling speed: 80km/h  
 Gradeability (tanθ): 28% (computed, @G.V.W. = 39,400kg)  
 Minimum turning radius (centre of extreme outer tire): 11.5m

#### General dimensions

Overall length: approx. 13,300mm  
 Overall width: approx. 2,750mm  
 Overall height: approx. 3,800mm  
 Wheel base: 1,450mm + 3,850mm + 1,350mm = 6,650mm  
 Treads; Front: 2,240mm  
 Rear: 2,055mm  
 Centre to centre of extended outriggers: 7,200mm (Fully extended)  
 4,850mm (Intermediatly extended)  
 Gross vehicle weight: approx. 39,400kg  
 Front: approx. 15,400kg  
 Rear: approx. 24,000kg

#### Carrier

Maker: Mitsubishi  
 Model: KJ505S  
 Drive system: 8×4  
 Engine:  
 Maker: Mitsubishi  
 Model: 8DC9-2A  
 Type: 4 cycle, water cooled, diesel  
 No. of cylinder: 8-90° V  
 Piston displacement: 16,031cc  
 Max.output horsepower: 300PS/2,200r.p.m.  
 220kW/2,200r.p.m.  
 Max.output torque: 105kg-m/1,400r.p.m.  
 1,029N-m/1,400r.p.m.

NOTO: 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: 10 forward & 2 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  
 Rear: Equalizer beams and torque rods  
 Brake; Service: 2 circuit air brake,  
 8 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 - 145F51 × 2  
 Fuel tank capacity: 300 lit.  
 Driver's cab: All steel welded construction, 2 person, low line type  
 Tire size; Front: 12.00 - 20 - 18PR  
 Rear (dual tire): 12.00 - 20 - 18PR

### Carrier model NISSAN DIESEL KG54T

Maximum travelling speed: 71km/h  
 Gradeability (tanθ): 38% (computed, @G.V.W. = 39,000kg)  
 Minimum turning radius (centre of extreme outer tire): 11.0m

#### General dimensions

Overall length: approx. 13,300mm  
 Overall width: approx. 2,820mm  
 Overall height: approx. 3,800mm  
 Wheel base: 1,470mm + 3,780mm + 1,400mm = 6,650mm  
 Treads; Front: 2,230mm  
 Rear: 2,110mm  
 Centre to centre of extended outriggers: 7,200mm (Fully extended)  
 4,850mm (Intermediatly extended)  
 Gross vehicle weight: approx. 39,000kg  
 Front: approx. 15,000kg  
 Rear: approx. 24,000kg

#### Carrier

Maker: NISSAN DIESEL  
 Model: KG54T  
 Drive system: 8×4  
 Engine:  
 Maker: NISSAN DIESEL  
 Model: RE8  
 Type: 4 cycle, water cooled, diesel  
 No. of cylinder: 8-V  
 Piston displacement: 15,115cc  
 Max.output horsepower: 315PS/2,300r.p.m.  
 231kW/2,300r.p.m.  
 Max.output torque: 105kg-m/1,400r.p.m.  
 1,029N-m/1,400r.p.m.

NOTO: 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: 9 forward & 1 reverse speed, constantmesh on each shift and synchromesh on range shift  
 Axles; Front: Reverse "ELLIOT" type,  
 Rear: Full floating type  
 Steering: Ball nut type with power booster  
 Suspension; Front: Semi-elliptic leaf springs  
 Rear: Equalizer beams and torque rods  
 Brake; Service: 2 circuit air brake,  
 8 wheels internal expanding type  
 Parking: Mectanical, internal expanding type acting on drum at transmission case rear  
 Auxiliary: Exhaust brake  
 Electric system: 24V  
 Battery: 12V - 115F51 × 2  
 Fuel tank capacity: 300 lit.  
 Driver's cab: Steel, two men, semi under floor type, one side cab  
 Tire size; Front: 12.00 - 20 - 18PR  
 Rear (dual tire): 12.00 - 20 - 18PR

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



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