

# ROUGH TERRAIN CRANE



*20 metric ton maximum crane load • 25.8m maximum boom and 6.8m jib*

## RK200

**KOBELCO**

Bulletin No. RK200-5

# Rugged power has arrived!

Why should you buy a rough terrain crane? Because you want a one man traveling crane that can get into tight places to make lifts that a truck mounted crane cannot. This means speedy travel on improved surfaces, maneuverability in confined, cluttered, unsurfaced job sites, and most importantly, a variety of ratings so that one machine can cover as wide a range of duties as possible.

Why should you buy a KOBELCO RK200 rough terrain crane? Because the RK200 travels at speeds up to 45km/h, offers 3 steering modes, sports innovative features like M-type hydraulic outriggers and a "twist" jib, and enables you to choose just the right on-outrigger or on-rubber rating chart to maximize the RK200's productivity. You'll do more jobs in less time in more places with this new 20 tonner!



# TOUGH



**Max. lifting capacity: 20,000kg × 3.5m • Max. boom & jib length: 25.8m + 6.8m**

**R CLEVER** <sup>2</sup>



#### Power Package

A rear mounted, turbocharged direct injection diesel engine is at the heart of this crane. A unique "lockup" torque converter allows engine output to bypass the torque converter when traveling at higher speeds, but on site, it combines with a 12 speed transmission to deliver a wide variety of speed and driving power. During crane operations, a PTO clutch-activated governor restricts the engine to a maximum of 2,450 rpm. This reduces fuel consumption, noise emissions and wear on the engine. From site-to-site transit to precise pick-and-carry lifts, RK200 offers the optimum power control combination for both safety and efficiency.

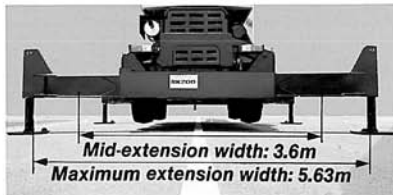


#### Attachment

The 4-section box boom is automatically sequenced to allow single lever control over its entire length. A rope crowd system for extending the top boom section keeps the boom light but strong with minimum deflection. The single boom hoist cylinder, mounted further back on the revolving frame, allows better operator visibility to the boom side of the cab. The twist jib (stowed on the base boom) and the auxiliary sheave (stowed on the boom tip) are ideal for single line operations that may require high speed duty cycle lifting of loads up to three tons. The jib's truss structure and the fold-up auxiliary sheave keep the boom point shorter and narrower to allow a minimized turning radius. Compared to a swing around jib, the twist jib sets up more easily in confined spaces, but offers better visibility when stowed for travel than an underslung jib.



# Gets around, gets into, gets it done.



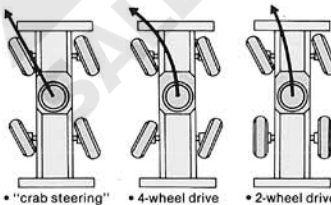
## Steering

Three steering modes are available to get the machine into the work spot: 2-wheel (front), 4-wheel (cramp) and 4-wheel (crab). The steering system also has about-face steering compensation and emergency steering power supply features.

About-face steering compensation is both a safety and simplicity feature which means that, when the upper has been rotated 180 degrees on the carrier, the steering hydraulic system reverses so that machine movement will correspond to the direction of steering wheel rotation.

The emergency steering power supply system consists of a battery powered hydraulic pump that will automatically come on line to supply hydraulic pressure to the steering system should engine power ever be lost.

Both of these features are sure to make the RK200 a favorite with the operators.



Minimum turning radius = 4.8m

## Suspension

On the road, RK200's fully sprung suspension treats the operator like a distinguished passenger, like he is the boss! Riding is smooth, but in the event of hard braking, an anti-nose dive mechanism counteracts the tendency of the crane to pitch forward.

On site, the suspension can be hydraulically locked out for stability to maximize on-rubber ratings, both stationary and pick-and-carry.

## Disk Brakes

As any operator will tell you, getting the machine to go is only half the job, getting it to stop is equally important. RK200 is fitted with "air-over-hydraulic" independent disk brakes all around. Our long experience as a wheel loader maker proved to us the heat and wear resistance qualities of disk brakes over drum brakes. They provide surer braking on long downgrades and in wet conditions, and generally make fewer maintenance demands. The front two disks are double-caliper as another extra safety feature.

## Now watch it lift!

Whether you are looking for lift height or reach, we invite you to run RK200's load rating chart against any other comparable machine. RK200 will speak for itself. But in addition to what the ratings tell you, note some extra features.

## On Rubber Lifting

Lifting while on the tires is the ultimate test for a rough terrain crane. Whether standing still or doing a "pick-and-carry" job, RK200 offers full main boom 360 degree on rubber ratings, plus upgraded ratings for over front lifts. Suspension lockout hydraulic cylinders are included as standard for use during all on rubber lifts.

## Positive/Negative Winch Brakes

Most cranes offer their operators only positive or negative winch brake systems. RK200 is one of the few machines to offer both at the shift of a lever. An operator asked to do precision placings can choose the fatigue reducing negative system — the winch brake automatically engages to hold the drum when the winch control lever returns to neutral. When faced with repetitious liftings of perhaps lighter loads, an operator may choose to engage the productivity improving positive brake system — so that at control lever neutral the winch drum goes into freefall for control by footbrake pedal pressure. You can get the best of both from RK200.

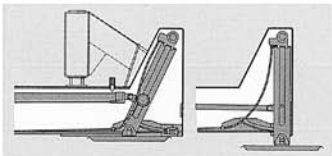
## "Hydrotorque" Swing Control

An original Kobe Steel development, "hydrotorque" is another way that RK200 lets the operator choose how he will most effectively operate. This swing system comes with two brake modes: "Free" (no brake applies at control lever neutral) for doing less precise cycle work like concrete pourings. The operator can establish a productivity enhancing "swing flow" pattern where both swing start and stop operations are done via the single swing control lever. "Braked" mode (a swing brake automatically engages at control lever neutral) is better for precision work like structural component and machinery placings.

Hydrotorque's smooth motion with these two braking modes, plus the inching and line speed attributes of RK200's winch system make this machine a winner — whether its speed or accuracy you want, have them both!

## M Outriggers

These exclusive KOBELCO outriggers permit maximum span while still allowing self-storing floats that have the largest surface area in the 20 ton class. Yet they retract to within the machine's traveling width. Besides offering two settings, these outriggers use inverted jack cylinders which keep the easily damaged rods encased in the beam structure. These features plus their low profile when extended make RK200's M outriggers the rigid base necessary for both heavy, close-in lifts and for long radius lifts where stability is the limiting factor.



# Instrument panel design revolutionized through the latest electronic technology!



## AT KOBE STEEL

We build performance into our cranes. We then must depend on the operator to get this performance out into the field where it can contribute to the profitability of the crane user — and also to our good reputation as a machinery maker. Therefore it is to everyone's benefit that the operator have as much information as possible so that he can safely extract the machine's full work potential.

## Electronic Assistance

Take a seat in the operator's cab and you will see how the machine communicates with its operator. Collected into three panels directly in front of the operator are electronic indicators of how the machine is currently operating. This removes much of the guess work that operators previously had to include in their decisions on how to proceed with a job. With this electronic assistance, there is less operator tension for longer hours of safer, more productive work.

## Easy Indicators

Operators new to electronic devices need not worry about getting themselves tuned into these indicators. For example, look at the center panel and you will see where speedometer and tachometer readings are given digitally (upper left corner) and graphically (along the center range line by green signal lamps). The operator can choose to operate by speedometer or tachometer readout by engaging one or the other via the selector switch (upper left on the right side panel). Water and torque converter oil temperatures as well as fuel level and many other operating factors are indicated by signal lamps. Nothing could be easier!

## Check and Safety Monitor

• When the operator starts to use the crane, he must set some switches on the left side panel to inform the on-board computer (overload warning device) of how he intends to operate. Corresponding lamps light up (see the panel's lower and right sides) to allow the operator to confirm that he has programmed the computer correctly for the outrigger and boom/jib/auxiliary sheave combination he will actually use.

• Besides acting as an overload warning device, the computer monitors and collects vital crane operation factors into a single location for the operator's easy reference. By noting such factors as boom angle and length, load moment (ratio), operating radius, lift height, actual load being lifted and allowable maximum load, the operator can choose to operate in such a way as to maximize the crane's lifting potential without gambling that he is asking too much and compromising safety. All these items are digitally indicated except for the "load moment" which uses a series of lamps to indicate the percentage of the maximum rated load being lifted.

• If the operator fails to respect the crane's load limits, the computer is equipped to hydraulically discontinue operation except for corrective measures (operation to the safe side). It also has an automatic stop to prevent overhoisting (two-blocking).

NEW ELECTRONIC DISPLAY

# CLAR INFORMATION

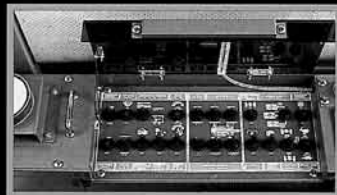


Shown only for illustration, not as a representation of working mode.



### Safety and Comfort

The cab is a command post which greatly influences how effective the operator and machine will be. By working closely with the Check and Safety Monitor as just described, the operator can see to his own and the machine's safety, but the operator must also be truly comfortable if he is to spend long hours in the cab at peak efficiency. Therefore we have arranged the switch panel conveniently to the side of the high-back reclining seat, used short stroke crane control levers which require minimum control pressure, and placed a large steering wheel at the control end of a full power-steering system. These features plus the ventilation and eye-pleasing trim features built into the two-seater cab make it a pleasant place to spend a working day.



### Efficiency to Productivity

With the wide cab, the operator has a wider view of the work area so that he can get on with his jobs. Because engine rpm is kept low during crane operations, the cab is quieter and voice communications easier with ground crews. The operator is able to carry out all his duties from inside the cab; driving to the site, maneuvering into work position, setting the outriggers, and then doing the lift. The man and the machine are a team working to make every hour a paying proposition.



# Specifications

## UPPER



### SWING UNIT

Hydraulic radial piston motor drives swing pinion through deck mounted planetary and spur gear reducer, 360° continuous rotation. By employing four check valves, "Hydrotorque" circuit controls hydraulic pressure in the motor. Brake valve allows operator to select free or automatic brake when swing control lever is in neutral position.

### SWING BRAKE

Hand operated disc brake.

### SWING GEAR

Internal spur gear.

### SLEWING RING

Single row ball bearing integral with swing gear.



### WINCHES

Mounted side-by-side, power raising and lowering; free fall; hydraulic motor drive and spur gear reduction.

**Clutches:** Hydraulically boosted shoe type.

**Brakes:** Band type; both positive and negative brake modes provided.

**Drums:** 352mm P.C.D., 528mm dia. flanges; Width: 357mm (Main), 204mm (Auxiliary).

Hoist wire rope: Non-twist, U4 x SeS(39), c/o H class, 16mm dia. Length: 145m (Main), 75m (Auxiliary, optional).

### BOOM HOIST

Double acting hydraulic cylinder with holding valve, boom angle indicator mounted on base boom section.



### BOOM TELESCOPE

Full power telescoping by two hydraulic cylinders (with holding valves) and wire ropes.

### CONTROLS

Four adjustable hand control levers for swing, telescope, winch, and boom hoist (boom hoist lever with foot-operated pedal on right hand drive only); two short hand levers for main and auxiliary winch clutches and negative brake ON-OFF. One short hand lever for swing parking brake, one lever for transmission gear selection (with high/low switch), swing lock pin (two holes), winch drum lock knobs, two pedals for main and auxiliary winch drum brakes (during free fall), foot-operated pedal for engine throttle control, and travel brake pedal.

### OPERATOR'S CAB



All weather, full vision with safety glass, sliding door and roll down window, and roof window with wiper. Auxiliary seat provided behind driver's seat (optional).

### SAFETY ENHANCING DEVICES

Overhoist alarm buzzer, relief valves in hydraulic circuits, holding valves for boom hoist and telescope cylinders, counter balance valve for winch motor, Check and Safety Monitor on dash, Overload Warning Device (automatic stopping), winch drum locks, swing brake lock pin, lock valve for outrigger vertical cylinder, emergency steering system, anti-nose-dive valve, about-face steering compensator valve, outrigger single pilot check valve, axle lockout valve, lower limit mechanism (optional), and backup warning alarm.



## HYDRAULIC SYSTEM

### PUMPS

Power for all motions of upper structure and outriggers is delivered from carrier engine power take-off to the motors and cylinders through 3 in-line gear pumps and a single gear pump.

First pump actuates boom hoist cylinder, telescope cylinders, and winch motor assist for high speed.

Second pump actuates winch motor.

Third pump actuates pilot circuits for clutches, negative brake cylinders, boom sequencing changeover valve and 4 check valves in swing circuit.

Fourth pump actuates swing motor or steering via outrigger hydraulic system, priority valve, and suspension axle lockout.

### MOTORS

One, hydraulic radial piston motor for swing.

One, hydraulic plunger motor for hoist.

### CONTROL VALVES

One set of 3 stack, 4-way valves; one set of 2 stack, 4-way valves, and one remote control valve.

### OIL RESERVOIR

Capacity ..... 365 liters

## EQUIPMENT



Cab heater/defroster (optional), radio, windshield wiper/washer, cigarette lighter, ashtray, sun visor, vinyl floor mat, tachograph (optional), engine tachometer, engine hourmeter, engine trouble alarm, air supply valve, paper element type air cleaner, fuel/water separator, three working lights, horn, outrigger sight level bubble, load centering button on winch lever (braked swing mode only), air conditioner for cooling purpose only (optional), towing hooks (one front, two rear), fenders and ladder for jib mounting (optional).



## CARRIER

### MAKE AND MODEL

KOBELCO R-200

### TYPE

4 wheel drive (4 × 4), 2 wheel drive select.

### FRAME

High tensile steel welded box structure.



### OUTRIGGERS

KOBELCO hydraulic M-type with self-storing floats, eight double-acting hydraulic cylinders for independent horizontal and vertical motion of each outrigger. Outriggers can be set from inside cab or at side of carrier.



### POWER PLANT

Mitsubishi 6D14T Turbocharged Diesel Engine, 4 cycles, direct injection, water cooled, 6 cylinders.  
Max. output (JIS) ..... 180PS at 2,800 rpm  
Max. torque (JIS) ..... 57kg-m at 1,600 rpm

### ELECTRICAL SYSTEM

24 volt DC, Battery: 12 volt, 120 A.H. × 2.

### FUEL TANK

Capacity ..... 200 liters

### CLUTCH

Multi-disc, electric shift.

### TRANSMISSION

12-speed, power shift with high-low range; lockup torque converter.  
Gear ratio (forward and reverse)

Low gear: 1st—5.812, 2nd—3.210, 3rd—1.942

High gear: 1st—2.512, 2nd—1.387, 3rd—0.839

### BRAKES

**Service:** Air-over hydraulic disc on all 4 wheels, dual caliper on front wheels and single caliper on rear wheels.

**Parking:** Spring applied, air released shoe type on output shaft of transmission.



### STEERING

"Orbitrol" hydraulic power steering with emergency system.

**About-Face Steering Compensator:** Travel in reverse with the same handling characteristics of forward travel (except steer) is possible with the about-face steering compensator. This handling is possible only when the upper frame is rotated 180°.

### SUSPENSION

**Front/Rear:** Leaf springs with axle lockout and shock absorber-like cylinder.

Anti-nose-dive mechanism prevents tendency of crane to pitch forward during hard braking.

### FRONT/REAR AXLE

Fully floating drive-steer type; non-spin differential on rear axle (optional).

### FINAL REDUCTION

2-stage reduction type, ratio 15.39

### TIRES

Front/Rear: 14.00-24-24PR(OR)

### LAMPS

European marked lamps except head lamps, license plate lamp, clearance lamp, directional lamp, and parking lamp.

## ATTACHMENTS

### BOOM

Four sections, consisting of a boom base and three power telescoping sections, all welded high tensile steel box construction.

Fully retracted length ..... 8.19m

Fully extended length ..... 25.8m

### JIB (OPTIONAL)

High tensile steel square tube, truss construction, twist type.

Length ..... 6.8m

Side stored, twisted under raised boom, pulled up from under by auxiliary rope. Adjustable tension members for 5° and 30° offsets.

### AUXILIARY SHEAVE (OPTIONAL)

Can be stored without resetting auxiliary wire rope. Folded up to store so does not obstruct operator's view during travel; pinned for extension to provide one part line operation. Must be mounted if jib is ordered.



### HOOK BLOCKS

20 metric ton three sheaves with swivel and safety latch.  
3 metric ton weighted hook with swivel and safety latch (optional).

## AXLE LOADINGS

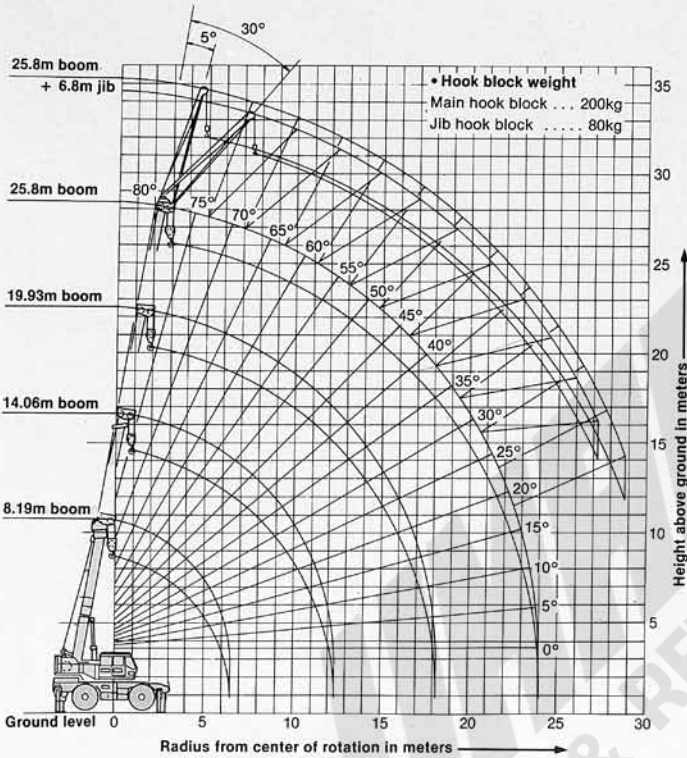
	Front	Rear	GVW
With jib	11,425kg	11,425kg	22,850kg
Without jib	11,035kg	11,565kg	22,600kg

## PERFORMANCE

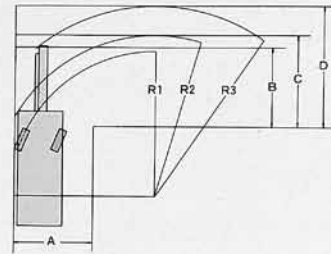
Max. rated lifting capacity	20 metric ton × 3.5m	
Boom length	8.19 ~ 25.8m	
Twist jib length	6.8m	
Boom derricking angle	0° ~ 80°	
Boom derricking time	52 sec. (0° ~ 80°)	
Boom telescoping time	99 sec./17.61m	
Main hoist line speed (6 part line)	High	86.6 m/min (3rd layer)
	Low	43.4 m/min (3rd layer)
Aux. hoist hook speed (Single part line)	High	86.6 m/min (3rd layer)
	Low	43.4 m/min (3rd layer)
Swing speed	3.5 rpm	
Max. travel speed	45 km/h	
Gradeability	tan θ	0.6



# Working Ranges

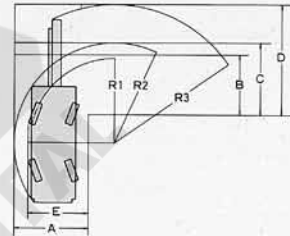


## Minimum 90° road width



### • 2-wheel steering

R1 = Wheel turning radius	8.30m
R2 = Vehicle turning radius	9.20m
R3 = Boom turning radius	10.76m
A = Road width at entrance	4.51m
B = Road width at exit for wheels	4.51m
C = Road width at exit for vehicle	5.20m
D = Road width at exit for boom	6.76m

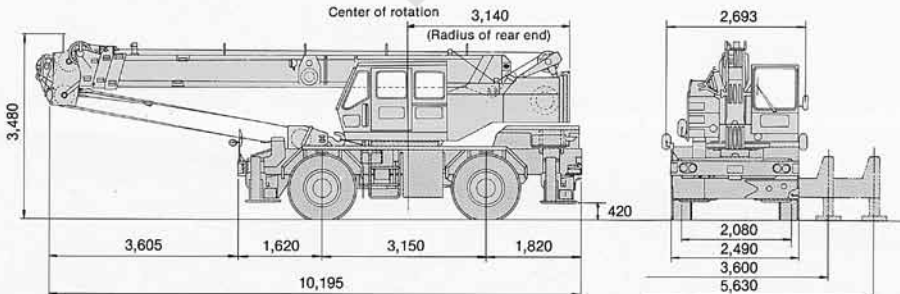


### • 4-wheel steering

R1 = Wheel turning radius	4.80m
R2 = Vehicle turning radius	5.72m
R3 = Boom turning radius	7.70m
A = Road width at entrance	4.08m
B = Road width at exit for wheels	3.41m
C = Road width at exit for vehicle	4.08m
D = Road width at exit for boom	6.06m
E = Road width at entrance allowing for rear swing	3.41m

# General Dimensions

Unit: mm



# RK200

**NOTE:** Due to our policy of continual product improvement, all designs and specifications are subject to change without advance notice. Data herein is informational in nature and shall not be construed to warrant suitability of the machine for any particular purpose as performance may vary with the conditions encountered. These statements are correct at time of going to press.

 **KOBE STEEL, LTD.**

**CONSTRUCTION MACHINERY DIVISION**

No. 27-8, 6-chome, Jingumae, Shibuya-ku, Tokyo 150, Japan  
Phone: Tokyo (03) 797-7021  
Telex: 2228507 KOBSTL J or KSLCONST J 29757  
Cable: "KOBESTEEL TOKYO"

**Address Inquiries to:**



**ROUGH TERRAIN CRANE**

**RK200**

**SPECIFICATIONS**

Max. Lifting Capacity: **20 tons x 2.5 m**

Max. Boom Length: **25.0 m**



**KOBELCO CONSTRUCTION MACHINERY CO., LTD.**

# SPECIFICATIONS

## UPPER STRUCTURE



### SWING UNIT

A hydraulic piston motor drives the swing pinion through a deck-mounted planetary gear reducer for 360° continuous rotation.

Hydraulic flow into the swing motor is controlled by a manual valve in the swing circuit. The brake valve allows the operator to select free or automatic braking when the swing control lever is set in neutral.

**SWING PARKING BRAKE:** manual disc brake

**SWING GEAR:** Internal spur gear

**SLEWING RING:** Integral with the swing gear, with a single row of ball bearings.

**SWNG SPEED:** 2.8 min<sup>-1</sup>(rpm)



### WINCHES

Mounted side by side, power hoisting and lowering with inching capability. Hydraulic motor drive, spur gear reduction, and counterbalance valve.

### BRAKES

Band type, with negative brake modes.

### DRUMS

**Main hoist:** 280 mm P.C.D. x 318 mm width

**Aux. hoist:** 280 mm P.C.D. x 170 mm width

### WIRE ROPES

<b>Main hoist</b>	14 mm dia. x 137 m	IWRC 6 X Fi (29) c/o hard twist rope 4 x F (40) c/o anti twist rope (Europe area)
<b>Aux. hoist</b>	14 mm dia. x 65 m	IWRC 6 X Fi (29) c/o hard twist rope 4 x F (40) c/o anti twist rope (Europe area)

### LINE SPEED

**Main hoist:** 98 m/min (at 4th layer)

**Aux. hoist:** 85 m/min (at 2nd layer)

### BOOM HOIST

One-double acting hydraulic cylinder with holding valve.



### BOOM TELESCOPE

Full power telescoping by two hydraulic cylinders with holding valves and telescoping assistance cables for the boom tip section.

### CONTROLS

Five hand control levers for swing, telescope (with pedal), main winch, auxiliary winch, and boom hoist (with pedal). These are remote-control type without steps and can be stored in their bases when not in use.

**Other controls include:** two short levers for main and auxiliary winch clutches and negative brake ON-OFF; one short lever for swing parking brake; one lever for telescope change; one lever for transmission gear selection; two pedals for main and (auxiliary winch drum brakes); throttle control; and one travel brake pedal.



### OPERATOR'S CAB

All-weather, wide-view cab with safety glass, sliding door, roll-down window, and sashless roof window with wiper. Adjustable driver's seat with seat belt.

### SAFETY DEVICES (Standard)

Moment limiter (auto-stop)	Swing lock device
Swing range limit device	Working range limit device
Boom telescope safety device	Overhoist prevention device (auto-stop)
Base machine inclination meter	Interceptive lever lock for on and off
Outrigger extension width automatic detecting device	Auxiliary brake for operating
Boom hoist safety device	Safety lock lever
Hydraulic safety valve	Sling wire lock
Boom telescoping default operation prevention device	Winch drum safety device
Swing flasher lamps	Outrigger safety device
	Anti-slip seat

## HYDRAULIC SYSTEM



### PUMPS

2 variable plunger pumps and 3gear

**1st pump :** Boom hoist, boom telescope, and winch assist

**2nd pump:** Outriggers, and winch system

**3rd pump :** Swing and steering

**4th pump :** Pilot circuits for the clutches and negative brake cylinders, steering, and air conditioner.

**5th pump :** Steering assist system,

**MOTORS :** Two plunger motors power the main hoist, the auxiliary hoist, and the swing.

### CONTROL VALVES

#### Upper

**One 5-stack valve :** Winch, boom telescope, and boom hoist

**One 4-stack valve :** Clutch and brake

**One 1-stack valve :** Swing

#### Lower

**Solenoid valves :** Outriggers and suspension lock system

**One 2-stack valve :** Steering

**OIL RESERVOIR :** 250 liters

## CARRIER



### TYPE

4-wheel drive (4WD), with 2-wheel drive (2WD) select for high speed mode.

**MAX. TRAVEL SPEED:** 49 km/h

**GRADEABILITY:**  $\tan \theta$  0.6 (31°)

**PASSENGER:** 1 person



### OUTRIGGERS

**Type:** Hydraulic H-type outriggers.

**Control:** Eight double-acting hydraulic cylinders provide independent horizontal and vertical movement for each outrigger. Outriggers can be set from inside the cab or at the side of the carrier.

Outrigger extension	5.1m	4.8m	4.2m	3.2m	1.825m
---------------------	------	------	------	------	--------



### ENGINE

MITSUBISHI 6D16-TE1/6D16-TUG (for Europe) turbocharged, water-cooled diesel engine with 4 cycles, 6 cylinders, and direct injection.

Max. output	136 kW at 2,800 min <sup>-1</sup>
	141 kW at 2,800 min <sup>-1</sup> (Europe area)
Max. torque	637 N·m at 1,600 min <sup>-1</sup>
	637 N·m at 1,600 min <sup>-1</sup> (Europe area)

**Displacement** ..... 7,545 cc

### ELECTRICAL SYSTEM

24-volt DC system with two 12-volt batteries

### FUEL TANK

Capacity ..... 250 liters

### TORQUE CONVERTER

3 element, single-stage, 2 phases, torque converter with manually and automatically controlled lock-up clutch.

### TRANSMISSION

3-speed for forward and 1-speed for reverse with high-low shift.

### BRAKES

**Service:** Hydraulic and air booster disc brakes on all wheels.

**Auxiliary:** Torque converter lock-up linked electronic control exhaust brake.

**Parking:** Propel shaft brake internal expansion type with auxiliary brake for crane operation.



### STEERING

Hydraulic power steering system with emergency steering device and about-face steering compensation device.

**Steering modes:**

Normal: 2W (front)	Rear: 2W (rear)
Cramp: 4W	Crab: 4W

### SUSPENSION

Front and rear axles are fitted with leaf springs with shock absorbers.

### FRONT/REAR AXLES

Fully floating drive-steer type axles.



### AXLE LOADING

Gross-Vehicle Weight	19,535 kg
Front-Vehicle Weight	9,620 kg
Rear-Vehicle Weight	9,915 kg

### TIRES

Front/Rear: 325/95 R24 161E ROAD

### LIGHTS

Headlights	License plate light
Clearance light	Directional lights
Parking lights	Back light

### SAFETY DEVICES

Emergency steering device
Rear steering auto-lock
Suspension lock device
Engine overrun warning buzzer
Reverse travel buzzer

## ATTACHMENTS



### BOOM

Boom consists of a boom base and four power telescoping sections. The first sections extended separately as do the 2nd and 3rd sections, and 4th and 5th sections synchronized. All-welded, high tensile strength steel box construction.

**Max. rated lifting capacity:** 20.0 metric ton x 2.5 m

**Fully retracted length** ..... 6.7 m

**Fully extended length** ..... 25.0 m

**Boom raising angle:** -9 to 80°

**Boom raising time:** 39 sec

**Boom telescoping time:** 60 sec / 18.3 m



### JIB

Compressed truss-type jib extendable to stored alongside boom. Jib swing down under the boom and twist to set out. Jib offsets 5°, 17°, and 30° with suspension rods.

**Jib length** ..... 5.5 m

### AUXILIARY SHEAVE

The auxiliary sheave permits one-part line operation.



### HOOK BLOCK

4-sheave, Optional 20 metric ton block (or standard 16 metric ton block) with safety latch for main hoist, 2.9 metric ton hook with swivel and safety latch for aux. hoist.

# LIFTING CAPACITIES

## NOTES:

### OPERATION WITH OUTRIGGERS

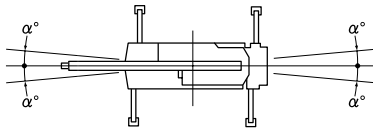
- Rated load do not exceed 75% of the tipping loads with machine set horizontally on a firm and level ground, satisfy the specified stability over the front, and include weight of hook block(s) and other handling accessories. Ratings shown in □ are based on the machine's structural strength, and others are determined by the machine's stability.
- The working radius given in the charts allow for loaded boom deflection. Always operate the machine on the basis of actual operating radius.
- Weight of hooks, hook blocks, slings and other lifting devices are a part of the total load. Their total weight must be subtracted load to obtain the weight that can be lifted.

Hooks	20-ton	16-ton	2.9-ton
Weight	155 kg (opt.)	140 kg	45 kg

- Maximum outrigger extension is 5.1 m. Three intermediate extension positions are also provided at 4.8 m, 4.2 m and 3.2 m. Minimum outrigger extension is 1.825 m.

#### Over-the-front area

#### Over-the-rear area



Outrigger extension	4.8m	4.2m	3.2m	Min. outrigger extension
$\alpha^\circ$	33°	28°	20°	5°

- Rated load in the over-the-side whole around various depending on the extension position of outriggers. Therefore, crane operation must be performed based on the rating chart corresponding to each extended outrigger position.
- To determine load ratings that fall between those shown in the charts, proceed as follows:
  - For boom lengths not listed use rating for next longer boom length or next shorter boom length, whichever is smaller.
  - For load radii not shown, use rating for next larger radius.
- Ratings of the auxiliary sheave are the same as main boom ratings, but should not exceed 2,900kg. Ratings of the auxiliary sheave are calculated by deducting 20-ton hook weight (155 kg) or 16-ton hook weight (140 kg) from main boom ratings.
- Jib operation must be based on the main boom angle.
- Ratings of the boom with extended jib are calculated by deducting 350 kg besides the weight of 20-ton hook block and the sling wire from the rated loads. At this time, do not use the auxiliary sheave.
- In such a condition not shown in the rating chart, operation is impossible. Lowering the boom over critical degrees leads to overturn even with no load. Be careful extremely.
- Standard hoist reevings are shown bellow. Rated single-line pull must not exceed 2,900 kg.

Boom length	6.7m		11.3m	15.9m to 25.0m	Jib aux. sheave
Hook	20-ton	16-ton	16-ton	16-ton	2.9-ton
No. of reeving	8	6	6	4	1

- In order to prevent a load from falling down to mistake of operation, do not use free-fall in crane operation.
- In lifting load operation in an oblique direction (direction toward the outrigger), sometimes the outrigger float in the diagonal side against the lifted load may be raised depending on a condition. This is caused by torsional rigidity and deflection of the carrier frame, and stability is not lost. The stability of this machine in operation within the rating is secured in the condition that the machine is set horizontally on a level and firm ground.

### OPERATION WITHOUT OUTRIGGERS (ON TIRES)

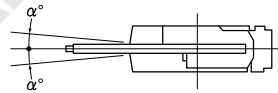
- Rated load do not exceed 75% of the tipping loads with machine set horizontally on a firm and level ground, satisfy the specified stability over the front, and include weight of hook block(s) and other handling accessories. Ratings shown in □ are based on the machine's structural strength, and others are determined by the machine's stability. Tire specified air pressure is set to 900 kPa (9.0 kgf/cm<sup>2</sup>)
- The working radius given in the charts allow for loaded boom deflection. Always operate the machine on the basis of actual operating radius.
- Weight of hooks, hook blocks, slings and other lifting devices are a part of the total load. Their total weight must be subtracted load to obtain the weight that can be lifted.

Hooks	16-ton	2.9-ton
Weight	140 kg	45 kg

\*Tire specified air pressure: 900kPa (9.0 kgf/cm<sup>2</sup>)

- Load ratings differ for over-the-front and over-the-side operation. Care must e taken to avoid overload when swinging a load from an over-the-front position to an over-the-side position.

#### Over-the-front area



On tires	Stationery	Pick & carry
$\alpha^\circ$ (FRONT)	1°	1°

- Ratings of the auxiliary sheave are the same as main boom ratings, but should not exceed 2,900 kg. Ratings of the auxiliary sheave are calculated by deducting 20-ton hook weight (155 kg) or 16-ton hook weight (140 kg) from main boom ratings.
- Do not use jib operation and free fall.
- Parking brake and auxiliary operation brake must be applied during stationary load lifting.
- Pick and carry operations must be done in the low travel mode.
- During pick and carry operations, keep the load close to the ground to avoid swaying, and travel no faster than 2.0 km/h. Avoid cornering, sudden starts (acceleration), and sudden braking. Boom must be centered over the front area.
- Do not operate the crane functions while carrying the load.
- Standard hoist reevings are shown bellow. Single-line load must not exceed 2,900 kg.

Boom length	6.7m		11.3m to 20.4m	Jib aux. sheave
Hook	20-ton	16-ton	16-ton	2.9-ton
No. of reeving	4	4	4	1



# BOOM LIFTING CAPACITIES

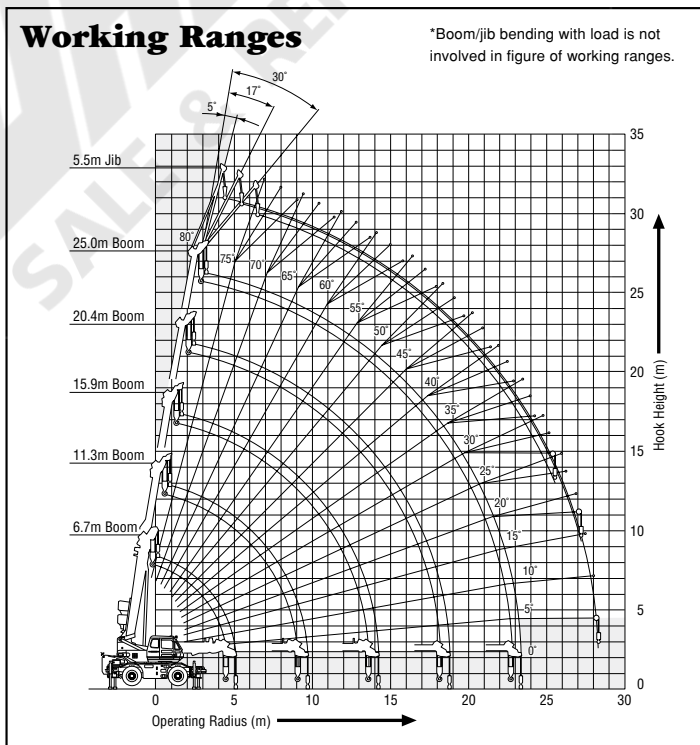
# RK200

## Main Boom Lifting Capacities with Outriggers

Unit: metric ton

MAIN Operating radius (m)	With outriggers in 5.1m position 360° swing area					With outriggers in 4.8m position Over the side					With outriggers in 4.2m position Over the side					With outriggers in 3.2m position Over the side				
	Boom length in meters					Boom length in meters					Boom length in meters					Boom length in meters				
	6.7	11.3	15.9	20.4	25.0	6.7	11.3	15.9	20.4	25.0	6.7	11.3	15.9	20.4	25.0	6.7	11.3	15.9	20.4	25.0
2.5	20.00	12.00	9.00	7.00		16.00	12.00	9.00	7.00		16.00	12.00	9.00	7.00		16.00	12.00	9.00	7.00	
3.0	16.00	12.00	9.00	7.00		16.00	12.00	9.00	7.00		16.00	12.00	9.00	7.00		13.00	12.00	9.00	7.00	
3.5	14.00	12.00	9.00	7.00	5.00	14.00	12.00	9.00	7.00	5.00	14.00	12.00	9.00	7.00	5.00	10.00	10.00	9.00	7.00	5.00
4.0	12.50	12.00	9.00	7.00	5.00	12.50	12.00	9.00	7.00	5.00	12.50	12.00	9.00	7.00	5.00	7.70	7.80	7.20	7.00	5.00
4.5	11.50	11.10	8.50	7.00	5.00	11.50	11.10	8.50	7.00	5.00	11.20	10.55	8.30	7.00	5.00	5.40	6.20	6.10	6.45	5.00
5.0		10.25	8.05	7.00	5.00		10.15	8.05	7.00	5.00		9.15	7.65	7.00	5.00		5.10	5.00	5.30	5.00
5.5		9.40	7.60	6.60	4.75		9.10	7.60	6.60	4.75		7.75	6.95	6.55	4.75		4.30	4.20	4.50	4.70
6.0		8.55	7.15	6.20	4.55		8.05	7.10	6.20	4.55		6.55	6.30	6.10	4.55		3.60	3.60	3.85	4.05
6.5		7.70	6.70	5.80	4.35		7.00	6.60	5.80	4.35		5.65	5.60	5.70	4.35		3.10	3.10	3.35	3.55
7.0		6.85	6.20	5.50	4.15		6.20	6.05	5.50	4.15		4.90	4.95	5.25	4.15		2.70	2.70	2.95	3.10
7.5		6.00	5.70	5.15	3.90		5.40	5.45	5.15	3.90		4.30	4.40	4.70	3.95		2.40	2.35	2.60	2.80
8.0		5.30	5.20	4.85	3.70		4.75	4.80	4.80	3.70		3.80	3.85	4.20	3.70		2.10	2.05	2.30	2.50
9.0		4.25	4.25	4.30	3.30		3.80	3.85	4.10	3.30		3.05	3.10	3.40	3.30		1.65	1.60	1.85	2.00
10.0			3.50	3.75	3.00			3.15	3.45	3.00			2.50	2.80	2.90			1.25	1.50	1.65
11.0			2.90	3.20	2.70			2.60	2.90	2.70			2.05	2.35	2.50			1.00	1.20	1.35
12.0			2.45	2.75	2.50			2.20	2.45	2.45			1.70	1.95	2.15			0.80	1.00	1.15
13.0			2.05	2.35	2.30			1.85	2.10	2.20			1.40	1.65	1.85			0.63	0.80	0.95
14.0			1.85	2.05	2.10			1.70	1.80	1.95			1.25	1.45	1.60			0.50	0.65	0.80
15.0			(13.6m)	1.75	1.90			(13.6m)	1.55	1.70			(13.6m)	1.20	1.40			(13.6m)	0.55	0.65
16.0				1.50	1.70				1.35	1.50				1.00	1.20				0.40	0.55
17.0				1.32	1.50				1.15	1.30				0.80	1.00					0.45
18.0				1.15	1.30				0.95	1.15				0.65	0.85					0.35
19.0				1.15	1.15				0.90	1.00				0.60	0.70					
20.0				(18.1m)	1.00				(18.1m)	0.85				(18.1m)	0.60					
21.0					0.90					0.75					0.50					
22.0					0.80					0.65					0.40					
22.7					0.74					0.60					0.35					
Min. boom angle	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	29°	37°

MAIN Operating radius (m)	With outriggers in min. position Over the side				
	Boom length in meters				
	6.7	11.3	15.9	20.4	25.0
2.5	7.75	7.80	7.80	7.00	
3.0	5.55	5.60	5.60	6.10	
3.5	4.20	4.30	4.25	4.70	4.70
4.0	3.30	3.40	3.35	3.70	3.80
4.5	2.65	2.70	2.70	3.00	3.10
5.0		2.20	2.25	2.55	2.65
5.5		1.80	1.85	2.10	2.25
6.0		1.50	1.55	1.80	1.90
6.5		1.25	1.30	1.55	1.65
7.0		1.05	1.05	1.30	1.45
7.5		0.85	0.85	1.15	1.30
8.0		0.70	0.70	0.95	1.10
9.0			0.45	0.70	0.85
10.0			0.30	0.50	0.65
11.0				0.29	0.50
12.0					0.30
13.0					
14.0					
15.0					
16.0					
17.0					
18.0					
19.0					
20.0					
21.0					
22.0					
22.7					
Min. boom angle	0°	29°	45°	52°	57°



# BOOM LIFTING CAPACITIES

## Main Boom Lifting Capacities without Outriggers

Unit: metric ton

MAIN Operating radius (m)	Stationary								Pick & Carry (under 2 km/h)							
	360° swing area				Over the front				360° swing area				Over the front			
	Boom length in meters				Boom length in meters				Boom length in meters				Boom length in meters			
	6.7	11.3	15.9	20.4	6.7	11.3	15.9	20.4	6.7	11.3	15.9	20.4	6.7	11.3	15.9	20.4
3.0	4.40	4.50	4.65	5.00	9.50	8.50	8.50	6.50	4.35	4.40	4.45	3.00	7.00	7.20	6.50	6.00
3.5	3.50	3.65	3.70	4.00	8.30	8.30	8.30	6.50	3.30	3.35	3.60	3.00	6.15	6.30	5.75	6.00
4.0	2.80	2.90	3.00	3.30	7.30	7.30	7.30	6.50	2.60	2.65	2.85	3.00	5.40	5.60	5.00	5.60
4.5	2.20	2.40	2.45	2.75	6.60	6.10	6.10	6.50	2.10	2.10	2.30	2.50	4.75	4.70	4.15	4.80
5.0		1.90	2.00	2.30		5.00	5.10	5.35		1.75	1.90	2.10		3.90	3.50	4.10
5.5		1.60	1.65	2.00		4.20	4.25	4.45		1.45	1.55	1.80		3.30	3.00	3.50
6.0		1.30	1.35	1.70		3.50	3.60	3.90		1.20	1.30	1.50		2.80	2.65	3.00
6.5		1.05	1.10	1.40		3.00	3.10	3.33		1.00	1.10	1.30		2.40	2.30	2.60
7.0		0.85	0.90	1.20		2.65	2.59	2.89		0.80	0.90	1.10		2.10	2.00	2.30
7.5		0.65	0.70	1.00		2.30	2.19	2.54		0.65	0.70	0.90		1.85	1.80	2.05
8.0		0.50	0.50	0.80		2.00	1.89	2.25		0.50	0.50	0.77		1.60	1.65	1.80
9.0				0.55		1.50	1.49	1.79				0.50		1.30	1.30	1.50
10.0				0.35			1.17	1.39				0.30			1.00	1.20
11.0							0.86	1.12							0.70	1.00
12.0							0.64	0.89							0.55	0.80
13.0							0.44	0.70							0.40	0.65
14.0								0.51								0.55
15.0								0.37								0.45
16.0																0.35
17.0																0.30
Min. boom angle	0°	29°	48°	55°	0°	11°	19°	22°	0°	29°	48°	55°	0°	11°	19°	22°

# JIB LIFTING CAPACITIES

5.1 M Boom angle	With outriggers in 5.1m position (360° swing area)					
	5.5 m Jib					
	Jib angle:5°		Jib angle:17°		Jib angle:30°	
Operating radius (m)	Rated Load (metric ton)	Operating radius (m)	Rated Load (metric ton)	Operating radius (m)	Rated Load (metric ton)	
80°	4.7	2.00	5.9	1.50	6.8	1.20
75°	7.6	2.00	8.6	1.50	9.4	1.20
70°	10.3	2.00	11.2	1.50	11.8	1.20
65°	12.7	1.62	13.4	1.25	14.1	1.12
60°	14.9	1.35	15.7	1.09	16.3	1.02
55°	17.0	1.15	17.6	0.98	18.3	0.91
50°	19.0	1.00	19.6	0.87	20.1	0.82
45°	20.8	0.87	21.4	0.78	21.8	0.75
40°	22.5	0.75	22.9	0.70	23.1	0.68
35°	23.9	0.65	24.3	0.62	24.4	0.60
30°	25.2	0.56	25.4	0.54	25.4	0.52
25°	26.2	0.48	26.4	0.46		
20°	27.1	0.41	27.1	0.38		
15°	27.7	0.35				
10°	28.0	0.30				
5°	28.3	0.25				
Min. boom angle		5°		20°		30°

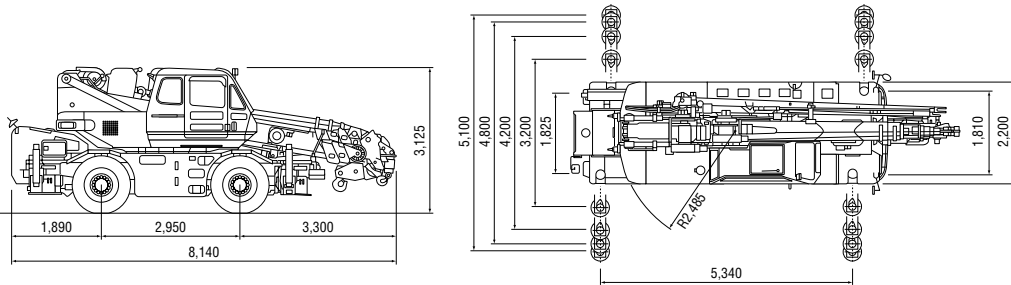
4.8 M	With outriggers in 4.8 m position (over the side)					
	5.5 m Jib					
	Jib angle:5°		Jib angle:17°		Jib angle:30°	
	Boom angle	Operating radius (m)	Rated Load (metric ton)	Operating radius (m)	Rated Load (metric ton)	Operating radius (m)
80°	4.7	2.00	5.9	1.50	6.8	1.20
75°	7.6	2.00	8.6	1.50	9.4	1.20
70°	10.3	2.00	11.2	1.50	11.8	1.20
65°	12.7	1.62	13.4	1.25	14.1	1.12
60°	14.9	1.35	15.7	1.09	16.3	1.02
55°	17.0	1.15	17.6	0.98	18.3	0.91
50°	19.0	1.00	19.6	0.87	20.1	0.82
45°	20.8	0.85	21.4	0.76	21.8	0.73
40°	22.5	0.70	22.9	0.66	23.1	0.63
35°	23.9	0.58	24.3	0.55	24.4	0.53
30°	25.2	0.47	25.4	0.45	25.4	0.41
25°	26.2	0.38	26.4	0.33		
20°	27.1	0.27				
Min. boom angle	20°		25°		30°	

4.2 M	With outriggers in 4.2 m position (over the side)					
	5.5 m Jib					
	Jib angle:5°		Jib angle:17°		Jib angle:30°	
	Boom angle	Operating radius (m)	Rated Load (metric ton)	Operating radius (m)	Rated Load (metric ton)	Operating radius (m)
80°	4.7	2.00	5.9	1.50	6.8	1.20
75°	7.6	2.00	8.6	1.50	9.4	1.20
70°	10.3	2.00	11.2	1.50	11.8	1.20
65°	12.7	1.60	13.4	1.25	14.0	1.06
60°	14.9	1.32	15.7	1.09	16.3	0.94
55°	17.0	1.07	17.6	0.93	18.3	0.82
50°	19.0	0.85	19.6	0.78	20.1	0.69
45°	20.8	0.65	21.4	0.63	21.7	0.57
40°	22.5	0.50	22.9	0.49	23.1	0.45
35°	23.9	0.35	24.3	0.35	24.4	0.32
30°	25.2	0.25				
Min. boom angle	30°		35°		35°	

3.2 M	With outriggers in 3.2 m position (over the side)					
	5.5 m Jib					
	Jib angle:5°		Jib angle:17°		Jib angle:30°	
	Boom angle	Operating radius (m)	Rated Load (metric ton)	Operating radius (m)	Rated Load (metric ton)	Operating radius (m)
80°	4.7	2.00	5.9	1.50	6.8	1.20
75°	7.6	2.00	8.6	1.50	9.4	1.20
70°	10.3	2.00	11.2	1.50	11.8	1.20
65°	12.7	1.50	13.3	1.15	14.0	1.00
60°	14.7	0.98	15.5	0.84	16.3	0.78
55°	16.7	0.65	17.5	0.58	18.3	0.56
50°	18.8	0.43	19.5	0.40	20.1	0.37
45°	20.6	0.22				
Min. boom angle	45°		50°		50°	

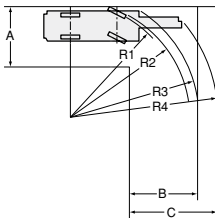
# DIMENSIONS

# RK200



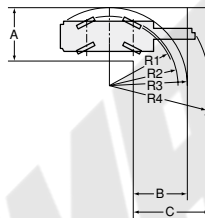
## TURNING RADIUS

### 2-Drive Steering (Front)



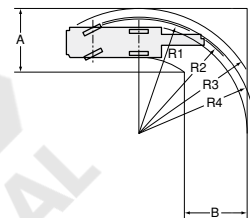
R1	Minimum turning radius	8.60m
R2	Tire clearance with cab	8.78m
R3	Carrier clearance	9.39m
R4	Boom clearance	9.78m
A	Entrance width (carrier)	4.63m
B	Exit width (tires)	4.63m
C	Exit width (boom)	5.02m

### 4-Drive Steering



R1	Minimum turning radius	4.73m
R2	Tire clearance with cab	4.94m
R3	Carrier clearance	5.53m
R4	Boom clearance	6.15m
A	Entrance width (carrier)	3.79m
B	Exit width (tires)	3.79m
C	Exit width (boom)	4.38m

### 2-Drive Steering (Rear)



R1	Minimum turning radius	8.60m
R2	Tire clearance with cab	8.78m
R3	Carrier clearance	9.39m
R4	Boom clearance	8.30m
A	Entrance width (carrier)	4.62m
B	Exit width (tires)	4.62m

## STANDARD EQUIPMENT

Engine tachometer
Tachograph
Hourmeter
Engine over running alarm
Paper-element air cleaner
Two working lights
Horn
Towing hooks (one front, one rear)
Outrigger plates
Oil cooler
Cab heater/defroster
Air conditioner
Operation Manual: one set

## OTHER AMENITIES

Radio
Cigarette lighter
Ashtray
Sun visor
Floor mat
Windshield wiper/washer

## OPTIONAL EQUIPMENT

Extra hydraulic oil cooler for hydraulic system
---

**Note:** Due to our policy of continual product improvements all designs and specifications are subject to change without advance notice.

## KOBELCO CONSTRUCTION MACHINERY CO., LTD.

3-13, Nihonbashi 1-chome, Chuo-ku, TOKYO, 103-8246 JAPAN  
Tel: ++81 (0)3 3278-7080/ Fax: ++81 (0)3 3278-7138