

**ROUGH
TERRAIN
CRANE**

RK250

SPECIFICATIONS

Max. Lifting capacity: 25.0 metric tons x 3.5 meters

Max. Boom Length: 30.6 meters

Max. Total Length (boom + jib): 42.6 meters

KOBELCO
◆ **KOBE STEEL, 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.



WINCHES

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

CLUTCHES

Internal-expanding, hydraulic shoe type.

BRAKES

Band type, with positive and negative brake modes.

DRUMS

320mm P.C.D., with 538mm diameter flanges. Width: 447.3mm (main) and 227.9 mm (auxiliary).

HOIST CABLES

IWRC6xFi (22+7) c/o spin-resist cable. Diameter: 16mm. Length: 170m (main) and 90m (auxiliary). U4xSes (39) non-spin cable optionally available.

BOOM HOIST

One-double acting hydraulic cylinder with holding valve, and boom angle indicator mounted on the base boom section.



BOOM TELESCOPE

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

CONTROLS

Five adjustable hand control levers for swing, telescope, main winch, auxiliary winch, and boom hoist (with pedal). These can be tilted in three neutral positions and 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 over; one lever for transmission gear selection; swing lock pin; winch drum lock knobs; two pedals for main and auxiliary winch drum brakes; one pedal for engine 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. Auxiliary seat behind driver's seat.

SAFETY DEVICES (Standard)

Overhoist shut off, relief valves in hydraulic circuits, holding valves for boom hoist and telescope cylinders, counterbalance valve for winch motor, Check and Safety Monitor, overload warning device (automatic shut-off), winch drum locks, swing lock pin, lock valves for vertical cylinders on outriggers, emergency steering system, about-face steering compensator valve, axle lock-out valve, and swing flasher lamps, Programmable Operating Zone System, Automatic Outrigger Extension Sensor, and Automatic Swing Arrest, free-fall interlock and safety lock lever.

HYDRAULIC SYSTEM



PUMPS

Three gear pumps and two single variable plunger pumps deliver power to the upper structure and outriggers. The first and second plunger pumps are paired and driven by power take-off. The third, fourth and fifth pumps are paired and directly driven. The first pump actuates the boom hoist, boom telescope, and winch assist; the second pump actuates the outriggers, and winch system; the third pump actuates the swing and steering the fourth pump actuates the pilot circuits for the clutches and negative brake cylinders, steering assist, the optional cab air conditioner. The fifth pump assists steering system and optional power sky tilt jib and power twist.

MOTORS

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

CONTROL VALVES

Upper

One 5-stack set for the winch, boom telescope, and boom hoist; one 2-stack set for the clutch and brake; one 1-stack set for the swing.

Lower

Seven solenoid valves for the outriggers and suspension system; one 2-stack set for steering.

OIL RESERVOIR

Capacity.....358 liters



EQUIPMENT (Standard)

Radio, windshield wiper/washer, cigarette lighter, ashtray, sun visor, floor mat, engine tachometer, tachograph, hourmeter, engine over running alarm, paper-element air cleaner, two working lights, horn, towing hooks (one front, one rear), oil cooler, cab heater/defroster, and air conditioner.

EQUIPMENT (Optional)

Extra hydraulic oil cooler for hydraulic system, remote back mirror, outrigger plates.



RK250

CARRIER

TYPE

4-wheel drive (4x4), with 2-wheel (4x2) drive select for high speed mode.

FRAME

Wave-shaped frame construction.



OUTRIGGERS

KOBELCO hydraulic H- or X-type outriggers. 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. Both outriggers feature self-storing floats.



POWER PLANT

Mitsubishi 6D16T, turbocharged, diesel engine with 4 cycles, 6 cylinders, and direct injection.

Max. output (DIN)220 PS at 2,800 rpm
Max. torque (DIN)65kg·m at 1,600 rpm
Displacement7,545cc

ELECTRICAL SYSTEM

24-volt DC system with two 12-volt, 120 Ah batteries

FUEL TANK

Capacity300 liters

TORQUE CONVERTER

Single-stage, torque converter with automatically controlled lock-up clutch.

TRANSMISSION

8-speed with high-low range. The transmission shifts to automatic drive when the D range is engaged in the high mode.

Gear ratios (forward and reverse):

Lower mode: 1st-5.43; 2nd-2.795; 3rd-1.760; R-5.43
High mode: 1st-2.598; 2nd-1.337; 3rd-0.842; R-2.598

BRAKES

Service: Air-over hydraulic disc brakes on all wheels; dual caliper on front wheels and single caliper on rear wheels.

Parking: Spring-applied, air-released shoe brake on the out-put shaft of the transmission, and complementary disc brake actuator.



STEERING

"Orbitrol" hydraulic steering with emergency system. Four steering modes are provided: normal, cramp, crab, and rear. Adjustable steering wheel.

About-Face Steering Compensator

An about-face steering compensator makes it possible to travel in reverse with the same handling characteristics as forward travel. The compensator is activated by a reverse steer switch on the front panel.

SUSPENSION

Front and rear axles are fitted with torque rod and hydro-pneumatic suspension with lock-up system.

FRONT/REAR AXLES

Fully floating drive-steer type axles. Standard conventional differential on all axle.

AXLE LOADINGS

Gross-Vehicle Weight: 26,390 kg; (26,500kg with operator)

Front: 13,190kg; (13,250kg with operator)

Rear: 13,200kg; (13,250kg with operator)

FINAL REDUCTION

2-stage reduction with a ratio of 18.849
(Differential=3.9; final reduction=4.833)

TIRES

Front/Rear: 16.00-25-28PR

LIGHTS

Halogen headlights, license plate light, stop lights, clearance light, directional lights, parking lights, back light, step light.

ATTACHMENTS

BOOM

Boom consists of a boom base and three power telescoping sections. The first sections extend separately as do the second and tip sections synchronized. All-welded, high tensile strength steel box construction.

Fully retracted length9.3m

Fully extended length30.6m

JIB

7.5m "A" frame jib with telescopic box section extendable to "12" m stored alongside the boom. Jib swing down under the boom and twisted to set out. Jib offsets 5°, 25°, and 45° with suspension rods. Optional sky tilt for variable offset angle 3° to 45° operated from the cab.

Length7.5m/12m

AUXILIARY SHEAVE

The pin-released auxiliary sheave permits one-part line operation.



HOOK BLOCKS

Four-sheave, 25 metric ton block with swivel and safety latch.

Optional 3-sheave, 18 metric ton block with swivel and safety latch.

3.2 metric ton ball hook with swivel and safety latch.

PERFORMANCE

Max. rated lifting capacity: 25 metric tonx3.5m

Boom length: 9.3 to 30.6m

Twist jib length: 7.5m/12.0m

Boom derricking angle: 0 to 82°

Boom derricking time: 60 sec

Boom telescoping time: 95.2 sec (9.3 to 30.6m)

Main hoist line speed (4th layer) High: 124m/min

Low: 60m/min

Aux. hoist hook speed (2nd layer) High: 107m/min

Low: 52m/min

Swing speed: 3.06rpm

Max. travel speed: 49km/h

Gradeability: tanθ 0.6

Note: Please consult your local dealer for details concerning which features are standard and which are optional.



Lifting Capacities

NOTES FOR LIFTING CAPACITIES

GENERAL NOTES

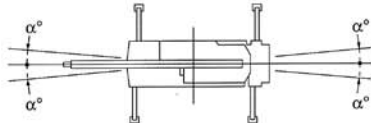
- Lifting capacities listed apply only to the machine as originally manufactured and designed by KOBE STEEL, LTD. modifications to this machine or use of equipment other than that specified can reduce operating capacity.
- Construction equipment can be dangerous if improperly operated or maintained. Operation and maintenance of this machine must be in compliance with the information in the operation, safety and maintenance manual supplied with machine. If this manual is missing, order replacement through the distributor.

OPERATION WITH OUTRIGGERS

- For outrigger operation, outriggers shall be fully extended with tires free of supporting surface before operating crane.
- Total rated loads shown on the chart are the maximum allowable crane capacities and are based on the machine standing level on firm supporting surface under ideal job conditions. Depending on the nature of the supporting surface, it may be necessary to have structural supports under the outrigger floats to spread the load to larger bearing surface.
- Capacities do not exceed 78% of the tipping loads. Capacities based on factors other than machine stability such as structural competence are shown by bold line.
- Weight of hooks, hook blocks, slings and other lifting devices are a part of the total load. Their total weight must be subtracted from the rated load to obtain the weight that can be lifted.
 25-ton hook block weight210kg
 18-ton hook block weight (opt.)210kg
 3.2-ton hook block weight70kg
- The working radius given in the charts allow for loaded boom deflection. Always operate the machine on the basis of actual operating radius.
- Total rated loads are based on freely suspended loads and make no allowance for such factors as the effect of wind, sudden stopping of loads, supporting surface conditions, side loads, etc. Side pull on boom or jib is extremely dangerous.
- Maximum outrigger extension is 6.3m. Two intermediate extension positions are also provided at 5.1m and 3.8m. Minimum outrigger extension is 2.105m.
 Over-the-side ratings depend on outrigger extension. Values for each outrigger position are given separately and must be followed accordingly during operation. Load rating over the front and rear assume fully extended outrigger position.

Over-the-front area

Over-the-rear area



Outriggers	5.1m extension	3.8m extension	2.1m extension (only H-type)
α° (FRONT)	28	20	5
α° (REAR)	28	20	5

- Ratings of the auxiliary sheave are calculated deducting 25-ton hook weight (210kg) from main boom ratings, but should not exceed 3,200kg.
- 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 radius not shown, use rating for next larger radius.
- Total load that can be lifted over a jib is based on main boom angle only.

- When lifting over the boom with a jib extended, deduct the weight of the hook block, other handling accessories, and 1,550kg (with jib box section stored) or 1,750kg (extended) from the main boom ratings.
 Do not use the auxiliary sheave when the jib is extended.
- To attempt to lift loads in the area other than those listed in the rated load charts, the machine may tip or collapse.
- Standard hoist reevings are shown below. Rated single-line pull should not exceed 3,125kg.

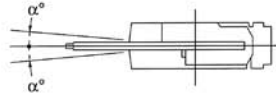
Boom length	9.3m		16.4m		23.5m		30.6m		Aux. sheave
Hook	25-ton	18-ton	25-ton	18-ton	25-ton	18-ton	25-ton	18-ton	3.2-ton
Parts of line	8	6	6	6	4	4	4	4	1

- Free fall should in principle be done with no load on a hook. When a load must unavoidably be applied, load allowable for free fall operations are restricted to one-fifth of rated loads at the given load radius.
 Never brake suddenly during free fall, or machine may tip.

OPERATION WITHOUT OUTRIGGERS (ON TIRES)

- Load ratings are the allowable maximum lifting capacities for a firm and level surface, with tires filled to prescribed pressure (7.75kg/cm²), and with axle lock-out cylinder engaged. Damaged tires are hazardous to safe operation of crane. Ratings include hook block and all other load handling accessories. Values in the bold line are based on the machine's hydraulic or structural limitations; all others are based on stability.
 25-ton hook block weight210kg
 18-ton hook block weight (opt.)210kg
 3.2-ton hook block weight70kg
- The working radius given in the charts allow for loaded boom deflection. Always operate the machine on the basis of actual operating radius.
- Load ratings differ for over-the-front and 360° operation. Care must be taken to avoid overload when swinging a load from an over-the-front position to a over-the-side position.

Over-the-front area



On tires	Stationary	Pick & carry
α° (FRONT)	1°	1°

- Ratings of the auxiliary sheave are calculated deducting 25-ton hook weight (210kg) from main boom ratings, but should not exceed 3,200kg.
- Do not operate the jib or use 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 2.0km/h. Avoid cornering, sudden starts, sudden 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 below.
 Single-line load must not exceed 3,125kg.

Boom length	9.3m		16.4m		23.5m		Aux. sheave
Hook	25-ton	18-ton	25-ton	18-ton	25-ton	18-ton	3.2-ton
Parts for line	8	6	4	4	4	4	1



Main Boom Lifting Capacities with Outriggers

Operating radius in meters	With outriggers fully extended—360° working area				With outriggers in 5.1m position—over the side				With outriggers in 3.8m position—over the side				With outriggers in 2.1m position over the side (only H-type outrigger)			
	Boom length in meters				Boom length in meters				Boom length in meters				Boom length in meters			
	9.3	16.4	23.5	30.6	9.3	16.4	23.5	30.6	9.3	16.4	23.5	30.6	9.3	16.4	23.5	30.6
2.5	25.00	18.00			25.00	18.00			25.00	18.00			11.10	10.00		
3.0	25.00	18.00			25.00	18.00			25.00	18.00			11.10	10.00		
3.5	25.00	18.00	11.50		25.00	18.00	11.50		20.00	18.00	11.50		8.40	8.00	9.30	
4.0	23.00	18.00	11.50		23.00	18.00	11.50		15.70	15.60	11.50		6.70	6.30	7.20	
4.5	21.20	18.00	11.50		21.20	18.00	11.50		12.60	12.60	11.50		5.50	5.10	5.90	
5.0	19.40	16.70	11.50	7.00	18.10	16.00	11.50	7.00	10.60	10.30	10.25	7.00	4.55	4.20	4.90	5.30
5.5	17.80	15.50	11.50	7.00	15.35	14.60	11.50	7.00	9.05	8.70	9.00	7.00	3.85	3.50	4.15	4.50
6.0	16.30	14.40	10.85	7.00	12.90	12.40	10.60	7.00	7.70	7.50	7.80	7.00	3.30	2.95	3.55	3.90
6.5	15.10	13.40	10.25	7.00	11.10	10.80	9.90	7.00	6.60	6.50	6.85	7.00	2.85	2.45	3.05	3.35
6.8	7.00	12.80	9.90	7.00	7.00	9.90	9.40	7.00	6.00	5.90	6.40	6.65	2.60	2.20	2.75	3.05
7.0		12.50	9.70	7.00		9.40	9.15	7.00		5.60	6.10	6.40		2.05	2.60	2.85
7.5		11.70	9.15	7.00		8.20	8.50	7.00		4.90	5.50	5.75		1.70	2.20	2.45
8.0		10.90	8.70	6.70		7.30	7.80	6.70		4.40	4.90	5.15		1.40	1.90	2.10
9.0		8.65	7.70	6.15		5.85	6.45	6.05		3.50	3.95	4.20		0.90	1.40	1.60
10.0		7.05	6.90	5.60		4.75	5.35	5.55		2.80	3.25	3.50			1.05	1.25
11.0		5.85	6.25	5.15		3.90	4.50	4.75		2.25	2.70	2.95				0.95
12.0		4.95	5.45	4.70		3.30	3.80	4.10		1.80	2.25	2.50				
13.0		4.20	4.70	4.30		2.75	3.25	3.50		1.40	1.90	2.15				
13.5		3.90	4.40	4.15		2.50	3.00	3.25		1.20	1.75	2.00				
13.9		3.70	4.15	4.05		2.30	2.85	3.10		1.00	1.65	1.90				
14.0			4.10	4.00			2.80	3.05			1.60	1.85				
15.0			3.60	3.70			2.45	2.65			1.35	1.55				
16.0			3.15	3.45			2.10	2.35			1.10	1.35				
17.0			2.80	3.05			1.80	2.05			0.95	1.15				
18.0			2.45	2.70			1.55	1.80			0.75	1.00				
19.0			2.15	2.45			1.35	1.55			0.60	0.85				
20.0			1.90	2.20			1.15	1.40				0.70				
21.0			1.70	1.95				1.20								
22.0				1.75				1.05								
24.0				1.40				0.75								
26.0				1.15				0.50								
28.0				0.95												
28.1				0.95												
Min. angle	0°	0°	0°	0°	0°	0°	15°	23°	0°	0°	26°	44°	0°	48°	60°	65°

Main Boom Lifting Capacities without Outriggers

Operating radius in meters	Stationary						Pick & Carry (under 2km/h)					
	360° working area			Over the front			360° working area			Over the front		
	Boom length in meters			Boom length in meters			Boom length in meters			Boom length in meters		
	9.3	16.4	23.5	9.3	16.4	23.5	9.3	16.4	23.5	9.3	16.4	23.5
3.0	8.15	7.30		14.00	9.00		5.90	5.30		10.10	6.50	
3.5	6.05	5.60	4.50	14.00	9.00	6.50	4.40	4.00	3.20	10.10	6.50	4.70
4.0	4.65	4.40	4.50	12.60	9.00	6.50	3.30	3.20	3.20	9.10	6.50	4.70
4.5	3.65	3.40	3.90	11.25	9.00	6.50	2.60	2.40	2.80	8.10	6.50	4.70
5.0	2.90	2.70	3.35	9.90	8.15	6.50	2.10	1.90	2.40	7.10	5.90	4.70
5.5	2.30	2.10	2.80	8.55	7.35	6.15	1.70	1.50	2.00	6.20	5.30	4.40
6.0	1.80	1.65	2.30	7.20	6.60	5.80	1.30	1.20	1.70	5.20	4.80	4.20
6.5	1.40	1.30	1.90	6.15	5.90	5.45	1.00	0.90	1.40	4.40	4.20	3.90
6.8	1.15	1.10	1.70	5.60	5.40	5.25	0.80	0.75	1.25	3.95	3.90	3.75
7.0		1.00	1.60		5.20	5.10		0.70	1.20		3.70	3.70
8.0		0.50	1.10		4.00	4.40			0.80		2.90	3.20
9.0			0.70		3.05	3.70			0.50		2.20	2.70
10.0					2.40	3.00					1.70	2.20
11.0					1.85	2.45					1.30	1.80
12.0					1.40	2.00					1.00	1.40
13.0					1.05	1.65					0.80	1.20
14.0						1.35						1.00
15.0						1.10						0.80
16.0						0.85						0.60
17.0						0.65						0.50
Min. angle	0°	53°	62°	0°	22°	36°	0°	57°	62°	0°	22°	36°

