

Hydraulic Excavators MARKIII

SK 200 · SK 200 LC

Bucket Capacity: 0.45 - 1.10 m³ (0.67 - 1.70 cu yd) CECE (SAE) heaped Engine Power: 135 PS DIN(133 HP SAE) NET at 2,150 rpm Operating Weight: 19,200 kg (42,330 lb) — SK200-III 19,900 kg (43,900 lb) — SK200LC-III



Superb Engineering Gives You an Ideal Combination of Power, Precision, and Speed!

ITCS

Intelligent Total Control System

KOBELCO's exclusive ITCS is a computerized system that integrates the many aspects of machine operation, ensuring that each of the three mechatronic digging modes provides the right combination of power, speed and control for any job. These modes are backed by an **Engine Speed Sensing (ESS) system** and KOBELCO's Power Sensing System (KPSS) which efficiently coordinate engine and pump outlets for faster cycle times using less fuel. ITCS also controls other advanced features, such as variable loading mode and automatic engine deceleration.

Three Mechatronic Digging Modes

Three computer-controlled digging modes offer a range of power/speed combinations to suit the requirements of the job at hand:

● H mode: Heavy-duty mode that makes maximum

use of total horsepower.

S mode: Energy-efficient standard mode for light

to average digging.

● FC mode: Fine-control mode reduces engine rpm

and cuts pump output by half for out-

standing inching capability.

Automatic Engine Deceleration

While control levers are in neutral, the automatic engine deceleration function quickly reduces engine speed to 1,050 rpm, to reduce both noise and fuel consumption.







Automatic engine deceleration

Electric Throttle Lever

The electrically-controlled throttle lever provides light, fatigue-free movement.

Direct Injection Engine

The highly reliable direct injection turbo-charged engine boasts more power and more torque. It combines the power to take on the toughest tasks with efficiency to minimize fuel consumption.

Power Boost

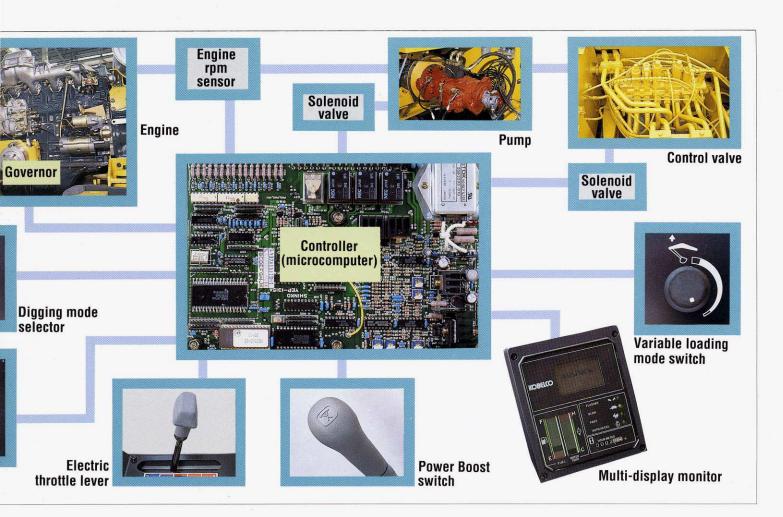
Power Boost supplies a temporary surge of digging power to handle stubborn tree roots or boulders. Available on the SK200, it is activated simply by

pressing a button on the left hand control lever.

Power Boost increases ...

- Bucket digging force to 12,700 kg (28,000 lb)
- Arm crowding force to 10,300 kg (22,700 lb)



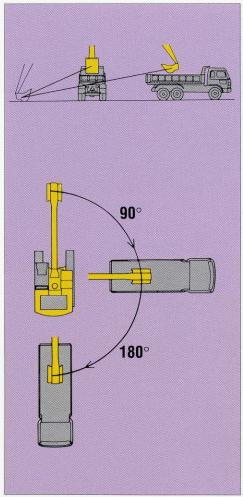


Multi-Display Monitor

The advanced liquid crystal multidisplay monitor, a worldwide first, gives the operator access to a wide range of information with a choice of 16 different easily-read visual displays. The machine's running condition can be checked at a glance.

Variable Loading Mode

The free-turning variable loading mode dial allows the operator to balance swing and boom hoisting speeds so that the bucket arrives at the correct dumping position at the end of the swing cycle. With this feature, even novices can perform repetitious swing and dumping cycles at full throttle.



Other Major Performance Features:

- Boom holding valves prevent hydraulic oil from flowing out of the boom cylinders, minimizing boom drift. The attachment stays at the set height to provide pinpoint accuracy in pipe-laying and other positioning operations.
- Swing shockless valve connects the entrance and exit circuits of the swing motor to minimize rebound motion at the end of the swing cycle. Even at full throttle, swing stops smoothly and precisely, with virtually no lingering vibration.
- Boom lowering circuit maximizes fuel efficiency and makes simultaneous bucket operations more precise.
- Sequenced arm recharge recycles hydraulic flow directly to the attachment for increased arm power when lever stroke demands it.

Smooth, Straight Travel Gets You Where You're Going Faster than Any Other Machine!



Two-Speed Travel System

Travel speed can be changed at the touch of a button conveniently located on the travel lever.

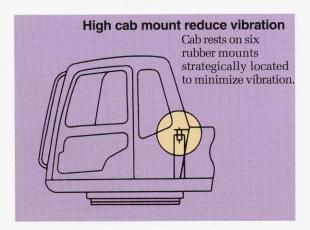
Shockless Propel System

A brake valve in the travel circuit absorbs shocks to provide smooth starts and stops. Excellent inching capacity is assured, with reduced strain on the machine and a more comfortable ride for the operator.



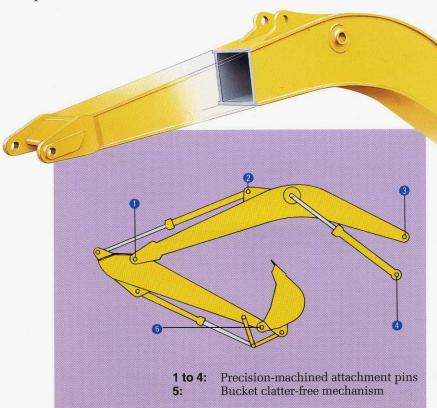
Long-Pitch Track Links

Long-pitch track links with strut reinforcement are highly durable and can withstand high speed travel. They are greased and sealed to keep out mud and debris and reduce wear on the pins.



Fast Travel Speed of 7.0 km/h (4.3 mph)

- The MARK-III machines are fast, without sacrificing drawbar pulling force or comfort. And their tough construction easily withstands the extra vibration and shock that high-speed travel entails.
- Two travel speeds give you the best combination of power and speed for any given terrain. Set to High mode, the machine will automatically shift down to Low mode on gradients or rough terrain where extra power is needed, and shift back again when the going gets easier. Low mode combined with FC working mode gives a maximum travel speed of 2 km/h (1.2 mph) for out-standing inching control.
- Four-point welded boom features high strength and light weight for maximum performance.



Clatter-Free Attachment

 Precision-machined attachment pins keep the attachment clatter-free over extended operating periods.





Pilot-Operated Travel Control

Travel control is hydraulically powered to give the operator lighter control, more "feel" and a smoother ride. Stabilizing dampers soften stops and starts.

Independent Travel Mode

The independent travel mode (D mode) completely separates the travel circuit and guarantees steady, straight travel and precise handling during simultaneous operations.

Straight Propel System

Straight propel keeps the machine right on track even when swing and attachment are operated at the same time. Pipe-laying and other jobs that require precise positioning can be carried out with ease.



Strong X Chassis

The all-welded, box-construction chassis can take the toughest punishment with a minimum of flexing. The crawler frames provide stability and feature a beveled top edge that facilitates mud removal.

Reliable Center Guards

Tough center guards on both tracks keep the machine going strong over the roughest terrain.



High Quality Cab Offers the Ease and Comfort You Need on Site



The Ultimate in Comfortable Cab Seating

The fully-reclining cab seat can be adjusted in seven different ways, including tilting the seat base to a maximum 15° to the front or rear, to provide the ideal working posture for every possible excavator operation. The seat gives extremely good all-round support and first-rate comfort. The operator can work for long periods in a relaxed posture, without fatigue or loss of concentration. The seat has a high-quality cloth cover, and its unique built-in flexibility keeps the operator comfortable through the toughest of working conditions.



Easy-to-Read Multi-Display Monitor

Easy-to-read multi-display monitor checks all important machine functions and immediately warns the operator of possible machine failures before they develop into serious problems.







One-touch Tilt Levers

The knob-topped control levers are ideally positioned for natural wrist and arm movement. At a touch, the left- and right-hand levers can be tilted forward through an angle of 10°, to suit individual operators in every sort of operation. Lever control is simple and minimizes fatigue.



Right-Hand Console

The console is positioned and the switches and throttle lever are specially arranged to be as clear and visible as possible.



Foward/Back Tilting Seat

In addition to separate adjustments for comfort, the whole seat can be tilted forward or back up to 15° from the standard position, to provide a better posture for deep digging or high level operations such as vertical clawing.

Hot 'n' Cool Box

Insulated storage compartment keeps drinks refreshingly cool in summer, or hot snacks hot in



cooler weather. One more welcome feature of the high quality cab interior.

Air Conditioning Installed as Standard

KOBELCO's pressurized air conditioning system introduces fresh air from outside the cab to maintain a comfortable working atmosphere at all times of

year. Humidity is reduced, dust particles are filtered out, and a more powerful fan maintains cab temperature at a comfortable level, however hot or cold it is outside.



Safety Features and Easy Maintenance Reduce Stress and

Save Time

As with all other aspects of machine performance, maintenance has been considered from the operator's perspective. Essential maitenance points can be reached easily, and lubrication requirements have been reduced to a bare minimum.

- Engine guard opens fully for easy access during routine maitenance work.
- Rounded counterweight improves maneuverability and safety.





Swing flashers and rear working lights, all with tough, damage-resistant polycarbonate lenses, enhance general site safety all round the clock.



An improved field of view to the front has been achieved by removing the upper frame from the front window and installing a large, curved skylight. The operator gets an uninterrupted view of high level bucket operations.



Low profile engine guard gives a better field of view to the rear, for safer swing and travel in reverse.



Safety bumpers on the two rear corners of the counterweight soften impact and reduce damage should the machine brush against an obstruction on site.



Wide-angle rear view mirror allows the operator to check the rear of the machine from the driving position, increasing all round safety.

One-touch tilt levers automatically disengage machine functions when pulled all the way back to ensure safe cab entry and exit.



Improved working lights illuminate the bucket and a wider area to the front of the machine for safer nighttime working.





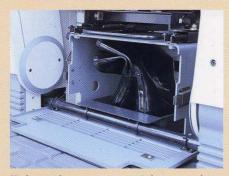


- Tapered side deck improves maneuverability and safety.
- Hinged undercover is easy to open for draining oil or changing elements.
- Easy-access side lubrication of the arm tip simplifies routine maitenance requirement.
- Flexible rings are used for the bucket pin fixtures.



Sharp-edged bucket with side cutters simplifies finishing operations and resists wear.

The Extra Details that Mean So Much...



Under-seat boot compartment is large enough to stow shoes and boots of any size.



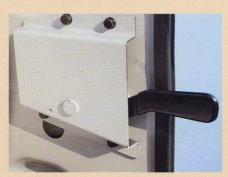
Large tilt-opening skylight with two supports to hold it in any desired position.



Sun visor to reduce the glare of the midday sun, with a stowing support.



Cab interior light activated by opening the door makes nighttime mounting and dismounting safer.



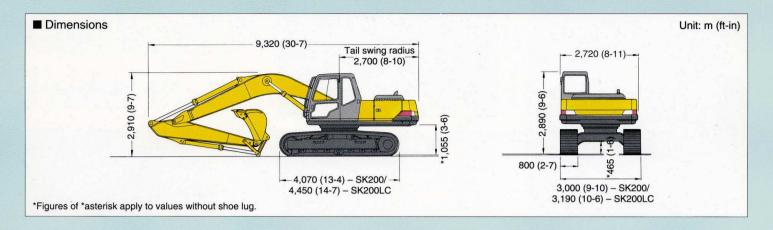
Door release lever can easily be operated from the cab seat.



Grease gun holder is always close to hand, stowed just inside the engine guard.

Two-jet window washer and intermittent wiper with long blades clean a large area of window.

SK 200 SK 200LC



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Performance		
Bucket capacity	m³ (cu yd)	
CECE (PSCA/SAE) heaped		0.45-1.10 (0.67-1.70)
Travel speed	km/h (mph)	7.0/4.0/2.0 (4.3/2.5/1.2)
Swing speed	rpm	13.0
Gradeability	° (%)	35 (70)
Drawbar pulling force	kg (lb)	16,300 (35,900)
Weight		
Operating weight	kg (lb)	19,200 (42,330)/*19,900 (43,900)
Ground pressure	kg/cm² (psi)	0.34 (4.83)*0.32 (4.55) with 800 mm shoe
Engine		
Model		Mitsubishi 6D31-T
Туре		Direct injection, water-cooled, 6-cylinder,
		4-cycle diesel with turbocharger
Power output		
PS DIN (HP SAE) NET at rpm		135 (133)/2,150
Displacement	cc (cu in)	4,948 (302)
Fuel tank capacity	liters (US gal)	300 (79)
Hydraulic system		
Pumps		2 variable displacement piston pumps
Control		ESS, KPSS
Max. discharge flow liters/min	(US gal/min)	2 x 208 (2 x 55)
Max. discharge pressure	kg/cm² (psi)	
Bucket, boom and arm		300 (4,270)
Power Boost		320 (4,550)
Propel circuit		350 (4,980)
Swing circuit		250 (3,560)
Pilot control		50 (710)
Swing motor		Axial piston motor
Travel motor		Twin, axial piston, two-step motors
Control valves		5-spool + 1-spool
Pilot control		Boom, arm, bucket, swing and travel
Hydraulic capacity	liters (US gal)	250 (66)/145 (38)-oil tank level

Shape	Triple grouser sl	noe (even height)	Flat shoe	Triangular shoe
Shoe width mm (in)	600	800	600	900
	(23.6)	(31.5)	(23.6)	(35.4)
Overall width mm (ft-in)	2,800/2,990*	3,000/3,190*	2,800/2,990*	3,100/3,290*
	(9-2/9-10)	(9-10/10-6)	(9-2/9-10)	(10-2/10-10)
Ground pressure	0.44/0.41*	0.34/0.32*	0.45/0.42*	0.30/0.28*
kg/cm² (psi)	(6.26/5.83)	(4.83/4.55)	(6.40/5.97)	(4.27/3.98)
Operating weight kg (lb)	18,700/19,500*	19,200/19,900*	19,400/20,200*	19,300/20,100*
	(41,230/43,000)	(42,330/43,900)	(42,800/44,500)	(42,600/44,300)

^{*}Asterisk shows figures of SK200LC.

■ Digging F	orce			Unit: kg (lb)
Arm Length	2.4 (7-10)	2.94	3.3	2.94+1.5
m (ft-ir		(9-8)	(10-10)	(9-8+4-11)
Bucket Digging	12,700*	12,700*	11,400	11,400
Force	(28,000)	(28,000)	(25,140)	(25,130)
Arm Crowding	12,100*	10,300*	8,500	6,800
Force	(26,680)	(22,710)	(18,740)	(14,990)

Force (26,680)
*Power Boost engaged, available only 2.4m and 2.94m arms

■ Working Ranges

Unit: m (ft-in)

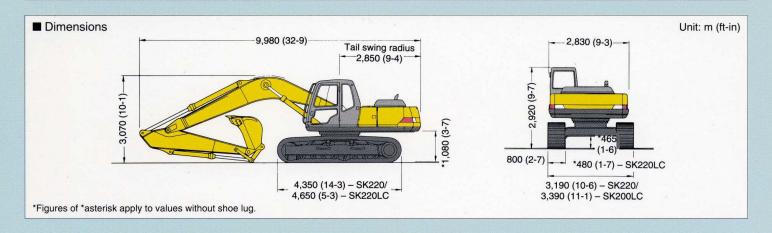
Arm Range	2.4 (7-10)	2.94 (9-8)	3.3 (10-10)	2.94+1.5 (9.8+4.11)
a — Max. digging reach	9.39 (30-10)	9.85 (32-4)	10.14 (33-3)	11.26 (36-11)
b — Max. digging reach at ground level	9.21 (30-3)	9.68 (31-9)	9.98 (32-9)	11.11 (36-5)
c — Max. digging depth*	6.12 (20-1)	6.67 (21-11)	7.02 (23-0)	8.18 (26-10)
c' — Max. depth of bucket hinge pin	4.67 (15-4)	5.21 (17-1)	5.57 (18-3)	6.73 (22-1)
d — Max. digging height*	9.43 (30-11)	9.59 (31-6)	9.62 (31-7)	10.28 (33-9)
d' — Max. height of bucket hinge pin	8.04 (26-5)	8.21 (26-11)	8.27 (27-2)	8.90 (29-2)
e — Max. dumping clearance	6.59 (21-7)	6.76 (22-2)	6.82 (22-5)	7.45 (24-5)
f — Min. dumping clearance	2.87 (9-5)	2.33 (7-8)	1.97 (6-6)	0.81 (2-8)
g — Max. vertical wall digging depth	5.46 (17-11)	6.00 (19-8)	6.19 (20-4)	7.48 (24-6)
h — Min. swing rading	3.59 (11-9)	3.48 (11-5)	3.52 (11-7)	3.48 (11-5)
i — Horizontal digging stroke at ground level	4.08 (13-5)	5.24 (17-2)	5.90 (19-4)	7.65 (25-1)
j — Digging depth for 2.4 m (8') flat bottom	5.90 (19-4)	6.46 (21-2)	6.82 (22-5)	8.05 (26-5)
Bucket capacity CECE (SAE/PCSA) heaped m³ (cu yd)	0.8 (1.22)	0.7 (1.06)	0.6 (0.91)	0.45 (0.68)

■ Attachments

					et			
Uses			General	purpose	Ligh	Light duty		
	et capacity m³ E heaped) cu yd	0.45 0.59	0.6 0.78	0.7 0.92	0.8 1.05	0.9 1.18	1.1	0.7 0.92
	et capacity m³ heaped) cu yd	0.51 0.67	0.69 0.9	0.81 1.06	0.93 1.22	1.05 1.37	1.24 1.62	0.8 1.05
Buck (Stru	et capacity m³ ck) cu yd	0.39 0.51	0.51 0.67	0.59 0.77	0.67 0.88	0.75 0.98	0.96 1.25	0.59 0.77
	ber of et teeth	3	5	5	5	6	6	5
	2.4m (7'-10")	0	0	0	0	Δ	Δ	Δ
Cor	2.94m (9'-8")	0	0	0	Λ	×	×	0
Combinations	3.3m (10'-10")	0	0	Δ	×	×	×	×
	2.4+1.5m (7'10"+4'11")	0	Δ	×	×	×	×	×
	2.94+1.5m (9'8"+4.11")	0	×	×	×	×	×	×

[○] Recommended △ Light material × Not recommended

SK 220 SK 220LC



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Performance		
Bucket capacity	m³ (cu yd)	
CECE (PSCA/SAE) heaped		0.7-1.2 (1.06-1.83)
Travel speed	km/h (mph)	7.0/4.0/2.0 (4.3/2.5/1.2)
Swing speed	rpm	12.0
Gradeability	° (%)	35 (70)
Drawbar pulling force	kg (lb)	18,900 (41,700)
Weight		
Operating weight	kg (lb)	23,300 (51,400)/*24,500 (54,000)
Ground pressure	kg/cm² (psi)	0.39 (5.55)*0.38 (5.40) with 800 mm shoe
Engine		
Model		Mitsubishi 6D15-T
Туре		Direct injection, water-cooled, 6-cylinder,
		4-cycle diesel with turbocharger
Power output		
PS DIN (HP SAE) NET at rpm		165 (163)/2,150
Displacement	cc (cu in)	6,919 (422)
Fuel tank capacity	liters (US gal)	310 (82)
Hydraulic system		
Pumps		2 variable displacement piston pumps
Control		ESS, KPSS
Max. discharge flow liters/min	(US gal/min)	2 x 240 (2 x 63)
Max. discharge pressure	kg/cm² (psi)	
Bucket boom and arm		300 (4,270)
Propel circuit		350 (4,980)
Swing circuit		260 (3,700)
Pilot control		50 (710)
Swing motor		Axial piston motor
Travel motor		Twin, axial piston, two-step motors
Control valves		5-spool + 1-spool
Pilot control		Boom, arm, bucket, swing and travel
Hydraulic capacity	liters (US gal)	290 (76.6)/170 (45)-oil tank level

^{*}Asterisk shows figures of SK220LC.

■ Working Ranges

■ Working Ranges		Unit: m (ft-in		
Arm Range	2.5 (8-2)	2.98 (9-9)	3.66 (12-0)	
a — Max. digging reach	9.85 (32-4)	10.31 (33-10)	10.91 (35-10)	
b — Max. digging reach at ground level	9.66 (31-8)	10.13 (33-3)	10.74 (35-3)	
c — Max. digging depth*	6.52 (21-5)	7.00 (23-0)	7.68 (25-2)	
c' — Max. depth of bucket hinge pin	5.00 (16-5)	5.48 (18-0)	6.16 (20-3)	
d — Max. digging height*	9.44 (31-0)	9.72 (31-11)	9.92 (32-1)	
d' — Max. height of bucket hinge pin	8.10 (26-7)	8.35 (27-5)	8.56 (28-1)	
e — Max. dumping clearance	6.58 (21-7)	6.83 (25-5)	7.05 (23-2)	
f — Min. dumping clearance	3.03 (9-11)	2.55 (8-4)	1.87 (6-2)	
g — Max. vertical wall digging depth	5.31 (17-5)	6.04 (19-10)	6.58 (21-7)	
h — Min. swing rading radius	4.06 (13-4)	4.00 (13-1)	4.01 (13-2)	
i — Horizontal digging stroke at ground level	4.17 (13-8)	5.27 (17-3)	6.48 (21-3)	
j — Digging depth for 2.4 m (8') flat bottom	6.30 (20-8)	6.81 (22-4)	7.48 (24-6)	
Bucket capacity CECE (SAE/PCSA) heaped m³ (cu yd)	1.0 (1.52)	0.9 (1.36)	0.7 (1.05)	

■ Track Shoes, Ground Pressure, and Operating Weight

Shape	Triple grouser shoe (even height)				
Shoe width cm (in)	600 (23.6)	800 (31.5)			
Overall width mm (ft-in)	2,990/3,190* (9-10/10-6)	3,190/3,390* (10-6/11-1)			
Ground pressure kg/cm² (psi)	0.51/0.48* (7.25/6.83)	0.39/0.38* (5.55/5.26)			
Operating weight kg (lb)	22,900/23,500* (50,490/51,810)	23,300/24,500* (51,400/54,000)			

^{*}Asterisk shows figures of SK220LC.

Digging Force			Unit: kg (lb)
Arm Length m (ft-in)	2.5	2.98	3.66
	(8-2)	(9-9)	(12-0)
Bucket Digging Force	13,300	13,300	13,300
	(29,320)	(29,320)	(29,320)
Arm Crowding Force	12,500	10,500	9,200
	(27,560)	(23,150)	(27,560)

■ Attachments

				Backhoe bucke		
Uses		Gene	ral purpose		Light duty	Heavy duty
	et capacity m³ E heaped) cu yd	0.7 0.92	0.9 1.18	1.0 1.31	1.2 1.57	0.9 1.18
	et capacity m³ heaped) cu yd	0.81 1.06	1.04 1.36	1.16 1.52	1.4 1.83	1.04 1.36
Buck (Stru	et capacity m³ ck) cu yd	0.59 0.77	0.76 0.99	0.84 1.10	1.0 1.31	0.76 0.90
	ber of et teeth	4	4	5	6	5
Cor	2.5m (8'-2")	0	0	0	Δ	0
Combinations	2.98m (9'-9")	. 0	0	Δ	×	0
ions	3.66m (12'-0")	0	Δ	×	×	×



Features

Upper Machinery:

- · Tough engine supplies plenty of power for continuous, trouble-free operation with a minimum of maintenance
- Three mechatronic digging modes offer a wider range of power/ speed combinations to suit the requirements of the job at hand.
- KPSS (KOBELCO Power Sensing System) controls hydraulic oil flow and puts power where it's needed without wasting energy.
- Microcomputerized ESS (Engine Speed Sensing) provides optimum engine speed VS. power for fast, efficient operation.
- Computerized Intelligent Total Control System reliably coordinates the machine's advanced features for optimal ecconmy and efficiency.
- The FC Mode cut engine rpm and reduces maximum pump output by 50% for outstanding iching capability.
- · Automatic engine deceleration quickly reduces engine speed to 1,050 rpm to minimize noise and fuel consumption while waiting for dumptrucks.
- · Easy-to-read multi-display monitor checks all important machine functions and immediately warns the operator of possible machine failures before they develop into serious problems.
- Swing priority system ensures steady swing during operation of the arm, boom, bucket, and propel circuits.
- · Automatic swing brake assures safe operation on slopes.
- Swing shockless valve gives smooth, exact swing stops with virtually no reboud motion.
- · Variable loading mode permits even inexperienced operators to perform repetitious loading work at full throttle for reduced cycle times.
- · Luxurious, upholstered seat adjusits in seven directions to keep the operator fresh and alert.



- · Intermittent windshield wiper with doublespray washer maintains excellent visibility in bad weather.
- · One-touch tilt lever can be easily positioned for maximum operating comfort even during deep digging.
- · Cab rests on six rubber mounts strategically located to minimize vibration.
- · Electric throttle lever provides light, fatigue-free movement and is specially contoured for optimal control-console visibility.
- · Cab light can be operated automatically as needed.
- · Safety lock permits cab entry and exit only when the levers are disengaged to prevent accidental operation.
- · Grease gun holder keeps the grease gun neatly and conveniently within reach at all times.
- · Rounded counterweight and tapered side decks improve maneuverability and safety.
- · Large, freely adjustable rearview mirror ensures an unobstructed view behind the machine.

Attachment:

· Sequenced arm recharge system increases hydraulic flow to the arm according to lever stroke for smooth, powerful arm retraction.

- · Boom holding valves help prevent hydraulic drift in the boom when the same position must be maintained over extended periods.
- The SK200 offers "Power Boost" that gives a temporary burst of digging force.
- Boom lowering circuit makes simultaneous bucket operation more precise.
 - · Boom and arm feature welded steel box sections.
 - · For the attachments, central lube points save time and effort.
- Four-point welded boom features high strength and light weight for maximum performance.

Lower Machinery:

- Maximum travel speed of 7.0 km/h (4.3 mph) in the High mode, the fastest in the world, ensures guick on-site positioning.
- · Two-speed travel system automatically switches from high to low speed on hills or rough terrain where extra power is needed.
- · Independent travel more (D mode) separates travel and attachment circuits so that travel speed is unaffected by attachment movement.
- · Straight propel system automatically keeps the machine on track during simultaneous swing and attachment operations.
- Lubricated and sealed long-pitch track links with strut reinforcement assure excellent durability.
- · Track link disassembly mechanism simplifies on-site crawler replacement.
- · Slip-free steps on the upper carriage provide sure footing during routine maintenance.
- Rib-reinforced, X-type chassis gives strong, rigid support.
- Track tension is adjusted with a grease
- Insect-proof radiator screen
- · Double element filter

NOTE: Due to our policy of continual product improvement, all design and specifications are subject to change without advance notice.



KOBE STEEL, LTD.

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