Hydraulic Excavator

SK210HLC-10

Bucket Capacity:
0.92 - 1.22 cu. yd. SAE

Engine Power:
160 hp (119 kW) @ 2,000 rpm

Operating Weight:
52,500lbs (23,800kg)

Complies with the latest exhaust emission regulations

US EPA Tier IV Final
EU (NRMM) Stage IV
Japanese Regulations
Power Meets Efficiency

In 2006, KOBELCO developed the 8 ton SK80H, the world’s first hybrid excavator. It was then followed by another industry first, the KOBELCO SK200H-9 hybrid to further reduce the environmental impact versus a conventional excavator.

Now, KOBELCO has reinvented the hybrid excavator with the SK210HLC-10 that has new technology using lithium-ion batteries, an industry first, where it can achieve better fuel economy and additional power to provide increased efficiency to be even more productive than a standard 20 ton excavator.

KOBELCO machines have always been known for their excellent fuel economy and now have set the new industry standard for hybrid excavators.

KOBELCO backs the hybrid technology with a 5 year/10,000 hour warranty on the hybrid components.

Hybrid System with extra electric power

The KOBELCO revolutionary hybrid system has further evolved with the introduction of the SK210HLC-10. The new electric swing motor combined with the additional hybrid components are optimized for efficiency without sacrificing productivity. During heavy digging, the motor/generator/lithium-ion battery assist the engine and hydraulic pump in order to reduce fuel consumption and engine exhaust emissions. The components of the hybrid system work in harmony with the same size engine as a conventional SK210LC-10, therefore making the machine even faster for increased cycle times.
During high-load operation
The stored electrical power in the Lithium-ion battery now flows back to the motor/generator to assist the engine to power the hydraulic functions. Reducing the power demand on the diesel engine, reduces fuel flow and thereby increases overall efficiency.

During swing deceleration
The braking energy generated during swing deceleration is converted into electrical energy, and then the electricity is accumulated in the lithium-ion battery.

While the machine is digging or swinging, an assist from the generator motor greatly reduces the engine load and generate extra power.

An independent swing electric system enables powerful and outstanding operability and performance for combined operation of swing and attachment.

Powerful electric swing acceleration by independent electric system
The swing motor is powered by electrical energy, stored in the lithium-ion battery.

Runtime
17.6 times longer
Higher power capacity of the Lithium-ion battery provides longer, more consistent, engine assist power and independent swing.

Hybrid Assist System

<table>
<thead>
<tr>
<th>Light load</th>
<th>Heavy load</th>
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<tbody>
<tr>
<td>E/G output</td>
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<tr>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Hybrid</td>
<td>Hybrid</td>
</tr>
<tr>
<td>Conventional</td>
<td>Conventional</td>
</tr>
<tr>
<td>Electric Charge</td>
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<tr>
<td>E/G</td>
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<tr>
<td>0%</td>
<td>0%</td>
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</table>

Hybrid
Unused or underutilized power is used to charge the battery.

Conventional
Unused power will be wasted just running engine.

Adoption of a lithium-ion battery for the first time in the excavator industry
The adoption of the large capacity lithium-ion battery provides mass energy storage for optimum efficiency.

Runtime
17.6 times longer
Higher power capacity of the Lithium-ion battery provides longer, more consistent, engine assist power and independent swing.

Lithium-ion battery (SK219HLC-10)
Capacitors (typical hybrid systems)
The KOBELCO’s original hybrid system minimizes fuel consumption while maximizing power. With nimble movement and outstanding digging power, this excavator improves job productivity.

**Arm Extends NOx**

- Elapsed Power Boost
- More power and higher efficiency.
- The KOBELCO’s original hybrid system minimizes fuel consumption while maximizing power. With nimble movement and outstanding digging power, this excavator improves job productivity.

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**Up to 40% CO₂ reduction expected**

Compared to standard machine (Based on SK210LC-10 in H-mode vs SK210HLC-10 in ECO-mode.)

- **CO₂-emissions**
  - SK210HLC-10 (ECO-mode)
  - SK210LC-10 (H-mode)
  - **40% lower CO₂-emissions**

*CO₂-emission means Fuel-emissions.

**Power to do more, faster**

**Power Boost**

When you need more power instantly, engage Power Boost to get 10% more digging force, with no time limit.

**Independent Travel**

Selecting Independent Travel dedicates one hydraulic pump to KOBELCO’s original travel and one to the attachment on a continuous basis, allowing for a smooth and constant movement speed even while swinging or using the boom or attachment. With Independent Travel, safely carrying a large pipe across a job site is a breeze.

**Revolutionary technology boosts efficiency and minimizes fuel consumption**

**Fuel Efficiency**

The hybrid system continuously provides reduced fuel consumption, while boosting efficiency in all modes. For jobs where fuel efficiency is more of a concern, the operator can select “S” or “ECO” mode to even further reduce fuel consumption while maintaining machine performance.

**Boom to Arm Regeneration System**

Innovative engineering uses the downward movement of the boom to push fluid to extend the arm. Gravitational and kinetic energy greatly reduce the amount of power needed to move fluid through the system.

**Hydraulic circuit reduces energy loss**

- Improved hydraulic line layout minimizes hydraulic pressure resistance from turbulence and valve restrictions.
- Fuel efficiency is increased because it takes less energy to move fluid through a circuit with low flow resistance.

**AIS (Auto Idle Stop)**

The engine will stop automatically after 60 seconds of inactivity if the safety lock lever is in the up position. This eliminates wasteful idling during standby, saving fuel and reducing CO₂ emissions.

**SCR System with DEF**

Engine exhaust system utilizes Selective Catalytic Reduction (SCR) to convert NOx into harmless nitrogen and water emissions. SCR combined with a Diesel Particulate Filter (DPF) makes the SK210LC a much cleaner machine meeting US EPA regulations for Tier IV final. This approach allows KOBELCO to tune the engine for maximum efficiency and performance.

**Conforms to Tier IV Final exhaust emissions standards**

Reduces fuel consumption and minimizes exhaust emissions.

- Hino engines are renowned for fuel efficiency and environmental performance, and KOBELCO has tuned them specifically for construction machinery.
- The high-pressure common rail fuel injection system, the variable-geometry (VG) turbocharger, and the exhaust gas recirculation (EGR) system, and cooler reduce particulate matter (PM) and minimizes formation of Nitrogen Oxide (NOx).

**Heavy Lift**

10% more hydraulic pressure (Heavy Lift) means greater lifting power, at closer radius, allowing for smooth and steady operation while moving heavy objects.

**Dedicated Electric Swing System (DESS)**

The KOBELCO Hybrid utilizes a completely independent electric swing system, powered by the lithium ion battery. This system instantly delivers full swing torque during the combined operation of swinging and arm “in” required to dig against the sidewall of a trench. There is no “sharing” of pressure or flow with this system, maximizing productivity.

- The system functions automatically and independently, with no need to operator input.
- This optimizes side-digging and back fill operations.

**About 88% decrease**

- *88% cleaner than Tier IV Interim

*The percentages are approximate improvement rates.
Increased power with enhanced durability to maintain the machine’s value

Smart system design increases strength and eliminates hydraulic problems. Enhanced reliability and durability takes productivity to a new level.

Built to operate in tough working environments

Reinforced and redesigned boom and arm offers excellent durability during demanding work conditions to reliably handle higher work volume.

Enlarged reinforcement of the arm
Arm base plate thickness has been increased.

Modified foot boss shape
Arm foot boss shape has been changed to better distribute stress.

500 Hour Attachment Lubrication Interval
The self lubrication bushings are used at the attachment pins and the bushings with high abrasion resistant property are used at the pins around the bucket. The lubrication cycle of the lubrication points around the bucket is 250 hours and that of other lubrication points is 500 hours.

* Flanged arm to bucket bushings protect the side of the arm from contact and then wear from the bucket ears. Should the bucket bushings need replacement, they can be replaced separately from the larger main bushing, reducing costs.

Improved filtration system reliability

Clean, contaminant-free fuel and hydraulic fluid are essential to stable performance. The improved filtration systems reduce the risk of mechanical trouble and enhance longevity and durability.

Hydraulic fluid filter
Our super-fine filter separates out even the smallest particles. A new cover prevents contamination when changing filters.

Double-element air cleaner
The large-capacity element features a double-filter structure that keeps the engine running clean even in industrial environments.

Fuel filter
Pre-filter with built-in water separator maximizes filtering performance.

Hydraulic fluid filter restriction indicator
Detects clogging by measuring the difference in pressure between incoming and outgoing hydraulic fluid. Detecting filter restriction prevents contaminants from getting into the hydraulic fluid reservoir reduces the risk of damage to the hydraulic system.

Three Track Guides
STANDARD over sized. Three heavy-duty track guides installed on each crawler side frame assure stability in the most demanding situations.

Side Deck Guards
5,000 hour interval.

Arm Rock Guard
Our super-fine filter separates out even the smallest particles. A new cover prevents contamination when changing filters.

500 Hour Attachment Lubrication Interval
5,000 hour interval.

Fuel filter
Pre-filter with built-in water separator maximizes filtering performance.
**Comprehensive safety and intuitive operation**

User-friendly design and enhanced safety means greater efficiency and productivity.

### Color Multi-display

- Brilliant colors differentiate multiple graphics on cab LCD. Graphics indicate fuel consumption, maintenance intervals and more.
- Analog-style gauges provide an intuitive reading of fuel level and engine temperature
- Green indicates ECO mode selected or efficient operation in other modes
- PM accumulation (left) and DEF level (right)
- Switchable between power supply monitor, fuel consumption, and rear view camera image
- Digging mode switch
- Monitor display switch

### One-touch attachment mode switch

A simple flick of switch sets the hydraulic flow amount to match attachments and attachment mode. Helpful icons let the operator confirm the proper configuration at a glance.

### Safety

**ROPS Cab**

ROPS (Roll-Over Protective Structure) compliant cab complex with ISO standards (ISO-12117-3: 2004) and ensures greater operator safety in the event of a roll-over. KOBELCO encourages operators to wear their seat belt during operation.

- Standard top FOP guard that complies with ISO10262

### Expanded field of view for greater safety

- **Standard rear view camera**
  - Eases safety checks behind the machine.
  - Color video displays on cab monitor.

### Optional right side camera

- **Standard rear swing flashers and rear work lights**

### Operator-friendly features that are easy to see, easy to use

#### Color Multi-display

- Bright colors differentiate multiple graphics on cab LCD. Graphics indicate fuel consumption, maintenance intervals and more.
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The newly refined cab puts the operator first, ensuring a quieter, more comfortable work environment and easier operation.

**Comfort**

- **Climate control outlets behind the seat**

- **A light touch on the lever means smoother, less tiring work**

- **More comfortable seat means higher productivity**

- **Quiet Inside**

- **Low Vibration**

- **Wide, Open View, makes the operators job and control easier.**

**Interior equipment adds to comfort and convenience**

- **Large door allows easy access in and out of the cab**

- **It takes 25% less effort to move the operation lever, which reduces fatigue over long working hours or continuous operations.**

**Footnotes:**

- **25% LESS**

- **11 12**
Easy, on-the-spot maintenance

Adequate space in the engine compartment allows service staff to comfortably perform maintenance in a natural body position. The distance between access steps is smaller so getting to and from the engine compartment is easier. The hood is lighter and easier to raise and lower.

Ground-level Access

Design allows for easy access at ground level for daily checks and maintenance work.

Maintenance Work, Daily Checks, Etc., Can Be Done from Ground Level

The layout allows for easy access from the ground for many daily checks and regular maintenance tasks.

Efficient maintenance keeps the machine in peak operating condition

Easy Access to In-cab Maintenance Features

Easy-access fuse box.

DPF regeneration is an automatic function, but should manual regeneration be called for, a switch to engage it is readily available.

Air conditioner filter can be easily removed without tools for cleaning. One for outside air and one for inside air.

One for outside air and one for inside air.

Fuel tank drain valve.

Special sloped crawler side frame design is easily cleaned of mud and minimizes dirt build up.

Detachable two-piece floor mat with handles for easy removal.

Total Support for Machines with Network Speed and Accuracy

KOMEXS is a satellite-based system for receiving machine information. Manage your machines anywhere in the world using the Internet. Location, workload and diagnostic data aid business operations.

Location Data

Accurate location data can be obtained even from sites where communications are difficult.

Operating Hours

A comparison of operating times of machines at multiple locations shows which locations are busier and more profitable. Operating hours on site can be accurately recorded, for running time calculations needed for rental machines, etc.

Fuel Consumption Data

Data on fuel consumption and idling times can be used to indicate improvements in fuel consumption.

Graph of Work Content

The graph shows how working hours are divided among different operating categories, including digging, idling, traveling, and optional operations (N&B).

KOBELCO service personnel/dealer/customer

Base station

Web server

GPS

The DEF fill is located inside the convenient storage compartment.

Examples of displaying maintenance information

Displays only the maintenance information that’s needed, when it’s needed

Self-diagnostic function provides early-warning detection and display of electrical system operational condition

Service-diagnostic function makes it easier to check the status of the machine

Remote function for any possible on going or intermittent service issues

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Specifications

**Engine**
- Model: HINO DISEL 95SKK
- Type: Direct injection, water-cooled, 4-cylinder diesel engine with turbocharger, intercooler/Complus with EU/NAMM 5 Stage IV, EPA Tier IV Final.
- No. of cylinders: 4
- Bore and stroke: 4.41 x 1.63 (112 x 5.16 mm)
- Displacement: 11.6 cu. ft (331 L)
- Rated power output: 165hp (124kW), 2,000rpm (SAE net)
- Max. torque: 472 lb-ft (642 Nm), 1,800rpm (Without fan)

**Boom, Arm & Bucket**
- Boom cylinder: 4.7’ x 120 mm x 4’3” x 3,155 mm
- Arm cylinder: 5.3’ x 135 mm x 5’1” x 1,558 mm
- Bucket cylinder: 4.7’ x 120 mm x 3’8” x 1,080 mm

**Hyaluronic Acid System**
- Type: Two variable displacement pumps + 1 gear pump
- Max. discharge flow: 3.5 x 975 US gph (3 x 220 L/min)
- Max. pressure: 1,500 psi (10.5 MPa)
- Max. Parker’s size: 4
- Max. Parker’s size: 1.6
- Oil cooler: AC-cooled type

**Swing System**
- Parking brake: Wet multiple plate
- Swing speed: 12 rpm
- Swing torque: 91,950 Nm (67,703 ft-lb)
- Tail swing radius: 9’7” (2.91 m)
- Min. front swing radius: 11’8” (3.55 m)

**Travel System**
- Travel motors: 2 axial piston, two-speed motor
- Parking brakes: DC disk brake per motor
- Travel speed: 12.7 rpm
- Travel torque: 375 ft-lb
- Breakout pressure line: 180 psi (1256 kPa) (SAE)
- Grading ability: 10% (35°)
- Ground clearance: 1’8” (455 mm)

**Hydraulic P.T.O.**
- Specification: Output: 4.88 rpm, Max. torque: 1,800 ft-lb

**Boom & Control**
- All-weather, sound-suppressed steel cab mounted on the silicon-sealed suspension mounts and equipped with a heavy, insulated floor mat.
- Two hand levers and two foot pedals for travel
- Two hand levers for excavating and swing
- Electric rotary-type engine throttle

**Refilling Capacities & Lubrications**
- Fuel tank: 84.5 U.S. gal (320L)
- Cooling system: 9.3 U.S. gal (36L)
- Engine oil: 5.4 U.S. gal (20L)
- Travel reduction gear: 2.1 x 1.3 U.S. gal (2 x 1.5 US)
- Swing reduction gear: 1.9 U.S. gal (7L)
- Hydraulic oil: 312.6 cu. in (5.123L)
- DEF/AdBlue tank: 84.5 U.S. gal (320L)

**Working Ranges**
- SHOW A: 1 L x 1.5 M (3 ft x 0.5 m)
- SHOW B: 1.5 L x 1.5 M (5 ft x 5 ft)

**Dimensions**
- Overall length: M: 60’2” (18.3 m), H: 64’5” (19.7 m), L: 68’4” (20.8 m)
- Overall width: M: 10’1” (3.1 m), H: 10’6” (3.2 m), L: 12’1” (3.7 m)
- Overall height: M: 10’1” (3.1 m), H: 10’6” (3.2 m), L: 12’1” (3.7 m)
- Turning radius: M: 11’6” (3.5 m), H: 12’1” (3.7 m), L: 13’7” (4.1 m)
- Overall width of suspension mount: M: 9’6” (2.9 m), H: 10’1” (3.1 m), L: 10’1” (3.1 m)

**Bucket Selection Chart**
- Bucket type: Capacity (SAE) Cubic Yd
- Width (inches) (mm)
- Bucket Weight (lb) (kg)
- Arm lift (in) (mm)

**Operator Working & Ground Pressure**
- In standard trim, with standard boom, 9’8” (2.93 m) arm, 1.05 cu. yd. (0.88 m) SAE heaped bucket, and 10,800lb (4900kg) counterweight.
Specifications

STANDARD EQUIPMENT
- Three lower track guards
- Handrails
- Grip for barefoot operation
- Heated footrest
- Heated and defroster
- Intermittent windshield wiper with dual-spray washer
- Skylight
- Upper guard
- Tilted safety glass
- Fold-down type front window and removable lower front window
- Easy to read multi-display monitor
- Automatic climate control
- Automatic emergency escape hammer
- Alarm tone
- Start override switch
- Automatic engine deceleration
- Turbocharged and intercooled HINO J05EUM-KSSK ENGINE
- 60-amp alternator
- 24V, 5kW starting motor
- Cigarette lighter
- Multi-function display
- SWING SYSTEM & TRAVEL SYSTEM
- Grease-type track adjusters
- Sealed & lubricated track links
- Independent travel system
- MIRRORS & LIGHTS
- Optional equipment
- Two front working lights
- Three rearview mirrors plus rear-view camera
- Cab lights
- Roof light
- Intercom / interphone
- Headrest
- Air Suspension Seat with Heat
- Rain visor
- Right side camera
- Cab two lights
- Vandal Guards available via KOBELCO Parts Department
- Boom & arm load (lock) holding valve
- 600mm, 700mm and 900mm shoes are optional
- Two-way control pattern changer
- 12V converter
- AM/FM stereo radio
- Emergency escape hammer
- Pull-type front window and removable lower front window
- Skylight
- Intermittent windshield wiper with double-spray washer
- In-terms of performance
- 10' 10''(3.05m) track shoes
- 3' 4''(1.02m) swing radius
- 3' 6''(1.09m) swing radius
- 3' 7''(1.1m) swing radius
- 3' 7''(1.1m) swing radius
- 3' 7''(1.1m) swing radius
- 3' 7''(1.1m) swing radius

Lifting Capacities

HINO J05EUM-KSSK ENGINE

ENGINE
- Turbocharged and inter-cooled HINO J05EUM-KSSK
- Tier IV Final Diesel engine
- Automatic engine deactivation
- Two 12V, 90A batteries
- 24V, Side starting motor
- 60-amp alternator
- Removable radiator clean-out screen
- Automatic engine shut-down if low engine oil pressure
- Side by side oil, hydraulic and engine radiators
- Double-element air cleaner

CONTROL
- Working mode selector
- Joystick, 5-mode and ECO-modes
- Heavy Lift and Power Boost "without time limit"

SWING SYSTEM & TRAVEL SYSTEM
- Swing redundant prevention system
- Independent travel system
- Two-speed travel with automatic down shift
- Sealed & lubricated track links
- 3' 5''(1.06m) track shoes
- Groove-type track adjusters
- Automatic swing brake

OPTIONAL EQUIPMENT
- 600mm, 700mm and 900mm shoes are optional
- Boom & arm load (load) holding valve
- Light and heavy duty front window guards.
- Additional hydraulic circuits
- Vandal Guards available via KOBELCO Parts Department
- Cab two lights
- Right side camera
- Rain visor
- Air Suspension Seat with Heat

<table>
<thead>
<tr>
<th>SK210HCL Long Arm</th>
<th>10' 10''(3.05m), no bucket, 2' 7''(790mm) shoes</th>
<th>20' 6''(6.25m), no bucket, 2' 7''(790mm) shoes</th>
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<tbody>
<tr>
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Notes:
1. Do not attempt to lift or hold any load that is greater than these lifting capacities at their specified lift point radius and height. Weight of all accessories must be deducted from the above lifting capacities.
2. Lift capacities are based on machine standing on level, firm, and uniform ground. User must make allowance for job conditions such as soft terrain, uneven ground, out of level conditions, side loads, sudden stopping of loads, hazardous conditions, experience of personnel, etc.
3. Lifting capacities increase with increasing boom or arm angle. The lift of each lifting capacity is specified for standard boom 0°, long boom 10°
4. The above lifting capacities are in compliance with SAE J1044. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. Lifting capacities marked with an asterisk (*) are limited by hydraulic capacity rather than tipping load.
5. Operator should be fully acquainted with the Operator’s and Maintenance Instructions before operating the machine. Rules for safe operation of equipment should be adhered to at all times.
6. Lift capacities apply to only machines as originally manufactured and newly equipped by KOBELCO CONSTRUCTION MACHINERY CO., LTD.

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<th>SK210HCL Standard Arm</th>
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RATINGS

- Reach from swing centerline to arm tip
- Arm bucket pin, without bucket is defined as lift point.