

SL4500

KOBELCO

# HYDRAULIC CRAWLER CRANE

# *SL4500*

## STANDARD CONFIGURATION

Max. Lifting Capacity: **400 ton**

### STANDARD

Max. Boom Length: **96 m** (Long Boom)

Max. Luffing Jib Combination: **66 + 66 m**

### HEAVY LIFT

Max. Boom Length: **84 m**

Max. Luffing Jib Combination: **72 + 66 m**

### SUPER HEAVY LIFT

Max. Boom Length: **84 m**

Max. Luffing Jib Combination: **78 + 66 m**

## LIGHT CONFIGURATION

Max. Lifting Capacity: **300 ton\*** / 180 ton

**Luffing Boom**

Max. Boom Length: **78 m**

**Long Boom**

Max. Boom Length: **96 m**

**Luffing Jib**

Max. Luffing Jib Combination: **66 + 66 m**

\*With Standard Boom Configuration (width 3.0 m boom)



# ***SL4500***

## **A New Global Standard**

## **The SL4500 Joins the KOBELCO SL**

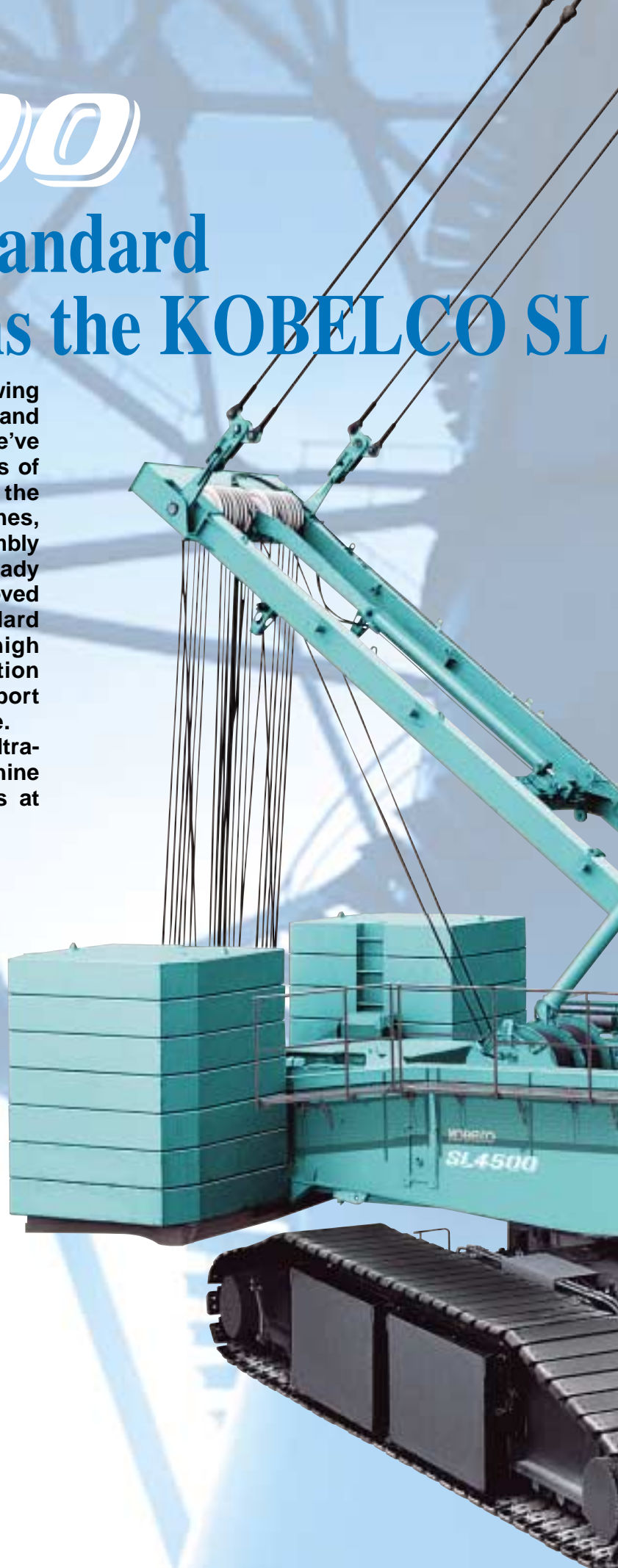
Energy and infrastructure projects are growing larger in scale year by year. To meet the demand for machines that can handle huge loads, we've added the SL4500 to the KOBELCO SL Series of ultra-large crawler cranes. Together with the remarkable lifting capacity of these machines, their innovative design that makes disassembly and transport so quick and easy has already shown the world how far KOBELCO has moved on. Now with the SL4500, the standard configuration gives top priority to high performance, while the light configuration emphasizes transportability to lower transport costs and shorten assembly/disassembly time. Kobelco has always been in the forefront of ultra-large crane development, and our new machine line-up is ready to take on challenging jobs at locations anywhere in the world.

### **Choice of Configurations**

400-ton capacity standard configuration  
for high performance,  
or 300-ton capacity light configuration  
for easier transportation

### **Innovative Upper Frame Design**

Giving highly rigidity  
with optimum transport weight.







**Series!**

## **Boom-Mounted Hoist Winches**

Greater convenience  
for assembly/disassembly  
and transportation.

## **High-Strength Lattice Boom**

Large-diameter main pipe  
provides greater lifting capacity.

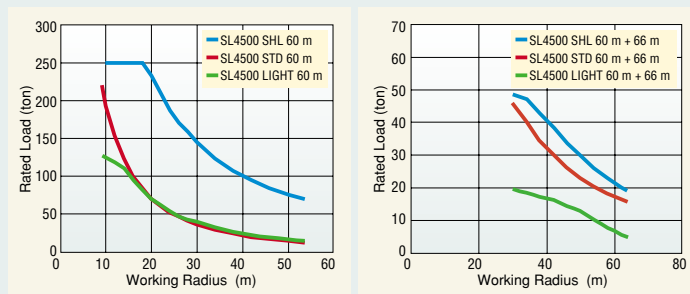
## High Lifting Performance

# A Crane that Lifts More, for a Wider Range of Applications

A new design combines strength with reduced weight for crane components such as swing frame, crawler frame, and lattice boom. This combination gives superlative lifting capacity in strong zones, and opens up a wide range of possible applications with either standard or light configuration. Where lifting performance is the priority, standard configuration delivers powerful, efficient crane operations. Light configuration allows a range of applications to match the job, while cutting transport costs and shortening assembly/disassembly times. The options of high performance or easier transport offer efficiency on the job and big savings.

### Lifting Capacity Comparison

(STD and SHL for Standard Configuration, and Light Configuration)



### Cost-Saving Light Configuration

With luffing jib specifications using a light configuration (120 ton counterweight; boom section width 2.5 m) only the weight needed for the job has to be transported, on-site assembly time is shortened, and the 2.5 m width is nowhere subject to transport restrictions and can be transported with a high-bed trailer. Big savings on costs and time!

### New, Highly Rigid Upper Frame

The upper frame has been newly designed to increase sectional strength and optimize the frame's stress capacity. This enhances rigidity while reducing weight, which contributes greatly to the SL4500's exceptional lifting capacity.

### High-Strength Lattice Boom



Highly rigid, large-diameter main pipe increases boom strength while significantly boosting lifting capacity.



### Double Travel Motors

Double motors deliver powerful, steady traction for smooth onsite travel.







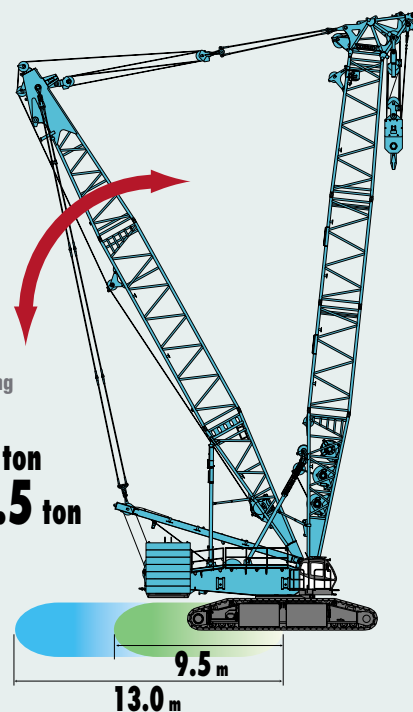
## Adjustable HL Mast

With the adjustable HL mast, the rear swing radius can be set to one of two options to suit work site conditions. This guarantees optimized lifting performance even on small sites.

HL Spec. Max. Lifting Capacity:

Heavy Duty Crane Boom: **350 ton**

Luffing Jib: **113.5 ton**



## High-Output Engine

The engine has an impressive rated output of 320 kW and complies with NRMM (Europe) Stage IIIA and US EPA Tier III exhaust emissions regulations. All of this power works with KOBELCO's unique Engine Speed Sensing (ESS) control system and new hydraulic systems to ensure stable and smooth simultaneous operations.



Engine Output:

**320 kW**

Meets NRMM (Europe) Stage IIIA

## Wide, Large-Capacity Winches for Smooth High-Rise Work

The wide hoist winches provide an impressive spooling capacity of 790 m with a 28 mm hoist rope. Their large capacity and large diameter help to prevent uneven spooling and wear while ensuring smooth operation when using a long boom for high-rise work.



Spooling Capacity:

**790 m**

## High-Speed Lifting Increases Work Efficiency

The hoist winches deliver a fast maximum hoisting and lowering speed of 110 m/min that improves operational efficiency on high-rise jobs.

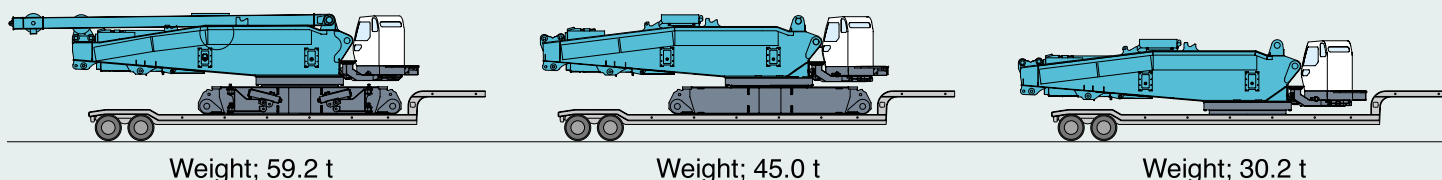
Max. Line Speed (First Layer):

**110 m / min**

To ensure safe assembly and increase actual working hours

# Excellent Transportability and Assembly

Through wide-ranging expertise and innovative technologies, KOBELCO has designed the SL4500 to comply with various transport regulations throughout the world. The layout has been completely reviewed, and a variety of new mechanisms introduced to reduce transport weight. The innovative unit assembly system simplifies assembly/disassembly and transportation to minimize labor and other costs.



## New Design Upper Frame

The upper frame is lighter in weight due to the new structural design combined with the use of high-grade high tensile steel plate. This contributes to improved ease of transport and assembly.

## Easy-to-Transport Swing Cab

The swing cab is practically designed for easy transportation. By swinging and stowing the cab at the front of the base machine, the transport width of the upper machine is just 3 m.



## Winches Mounted on Boom

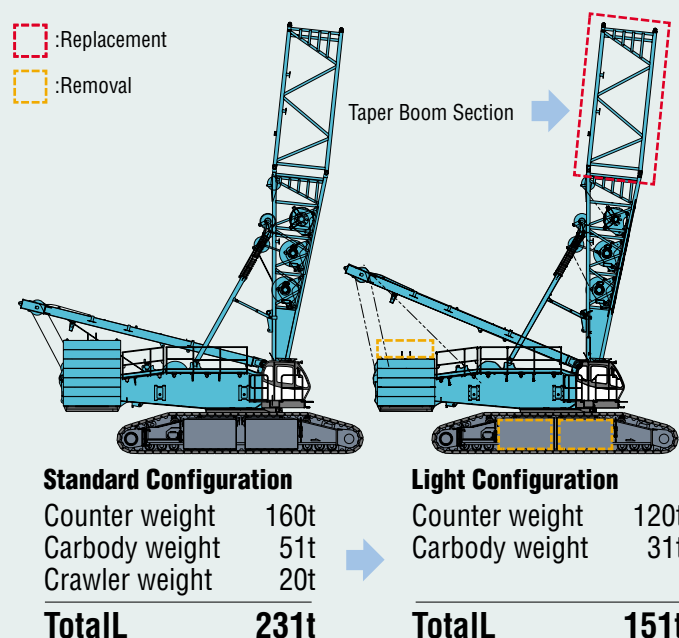
On a conventional model the winches are mounted on the base machine, but on the SL4500 the boom hoist winch is mounted on the boom base. This not only reduces the weight of the base machine, but also shortens assembly/disassembly times and saves on transportation costs because the boom and mast can be transported with winches attached.



\* The boom hoist winch is mounted on the base machine for crane operation and on the mast for transportation.

## Light Configuration: Excellent Transportability

Counterweights of 231 tons needed for standard configuration and 151 tons for light configuration. Boom section widths are 3.0 m for the standard configuration and 2.50 m for the light configuration. The choice of light configuration for a 180 ton-class frequent lifting job cuts both transport costs and assembly time.

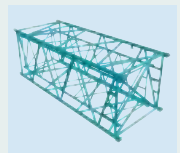


## Attachment Transport Streamlined in Four Big Ways



### 1 Symmetrical, Thin Counterweights

Symmetrical, thin counterweights ensure a low transport height when loaded on a trailer with the boom. Also, the counterweights can be assembled in any order, making transport planning easier.



### 2 Nested Booms Improve Transport Efficiency

The luffing insert jib can be easily nested in the insert boom by using the optional stowing guide rollers. This reduces the number of trailers needed for transport and helps to minimize required storage space.



### 3 Boom Connector Pin Holder

The boom connector pin holder prevents the loss of boom connector pins during assembly/disassembly and transportation.

## Versatile Attachment Configurations



## Choice of Methods for Assembly/Disassembly of Luffing Jib

Jib assembly is possible using either the extension or inside holding methods. On sites where construction has not yet started and space is available the extension method is faster, but in a limited space the inside holding method, in which the jib is folded under the boom, can be used for assembly/disassembly.

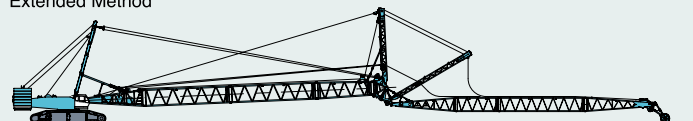
### Limited Space

Inside Holding Method



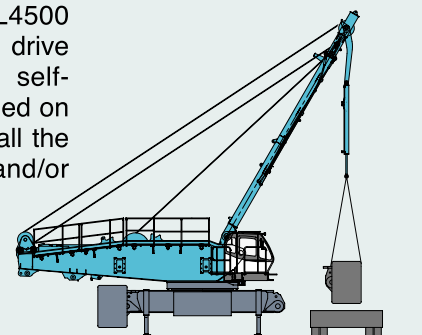
### Open Space

Extended Method



## Self-Erection System

Use the built-in, remote controlled trans-lifter (jack system) to lift the SL4500 clear of the trailer, then drive the trailer away. The self-assembly cylinder installed on the mast is used to install the crawler side frames and/or the boom.



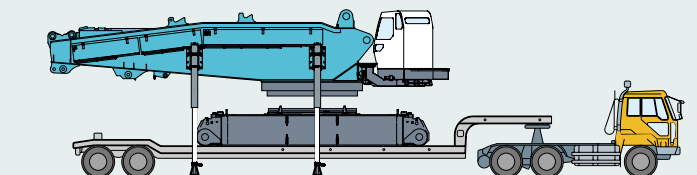
## Boom Assembly/Disassembly Mode

The boom assembly/disassembly mode, which is used to release the over-hoist prevention function to facilitate boom assembly and disassembly, is activated with a switch located under the multi-function LCD display of the load moment indicator (LMI). (This switch is different from the switch that releases the auto-stop functions for overload and hook over-hoist.) When the boom is lifted to a certain angle, it is automatically deactivated and the LMI function is automatically re-engaged to ensure that the boom assembly/disassembly function is used only when needed.



## Upper Trans-Lifter (Optional)

The upper frame can be mounted onto the lower frame without the use of an assistant crane.



## Quick Connection Device (Optional)

Upper frame is attached to or detached from the lower frame using a swift, reliable hydraulic device.



For greater work efficiency

# Smooth Operation and Control

## Control Levers Connected Directly to Pilot Valves for Smooth Operation



The control levers regulate the pilot valves directly to reduce the amount of play and ensure smooth, precise hoisting start-ups and inching. Control is light and sure, with almost no clatter even over long operating periods.

## Winch Speed Controller



The speeds of the hoist winches and boom hoist can be set independently with trimmer controls.



■ Hydraulic pilot system detects swing reaction force.

■ Electric throttle with a twist grip ensures sensitive engine control.



■ Red switch on the boom lever grip allows easy inching control for hoist, boom hoist, and travel. The operator can activate it without taking his hands off the boom hoist lever.

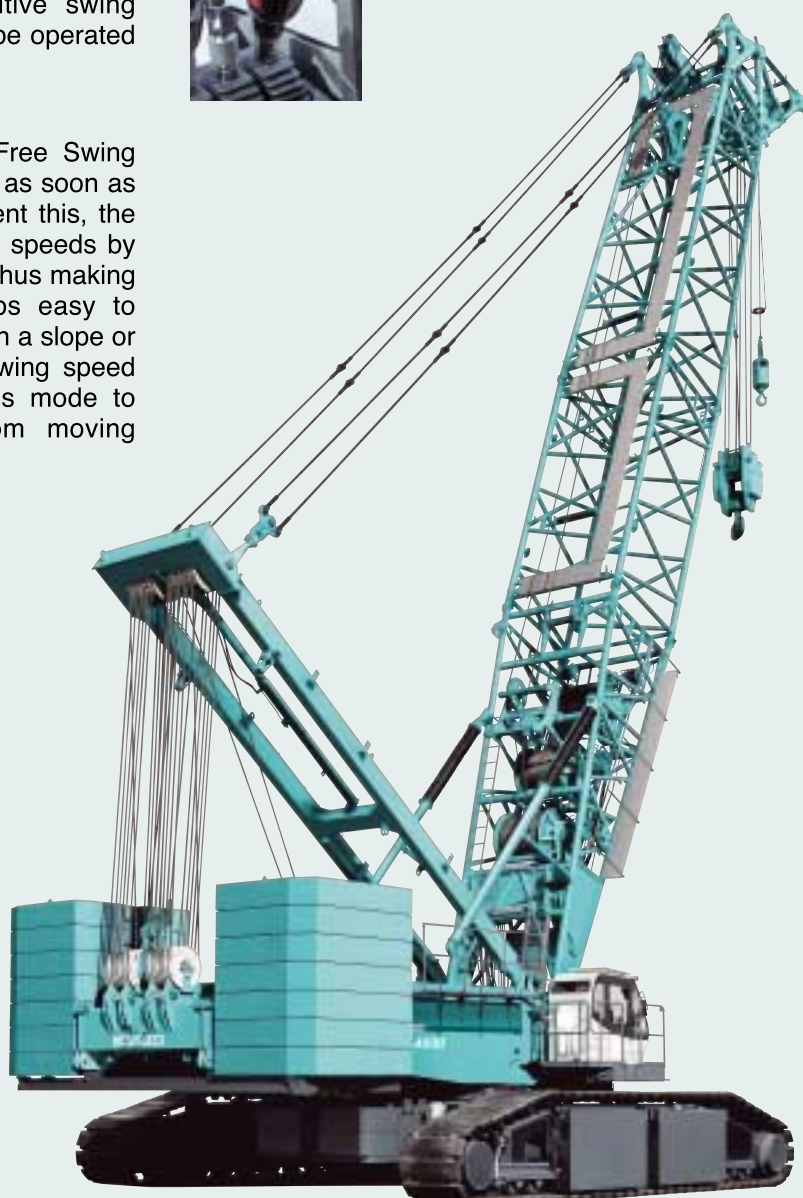
## Selectable Swing Modes to Match the Job at Hand

### ■ Free Swing Mode (High/Low):

This mode is designed for material handling and other cycle-duty operations that require consecutive swing cycles. The swing is completely free and can be operated at High or Low speed to suit job requirements.

### ■ Neutral Brake Swing Mode:

When the crane is working on a slope in Free Swing Mode, it may swing in an unintended direction as soon as the swing parking brake is released. To prevent this, the Neutral Brake Swing Mode reduces operating speeds by lowering the flow of oil in the hydraulic circuit, thus making swing starts and stops easy to control when working on a slope or in windy conditions. Swing speed is also reduced in this mode to prevent the load from moving sideways.



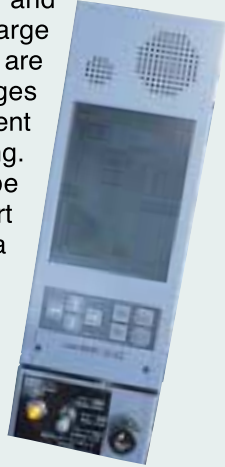


For better man-machine communication

# Excellent Cab with Enhanced Functions

## Multi-Function LMI Display

The newly designed load moment indicator (LMI) system features a large, easy-to-read LCD display. The rated load, actual load, load ratio, and other information are displayed in large characters. Warnings and other items are displayed in color, and text messages and alarms alert the operator to prevent dangerous conditions from developing. Other information can also be displayed, including a rated load chart and rated load curve, in addition to a function that regulates the working range.



## Multi Display

The easy-to-read LCD multi display provides information on the current status such functions as engine rpm, maintenance and on-board trouble-shooting, so that the operator has an ongoing, real-time assessment of the machine's condition at a glance.

### Normal Displays

- Engine speed (Lifting height\*<sup>1</sup>)
- Engine oil change interval
- Reeving number for hoist winch wire rope
- Low-speed switch status
- Wind speed\*<sup>2</sup>

\*<sup>1</sup>With the optional lifting height gauge installed

\*<sup>2</sup>With optional anemometer installed

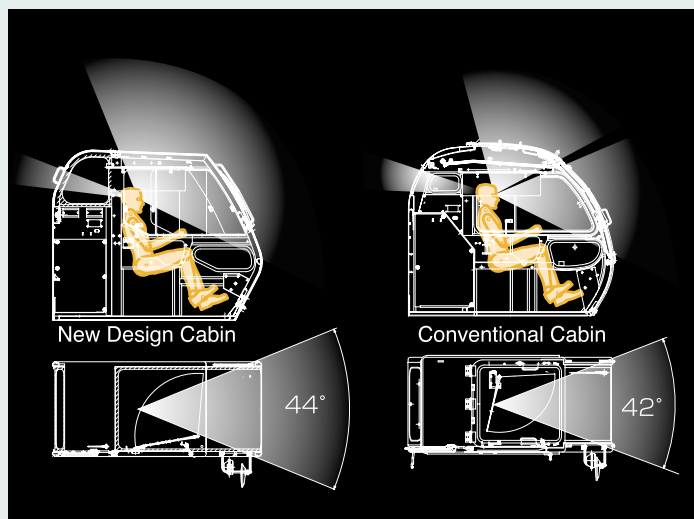
### Warning Displays

- Warning (malfunction, maintenance information, etc.)
- Self-diagnostic function (detects malfunctions in solenoid valves, sensors, etc.)



## Unobstructed Panoramic View

The SL4500 has a new cabin design with sash-less front and top glass that provides a panoramic frontward and skylight view. The glass also has less curvature to minimize distortion. The front upper window has been extended on both sides to give a much wider lateral view, while the top-window view has been extended toward the rear.



## Comfortable 940 mm-Wide Cab

- Air conditioner
- Fully adjustable, high backed seat with a headrest and armrests
- Intermittent wipers and window washers
- Sun visor
- Roof blind



## Tilting cab



A tilting device allows the cab to be tilted up to 15° to give the operator a more comfortable working position over long periods of high-rise work.



■ Luggage tray



■ Cup holder

No compromise in KOBELCO's safety policy

# Safe, Environmentally-Conscious Design

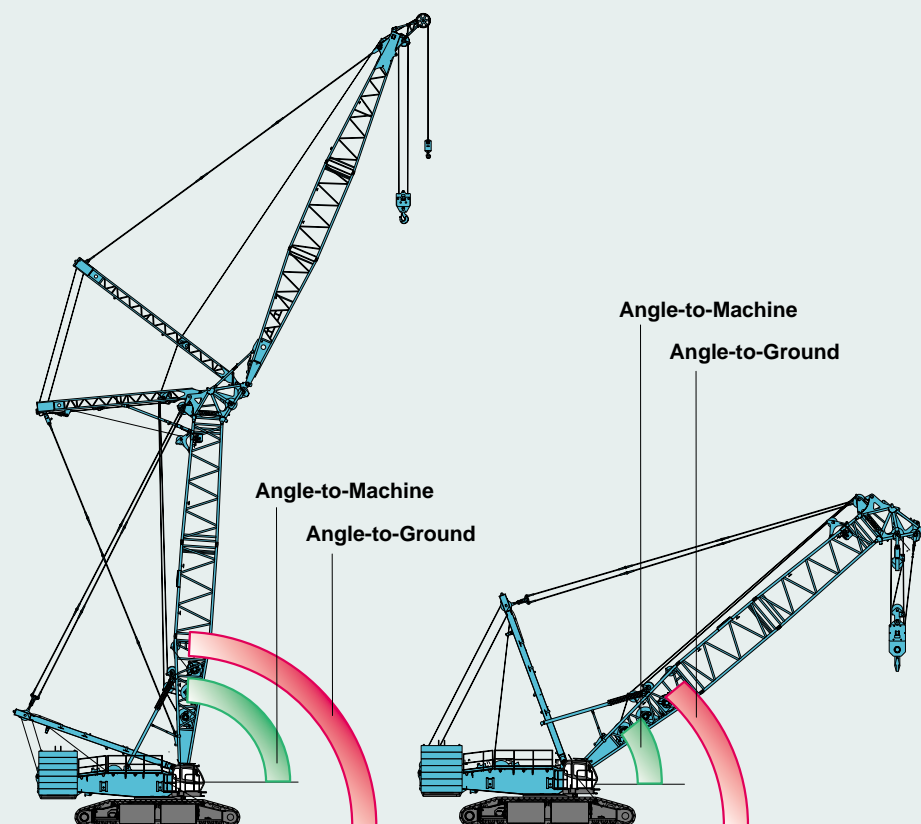
## Two-Stage System to Prevent Boom and Jib Over-Hoists

With primary and secondary over-hoist prevention devices, this new safety system can prevent boom over-hoist at two stages. The primary stop function is activated when the boom or luffing boom approaches the critical angle-to-ground during hoisting. This new system monitors the angle-to-ground the boom, luffing boom or jib with a sensor, and swiftly alerts the operator of danger. For the

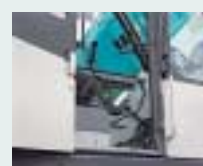
luffing boom, the angle-to-machine is also monitored at this stage. The secondary stop function uses a device that monitors the angle-to-machine of the boom, luffing boom, or jib through a limit switch fitted to the boom and jib backstops. It stops the machine automatically to prevent it from working outside of the safety range, and once activated it cannot be cancelled.

## Automatic Stop Release Switch with Safety Function

The automatic stop system prevents over-load, hook over-hoist and boom over-hoist. To deactivate the system, a two-stage release procedure is employed that uses a master key and separate switches. This makes it easy to supervise the use of the single key and prevent unauthorized release of the automatic stop system.



## Other Safety Features



■ Function lock lever helps prevent accidental operation when the operator enters or leaves the cab.



■ One-way call supports the safety of onsite personnel (Optional)



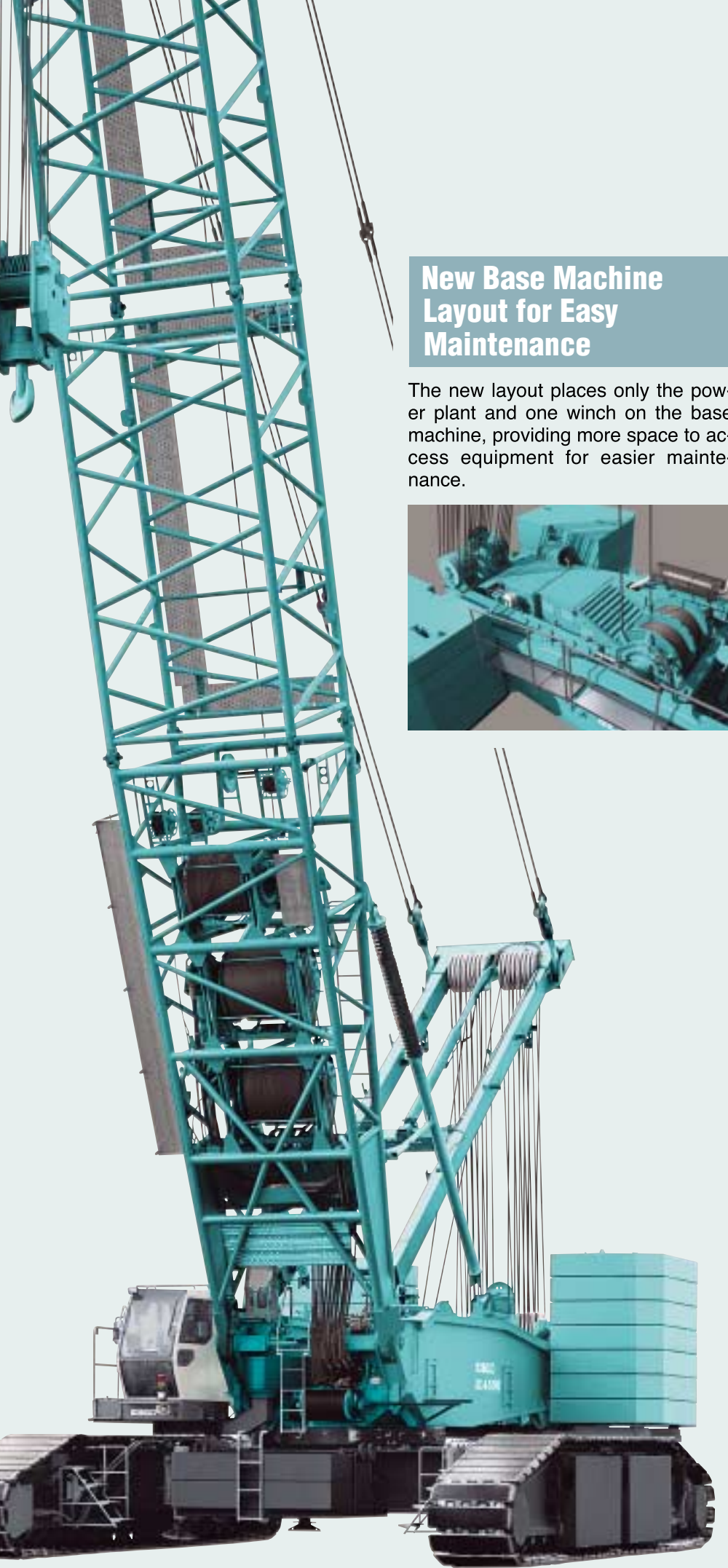
■ External lamp for over-load alarm notifies surrounding workers of the load condition.

## Automatic Soft-Stop Function Reduces Shocks

This function is activated automatically when boom or luffing jib lowering, or boom hoisting is stopped by the over-hoist prevention system. It makes for a smooth stop and prevents the load from swinging sideways.

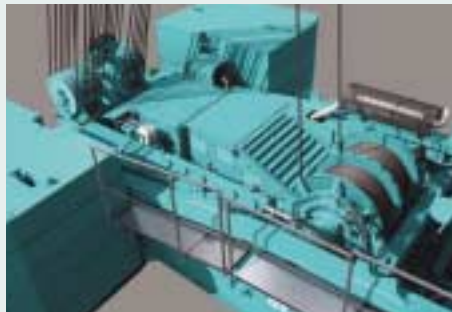
■ Swing flashers and warning buzzer warn surrounding workers when the machine is swinging.





### New Base Machine Layout for Easy Maintenance

The new layout places only the power plant and one winch on the base machine, providing more space to access equipment for easier maintenance.



### Dust-Resistant Internally Cut Swing Bearing

The standard KOBELCO internally gear swing bearing resists dust penetration and holds grease better than outer-cut bearings.

### Super-Fine Filter, a Long-Life Filter for Hydraulic Oil

The large-capacity, super-fine filter is made of a high-performance filter medium consisting of glass fiber reinforced with steel wires. The replacement cycle is extended to four times longer than that of conventional filters to reduce lifelong operating costs.

Photomicrograph (× 250)



Super fine filter  
(glass fiber)



Conventional filter  
(paper fiber)



### Conforms with European Exhaust-Gas and Noise Regulations

The SL4500 meets NRMM (Europe) Stage IIIA and US EPA Tier III exhaust emissions regulations, and is designed with advanced KOBELCO low-noise construction technologies to comply with European Noise Regulations.

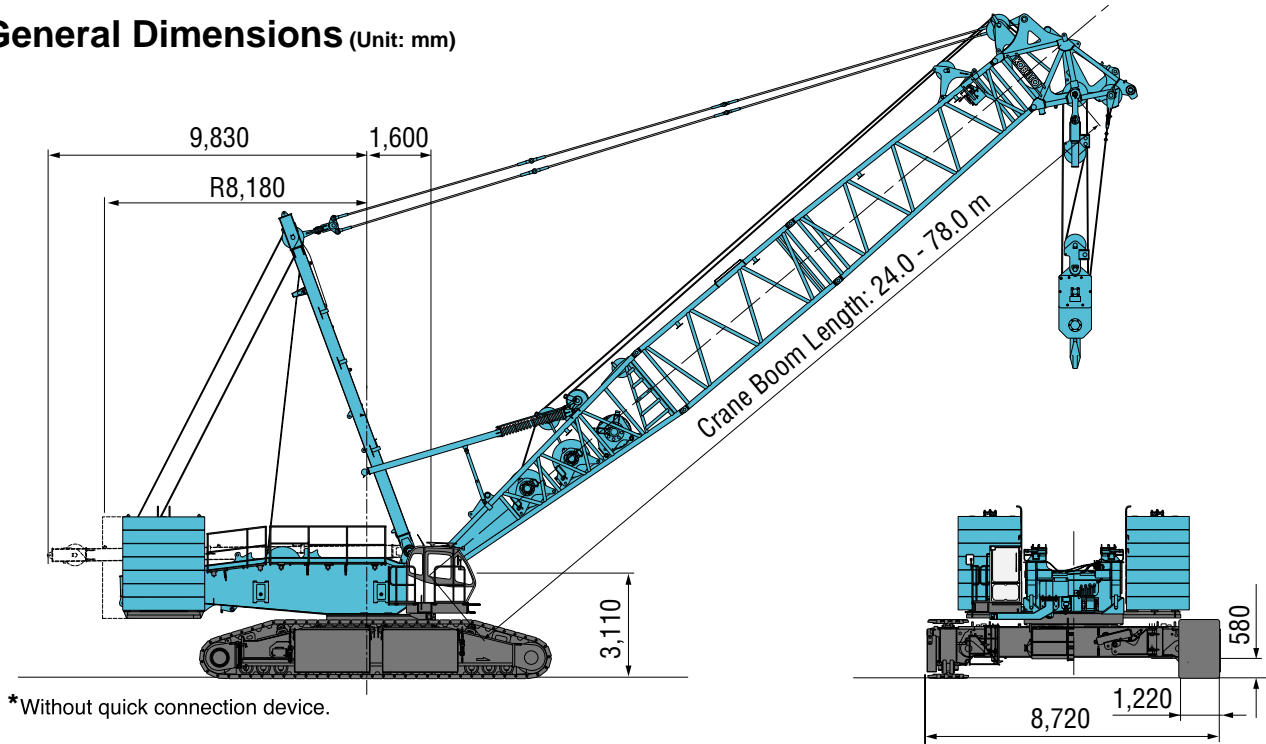
Main Specifications (Model: SL4500)

STANDARD CONFIGURATION			
Lift Enhancer	STD	HL	SHL
HL Mast		30 m	30 m
Additional Weight			~250 t
Luffing Boom			
Max. Lifting Capacity	400 t	350 t	350 t
	5.5 m	7.4 m	12.0 m
Length	24~78 m	30~84 m	30~84 m
Long Boom			
Max. Lifting Capacity	113.5 t		
Length	60~96 m		
Luffing Jib			
Max. Lifting Capacity	113.5 t	113.5 t	113.5 t
Boom Length (Min.~Max.)	24~66 m	30~72 m	30~78 m
Jib Length (Min.~Max.)	24~66 m	24~66 m	24~66 m
Luffing Angle	66°~86°		
LIGHT CONFIGURATION			
Luffing Boom			
Max. Lifting Capacity	300 t x 6.0 m <sup>*1</sup> / 180 t x 10.0 m		
Length	24~78 m		
Long Boom			
Max. Lifting Capacity	90 t x 14.0 m		
Length	48~96 m		
Luffing Jib			
Max. Lifting Capacity	80 t x 16.0 m		
Boom Length (Min.~Max.)	30~66 m		
Jib Length (Min.~Max.)	24~66 m		
Luffing Angle	66°~86°		

POWER PLANT	
Model	Hino E13C-UV
Engine Output	320 kW/2,000 min <sup>-1</sup> {rpm}
Fuel Tank Capacity	600 liters
HOIST WINCH (H1, H2)	
Max Line Speed	110 m/min (1st layer)
Rated Line Pull (Single line)	137 kN {14.0 tf}
Wire Rope Diameter	28 mm
WORKING SPEED	
Swing	1.2 min <sup>-1</sup> {rpm}
Travel	1.0/0.6 km/h
HYDRAULIC SYSTEM	
Pumps	6 variable displacement
Max. Pressure	32.0 MPa {326 kgf/cm <sup>2</sup> }
Hydraulic Tank Capacity	710 liters
WEIGHT	
STANDARD CONFIGURATION	
Operating Weight <sup>*2</sup>	Approx. 413 t
Ground Pressure <sup>*2</sup>	178 kPa {1.8 kgf/cm <sup>2</sup> }
Counterweight	Upper: 160 metric tons
	Lower: 51 + 20 metric tons
LIGHT CONFIGURATION	
Operating Weight <sup>*3</sup>	Approx. 310 t
Ground Pressure <sup>*3</sup>	134 kPa {1.4 kgf/cm <sup>2</sup> }
Counterweight	Upper: 120 metric tons
	Lower: 31 metric tons

\*1 Equipped with Standard Boom Configuration (width 3.0 m boom)  
\*2 Including upper and lower machines, counterweights (=160 ton), carbody weights (=51 ton), crawler weights (=20 ton), 24 m luffing boom, and 400 t hook block.  
\*3 Including upper and lower machines, counterweights (=120 ton), carbody weights (=31 ton), 24 m luffing boom, and 180 t hook block.  
Units are SI units. { } indicates conventional units.

General Dimensions (Unit: mm)



Note: This catalog may contain photographs of machines with specifications, attachments and optional equipment not certified for operation in your country. Please consult KOBELCO for those items you may require. Due to our policy of continual product improvements all designs and specifications are subject to change without advance notice.

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