

7090

KOBELCO

HYDRAULIC CRAWLER CRANE

7090

Crane Boom

Max. Lifting Capacity:

90t at 4.3m

Tower Jib

Max. Lifting Capacity:

15t at 14.0m



Technology and Power, The Pride of KOBELCO

Hydraulic Crawler Crane 7090 Now Ready to Launch!

Kobelco's new hydraulic crawler crane 7090 has capitalized on the latest technologies to raise its performance to new heights. Precision and high-elevation crane jobs depend on accuracy and speed, whereas heavy and hard work require reliable power and strength.

Look no further than our new 7090. Hoist winches with a powerful line-pull are designed to handle the toughest jobs. Large drum capacities combined with a new hydraulic system promote ultra-smooth operation, while excellent transportation features enable cost saving.

Of course, Kobelco is renowned for its engineered technology backed with long and worldwide experience, meaning productivity-boosting technical advances can be found everywhere. With lifting performance, transportation features, smooth control functions, safety features, as well as durability and reliability, the 7090 can handle and satisfy all types of crane jobs.

Kobelco is proud to announce the new 7090 crawler crane.





Hydraulic Crawler Crane 7090

5 Major Features

1. High and Versatile Lifting Performance

2. High-Performance Winches

**3. Excellent Cab
with Enhanced Functions**

**4. Excellent Transportation
and Assembly**

5. Safe and Environmental Design

For high-lifting crane work, as well as civil engineering jobs

High and Versatile Lifting Perform

Large Lifting Capacity

Max. lifting capacity

90.0t at 4.3m

Tower Jib max. lifting capacity

15.0t at 14.0m

Boom length, the longest in its class

The boom specification achieves a wider working range with its maximum boom length of 62.6m. The maximum working radius is 46.0m with lifting capacity of 1.6 metric tons.

Boom length

13.8m to 62.6m

Lifting capacity at the maximum working radius

1.6t at 46.0m

(with a 53.4m boom)



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Powerful, High Performance Engine

7090 is powered by a powerful and reliable diesel engine and guaranteed to complete your job. The Kobelco's unique Engine Speed Sensing (ESS) control system and new hydraulic system enable operators to achieve smooth and stable combined operations.



Fast Line Speed to Enhance Work Efficiency

Both main and auxiliary winches perform 120m/min of maximum line speed at 1st layer for hoisting and lowering. The fast line speed reduce idle time. Ready to lift again and again.

120m/min

Direct Control Lever Connection to the Pilot Valve 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.

Drum Speed Controller

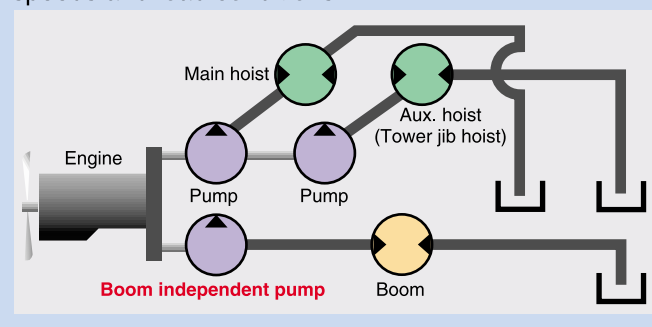
Speeds for main winch, auxiliary winch and boom hoist can be set independently with trimmer controls.



New Hydraulic System for Smooth Combined Operation

In the tower and tower jib operation, the auxiliary winch is used for jib hoisting. And the line speed reduction occurs by main hoist/lower and jib hoist/lower combined operation due to hydraulic pressure interference with the conventional series hydraulic circuit (conflux hydraulic circuit).

7090 adopts a one-pump to one-motor system (independent hydraulic circuit) for the main, auxiliary and boom hoist. This is a completely interference-free hydraulic circuit for performing smooth combined operation of main, auxiliary, boom and jib hoist/lowering without shocks which may interfere precise operation, and almost no speed reduction occurs under all winch speeds and load conditions.



Swing Operation Mode Selector for Various Work

■ Swing free mode (High/Low)

When crane works in cycle-duty such as material handling with consecutive swing operation, swing free mode makes complete free swing and is able to select High or Low speed, depending on your job requirements.

■ Swing Neutral mode

When crane is inclined at jobsite on slope and start to swing with swing free mode, possibly the crane may swing to other direction than you want as soon as swing parking brake is released. Swing neutral mode applies swing brake automatically according to swing lever action to prevent such sudden swing (Swing speed will be reduced when this mode is selected to prevent side-motion of load).



■ The swing operation is controlled by hydraulic pilot system with a swing reaction force detection.



■ Sensitive engine control is assured by an electric throttle with a twist grip.



■ The red switch on the boom lever grip (Inching control switch) allows easy inching control for hoist, boom hoist, and travel that the operator can activate without taking his hands off the boom hoist lever.

■ The drum turning sensor enables sensing start of hoisting and lowering (main and aux winches only) by touching the top of the hoisting lever grip (optional).

To meet requirements of various Construction work

High-Performance Winches



Wide and Large Capacity Winches

The wide and large capacity hoist winches have large spooling capacity, 50.2m with $\phi 26\text{mm}$ hoist rope (at 1st layer). This prevents uneven spooling and makes service life of hoist ropes longer, ensuring smooth lifting works.

Spooling capacity of the first layer **50.2m**

Powerful Winches Perform Heavy and Hard Work

The combination of powerful engine, hydraulic system and high performance hoist winches guarantees a high line-pull for single line. The winch power is controlled by load-sensing and ESS technologies. You can control gravity in any kind of lifting scene.

Rated single line-pull (main/aux.)

Single line **108kN {11.0tf}**

Optional Full-Size Third Drum

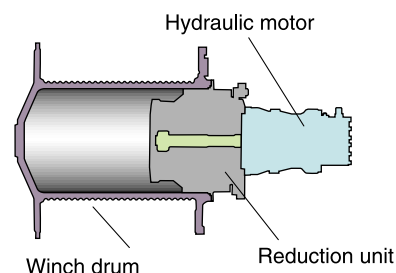
Adoption of a compact winch design and side engine layout allow an optional full-size third drum equivalent to main and auxiliary winches to be equipped. The full-size third drum increases the versatility of your lifting job combined with other attachments and work equipment. (The optional third drum is only available with non free-fall function.)



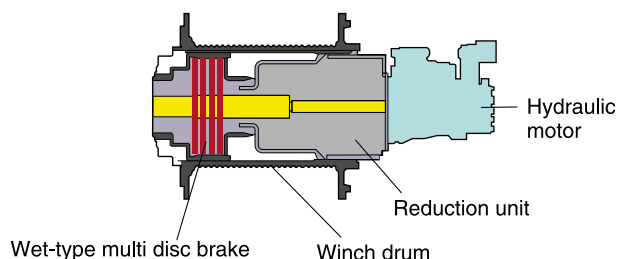
Choice of Non Free Fall Winch or Wet-Type Disc Brake

Either standard non free-fall winch, which is suitable for the lifting work, or an optional free-fall winch (wet-type multi disc brake) can be selected according to your job requirements, which achieves high reliability in material handling and general foundation work.

Non Free Fall Winch (Standard)



Wet-Type Multi Disc Brake System (Option)



KOBELCO's new oil cooled wet-type multi disc brake system provides quiet, dependable braking power. Multiple discs are self-adjusting and self equalizing. Forced oil circulation keeps brake temperatures cooler during long, continuous operations and maximizes smooth brake operation. The completely enclosed system eliminates the possibility of outside contamination, providing years of problem-free service life. The low brake pedal effort reduces operator fatigue when the machine is working in the optional free-fall mode.

Excellent Cab with Enhanced Functions

Multi-Function LMI Display

The newly-designed load moment indicator (LMI) system is easy-to-read with a large screen LCD display.

The rated load, actual load, load ratio, etc are displayed in large characters. The relevant caution, alerts or items are displayed in color, and text messages and alarms alerts the operator to prevent crane goes to further dangerous condition. In addition, other versatile functions are provided, such as a display of the rated load chart, rated load curve, or a function involving limitation of the work area.



• Main display



• Rated load display



Multi-Display

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



• Normal display

Engine rpm (lifting)* / Engine oil change interval
Number of wire rope layers on main / aux. drum
The number of the reeving main / aux. winch wire rope
Low speed switch status

* If the optional lifting height gauge is included

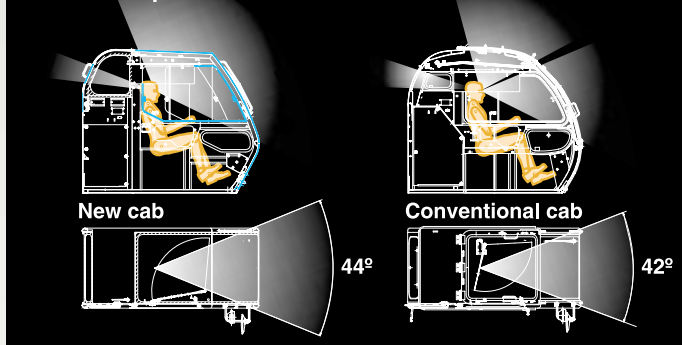
• Abnormal display

Warning (malfunction / maintenance information, etc)
Self-diagnosis (malfunction of solenoid or sensor)

Improved All-Round Vision

7090 adopted new design cabin. The sash-less front and top glass improve wide and clear sight of frontward and skylight vision for work. In addition, by adopting glass with less curvature, distortion of eye-sight is minimized. Widening the front upper window to the left and right, provides sight of 31% wider than a conventional cab, while the vision of the top window is also widened to the rear.

Visual comparison of new and Conventional cabs



A Cab with 940mm width Provides a Comfortable Space

- Air conditioner
- Fully adjustable, high backed seat with a head-rest and arm rests.
- Intermittent wiper and window washer
- Cup holder
- Sun visor
- Luggage tray
- Roof blind



Luggage tray



Cup holder

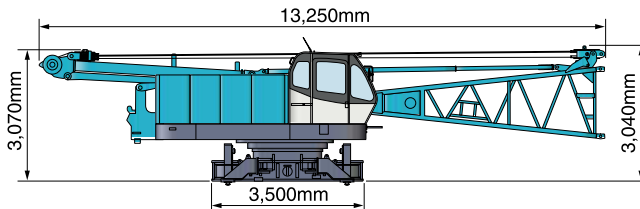
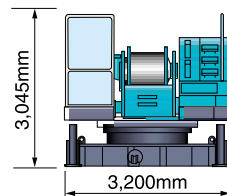
Reduced transportation and storage costs

Excellent Transportation and Ass

Transport with Lower Boom

The base machine possible to transport with lower boom. The width and weight is within 3.2m and 34.8t. This eliminates installation of lower boom and boom hoist rope in jobsite, swiftly ready for job.

Transport weight **34.8t**
Transport width **3,200mm**



Saving Cost of Transportation and Space of Storage by Common Use of Boom and Jib

The 7090 crawler crane features an innovative boom design to enhance lifting performance with the job at hand. The common use of boom and jib also enables to save the cost of transportation and storage.

Nesting Boom Design

The insert jib can be easily nested to the insert boom by using optional string guide rollers. As a result, the nested booms are convenient for transportation.



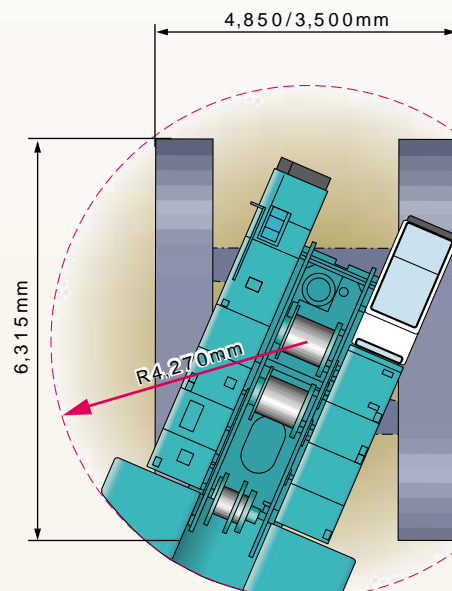
Thin Counterweights with Excellent Transportation Efficiency

The counterweights with piling up system are so easy to handle for transportation. They can be transported together with the insert boom contributing to the saving of transportation vehicles.



Compact Working Space

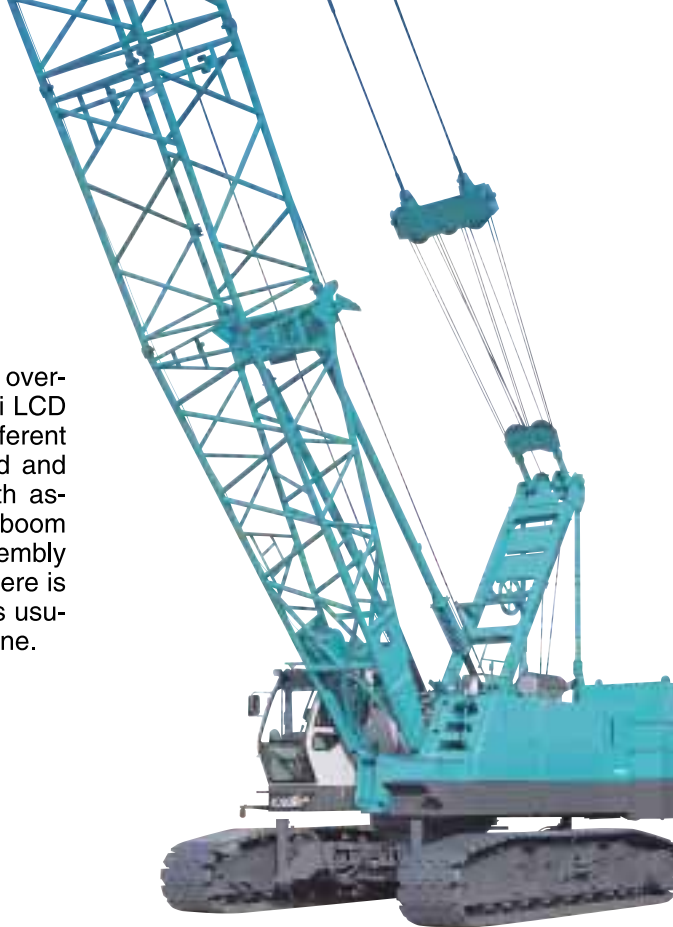
While achieving the maximum performance in its class, it maintains both high performance and operability in confined spaces.



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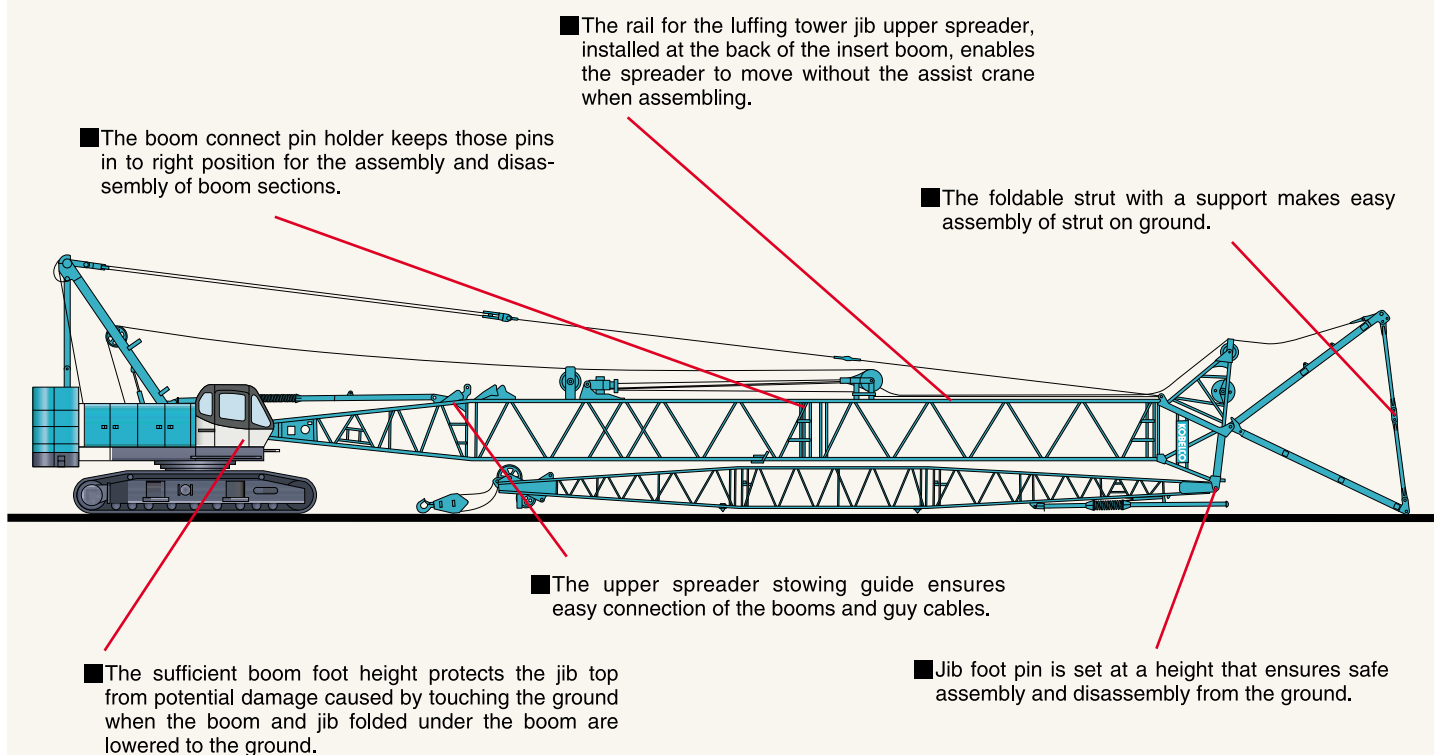
Setting of Boom Assembling Mode

The boom assembly and disassembly switch for releasing over-hoist prevention function is located at the bottom of the multi LCD display of Load Moment Indicator (LMI). This switch is different from the release switch of auto-stop functions for over-load and hook over-hoist. This switch and functions support smooth assembly and disassembly of the booms and jibs. When the boom is raised to certain boom angle, the assembly and disassembly mode will be canceled and LMI in function automatically. There is no fear that the release from the auto-stop function becomes usual practice when assembling and disassembling of the machine.



Reduced Assembly and Disassembly Time for Attachments

Thanks to various new mechanisms, the assembling work is drastically reduced. This is not only saving time and cost of labor and assist crane, but also support safe job. Then extra time can be spent on actual work.



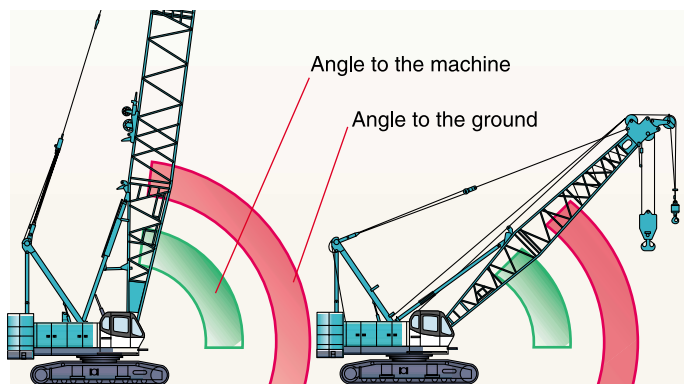
Safe and Environmental Design

Double and Triple Measures for Boom and Jib Over Hoist Prevention

This innovative boom and jib over-hoist prevention system was developed from the philosophy of 'accident extermination' as our ultimate goal. The system arrests boom and jib angles reach to out range from safe working area. Boom or jib over-hoisting may cause serious accident in result especially tower and tower jib operation.

Tower and tower jib angle is monitored by 'angle to ground' sensor and 'angle to machine' sensor to apply automatic stop function (primary stop) when crane approaches to danger zone while in operation and this stop function hardly produces any shock and not disturb operator in precise work.

In addition to above, the ultimate stop function (secondary stop) is equipped. This is an ultimate stop and not releasable. The same system applies to the tower jib also for even further protection.



Shock-Less Stop Function to Alleviate the Shock of Auto Stop

This is to smoothly implement the auto stop function and avoid the side-motion or swing of the load when automatic stop functions are applied such as boom lowering stop, tower jib lowering stop and boom over-hoist stop.

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 usage of the single key and prevent unauthorized release of the automatic stop system.



Safety Functions of Optional Free-Fall Winch

Free-Fall Safety Lock System with Master Key

To perform the free-fall work, it is necessary to cancel the lock using the key switch. It is not possible to perform the free-fall work in the state in which the key is locked even if the position of the free-fall switch is changed to neutral free mode. Meanwhile, to prevent the mode from being changed to the free-fall mode due to a system fault, there is a monitoring function installed to watch the free-fall clutch cylinder pressure of the main and auxiliary winch.

Free-Fall Changeover Switch with Inter Lock

The free-fall change-over switch is strategically located on the hoisting levers, allowing the operator to engage free-fall whenever desired without removing his hands from the control levers. It is equipped with an interlock function for disabling the changeover unless the foot brake is fully depressed, thus preventing a suspended object from falling due to operation mistakes.



To make sure that a suspended object does not fall due to operation mistakes, do not implement the free-fall operation while lifting work.

Sufficient Safety Systems

- Swing flashers/warning buzzer alert in vicinity when the machine is swinging.
- Function lock lever prevents accidental operation when the operator enters or leaves the cab.
- A display mark indicating the crawler traveling direction can be easily confirmed.
- One way call securing safety (optional).
- External lamp for over-load alarm people in the area concerning the condition of the load (optional).
- Camera and monitor (color) for monitoring the area behind the machine, main and aux. drums, boom hoisting drum (optional).



• Traveling direction display mark



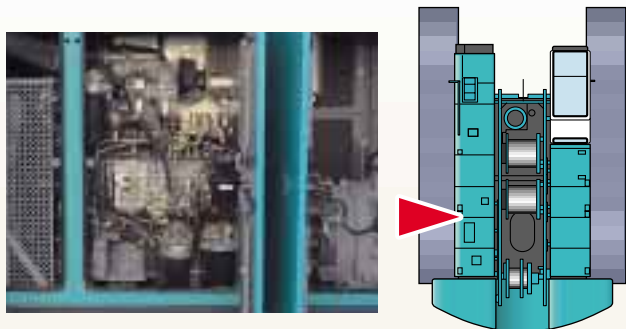
• Function lock lever



• One way call (optional)

Easy Maintenance

A new engine layout on the side of the machine provides easy access for routine inspections and servicing.



Complying with Worldwide Exhaust Gas Regulations

Adopting the low pollution engine, the crane has been specified as construction equipment complying with Japanese secondary exhaust gas measures. It also complies with NRMM(Europe) Stage II and U.S. EPA Tier II.

Complying with Japanese Noise Regulations

7090 is designed with advanced Kobelco low noise construction technologies, as specified by the Japanese Ministry Land, Infrastructure and Transportation Ministry.

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



Large capacity super fine filter is made of high performance filter medium, using glass fiber reinforced with steel wires. The replacement cycle is extended four times longer than that of conventional filters. It saves on lifelong operating costs.

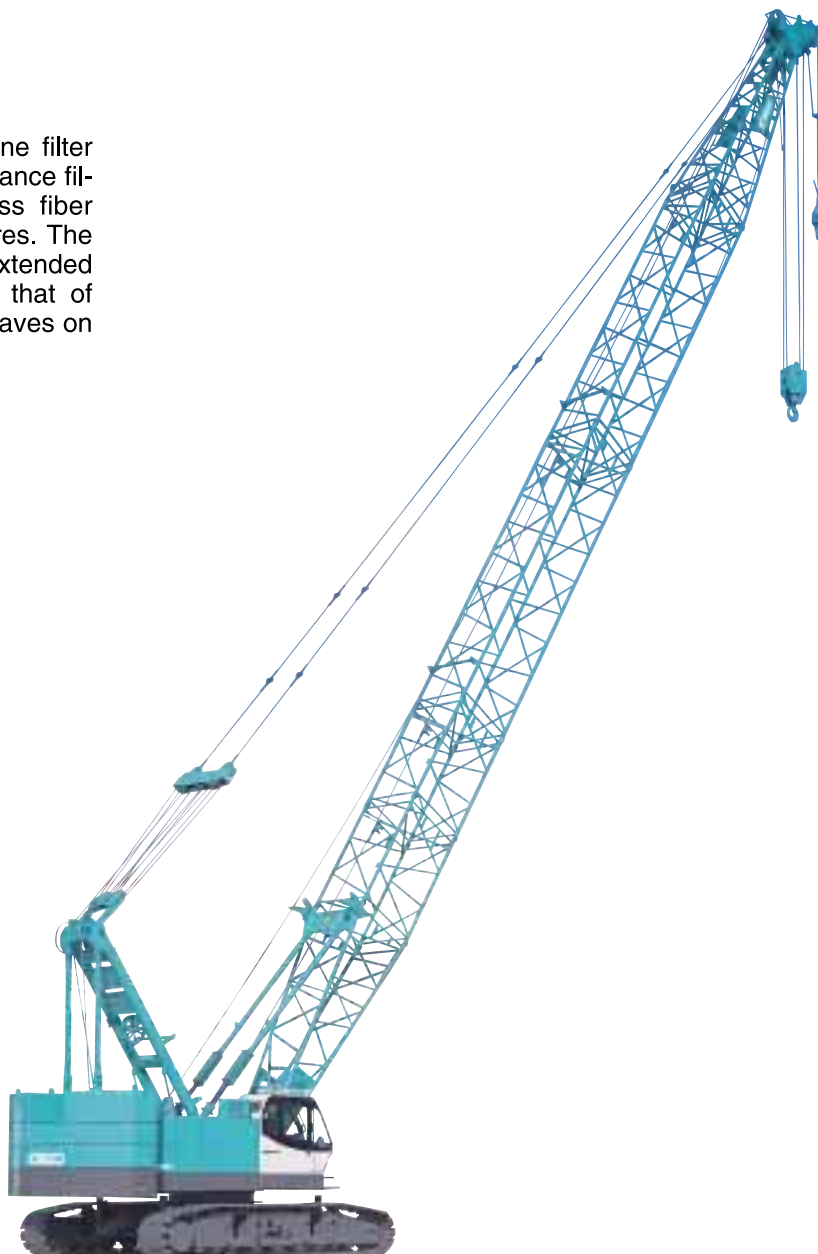
Microscopic image of filtering material (x250)



• Conventional filter (paper fiber)



• Super fine filter (glass fiber)

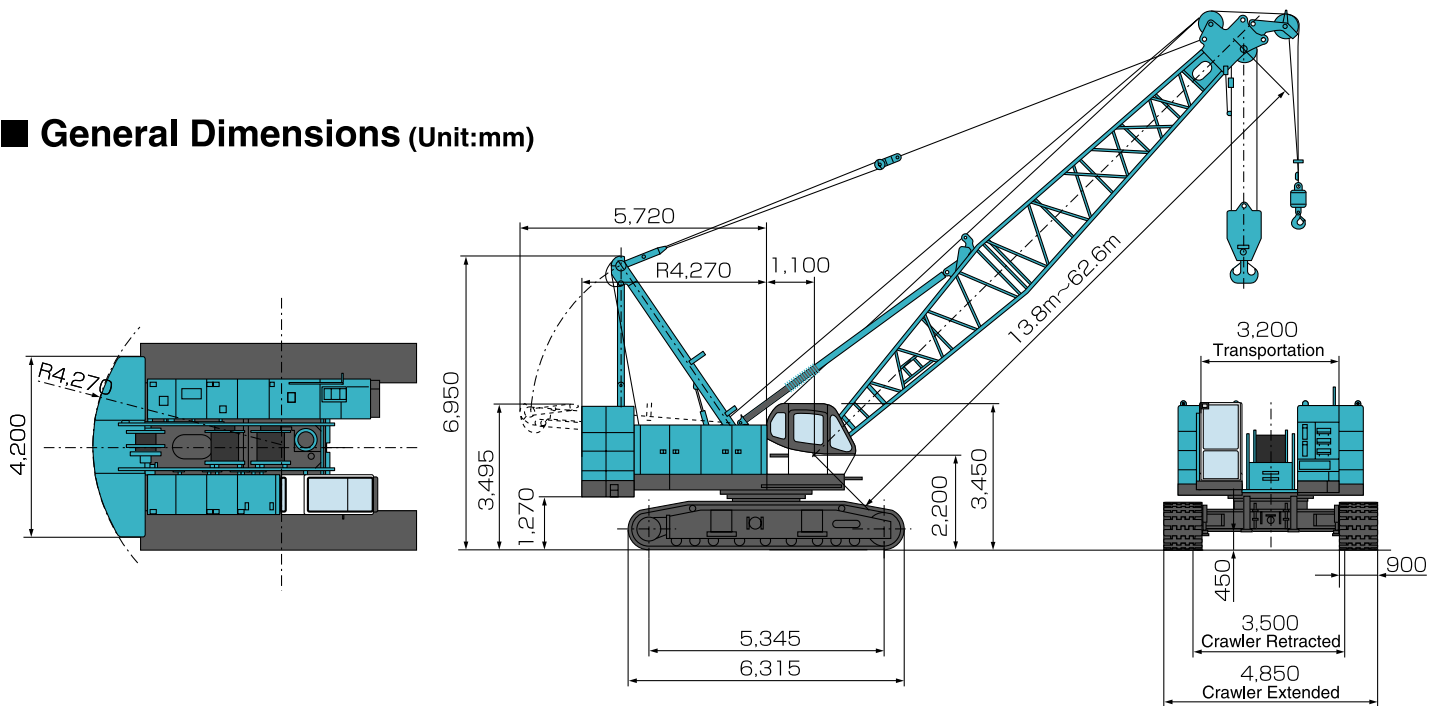


■ Main Specification (Model: 7090)

Specifications			Crane	Tower Jib
Max. lifting capacity		ton x m	90 x 4.3	15 x 14.0
Boom (Tower) length		m	13.8 to 62.6	26.0 to 44.3
Jib (Tower jib) length		m	9.1 to 21.3	18.8 to 37.1
Max. boom (Tower) + Jib (Tower jib) combination		m	53.4 + 21.3	44.3 + 37.1
Line speed	Main	hoisting/lowering m/min	*120 to 3	
	Aux.	hoisting/lowering m/min	*120 to 3	—
	Tower jib hoisting/lowering m/min		—	*60 to 3
	Boom (Tower) hoisting/lowering m/min		*48 to 2	
Swing speed		min ⁻¹ {rpm}	3.1{3.1}	
Travel speed		km/h	*1.4 / 1.0	
Operating weight		t	Approx. 91	Approx. 99
Ground pressure		kPa{kgf/cm ² }	Approx. 93{0.95}	Approx. 101{1.03}
Gradeability		% (degree)	30(16.7)	—
Rated line-pull (Main/Aux.)		kN{tf}	108{11}	—
Engine	Model		Mitsubishi 6D24-TLE2A	
	Rated output	kW/min ⁻¹ {PS/rpm}	235/2,000{320/2,000}	
Wire rope	Main	mm	ø26	
	Aux.(Tower jib)	mm	ø26	
	Boom (Tower)	mm	ø20	

Each line speed is the value taken on the first drumlayer.
Working speeds marked * based on light load, vary due to loads.
The 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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