

7120

KOBELCO

HYDRAULIC CRAWLER CRANE

7120

Crane Boom

Max. Lifting Capacity:

120t at 5.0m

Tower Jib

Max. Lifting Capacity:

20t at 15.0m



Technology and Power, The Pride of KOBELCO

Hydraulic Crawler Crane 7120

The Difference is in its Basic Performance

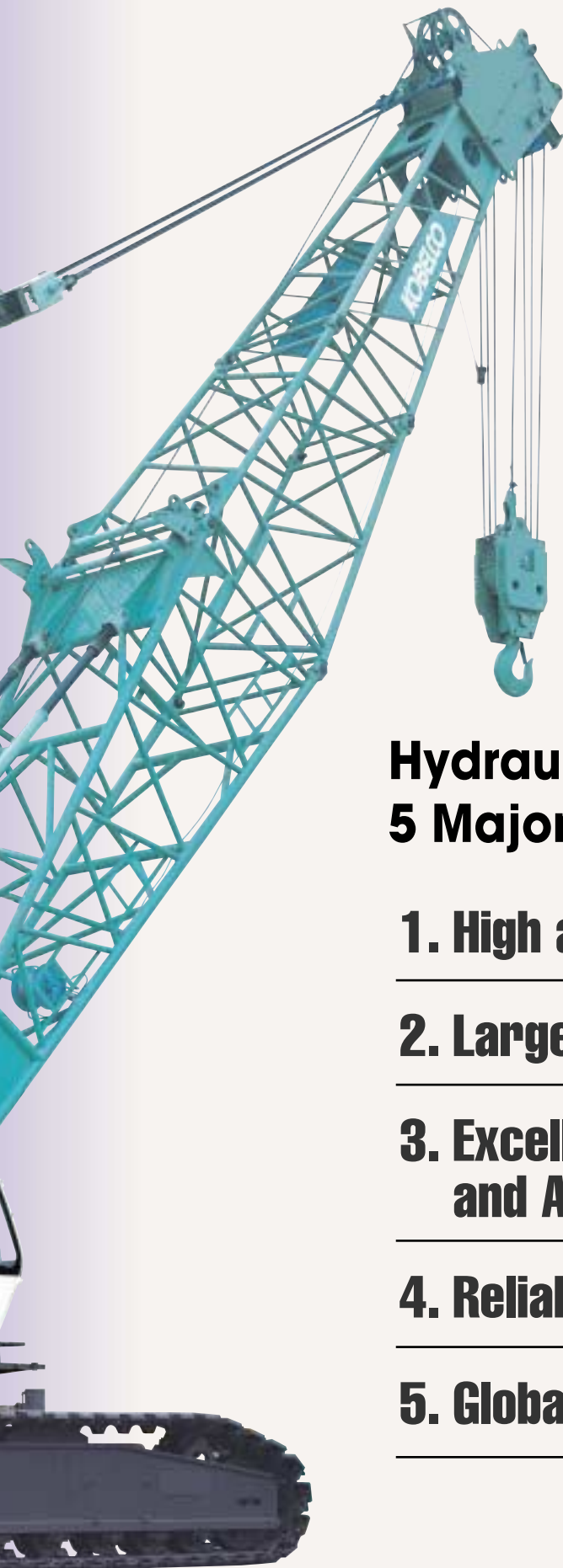
Kobelco's Hydraulic Crawler Crane 7120 takes advantage of new technologies to raise its performance to new heights. Precision and high-elevation crane jobs depend on accuracy and speed, whereas general construction lifting works depends on having a reliable safety and sufficient working area. The perfect answer comes in one versatile machine. Hoist winches with powerful line-pull are capable of handling precise and continuous jobs smoothly. The new hydraulic system combined with a large drum capacity promotes ultra-smooth operation. Excellent transportation features enable cost saving.

Of course, Kobelco is renowned for its engineered technology backed with long, worldwide experience, giving rise to many productivity-boosting technical advances.

Not only with its durability and reliability, but also with its high lifting performance, cost-saving transportation features, smooth control functions and safety features, 7120 can handle all types of crane jobs, giving the utmost customer satisfaction.



Photos in this catalogue may include optional items.



Hydraulic Crawler Crane 7120 5 Major Features

1. High and Wide Lifting Performance

2. Large and Powerful Winches

**3. Excellent Transportation
and Assembly**

4. Reliable Safety Features

5. Global Design Super-structure

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

High and Wide Lifting Performance

Large Lifting Capacity

Max. lifting capacity

120t at 5.0m

Tower jib max. lifting capacity

20t at 15.0m

Long Boom Configuration to Enhance Working Ranges

The long boom specification achieves a wider working range with its maximum boom length of 79.2m. The maximum working radius is 64.9m with a lifting capacity of 2.2 metric tons.

Long boom length

61.0m to 79.2m

Lifting capacity at the max. working radius

2.2t at 64.9m

(with 73.2m long boom)

Relay jib
Tower jib top
Tower insert jib
Tapered insert boom
Insert boom
Lower boom
Long boom





30.5m Fixed Jib, the Longest in its Class

The maximum length of the fixed jib installed on the crane boom is extended up to 30.5m, making work at higher and deeper sites possible.

Jib length **12.2m to 30.5m**

High Traveling Speed for On-Site Maneuverability

Max. **1.3km/h**

Powerful, High Performance Engine

7120 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 as high as 120m/min of maximum line speed at 1st layer for hoisting and lowering. Ready to lift again and again.

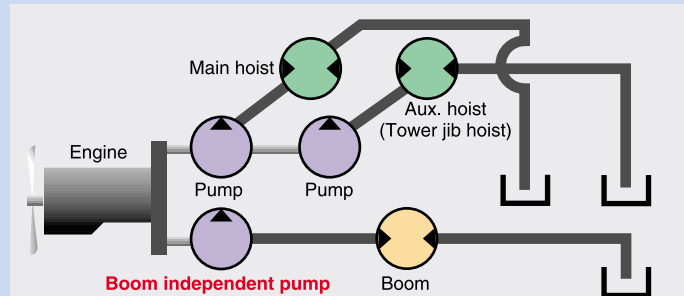
120m/min

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.

New Hydraulic System for Smooth Combined Operation

In the luffing tower 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). 7120 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.



Drum Speed Controller

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



- 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).



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).



To meet requirements of various types of construction work

Large and Powerful Winches



Wide and Large Capacity Winches

The wide and large capacity hoist winches with 672mm width have a large spooling capacity, 52.3m (24.5 rows) with $\varnothing 26\text{mm}$ hoist rope (at 1st layer). The large spooling capacity at a layer and the large spooling radius prevent uneven spooling and wear of the hoist rope, ensuring that bucket work and high lifting work are executed smoothly.

Powerful Winches Perform Hard Work

The combination of a powerful engine, hydraulic system and high performance hoist winches guarantees high productivity. It can easily perform continuous, hard work such as construction material handling at high lifting heights.

Rated line-pull (main/aux.)

118kN {12.0 tf}

Optional Full-Size Third Drum

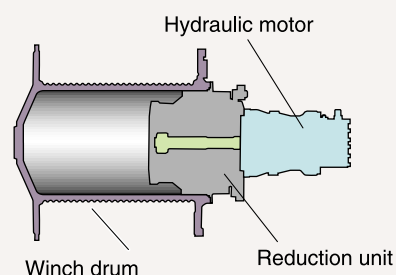
Adoption of a compact winch design and side engine layout allow an optional full-size third drum equivalent to main and auxiliary winches to be equipped. The full-size third drum increases the versatility of your lifting job combined with other attachments and work equipment. (The optional third drum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



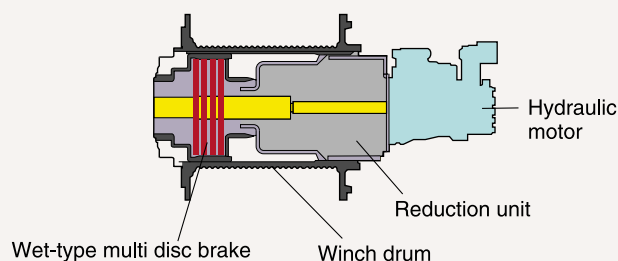
Choice of Non Free Fall Winch or Wet-Type Disc Brake

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.

Maintenance-Free Winch

Not only the non free-fall winch which has no brake band, but also the free-fall winch is maintenance free. The built in wet-type multi disc brake for free fall is equipped with a forced oil cooling system to prevent overheating and the brake band-less structure eliminating the necessity for brake band adjustment and lining replacement, contributing to the saving of labor and cost required for maintenance.

Environment Friendly Design

There is neither brake noise nor contamination from lining dust.

For better man-machine communication

Multi Function M/L Display

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, and load ratio, etc are displayed in large characters. The relevant caution, alerts or items are displayed in color, and text messages and alarms alert 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 working area.



Overload prevention display
(Overload alarm display)



Overload and Boom
over-hoist alarm display



Boom over-hoist alarm
display



Rated load display



Rated load curve display



Working area limit display

Multi-Display



• Normal display

Engine rpm (Lifting height*), Engine oil change interval
Number of reeving main/aux. winch wire rope
Low speed switch status, Wind speed**

* If the optional lifting height gauge is included.

** If the optional anemometer is included.

• Abnormal display

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

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.

Easy Maintenance

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



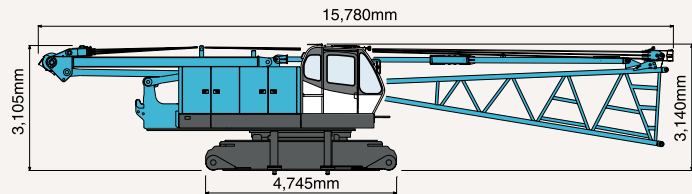
Engine

To ensure safe assembly and secure actual working hours

Excellent Transportation and Assembly

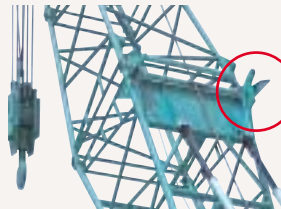
Transport with Lower Boom

Transport weight **36.8t**
Transport width **3,200mm**

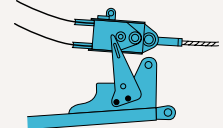


Quick and easy assembly and disassembly

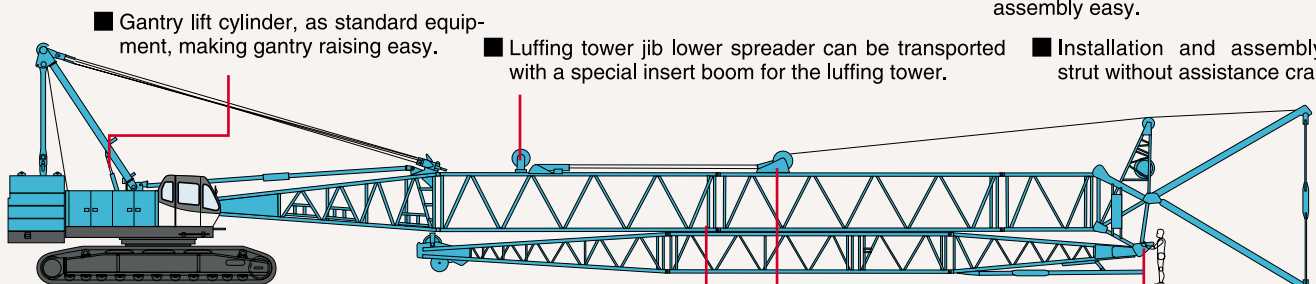
Thanks to various new mechanisms such as the new luffing tower spreader system, the assembly work is drastically reduced. This not only saves the time and cost of labor and the assistance crane but also increases safety, allowing extra time to be spent on the actual work.



■ The boom upper spreader stowing guide ensures easy connection of the booms and guy cables.



■ Large-tapered guy cable pin makes assembly easy.



■ Gantry lift cylinder, as standard equipment, making gantry raising easy.

■ Luffing tower jib lower spreader can be transported with a special insert boom for the luffing tower.

■ Installation and assembly of strut without assistance crane.

■ Crawler connection to carbody by hydraulic pin system makes assembly and disassembly easy.

■ Switching from/to the luffing tower and crane assembly without relocating the boom upper spreader.

■ Jib upper spreader does not need to be unloaded even when being stored at a depot.

■ Boom base connecting tapered pins at both ends, which helps safe connection and disconnection of boom inserts from outside the boom.

■ Jib foot pin is set at a height that ensures safe assembly and disassembly from the ground.

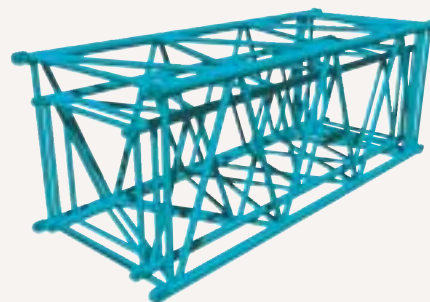
Basic Luffing Tower Configuration Able to be Assembled by Cantilever

Thanks to the boom base with enhanced strength, cantilever of the boom is made possible up to 36.6m, in case of the crawler crane specification, and up to 30.4m, in case of luffing tower specification, simplifying the assembly procedures.

Thin Counterweights with Excellent Transportation Efficiency

The counterweights with a 6-pieces pilling up system and weight of 6.1 tons to 10.0 tons each are easy to handle for transportation. Furthermore they also can be transported together with the insert boom contributing to the saving of transportation vehicles.

Nesting Boom Design

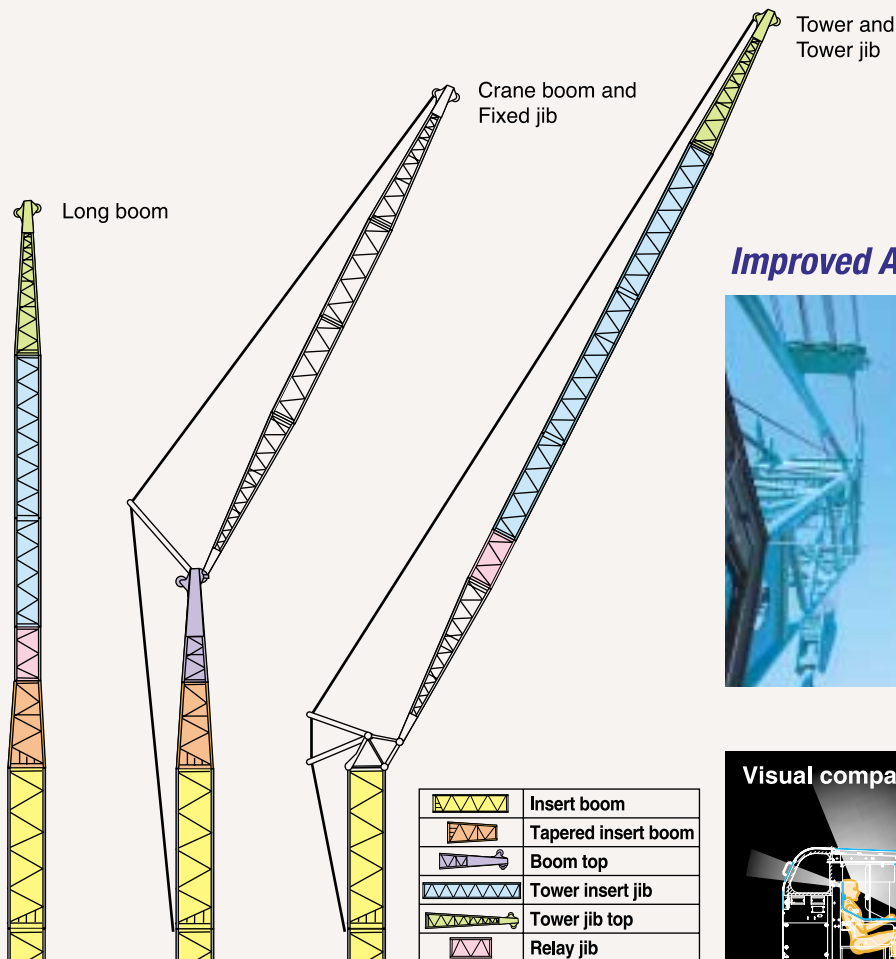


The insert jib can be easily nested to the insert boom by using optional string guide rollers. As a result, the nested booms are convenient for transportation.

Setting of Boom Assembling Mode

The boom assembly and disassembly switch for releasing the over-hoist prevention function is located at the bottom of the multi LCD display of the 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 boom and jibs. When the boom is raised to a certain boom angle, the assembly and disassembly mode is canceled and the LMI functions automatically. There is no fear that the release from the auto-stop function becomes usual practice when assembling and disassembling of the machine.





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

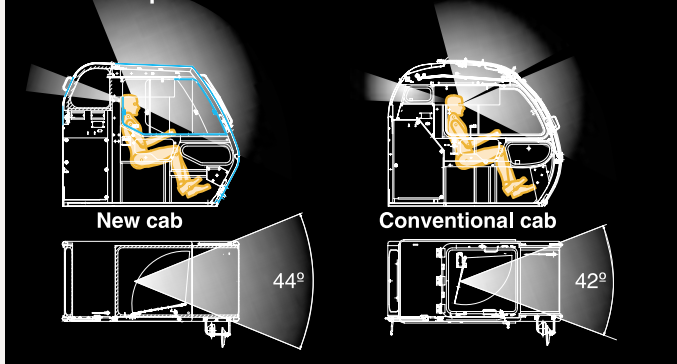
The 7120 crawler crane features an innovative boom design to enhance lifting performance with the job at hand. The common use of boom and jib also enables to save the cost of transportation and storage.

Improved All-Round Vision



7120 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
- Luggage tray



Luggage tray



Cup holder

Reliable Safety Features

Double and Triple Measures for Boom and Jib Over-Hoist Prevention

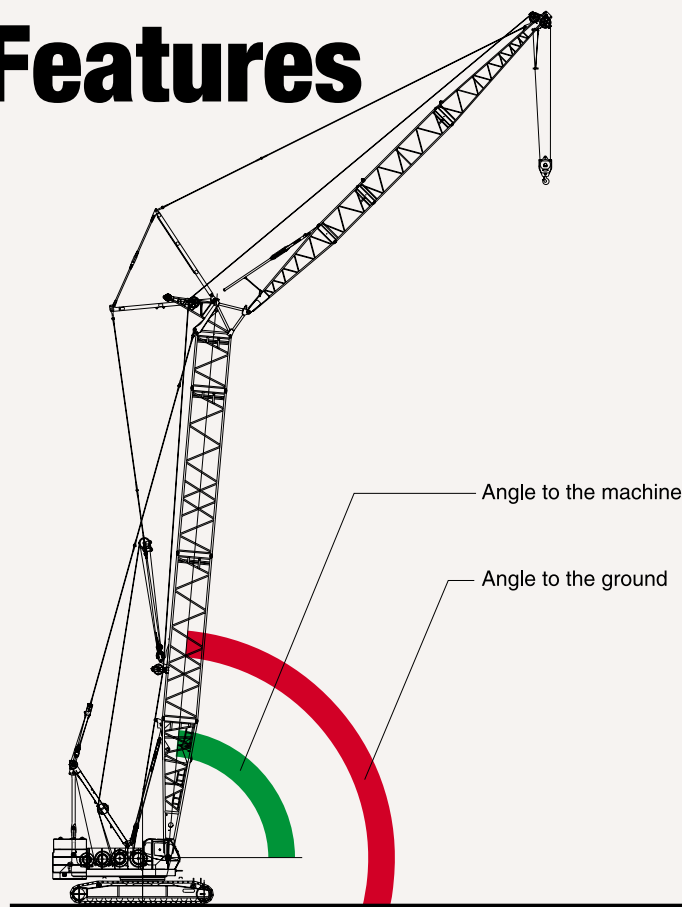
This innovative boom and jib over-hoist prevention system was developed from the philosophy of 'accident extermination' as our ultimate goal. The system arrests boom and jib angles reach to out range from safe working area. Boom or jib over-hoisting may cause serious accident in result especially luffing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

Luffing tower boom and 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, luffing 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 inter lock 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 in lifting work.

Sufficient Safety Features

- 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.
- Directional markings on the crawlers make it easy to ascertain which direction the crawlers will move.
- One way call securing safety (optional).
- External over-load alarm lamp for warning people in the area concerning the load condition (optional).



• Function lock lever



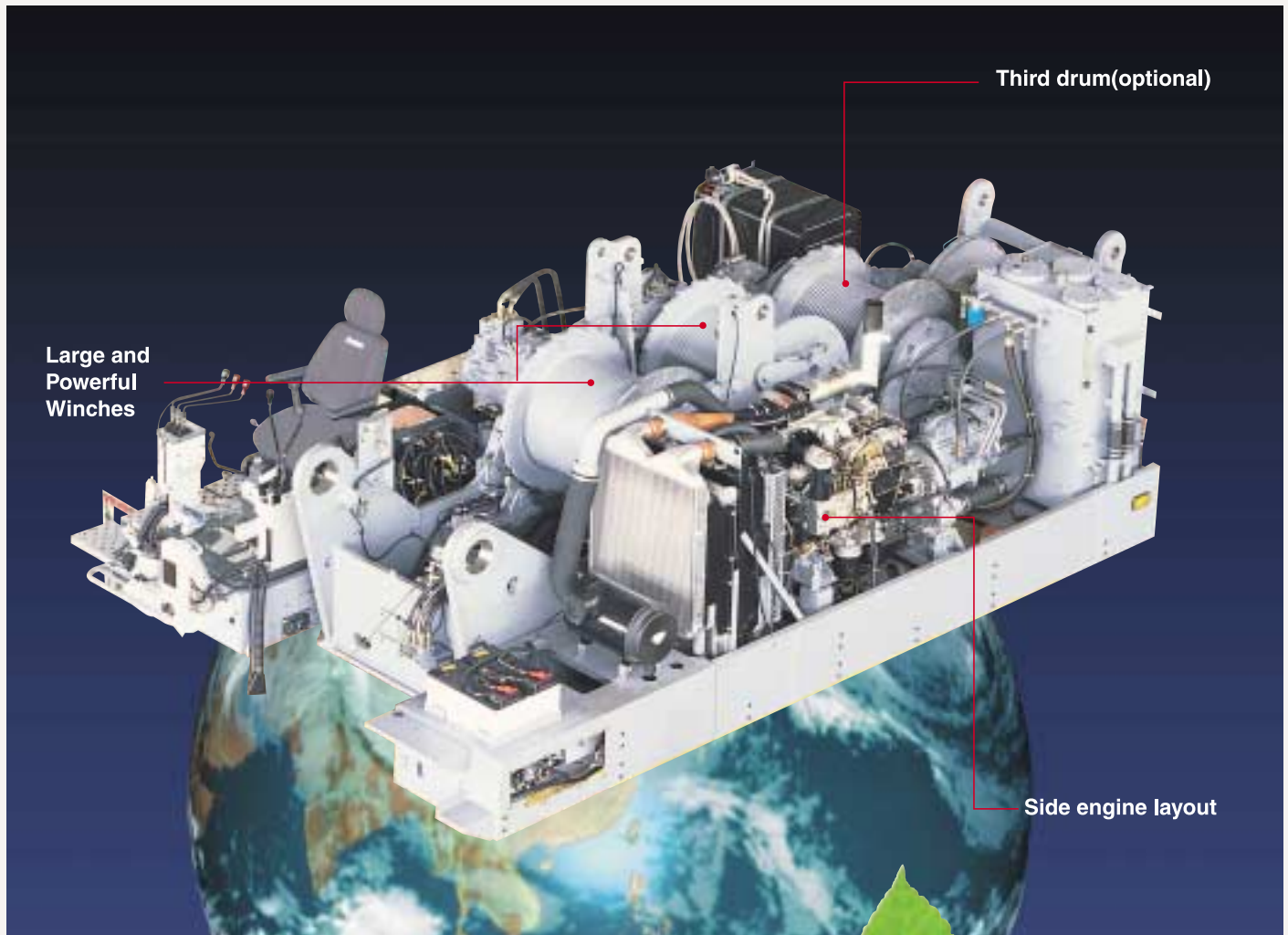
• Traveling direction display mark



• One way call (optional)

For the satisfaction of every user

Global Design Super-Structure



The Global Design Super-Structure

The Global Design Super-Structure is the ultimate answer to user needs for all over the world.

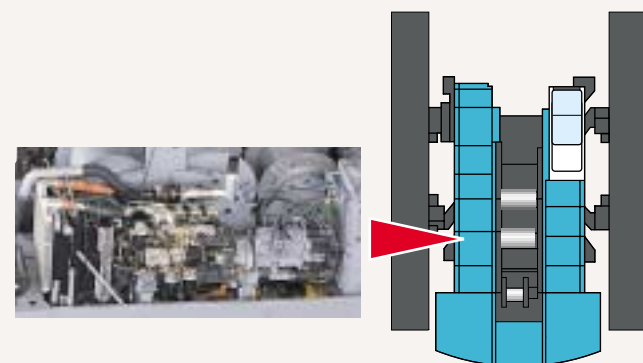


Complying with Worldwide Exhaust Gas Regulations

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

7120 is designed with advanced Kobelco low noise construction technologies, as specified by the Japanese Ministry of Land, Infrastructure and Transport.



Versatile Work Applications

7120 is a versatile machine that performs many types of work including various crane applications, luffing tower and civil-engineering supported by its power, structural strength, safety and operability

■ Main Specification (Model: 7120)

Specifications		Crane	Long	Tower Jib
Max. lifting capacity ton x m		120 x 5.0	24.0 x 16.0	20 x 15.0
Boom (Tower) length m		15.2 to 61.0	61.0 to 79.2	30.4 to 51.7
Jib (Tower jib) length m		12.2 to 30.5		22.9 to 44.2
Max. boom (Tower) + Jib (Tower jib) combination m		61.0 + 30.5		51.7 + 44.2
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		
	Third (optional) hoisting/lowering m/min	*100 to 3		—
Swing speed min ⁻¹ {rpm}		2.1{2.1}		
Travel speed km/h		*1.3/0.9		
Operating weight t		122 ^{#1}		131 ^{#1}
Ground pressure kPa{kgf/cm ² }		95{0.97} ^{#1}		102{1.04} ^{#1}
Gradeability % (degree)		30(16.7)		—
Rated line-pull (Main/Aux.) kN{tf}		118{12.0}		—
Engine	Model	Mitsubishi 6D24-TLE2A (JPN)		
	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		

Third drum is option.

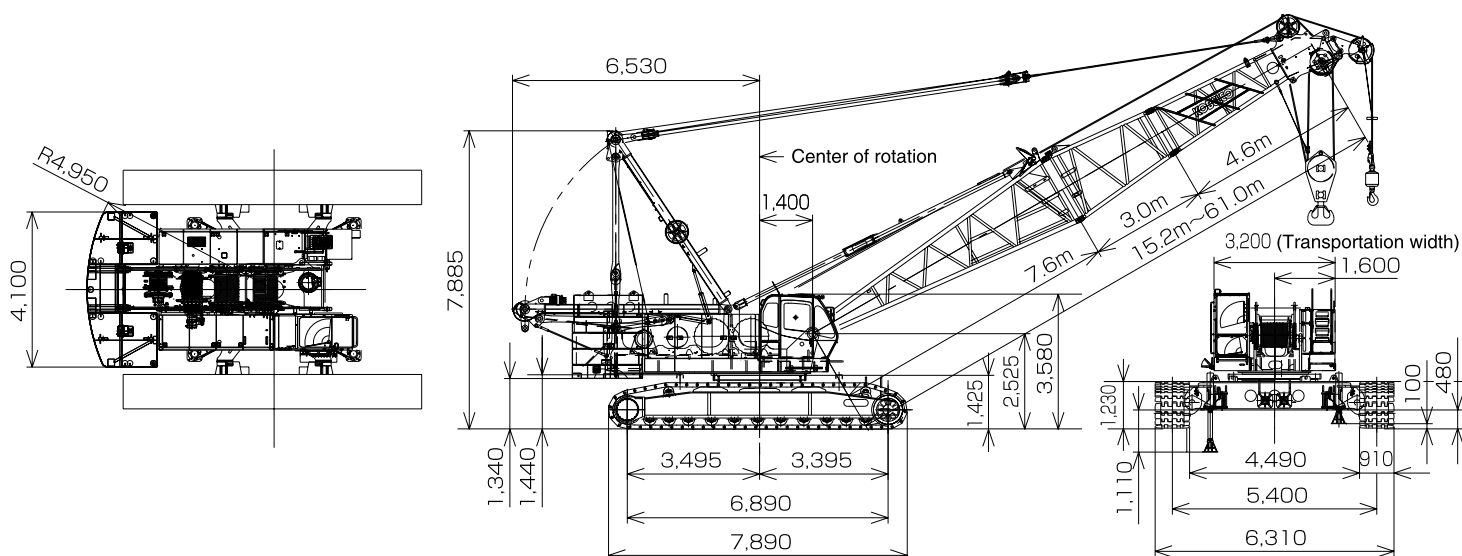
Each line speed is the value taken on the first drum layer.

Working speeds marked* based on light load, vary due to loads.

^{#1} Including upper and lower machine, 52.3t weight, 15.2m basic boom(or 30.4m basic tower + 22.9m basic tower jib), hook and other accessories.

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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KOBELCO CRANES CO., LTD.

17-1, Higashigotanda 2-chome, Shinagawa-ku, Tokyo, 141-8626 JAPAN
Tel: +81-3-5789-2130 / Fax: +81-3-5789-3372

Inquiries To: