



LIFTING CHARTS - Crawler Cranes

KOBELCO MODEL CK850-III - 85 TON CAPACITY

SPECIFICATIONS

The Kobelco CK850-III Crawler Crane is designed from the ground up for reliable operation, convenient maintenance and easy transport. Please consult your Kobelco distributor for additional information regarding specifications, operating parameters and maintenance requirements.

1. GENERAL DESCRIPTION

Type	Crawler mounted, fully revolving
Maximum lifting capacity	170,000 lbs (77,100 kg) (at 11' operating radius, with 40' boom)
Basic boom length	40' (12.2 m)
Maximum boom length	200' (61.0 m)
Basic boom & jib length	80' + 30' (24.4 m + 9.1 m)
Maximum boom & jib length	180' + 60' (54.9 m + 18.3 m)
Working weight	Approx. 162,700 lbs (73,800 kg)
Ground bearing pressure	Approx. 11.2 psi (77.1 kPa)
Gradeability	40 %
Calculations to determine working weight, ground pressure and gradeability include the weight of the upper and lower works of the crane, counterweights and carbody weights, 40' boom and hook block.	

2. GENERAL DIMENSIONS

Height to top of gantry (lowered)	11' 4" (3.45 m)
Width of upper machine with operator's cab	10' 6" (3.20 m)
Radius of rear end (counterweight)	14' 1" (4.28 m)
Counterweight ground clearance	3' 7" (1.10 m)
Center of rotation to boom foot pin	3' 7" (1.10 m)
Height from ground to boom foot pin	5' 9" (1.75 m)
Height over gantry (raised)	20' 3" (6.18 m)
Overall length of crawler	19' 8" (5.99 m)
Center to center of tumblers	16' 10" (5.13 m)
Overall width of crawlers	16' 3" (4.94 m)
Shoe width	36" (0.91 m)
Ground clearance of carbody	15" (0.39 m)

3. WORKING SPEED

Hoist line speed (front and rear drum)	390 ~ 10 ft/min (120 ~ 3 m/min)
Lowering line speed (front and rear drum)	390 ~ 10 ft/min (120 ~ 3 m/min)
Boom hoist line speed	230 ~ 7 ft/min (70 ~ 2 m/min)
Boom lowering line speed	230 ~ 7 ft/min (70 ~ 2 m/min)
Swing speed	4.0 rpm (4.0 min ⁻¹)

Travel speed (High / Low)

1.18 / 0.75 mph (1.9 / 1.2 km/hour)

Line speed based on single line, no load and first layer of rope on the drum. Line speed is controllable by Dial-type Speed Control System.

4. UPPER MACHINERY

4.1 Power plant

Diesel engine, make and model

Hino J08E-TM (Comply with EPA "Tier 3")

No. of cylinders 6

Bore X stroke 4-13/32" X 5-1/8" (112 mm X 130 mm)

Cycles 4

Total displacement 469 cu.in (7,684 cm³)

Rated output SAE GROSS

213 HP / 2,000 rpm (159 kW / 2,000 min⁻¹)

Maximum torque

588 lbs-ft / 1,600 rpm (797 Nm / 1,600 min⁻¹)

Starter 24 Volts / 5.0 kW

Alternator 24 Volts / 60 Amp

Batteries

Two 12 volt, 136 AH capacity series connected.

Radiator

Corrugated type core, thermostatically controlled.

Throttle

Twist grip type hand throttle, electrically controlled.

Air cleaner Dry type with replaceable paper element.

Fuel tank capacity 106 US gal. (400 liters)

Lube oil filter

Full flow and by-pass type with spin off type cartridge.

Fuel filter Heavy duty with spin off type cartridge.

Approximate fuel consumption

0.342 lb / HP-hr (208 g / kW-hr)

10.53 US gal. / hr at 100 % HP

4.2 Hydraulic pumps

All driven from heavy duty pump drive.

Load hoist, boom hoist and propel 2 Piston pumps

Swing 1 Piston pump

Control system and auxiliary 2 Gear pumps

Break cooling system 2 Gear pumps

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4.3 Counterweight and carbody weight

Counterweight (A)	1 x 27,340 lbs (12,400 kg)
Counterweight (B)	1 x 27,560 lbs (12,500 kg)
Total weight	54,900 lbs (24,900 kg)
Carbody weight	2 x 7,360 lbs (3,340 kg)
Total weight	14,720 lbs (6,680 kg)

4.4 Gantry

This high folding type gantry is fitted with a sheave frame for boom hoist reeving. Hydraulic lift is standard. It provides full up, full down positions with linkage.

4.5 Operator's cab

Totally enclosed from weather, this full-vision cab has safety glass all around. The adjustable, high-backed seat with armrest is standard, allowing operators to customize the position. Auxiliary controls and instruments are on a side mounted console. A signal horn, windshield wipers, air conditioner are all standard features.

4.6 Controls

At operator's right are console-mounted adjustable short levers for the front and rear drum and the boom hoist control. Beside the operator's seat on the right are two short levers for propel control, individual speed shifts for front drum, rear drum and boom drum. At the operator's left are the console mounted swing lever, knobs for front and rear drum, boom drum pawls, engine start / stop key. A swing brake control switch and signal horn button are on the swing lever.

4.7 Electric system

All wiring corded for easy serving, individual fused branch circuit.

4.8 Hydraulic system

Maximum pressure rating	4,620 psi (32.0 MPa)
Cooling	Oil to air heat exchanger
Filtration	
Full flow filters with replaceable paper elements	
Reservoir capacity	116 US gal. (440 liters)

4.9 Boom hoist

Powered by hydraulic motor through planetary reducer.

Drum	Single drum.
	Grooved for 5/8" (16.0 mm) dia. wire rope.

Brake

A spring set, hydraulically-released, multiple-disc holding brake is mounted inside the boom hoist motor and is operated through a counter-balance valve. An external ratchet is fitted for locking the drum.

4.10 Front drum

Powered by hydraulic motor through planetary reducer.

Drum	21.7" (550 mm) P.C.D. X 21.5" (545 mm) LG. Grooved for 7/8" (22 mm) dia. wire rope.
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Brake

A spring set, hydraulically-released, multiple-disc holding brake is mounted inside the hoist motor and is operated through a counter-balance valve. An external ratchet is fitted for locking the drum.

Free-Fall (Standard)

Wet-type disk brake free-fall is mounted inside the drum.

4.11 Rear drum

Powered by hydraulic motor through planetary reducer.

Drum	21.7" (550 mm) P.C.D. X 21.5" (545 mm) LG. Grooved for 7/8" (22 mm) dia. wire rope.
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Brake

A spring set, hydraulically-released, multiple-disc holding brake is mounted inside the hoist motor and is operated through a counter-balance valve. An external ratchet is fitted for locking the drum.

Free-Fall (Standard)

Wet-type disk brake free-fall is mounted inside the drum.

4.12 Third drum (Optional)

Powered by hydraulic motor through planetary reducer.

Drum	21.7" (550 mm) P.C.D. X 21.5" (545 mm) LG. Grooved for 7/8" (22.0 mm) dia. wire rope.
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Brake

A spring set, hydraulically-released, multiple-disc holding brake is mounted inside the hoist motor and is operated through a counter-balance valve. An external ratchet is fitted for locking the drum.

Free-Fall (Standard for third drum)

Wet-type disk brake free-fall is mounted inside the drum.

4.13 Swing

Swing unit

Hydraulic motor driving through planetary reducer to output swing pinion for 360 degree rotation.

Swing brake

Spring set hydraulically released multiple disk brake mounted on swing motor.

Swing circle

Single row ball bearing with internal, integral swing gear.

Swing Lock	2 Position lock for transportation.
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5. LOWER MACHINERY

5.1 Carbody

The durable carbody features steel welded construction with extendible axles.

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5.2 Crawler

Crawler assemblies can be hydraulically extended for wide-track operation or retracted for transportation. Crawler belt tension adjusted with hydraulic jack and maintained by shims between the idler block and frame.

5.3 Crawler drive

The independent hydraulic propel drive is built into each crawler side frame. Each drive consists of a hydraulic motor driving a propel sprocket through a planetary gear box. The hydraulic motor and gearbox are built into the crawler side frame within the shoe width.

5.4 Crawler brakes

Spring set, hydraulically released, multiple disk-type parking brakes are built into each propel drive.

5.5 Steering mechanism

The hydraulic propel system provides both skid steering (driving one track only) and counter-rotating steering (driving each track in opposite direction).

5.6 Crawler shoes

63 shoes, 36" (914 mm) wide each crawler.

5.7 Track rollers

The track rollers are sealed for maintenance-free operation.

6. CRANE ATTACHMENTS

6.1 Crane boom

The welded lattice construction uses tubular, high-tension steel chords with pin connections between sections.

Maximum boom length	200' (61.0 m)
Basic boom length	40' (12.2 m)
Boom base section	19' (5.8 m)
Boom tip section	21' (6.4 m)

6.2 Boom insert (Optional)

An optional boom inserts is available to provide extension capabilities. It also has welded lattice construction with tubular, high-tension steel chords and pin connections.

Boom insert 10' (3.1 m), 20' (6.1 m), 40' (12.2 m)

6.3 Jib (Optional)

The optional jib employs welded lattice construction with tubular, high-tension steel chords with pin connections between sections.

Maximum jib length	60' (18.3 m)
Basic jib length	30' (9.1 m)
Jib base section	15' (4.6 m)

Jib tip section

15' (4.6 m)

Jib insert

10' (3.1 m), 20' (6.1 m)

Jib inserts are available to provide extension capabilities.

They also have welded lattice construction with tubular, high-tension steel chords and pin connections.

Jib is extendible on booms of 80' (24.4 m) through 180' (54.9 m)

6.4 Auxiliary sheave (Optional)

Auxiliary sheave is extendible on booms of 40' (12.2 m) to 190' (57.9 m).

6.5 Boom hoist reeving

Twelve (12) parts of 5/8" (16.0 mm) dia. high strength wire rope.

6.6 Boom backstops

Telescopic type with spring bumper.

7. AUXILIARY EQUIPMENT

7.1 Lights

Tow (2) Front flood lights
One (1) Cab inside light

7.2 Gauges and warning display

Gauges

One (1) Tachometer
One (1) Hour meter
One (1) Fuel gauge
One (1) Water temperature gauge for engine

Warning display

Battery charge
Engine oil pressure
Air cleaner
Engine oil filter
Control main pressure
Hydraulic oil temperature

7.3 Others

Air conditioner
Drum turn indicator (front and rear drum)
Foot acceleration pedal
Electric fuel pump
Counterweight self-removal device

8. SAFETY SERVICE

Function lock lever
Boom over hoist limit switch
Signal horn
Front and rear hoist drum lock
Swing alarm (buzzer and lamps)
Over load preventive device (Load Moment Indicator)
Hook over hoist shut off (Anti-two-block)

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Boom angle indicator
Boom hoist drum lock
Swing lock
Boom backstops

9. TOOLS AND ACCESSORIES

A set of tools and accessories are furnished.

10. OPTIONAL EQUIPMENT

Hydraulic tagline
Travel kit
Third drum
Pillow plate for boom self-erection
Custom color

All specifications are subject to change without notice.