STERLING CRANE

LIFTING CHARTS - Crawler Cranes

KOBELCO MODEL CKE2500-II - 275 TON CAPACITY

SPECIFICATIONS

Power Plant

Model: Hino diesel engine P11C-UN
Type: Water-cooled, direct fuel injection, with turbocharger Compiles with NRMM (Europe) Stage IIIA and US EPA Tier III.
Displacement: 10.520 liters
Rated Power:247 kW at 2,000 min^{-1} {rpm} (ISO)
Max. torque: 1,300 N·m/1,500 min^{-1}
Cooling system: Liquid, recirculating bypass
Starter: 24 V/6.0 kW
Radiator: Corrugated type core, thermostatically controlled
Air cleaner: Dry type with replaceable paper element
Throttle: Electric throttle control, twist grip type
Fuel filter: Replaceable paper element
Batteries: Two 12V , 170Ah/20HR capacity batteries, series connected.
Fuel tank capacity: 400 liters

Hydraulic System

Four variable displacement piston pumps are driven by heavy-duty pump drive. Two of variable displacement pumps are used in the main hook hoist circuit, auxiliary hook hoist circuit, jib hoist circuit and each propel circuit. One of the other two pumps is used in the boom hoist circuit, and the other is used in the swing circuit.
Control: Full-flow hydraulic control system for infinitely variable pressure to front and rear drums, boom hoist drum and propel. Controls respond instantly to the touch, delivering smooth function operation.
Cooling: Oil-to-air heat exchanger (plate-fin type)
Filtration: Full-flow and bypass type with replaceable element
Electrical system: All wiring corded for easy servicing, individual fused branch circuits.

Max. relief valve pressure:
Load hoist, boom hoist and propel system:
31.9 MPa {325 kgf/cm^2}
Swing system: 27.5 MPa {280 kgf/cm^2}
Control system: 5.4 MPa {55 kgf/cm^2}
Reservoir capacity: 600 liters

Boom Hoisting System

Powered by a hydraulic motor through a planetary reducer.
Brake: A spring-set, hydraulically released multiple-disc brake is mounted on the boom hoist motor and operated through a counter-balance valve.
Drum lock: External ratchet for locking drum.
Drum: Double drum, grooved for 26 mm dia. wire rope.
Line speed: Double line on first drum layer
Hoisting/Lowering: 22 to 2 m/min x 2
Diameter of wire ropes
Boom guy line: 38 mm
Boom hoist reeving: 16 parts of 26 mm dia. high strength wire rope
Boom backstops: Required for all boom lengths

Load Hoist System

Front and rear drums for load hoist powered by a hydraulic variable plunger motors, driven through planetary reducers.
Negative Brake: A spring-set, hydraulically released multiple-disc brake is mounted on the hoist motor and operated through a counter-balance valve. (Positive free fall brake is optional item.)
Drum lock: External ratchet for locking drum
Drums:
Front drum:
617.1 mm P.C.D. x 833.7 mm Lg. wide drum, grooved for 25 mm wire rope. Rope capacity is 480 m working length and 600 m storage length.
Rear drum:
617.4 mm P.C.D. x 833.7 mm Lg. wide drum, grooved for 25 mm wire rope. Rope capacity is 390 m working length and 600 m storage length.
Note: Rope lengths listed above denote drum capacity and may differ from actual rope lengths supplied when machinery is shipped.
Line speed: Single line on the first drum layer
Hoisting/Lowering: 110 to 3 m/min
Line Pull (Single-line):
Rated line pull: 132 kN {13.5 tf}

Swing System

Swing unit is powered by hydraulic motor driving spur gears through planetary reducers (2 sets), the swing system provides 360° rotation.
Swing parking brakes: A spring-set, hydraulically released multiple-disc brake is mounted on swing motor.
Swing circle: Single-row ball bearing with an integral internally cut swing gear.
Swing lock: Manually, four position lock for transportation
Swing speed: 2.2 min^{-1} {rpm}

Upper Structure

Torsion-free precision machined upper frame. All components are located clearly and service friendly. Engine with low noise level. Complies with EC Directive 2000/14/EC.
Counterweight: 90.0 ton

SPECIFICATIONS

Cab & Control

Totally enclosed, full vision cab with safety glass, fully adjustable, high backed seat with a head-rest and armrests, and intermittent wiper and window washer (skylight and front window).

Cab fittings:
Air conditioner, convenient compartment (for tool), cup holder, ashtray, cigarette lighter, sun visor, roof blind, tinted glass, floor mat, foot-rest, shoe tray

Controls:
Four adjustable levers for front drum, rear drum, boom drum and swing controls, and boom hoist pedal.

Lower Structure

Steel-welded carbody with axles. Crawler assemblies are designed with quick disconnect feature for individual removal as a unit from axles. Crawler belt tension is maintained by hydraulic jack force on the track-adjusting bearing block.

Carbody weight: 24.0 ton

Crawler drive: Independent hydraulic propel drive is built into each crawler side frame. Each drive consists of a hydraulic motor propelling a driving tumbler through a planetary gear box. Hydraulic motor and gear box are built into the crawler side frame within the shoe width.

Crawler brakes: Spring-set, hydraulically released parking brakes are built into each propel drive.

Steering mechanism: A hydraulic propel system provides both skid steering (driving one track only) and counter-rotating steering (driving each track in opposite directions).

Track rollers: Sealed track rollers for maintenance-free operation.
Shoes (flat): 68 shoes, 1,220 mm wide each crawler
(Optional 1,330 mm shoe is availavle)
Max. travel speed: 1.1/0.7 km/h
Max. gradeability: 30%

Weight

Including upper and lower machine, 90.0 ton counterweight and 24.0 ton carbody weight, basic boom (or basic boom + basic jib), hook, and other accessories.

Specification	Weight	Ground pressure
Crane boom	Approx. 213 ton,	108.4 kPa {1.11 kgf/cm^2}
Fixed jib	Approx. 214 ton,	108.9 kPa {1.11 kgf/cm^2}
Luffing jib	Approx. 222 ton,	113.0 kPa {1.15 kgf/cm^2}

Attachment

Boom and Jib:
Welded lattice construction using tubular, high-tensile steel chords with pin connections between sections.

Boom and Jib Length

	Min. Length (Min. Combination)	Max. Length (Max. Combination)
Crane Boom	15.2 m	91.4 m
Luffing Boom	15.2 m	61.0 m
Long Boom	64.0 m	91.4 m
Fixed Jib	27.4 m + 12.2 m	76.2 m + 30.5 m
Luffing Jib	21.3 m + 21.3 m	61.0 m + 61.0 m

Main Specifications (Model: CKE2500-2)

Crane Boom	
Max. Lifting Capacity	250 t/4.6 m
Max. Length	91.4 m
Luffing Boom	
Max. Lifting Capacity	150 t/7.0 m
Max. Length	61.0 m
Long Boom	
Max. Lifting Capacity	47.1 t/12.8 m
Max. Length	91.4 m
Fixed Jib	
Max. Lifting Capacity	27 t/10.4 m
Max. Length	30.5 m
Max. Combination	76.2 m + 30.5 m
Luffing Jib	
Max. Lifting Capacity	80 t/9.8 m
Jib Length	21.3 m ~ 61.0 m
Max. Combination	61.0 m + 61.0 m
Luffing Angle	63° ~ 88°
Main & Aux. Winch	
Max. Line Speed	110 m/min (1st layer)
Rated Line Pull (Single Line)	132 kN {13.5 tf}
Wire Rope Diameter	25 mm
Wire Rope Length	480 m (Main) 390 m (Aux.)
Brake Type	Spring set hydraulically released (Negative)
Free-Fall Brake Type	Wet-type multiple disc brake (Optional)

Working Speed	
Swing Speed	2.2 min^{-1} {2.2 rpm}
Travel Speed	1.1/0.7 km/h
Power Plant	
Model	Hino P11C-UN
Engine Output	247 kW/2,000 min^{-1} {rpm}
Fuel Tank Capacity	400 liters
Hydraulic System	
Main Pumps	4 variable displacement
Max. Pressure	31.9 MPa {325 kgf/cm^2}
Hydraulic Tank Capacity	600 liters
Self-Removal Device	Standard
Weight	
Operating Weight*	Approx. 213 t
Ground Pressure*	108.4 kPa {1.11 kgf/cm^2}
Counterweight	90.0 t (Upper), 24.0 t (Lower)
Transport Weight**	Approx. 44.9 t

* Including upper and lower machine, 90.0 ton counterweight and 24.0 ton carbody weight, basic boom, hook, and other accessories.
** Base machine with trans-lifter, main and aux. winches (non-free fall) including wire rope, and boom hoist winch including wire rope.
Units are SI units. { } indicates conventional units.