Sept. 2006

SPECIFICATIONS

FOR

KOBELCO
CKE2500-2(WS) CRAWLER CRANE

KOBELCO CRANES CO., LTD.

SPEC, NO. 14S7967
1ssue-04

SPECIFICATIONS
FOR
KOBELCO CKE2500-2(WS) CRAWLER CRANE

1. General description

Type	Crawler mounted, fully revolving

Fixed jib, #1&#2

Maximum boom length	61.0 m (200')
Maximum boom & jib length	61.0 m+36.6 m (200' + 120')
Working weight	Approx. 240 ton (Including Upper and Lower machine, counterweights, carbody weights and 61.0m boom+36.6m fixed jib+Aux.sheave)
Gradeability	22%
Transportation weight	Below 55t With basic upper, carbody, vertical and horizontal cylinders of trans-lifter
Transportation width	Max.3.6 m

Auxiliary sheave (for fixed jib), #1&#2

Maximum lifting capacity	24t with 2 part line Two wheels provided on sheave shaft for luffing jib erection/lowering.

Luffing boom, #1&#2

Maximum boom length	61.0 m (200')
Maximum lifting capacity	150t

Luffing jib, #2 Only

Maximum lifting capacity	80.0 ton×9.8 m
Maximum boom length & jib length	61.0 m + 61.0 m (200' + 200')

2. General dimensions

Height to top of cab	4010 mm
Width of upper machine with operator's cab	3400 mm
Radius of rear end (counterweight)	6000 mm
Center of rotation to boom foot pin	1400 mm
Height from ground to boom foot pin	2760 mm
Overall length of crawler	9320 mm
Center to center of tumblers	8150 mm
Overall width of crawlers, fully extended	7470 mm
Overall width of crawlers, fully retracted	4850mm
Shoe width	1070 mm
Ground clearance of carbody	560 mm

3. Working speed

Hoist line speed (front and rear drum)	110～3 m / min
Lowering line speed (front and rear drum)	110～3 m / min
Boom hoist line speed	44～2 m / min
Boom lowering line speed	44～2 m / min
Swing speed	2.2 min^{-1} (2.2 rpm)
Travel speed	0.55/ 0.35 km / h

Line speeds based on single line, no loads and first layer of rope drum.

4. Upper Machinery

4.1 Power plant

Diesel engine, make and model :	Hino P11C-UN
Rated output (Without fan) :	247kw / 2,000 min^{-1}
Batteries :	Two 12 volt, 170 ampere-hour capacity series connected.
Radiator :	Corrugated type core, thermostatically controlled.
Throttle :	Twist grip type hand throttle, electrically actuated.
Air cleaner :	Dry type with replaceable paper element.
Fuel tank :	400 liters capacity.
Lube oil filter :	Full flow and by-pass type with replaceable paper element.
Fuel filter :	Heavy duty with replaceable paper element.

4.2 Hydraulic pumps

All driven from heavy duty pump drive.

Hoist and propel :	2 Piston pumps
Boom :	1 Piston pump
Swing :	1 Piston pump
Control system and auxiliary :	2 Gear pumps

4.3 Counterweight

Upper weight	90 ton
Carbody weight	24 ton

(Weight may be adjusted finally)

4.4 Mast and Gantry

Live mast and folding type low gantry. Fitted with sheave frame for boom hoist reeving. Hydraulic lift is standard. Gantry positions full up and full down with linkage.

4.5 Operator's cab

Totally enclosed from weather.

Full vision cab has safety glass throughout, sliding front window. Operator's adjustable high back seat with arm rest is standard. Side mounted console for auxiliary controls and instruments. Signal horn, windshield wipers, cigarette lighter, airconditioner standard.

4.6 Controls

At operators right are console mounted adjustable short levers for front and rear drum controls, boom hoist control. At operators right side are two short levers for propel control. At operators left are console mounted swing lever, knobs for front and rear drum, boom drum pawls, engine start / stop key, individual speed shifts for front drum, rear drum, boom drum, swing and propel, swing mode switch.

Swing brake control switch and signal horn button are on the swing lever.

4.7 Electrical system

All wiring corded for easy servicing, individual fused branch circuits.

4.8 Hydraulic System

Maximum pressure rating 31.9 MPa (325kg / cm^2). Oil to air heat exchanger cools fluid. Filtered with full flow filters with replaceable paper elements. Reservoir holds 600 liters.

4.9 Boom hoist

Powered by hydraulic motor through planetary reducer.

Drum : Double drum.
Grooved for 26 mm dia. wire rope.

Brake : Counterbalance valve and spring set hydraulically released multiple disk brake mounted on boom hoist motor. External ratchet for locking drum.

4.10 Front drum

Powered by hydraulic motor through planetary reducer.

Drum : 617mm P.C.D.×833.7 mm Lg., grooved for 25 mm wire rope. Rope capacity is 480 m working, 600 m storage length.

Brake : Counterbalance valve and spring set hydraulically released multiple disk brake mounted on hoist motor. External ratchet for locking drum.

4.11 Rear drum

Powered by hydraulic motor through planetary reducer.

Drum : 617 mm P.C.D×833.7 mm Lg. , grooved for 25 mm wire rope. Rope capacity is 390 m working, 600 m storage length.

Brake : Counterbalance valve and spring set hydraulically released multiple disk brake mounted on hoist motor. External ratchet for locking drum.

4.12 Swing

Swing unit : Hydraulic motor driving through planetary reducer (2 sets) to output swing pinion for 360° 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.

5. Lower Machinery

5.1 Carbody

Carbody of steel welded construction with axles.

5.2 Retractable Crawler

Crawler assemblies are designed for individual removal as a unit from axles.

Three-position adjustable crawler width, fully extended, fully retracted and intermediate position.

Crawler width adjusted by four horizontal cylinders.

Four vertical cylinders support total machine while crawler width being adjusted.

Crawler belt tension maintained by hydraulic jack force on track adjusting bearing block.

5.3 Crawler drive

Independent hydraulic propel drive built into each crawler side frame front and rear.

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 .

5.4 Crawler brakes

Multiple disk type, spring set, hydraulically released 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 counterrotating steering (driving each track in opposite direction).

5.6 Crawler shoes

1070 mm wide each crawler.

5.7 Track rollers

Sealed track rollers for maintenance-free operation.

6. Crane attachments

6.1 Crane boom

Tubular high tension steel chords, lattice construction, pin connected.

Extendible up to 61.0 m (200').

6.2 Boom insert

Boom insert for extension, tubular high tension steel chords, lattice construction, pin connected.

2- 3.05 m (10')

1- 6.1 m (20')

3- 12.2 m (40').

6.3 Jib

Tubular high tension steel chords, lattice construction, pin connected,

Extendible up to 36.6 m (120') for fixed jib.

And up to 61.0m(200') for luffing jib. (#2 Only)

6.4 Jib insert

Jib inserts for extension, tubular steel chords, lattice construction, pin connected cross section.

2- 3.05m(10')

2- 6.1m (20')

2- 12.2m(40'), #2 Only

6.5 Auxiliary sheave

Mounted on top of fix jib. Maximum lifting capacity 24t with 2 part line.

6.6 Diameter of wire rope

Hoist rope, main	25 mm x 480m
Hoist rope, aux.	25 mm x 390m
Boom hoist rope	26 mm x 285m
Luffing jib hoist rope	22 mm x 265m
Boom suspension rope	38 mm
Jib suspension rope	38 mm
Strut suspension rope	38mm

6.7 Boom hoist reeving : sixteen (16) parts of 26 mm dia. high strength wire rope.

6.8 Backstops : Required for all boom and jib lengths.

6.9 Hook block

150t	6 sheaves	(Block weight 2.3t)
70 t	3 sheaves	(Block weight 1.2 t)
35 t	1 sheaves	(Block weight 0.9 t)

7. Luffing jib hoist drum, #2 Only

Powered by hydraulic motor through planetary reducer and mounted on base boom.

Drum : Single drum.
Grooved for 22 mm dia. wire rope.

Brake : Counterbalance valve and spring set hydraulically released multiple disk brake mounted on jib hoist motor. External ratchet for locking drum.

8. Auxiliary equipment

8.1 Lights :

2 - Front flood lights

1 - Cab inside light

8.2 Gauges and warning display :

1 - Tachometer

1 - Hour meter

1 - Fuel gage

1 - Water temperature gage for engine

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

9. Safety device

Function lock lever
Hook over hoist shut off
Boom over hoist limit
Boom angle indicator
Signal horn
Boom hoist drum lock
Front and rear hoist drum lock
Swing lock
Swing alarm (Buzzer and lamps)
Boom backstops
Over load protective device (Moment limiter)

10. Trans - Lifter

System allows quick and easy crawler side frame removal and trailer loading.
4 vertical cylinders lift up the basic machine for self loading onto trailer and for side frame retraction/extension.
2 position of vertical cylinder, wide and narrow.
For crawler side frame retraction, vertical cylinders need to swing and to be set at narrow position.
4 horizontal cylinders facilitate side frames for removal /retraction/extension.

11. Mast cylinder

Hanging cylinder lifts up counter weights, carbody weights, crawler side frames and etc, for self setting up of machine.

12. Tools and accessories

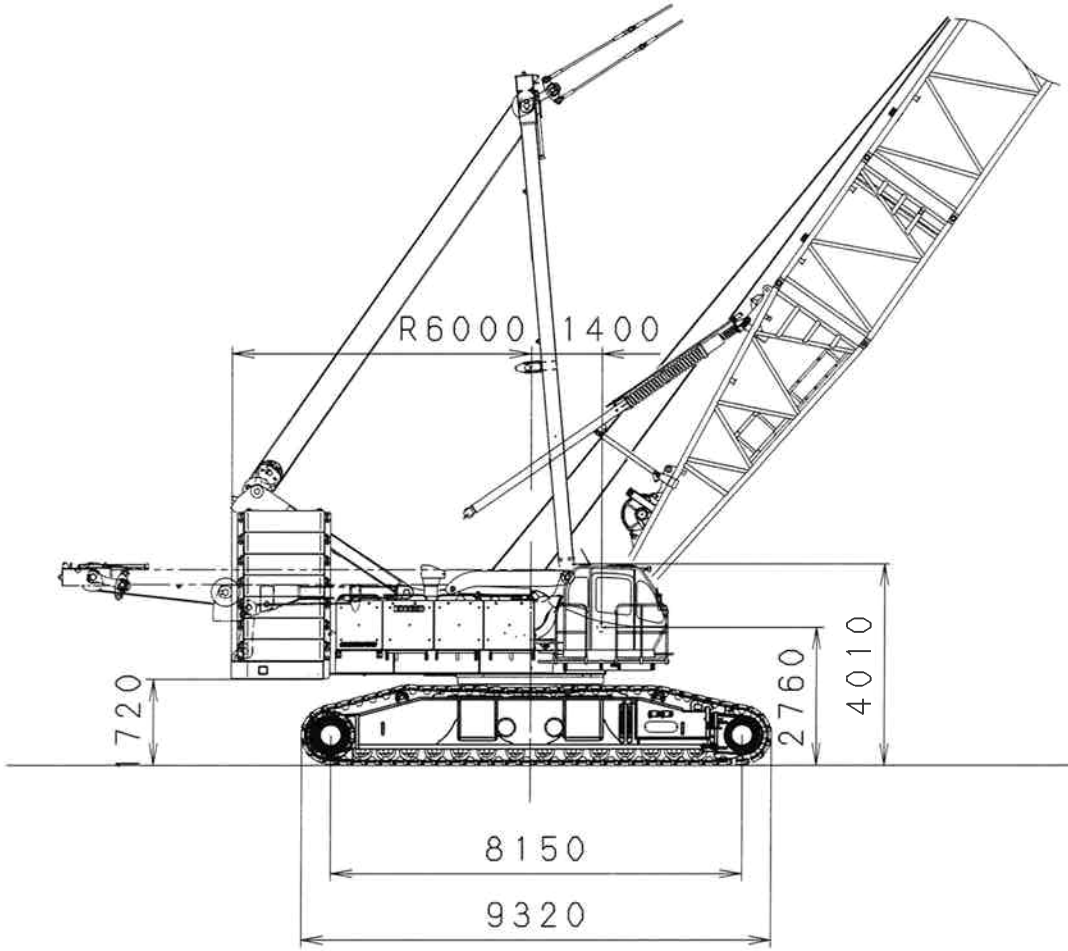
A set of standard tools and accessories are furnished.

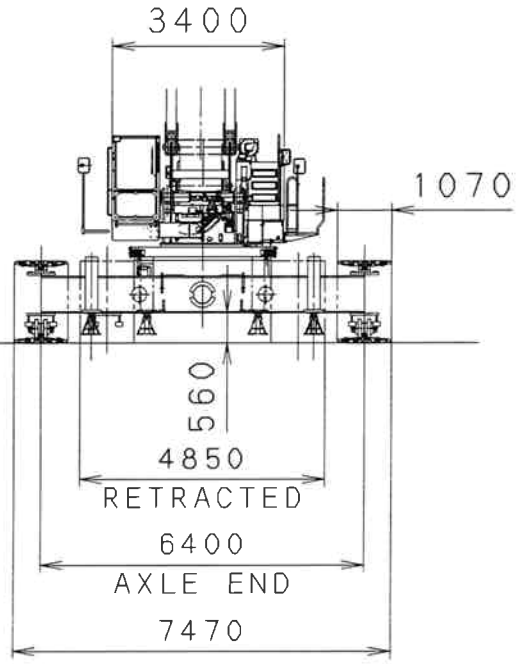
Remarks:

* Steel plates (min. thickness 22mm) need to be provided by customer and placed on the ground of crawler area for safe crawler side frame retraction/extension .
* As long distance travel and hill climbing accelerate wear of track shoes and rollers, frequent repair or replacement of these parts are expected.

GENERAL DIMENSIONS

(mm)





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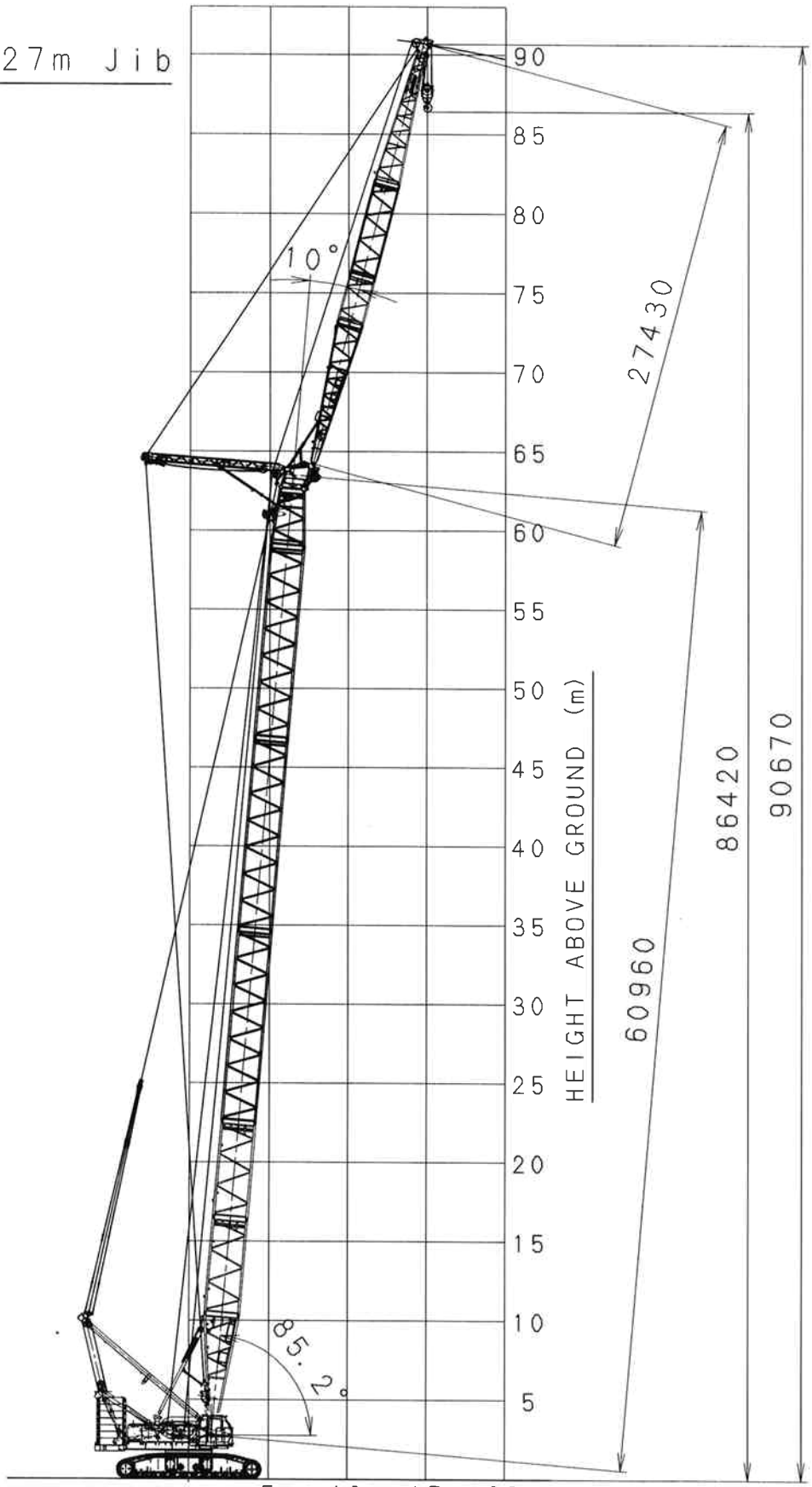
CKE2500-2WS WORKING RANGE

61m Boom+27m Jib



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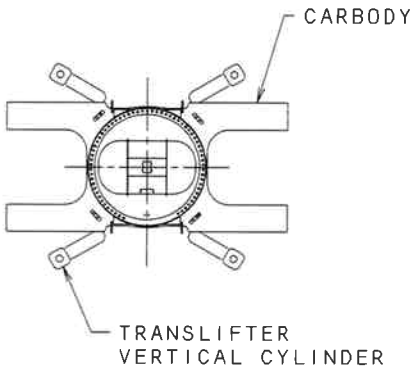
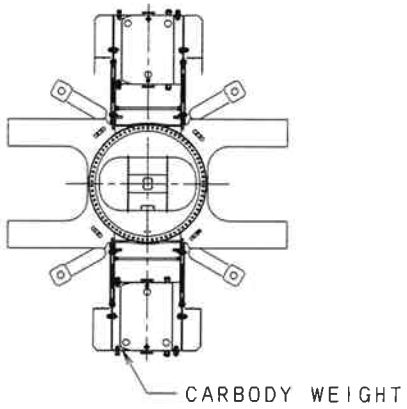
CKE2500-2 CRAWLER SIDE FRAME RETRACTION PROCEDURE



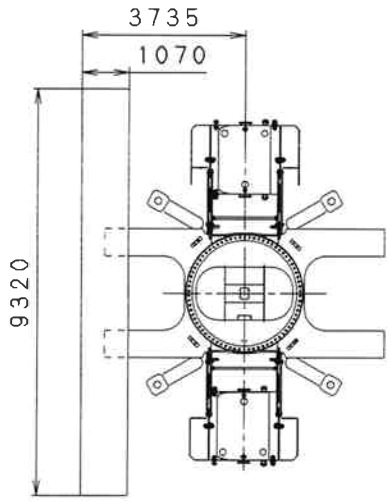
STEP1

SETTING VERTICAL CYLINDER AT WIDE POSITION



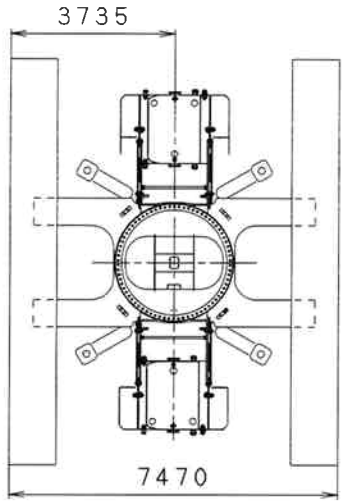
STEP2

CARBODY WEIGHT INSTALLATION



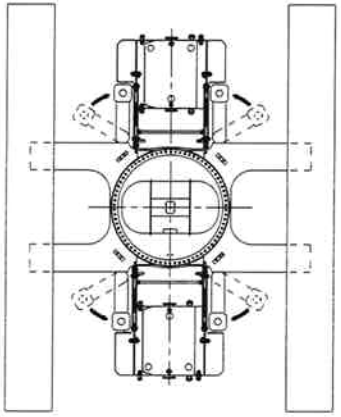
STEP3

CRAWLER SIDE FRAME INSTALLATION



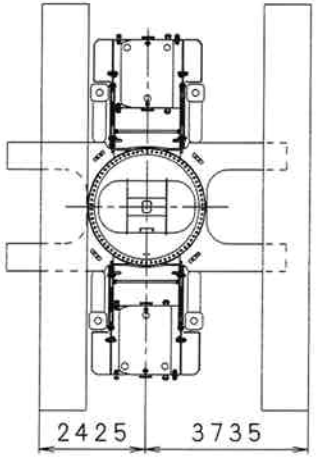
STEP4

ANOTHER SIDE FRAME INSTALLATION



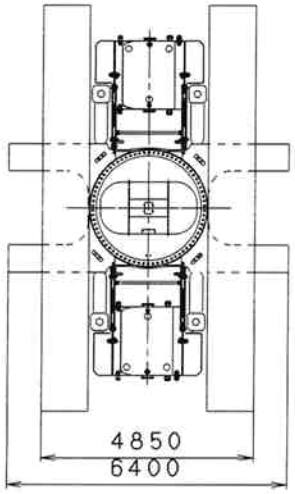
STEP5

SWING OF VERTICAL CYLINDERS TO NARROW POSITION



STEP6

RETRACTION OF SIDE FRAME



STEP7

RETRACTION OF ANOTHER SIDE FRAME

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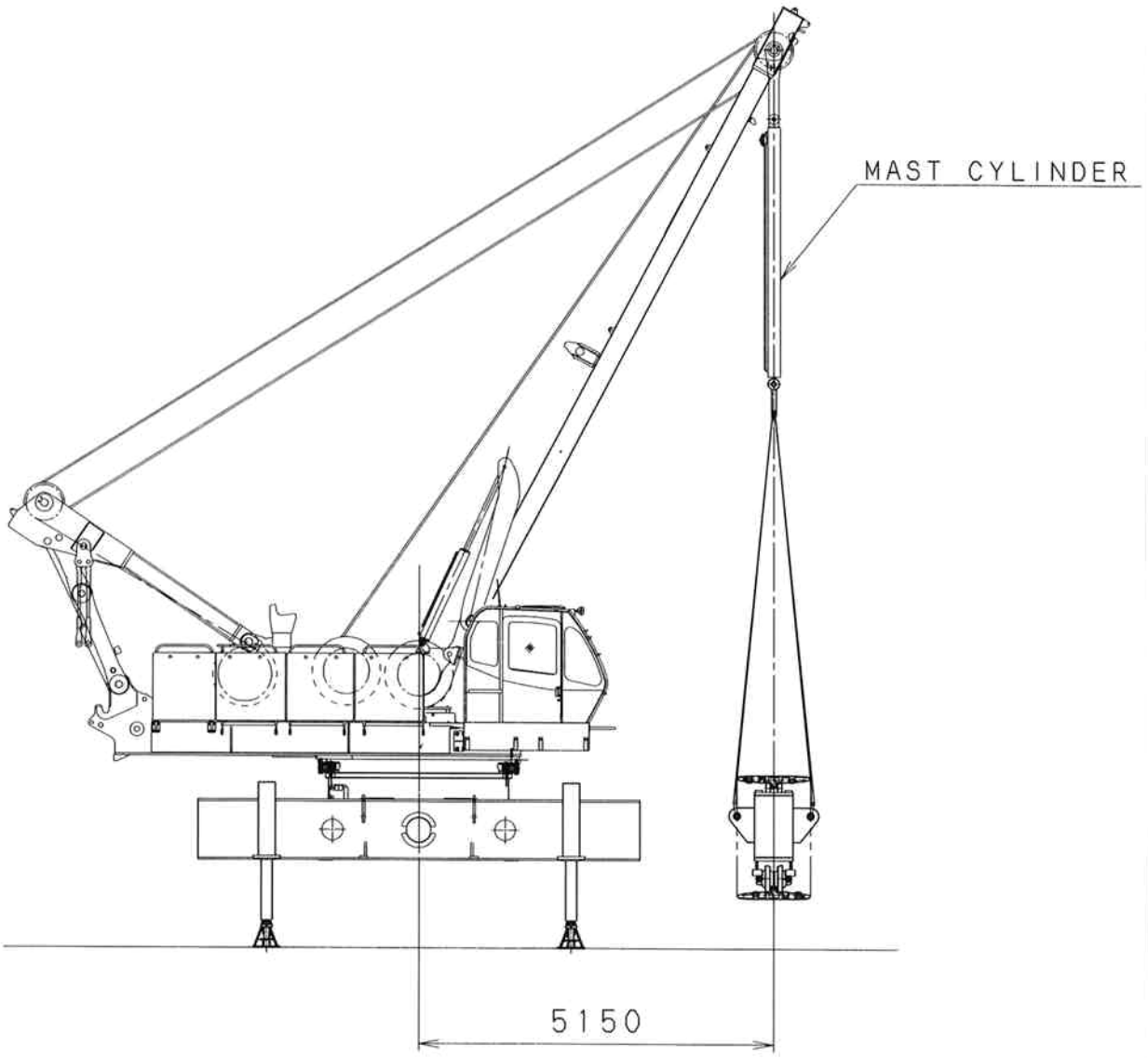
SELF SET UP WITH MAST CYLINDER



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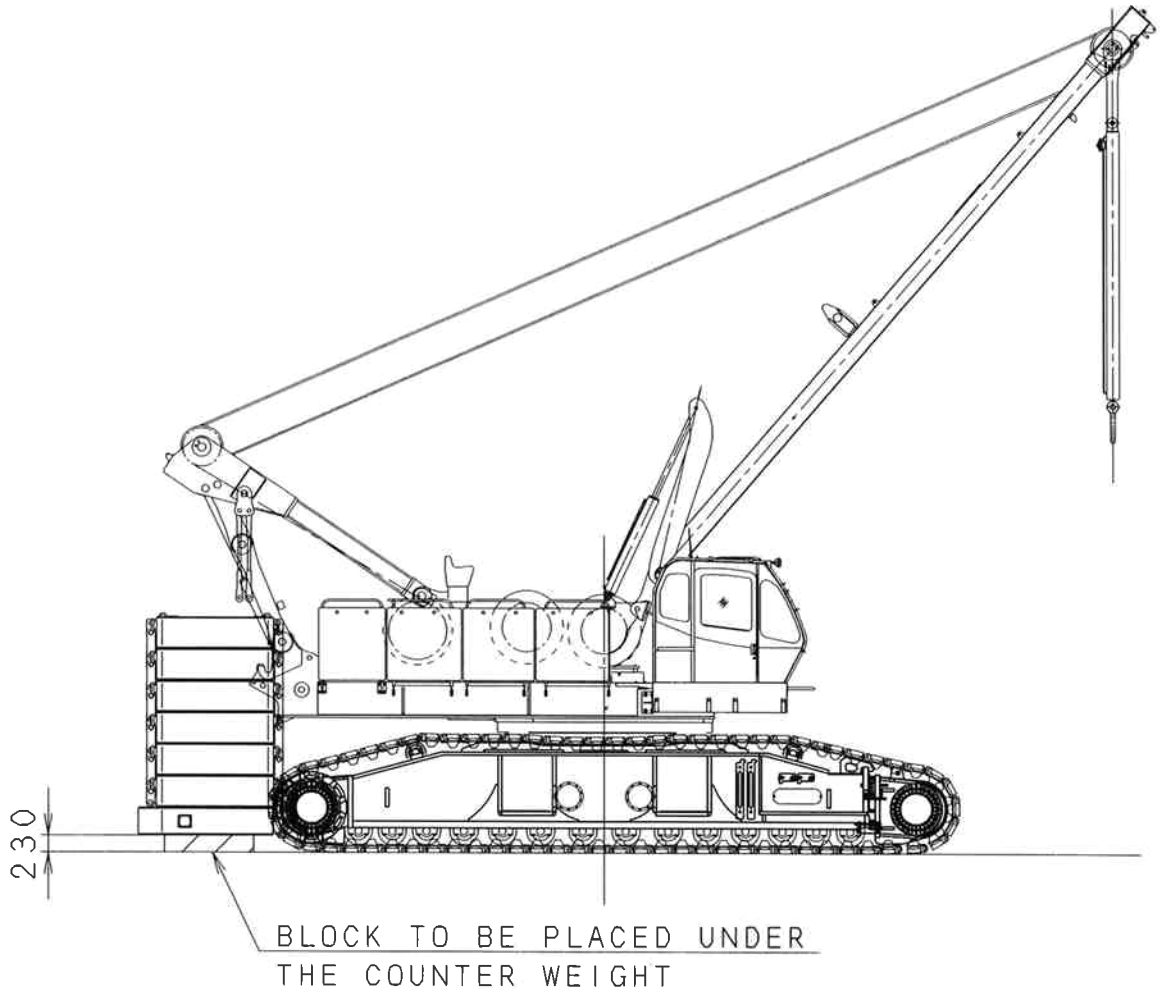
SELF SET UP OF COUNTER WEIGHT



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KOBELCO CKE2500-2(WS)
FIXED JIB RATING CHART , WITHOUT MAIN HOOK

CRAWLERS FULLY EXTENDED

BOOM	61.0m
JIB	27.4m
JIB OFFSET ANGLE	10deg
WORKING RADIUS(m)	RATED LOAD(t)
14	42.0
15	42.0
16	40.3
18	36.7
20	33.9
22	31.3
24	29.0
26	26.5
28	24.4
30	22.3
34	18.3
38	15.4
42	12.8
46	10.6
50	8.9
54	7.4
58	6.1
62	4.9
66	3.8

WEIGHT OF HOOK BLOCK:

HOOK BLOCK	t
150 TON	2.3
70 TON	1.2
35 TON	0.9

WEIGHT OF AUXILIARY SHEAVE:

0.3t

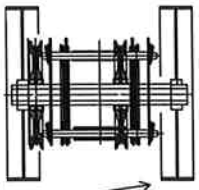
- RATINGS ACCORDING TO EN13000.
- OPERATING RADIUS IS THE HORIZONTAL DISTANCE FROM CENTERLINE OF ROTATION TO A VERTICAL LINE THROUGH THE CENTER OF GRAVITY OF THE LOAD.
- DEDUCT WEIGHT OF HOOK BLOCK(S) , AUXILIARY SHEAVE、SLINGS AND ALL OTHER LOAD HANDLING ACCESSORIES FROM RATINGS SHOWN.
- RATINGS SHOWN ARE BASED ON FREELY SUSPENDED LOADS AND MAKE NO ALLOWANCE FOR SUCH FACTORS AS WIND EFFECT ON LIFTED LOAD, GROUND CONDITIONS, OUT-OF-LEVEL, OPERATING SPEEDS OR ANY OTHER CONDITION THAT COULD BE DETRIMENTAL TO THE SAFE OPERATION OF THIS EQUIPMENT.
  THE OPERATOR, THEREFORE, HAS THE RESPONSIBILITY TO JUDGE THE EXISTING CONDITIONS AND REDUCE LIFTED LOADS AND OPERATING SPEEDS ACCORDINGLY.
- RATINGS ARE FOR OPERATION ON A FIRM AND LEVEL SURFACE, UP TO 1% GRADIENT.
- AT RADII AND BOOM LENGTHS WHERE NO RATINGS ARE SHOWN ON CHART, OPERATION IS NOT INTENDED NOR APPROVED.
- BOOM INSERTS AND GUY LINES MUST BE ARRANGED AS SHOWN IN THE "OPERATOR'S MANUAL".
- BOOM HOIST REEVING IS 20 PART LINE.
- GANTRY MUST BE IN RAISED POSITION FOR ALL CONDITIONS.
- BOOM BACKSTOPS ARE REQUIRED FOR ALL BOOM LENGTHS.

KOBELCO CKE2500-2(WS)
BOOM AND FIXED JIB COMBINATIONS

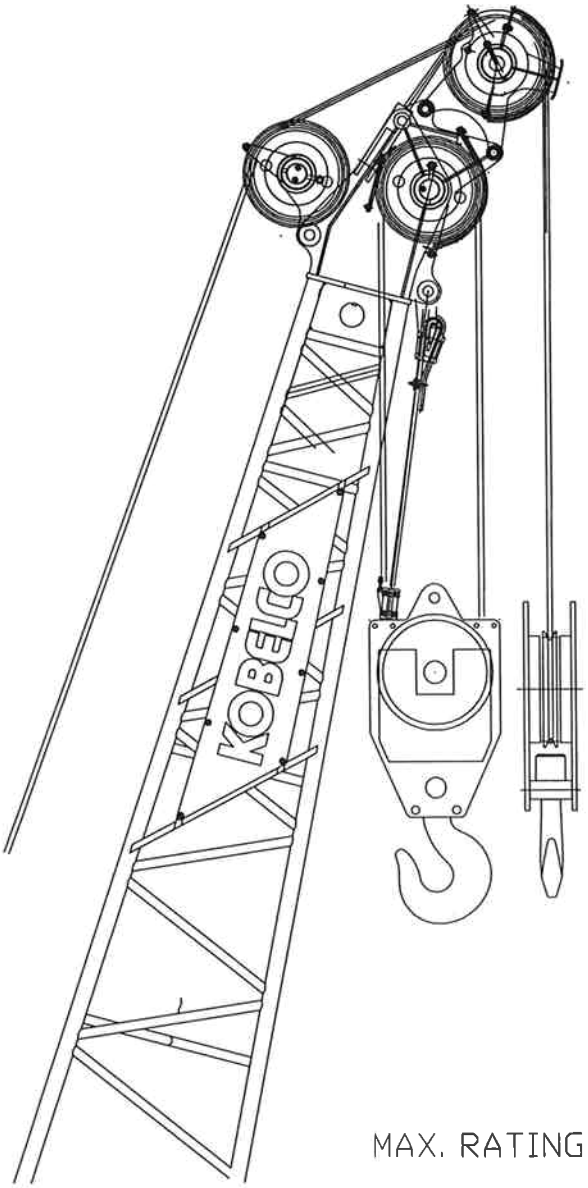
Boom and Fixed Jib Combinations			Jib Length					
			70ft 21.3m	80ft 24.4m	90ft 27.4m	100ft 30.5m	110ft 33.5m	120ft 36.6m
Boom Length	70ft	21.3m	○					
	80ft	24.4m	○	○				
	90ft	27.4m	○	○	○			
	100ft	30.5m	○	○	○	○		
	110ft	33.5m	○	○	○	○	○	
	120ft	36.6m	○	○	○	○	○	○
	130ft	39.6m	○	○	○	○	○	○
	140ft	42.7m	○	○	○	○	○	○
	150ft	45.7m	○	○	○	○	○	○
	160ft	48.8m	○	○	○	○	○	○
	170ft	51.8m	○	○	○	○	○	○
	180ft	54.9m	○	○	○	○	○	○
	190ft	57.9m	○	○	○	○	○	○
	200ft	61.0m	○	○	○	○	○	○

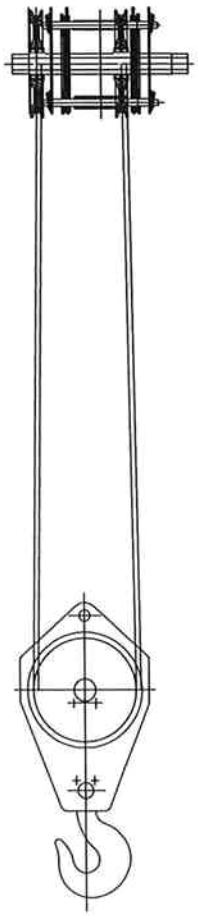
WHERE NO ○ MARK IS SHOWN, OPERATIONS IS NOT INTENDED OR APPROVED.

AUXILIARY SHEAVE, 2 PARTS LINE



WHEELS TO BE ATTACHED ON AUXILIARY SHEAVE PIN FOR LUFFING JIB ERECTION AND LOWERING.





MAX. RATING OF AUXILIARY SHEAVE : 24t

DEDUCT WEIGHT OF HOOK BLOCK(S), SLINGS AND ALL OTHER LOAD HANDLING MATERIALS FROM RATINGS.

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F/N:14S7967,01,21