

P&H KOBELCO Hydraulic Crawler Crane

7055 Specifications

Max. lifting capacity: **55** metric tons at **3.7** meters

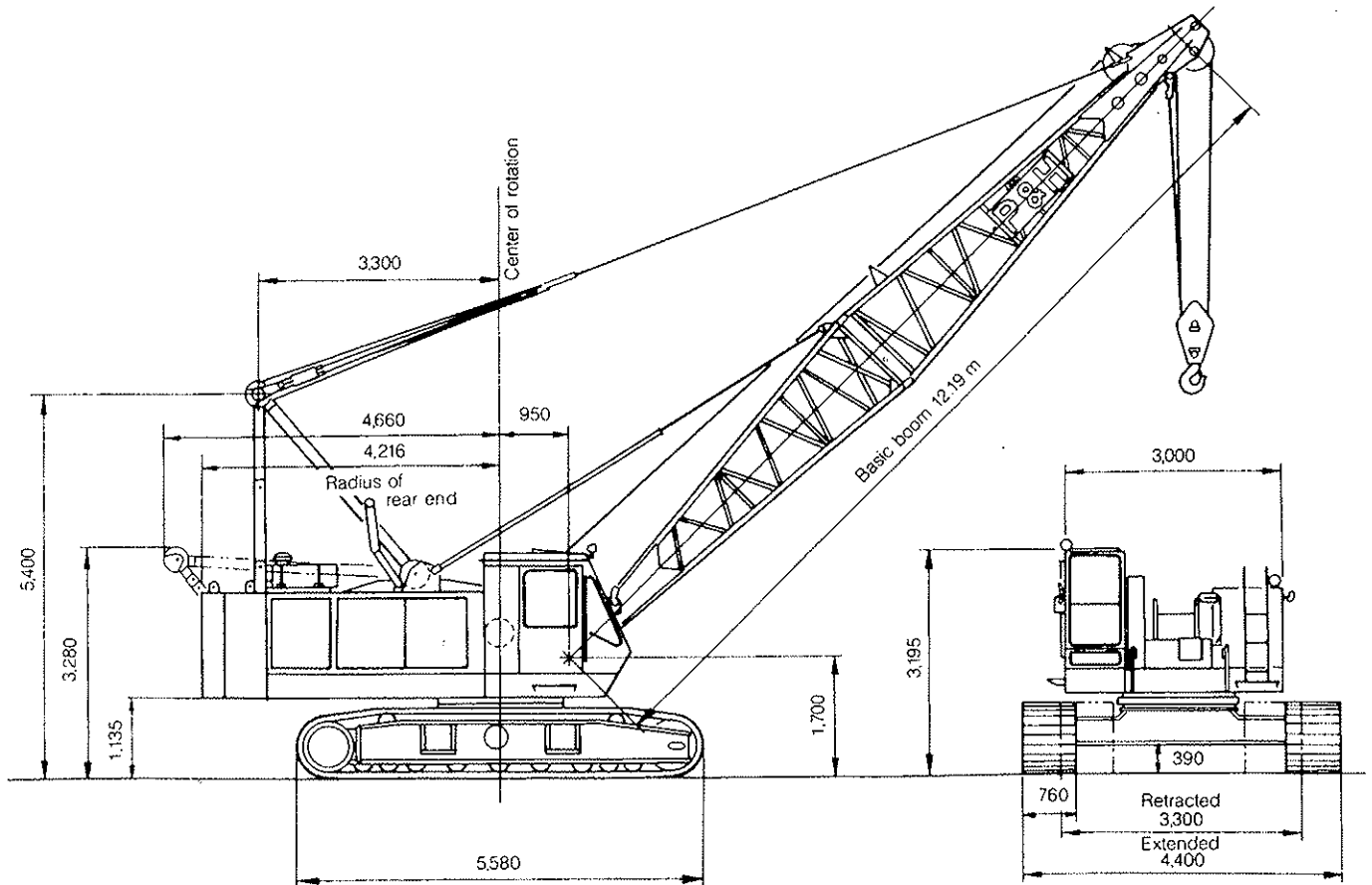
Max. boom length: **51.82** meters

Max. total length (boom + jib): **57.91** meters

- Tough winch that delivers extra lifting power
- Precise speed control for delicate inching operations
- Unrivaled fuel economy through a variable displacement hydraulic system
- Rationalized control layout for greater comfort and efficiency
- Lifetime floating seals and pre-lubricated bearings for maintenance-free operation

General Dimensions

Unit: mm



Specifications

Upper machinery



Power plant

Model	Mitsubishi 6D22C diesel
Type	Water cooled, direct fuel injection
No. of cylinders	6
Bore and stroke	130 mm x 140 mm
Displacement	11.1 liters
Rated power	180 ps (132 kW) at 2,000 rpm (JIS D1005)
	174 ps (128 kW) at 2,000 rpm (DIN 6270)
Max. torque	70 kgf-m at 1,200 rpm (JIS D1005)
	68 kgf-m at 1,200 rpm (DIN 6270)
Cooling system	Liquid, recirculating bypass
Starter	24 V, 5.5 kW
Generator	24 V, 30 amp
Cycles	4
Radiator	Corrugated fin type core, thermostat controlled
Air cleaner	Two stage, dry
Fuel tank capacity	280 liters
Batteries	Two 12 V, 150 A-hr capacity batteries, series connected
Fuel consumption (at 1,200 rpm)	164 gr/ps. hr



Hydraulic system

Pumps: Two variable displacement pumps and one fixed displacement pump are used. One variable displacement pump is used in the left propel circuit, boom hoist circuit and hook hoist circuit. The other is used in the right propel circuit and hook hoist circuit, and can accommodate an optional third hoist circuit. The fixed displacement pump is in the swing circuit. In addition, there are two gear pumps, one in the control system and one in the brake system.

Control: Full-flow hydraulic control system provides infinitely variable pressure to front and rear drums, boom, hoist brakes and clutches. Response to the operator's touch is instant, positive and smooth.

Pressure:

Load hoist, boom hoist and propel system	280 kg/cm ²
Swing system	250 kg/cm ²
Control system	45 kg/cm ²
Hoist drum service brake system	120 kg/cm ²

Reservoir capacity: 250 liters

Cooling: Oil-to-air heat exchanger, mounted in front of radiator.

Filtration: Suction with full-flow and drain filters



Boom hoisting system

Powered by a hydraulic axial piston motor through a planetary reducer.

Brake: Spring-set, hydraulically released multiple-disk brake, mounted on the boom hoist motor and operated through a counter-balance valve.

Drum lock: Spring-set hydraulically released drum pawl, automatically actuated when boom is stopped.

Drum: One-piece cast drum, grooved for 16mm dia. wire rope.

Line speed (Single line on first drum layer):

Hoisting (max.)	50 m/min
Lowering (max.)	50 m/min



Load hoist system

Tandem drums powered independently by two hydraulic axial piston motors through a planetary reducer.

Clutches: Internally expanding band clutches (splined on shaft).

Brakes: Brake valves and externally contracting, hydraulically set band brakes with both positive and negative actuation.

Drum locks: Manual safety pawls (external ratchets)

Drums (front and rear): 462 mm P.D. x 520 mm wide drums, each grooved for 22 mm wire rope. Rope capacity of 190 m working length and 273 m storage length.

Line speed (Single line on the first drum layer):

High	45/90 m/min
Low	30/60 m/min



Swing unit: Independently powered by a hydraulic axial piston motor through a planetary reducer; 360° of rotation.

Max. swing speed: 3.7 rpm

Swing brakes: Spring-set, hydraulically released multiple-disk brake, mounted on the swing motor.

Swing circle: Single-row ball bearings with internal swing gear. Bolted to both upper structure and under-carriage.

Swing lock: Two-position pin-in-hole lock (manual)



Operator's cab

Totally enclosed, full-vision cab fitted with safety glass and a sliding front window. A fully adjustable, high-backed seat permits all operators to set ideal working position. Signal horn, cigarette lighter, ashtray, windshield wipers, floor mat and cab heater are standard features.



Controls

In front of operator are foot pedals for front and rear drum brakes. At operator's right are console-mounted adjustable short levers for front and rear drum control, boom hoist control lever and positive/negative brake select switch for front and rear drum brakes. Beside the operator's seat on the right are two short levers for propel control. At operator's left are console-mounted swing lever, optional third drum control lever, crawler extend/retract lever, swing lock control lever, front and rear drum pawl control knobs; switches for ignition, engine stop, low and high speed control for front drum, rear drum and propel; and creep speed control for hoist, boom hoist and propel.

Gauges: Fuel, engine water temperature, engine oil pressure, hydraulic oil temperature, hourmeter and optional tachometer.

Warning lamps: Engine oil pressure, hydraulic oil pressure, battery charge, engine oil filter, air cleaner, and engine overheat.

Safety devices: Boom hoist limiter, hook over-hoist limiter, and optional load moment limiter



Gantry

Two-position, telescopic gantry, raised and lowered by boom hoist rope.

Counterweight

Two-piece stack, mounted behind the machinery compartment.

Total weight..... 15,700 kg



Tools

Tool set and accessories for routine machine maintenance.



Jib (optional)

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

Max. lifting capacity (ton)	5.5	11.0
Max. jib length (m)	15.24	28.96
Max. total length (m) (Boom length + jib length)	42.67 + 15.24	38.71 + 28.96



Hook blocks

A range of hook blocks can be specified, each with a safety latch.

Lifting capacity	55 tons	32 tons	19 tons	6.5 tons
No. of sheaves	4	2	1	0
Weight (kg)	650	500	400	160

Lower machinery

Carbody: Steel-welded carbody with axles.

Crawler: Side frames can be hydraulically extended for wide-track operation or retracted for transportation. Extension cylinders operated with a valve in the upper control system. Crawler belt tension adjusted with hydraulic jack and maintained by shims between idler block and frame.

Crawler drive: Independent hydraulic propel drive built into each side frame, each with a piston motor propelling a driving wheel through a planetary gear box.

Crawler brakes: Brake valves and spring-set, hydraulically released multiple-disc parking brakes.

Steering mechanism: Differential speed steering (driving one track faster than the other), counter-rotating steering (driving tracks in opposite directions) and skid steering (driving one track only) with lever control.

Track rollers: 9 lower rollers and 2 upper rollers in each side frame, with life-time lubrication for maintenance-free operation.

Shoes:

Number..... 59 each side

Standard flat shoe width..... 760 mm

Max. travel speed:

High..... 1.6 km/h

Low..... 1.1 km/h

Max. gradeability: 40%

Diameter of wire ropes

Standard:

Hook hoist 22 mm (dia.)

Boom hoist (12-part line) 16 mm (dia.)

Boom pendants (2-part line)..... 30 mm (dia.)

Optional:

Jib hook hoist 22 mm (dia.)

Jib back stay pendants 16 and 18 mm (dia.)

Boom midpoint suspension 16 mm (dia.)

Boom backstops recommended for all boom lengths.

Weight

Working weight: Approx. 50,700 kg (including 12.19 m boom, 55 ton hook block and standard counterweights)

Ground pressure: 0.66 kg/cm²

Line speed and line pull

Standard winches	Main hoist drum	H 90/45	H 90/45	14.5 ton	15.8 ton
		L 60/30	L 60/30		
	Aux. hoist drum	H 90/45	H 90/45	14.5 ton	15.8 ton
		L 60/30	L 60/30		

NOTE: All tonnage figures listed in these specifications are in metric tons.

Crane attachments



Boom:

Welded lattice construction using tubular, high tensile steel chords with pin connections between sections. Mid-point suspension (center-hitch) is required for boom lengths longer than 39.62 m.

Max. lifting capacity	55 tons
Basic boom length	12.19 m
Max. boom length	51.82 m

Lifting Capacities

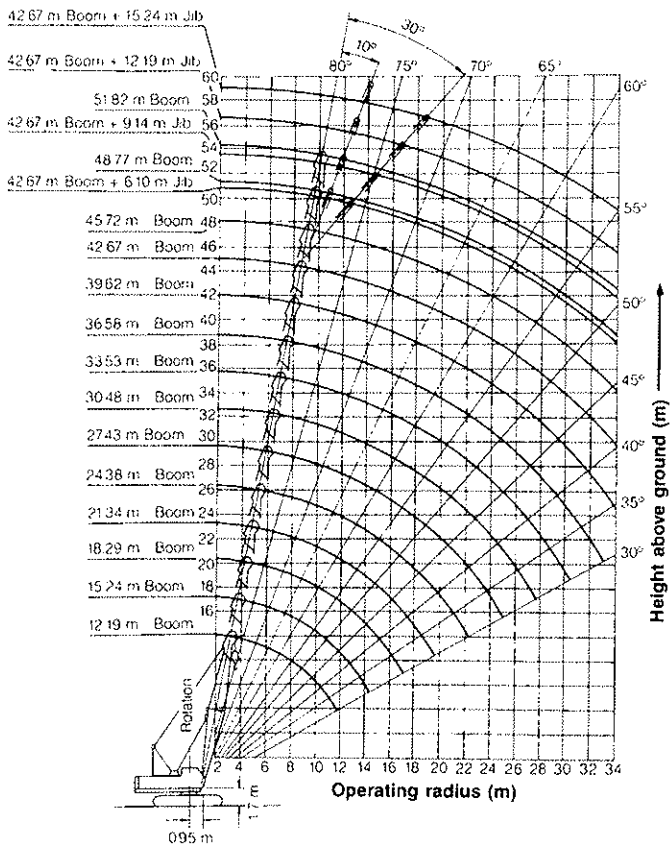
The following points should be kept in mind when interpreting the ratings given below.

1. Operating radius is the horizontal distance from center of rotation to the hoist load line or tackle with load applied.
2. Rated loads do not exceed 75% of tipping loads, and include weights of the load, hook blocks, slings and other lifting devices.
3. Rated loads are for stationary and level cranes lifting a freely suspended load, and have been determined for ideal operating conditions. The user must limit or derate lifted loads to allow for adverse conditions (such as soft or uneven ground, out-of-level conditions, winds, side loads, pendulum action, jerking or sudden stopping of loads, inexperience of personnel, multiple machine lifts and traveling with a load.)
4. Rated loads apply only to upper, lower, boom, jib, auxiliary sheave, and 15,700kg counterweight manufactured by Kobe Steel, Ltd.
5. Boom backstops are required for all boom lengths.
6. Gantry must be in fully raised position for all operations.
7. Crawlers must be fully extended and be locked in position.
8. The crane must be leveled to within 1% on a firm supporting surface.
9. When lifting over boom point with jib or auxiliary sheave, rated loads for the boom must be deducted as shown below.

Jib length	Aux. sheave	6.10m	9.14m	12.19m	15.24m
Deduct-kg	300	900	1,100	1,300	1,500

10. The total load that can be lifted with the jib at any radius is limited by the lower of the following two ratings: 1) the rated jib load, or 2) the rated load at that radius for the boom on which the jib is mounted.
11. When lifting over the boom point with a jib or auxiliary sheave, the combined weight of boom hook block, jib hook block, slings and other lifting devices is part of the total load. Their total weight must therefore be subtracted from the rated load to obtain the weight that can be lifted.
12. Boom lengths for jib mounting are 30.48m to 42.67m.
13. An auxiliary sheave cannot be used on a 51.82m boom.
14. The boom should be erected over the front of the crawlers, not laterally.

Working Ranges (with fixed jib)

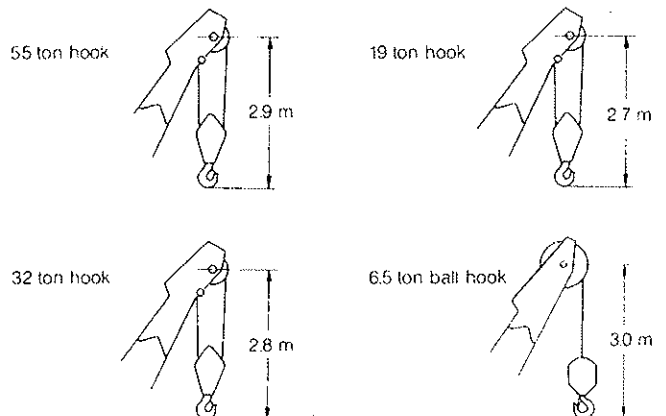


Boom Component Chart

Boom length meters (ft)	Boom arrangement
15.24 (50)	Base-A-Tip
18.29 (60)	Base-A-A-Tip, Base-B-Tip
21.34 (70)	Base-A-B-Tip, Base-C-Tip
24.38 (80)	Base-B-B-Tip, Base-A-C-Tip, Base-A-A-B-Tip
27.43 (90)	Base-B-C-Tip, Base-A-B-B-Tip
30.48 (100)	Base-A-B-C-Tip, Base-C-C-Tip, Base-A-B-A-B-Tip
33.53 (110)	Base-B-B-A-B-Tip, Base-B-B-C-Tip, Base-A-C-C-Tip
36.58 (120)	Base-A-B-B-C-Tip, Base-B-C-C-Tip
39.62 (130)	Base-B-C-A-C-Tip
42.67 (140)	Base-A-B-B-B-C-Tip, Base-B-C-B-C-Tip
45.72 (150)	Base-A-B-B-C-C-Tip
48.77 (160)	Base-B-B-B-C-C-Tip
51.82 (170)	Base-B-B-B-A-C-C-Tip

Base = 6.10 m (20'), Tip = 6.10 m (20')
 Inserts : A = 3.05 m (10'), B = 6.10 (20'), C = 9.14 m (30')

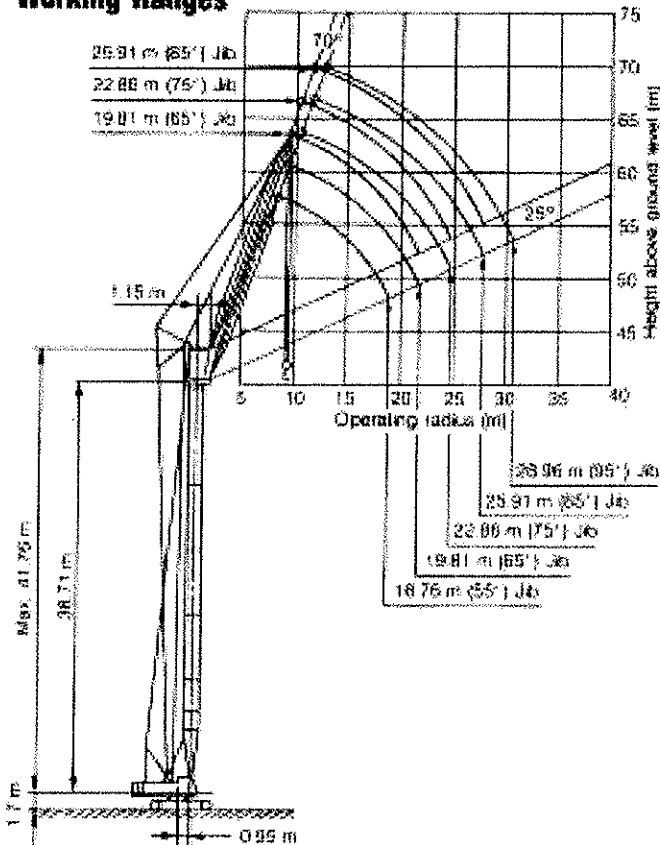
Min. Distance between the Hook and the Point Sheave



NOTE: These lengths are recommended for boom and jib angles of 75° or less.

Luffing Jib

Working Ranges



Rated Loads in Metric Tons for 360° Working Area

Jib length (m)	20-40 (65-71°)				21-47 (67-72°)		20-52 (67-69°)		20-51 (68-71°)		41-20 (73°)	
	36.76 (95°)	18.81 (85°)	22.88 (75°)	25.91 (65°)	26.96 (75°)	19.01 (65°)	22.88 (75°)	24.91 (85°)				
9	11.0											
10	11.0	9.5						8.2				
11	10.2	8.5	8.1					8.2	7.7			
12	9.5	9.5	8.1	5.7				8.2	7.7	6.2		
13	8.8	8.8	8.1	6.7	5.5			8.2	7.7	6.2		
14	8.1	8.1	8.1	6.7	5.5	7.7		8.2	8.2	6.2		
16	7.0	7.0	7.0	6.7	5.5	8.2	8.7	8.2	8.2	6.2		
18		6.0	6.0	6.0	5.0	5.8	5.4	5.5				
20			5.1	5.1	5.1	4.5	5.0	5.0	5.0	5.0		
22				4.4	4.4	4.0		4.3	4.3			
24					3.7	3.6				3.6		
26						3.1	3.1				3.0	
28							2.5					

Note: Rated capacities for the models are identical to those for 3355 crawler crane.

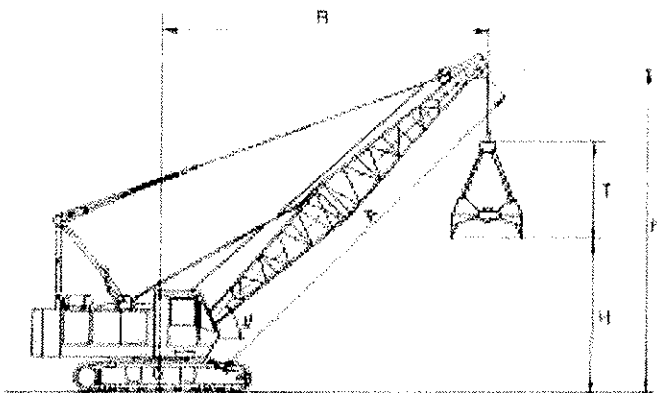
* This figure applies to an operating radius of 17 m.

Clamshell

Clamshell Ratings and Working Ranges

A	Boom length (m)	12.19				15.24				18.29					
d	Boom angle (°)	35	45	55	65	35	45	55	65	35	45	55	65		
R	Working radius (m)	11.3	10.0	8.4	6.8	13.8	12.2	10.1	7.9	16.6 (37°)	14.3	11.8	9.2		
H	Height at bucket opening	Bucket capacity	0.8m³	2.7	4.3	5.7	6.8	4.4	6.5	8.2	9.5	6.2	8.6	10.7	12.3
			1.0m³	2.7	4.3	5.7	6.8	4.4	6.5	8.2	9.5	6.2	8.6	10.7	12.3
			1.2m³	2.3	3.9	5.3	6.4	4.0	6.1	7.8	9.1	5.8	8.2	10.3	11.9
	1.6m³	2.4	4.0	5.4	6.5	4.1	6.2	7.9	9.2	5.9	8.3	10.4	12.0		
n	Boom pivot height (m)	8.5	10.2	11.5	12.6	10.2	12.3	14.0	15.4	12.5	14.5	16.5	18.2		
	Rated loads (ton)	5.5				5.5				5.5					

Dimensions



T Bucket clearance

Clamshell Buckets

Capacity (m³)	Approximate weight (kg)	Bucket clearance (m)
0.8	2,100	3.3
1.0	2,500	3.3
1.2	3,100	3.5
1.6	2,000	3.6

Boom Component Chart

Boom length (m)	Boom arrangement
15.24	Base A Tip
18.29	Base B Tip

Base = 6.10 m Tip = 6.10 m Inserts: A = 3.05 m, B = 6.10 m

Note:

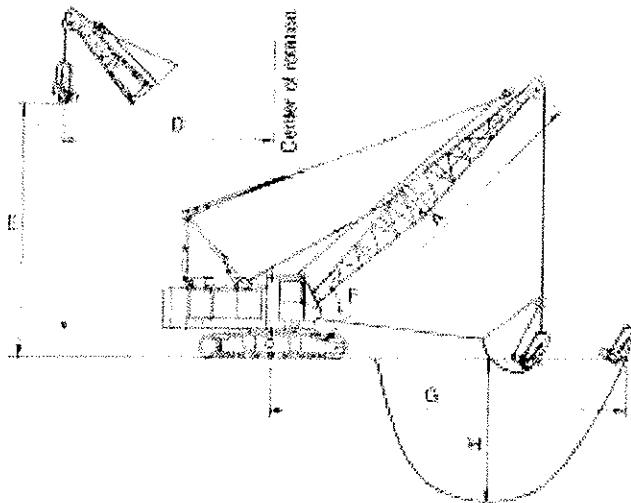
- 1) Bucket weight must not exceed 31 tons.
- 2) The 1.6 m³ bucket is for loading operations.
- 3) Clamshell ratings also apply to grapple and all other material handling buckets except dragline.
- 4) For clamshell operations, bucket weight is considered part of the load and the total bucket weight plus contents must not exceed the corresponding rating shown.
- 5) Ratings assume the use of a KOBELCO boom.

Dragline

Dragline Ratings and Working Ranges

A	Boom length (m)	12.18			15.24			18.29		
F	Boom angle (°)	30	40	50	30	40	50	30	40	50
D	Dumping radius (m)	12.0	10.9	9.4	14.7	13.2	11.3	17.3	15.5	13.3
E	Max. dumping height (m)	5.1	6.8	8.3	6.6	6.8	10.7	8.1	10.8	13.0
G	Max. digging radius (m)	18.8	15.3	13.3	20.2	18.3	15.7	25.6	21.3	18.2
H	Max. digging depth (m)	9.4	8.2	6.6	12.0	10.5	8.5	11.1	8.5	6.2
Rated load (ton)		4.8			4.8			4.8		

Dimensions



Boom Component Chart

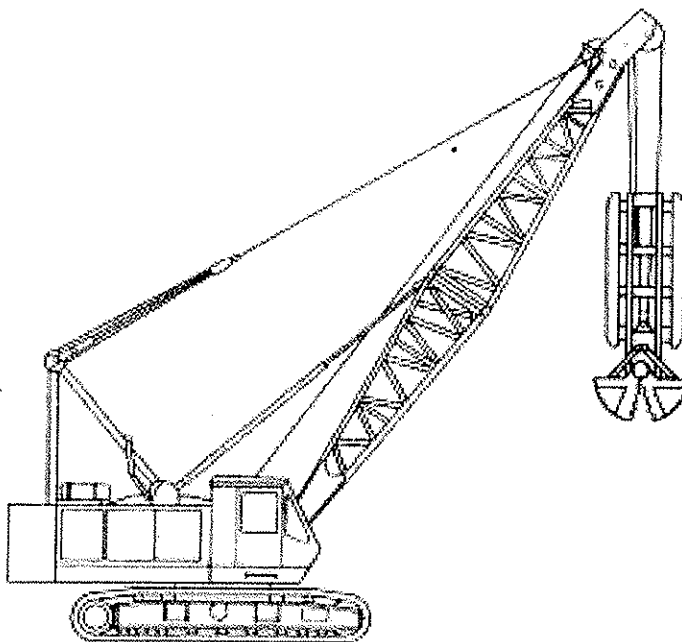
Boom length (m)	Boom arrangement
15.24	Base-A-Tip
18.29	Base-B-Tip

Base = 6.10 m
 Tip = 6.10 m
 Inserts: A = 3.05 m, B = 6.10 m

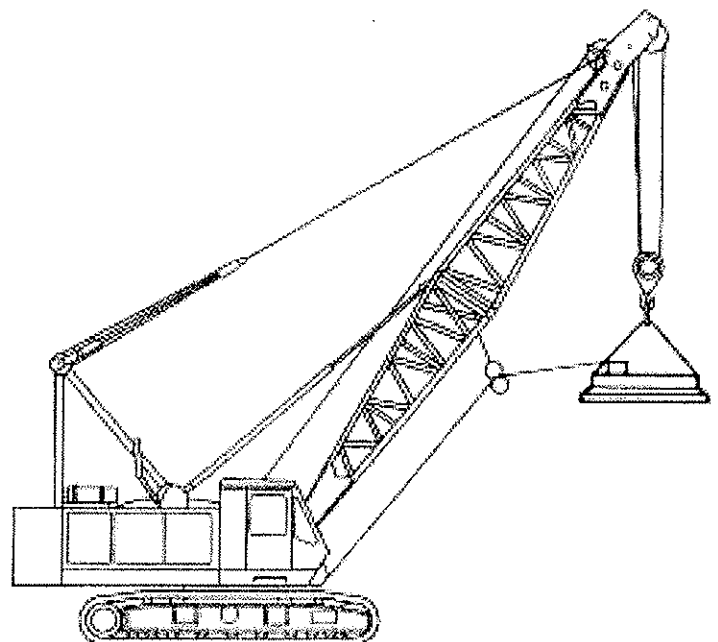
Note:

- 1) Dimension G may vary considerably depending on digging conditions and the skill of the operator.
- 2) Dimension H may vary depending on digging material.
- 3) Above ratings are for combined weight of bucket, accessories, and material.
- 4) Maximum boom length recommended for dragline operation is 18.29 m.
- 5) A 10-ton counterweight should be attached for dragline operation.
- 6) Maximum allowable bucket weight is 2 tons.
- 7) Maximum allowable digging bucket size:
 Heavy duty type..... 15 m³
 Light duty type..... 20 m³

Diaphragm Wall Bucket



Lifting Magnet



* For specific information on the use of the diaphragm wall bucket and lifting magnet, please contact Kobe Steel, Ltd.

Pile Driver

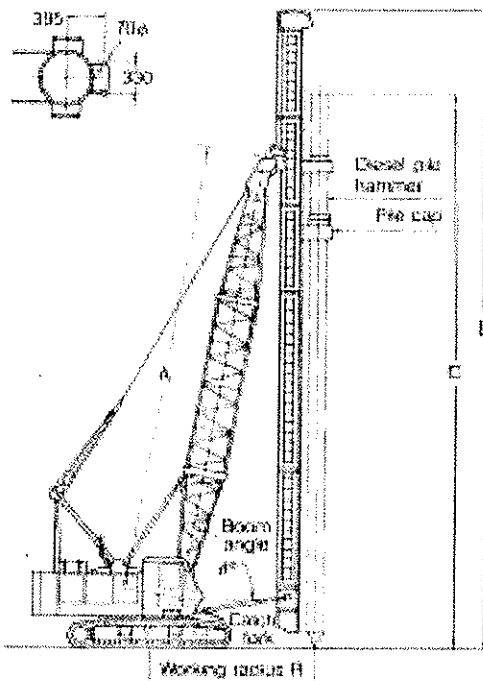
Working Capacities with Standard Counterweight

Leader model		LA45A																					
Diesel pile hammer	Model	KOBELCO K25				KOBELCO K35				KOBELCO K45													
	Hammer weight (ton)	5.2				7.5				10.5													
	Cap weight (ton)	0.5				1.0				1.8													
A	Boom length (m)	15.2	18.3	18.3	21.3	15.2	18.3	18.3	21.3	15.2	18.3	18.3											
B	Leader length (m)	21	24	27	30	21	24	27	30	21	24	27											
C	Pile length (m)	15.0 -14.5	18.0 -17.5	21.0 -20.5	24.0 -23.5	14.0 -13.5	17.0 -16.5	20.0 -19.5	23.0 -22.5	13.5 -13.0	17.0 -16.5	20.0 -19.5											
R	Working radius (m)	R		R		R		R		R		R											
W	Rated load (ton)	W		W		W		W		W		W											
Boom angle (°)	82	—	—	5.2	6.5	5.2	6.5	5.7	6.5	—	—	6.3	8.0	5.3	6.5	5.7	6.5	—	—	5.4	6.5	5.4	5.0
	81	—	—	5.6	6.5	5.6	6.5	6.0	6.5	—	—	6.6	8.0	6.6	6.5	6.1	6.5	—	—	5.7	6.5	5.7	5.0
	80	5.4	6.5	5.9	6.5	5.9	6.5	6.4	6.5	5.4	6.0	5.9	6.0	5.9	6.5	6.5	6.5	5.5	6.5	6.0	6.5	6.0	5.0
	79	5.6	6.5	6.2	6.5	6.2	6.5	6.8	6.5	5.7	6.0	6.3	6.0	6.3	6.5	6.8	6.5	5.8	6.5	6.4	6.5	6.4	5.0
	78	5.9	6.5	6.5	6.5	6.5	6.5	7.2	6.5	5.9	6.0	6.6	6.0	6.6	6.5	7.2	6.5	6.0	6.5	6.7	6.5	6.7	5.0
	77	6.2	6.5	6.8	6.5	6.8	6.5	7.5	6.5	6.2	6.0	6.9	6.0	6.9	6.5	7.5	5.8	6.3	6.5	7.0	6.5	7.0	4.5
	76	6.4	6.5	7.2	6.5	7.2	6.5	7.9	6.5	6.5	6.0	7.2	6.0	7.2	6.5	8.0	4.0	6.6	6.5	7.3	4.5	7.3	3.0
	75	6.7	6.5	7.5	6.5	7.5	6.5	8.3	6.0	6.7	6.0	7.5	7.0	7.5	6.5	8.3	3.0	6.8	6.5	7.0	3.0	7.6	2.0
	74	6.9	6.5	7.8	6.5	7.8	6.5	8.8	5.0	7.6	6.0	7.8	6.0	7.8	5.5	8.7	2.0	7.1	5.5	7.9	2.0		
	73	7.2	6.5	8.1	6.5	8.1	6.5	9.0	4.0	7.3	6.0	8.1	5.0	8.1	4.5	9.0	1.5	7.3	4.5				
	72	7.5	6.5	8.4	6.5	8.4	6.5	9.3	3.5	7.5	7.5	8.5	4.0	8.5	3.5			7.6	3.2				
71	7.7	6.5	8.7	6.0	8.7	5.5	9.7	2.5	7.8	6.5	8.8	3.0	6.8	2.5			7.9	2.5					

Note:

- 1) Figures assume the use of 760mm crawler shoes.
- 2) Crawler harness must be fully extended and locked.
- 3) Driving angle must be kept within 10° of the leader angle.
- 4) Recommended catch fork length: 4 1/8-5m.

Dimensions



NOTE: Due to our policy of continual product improvement, all designs and specifications are subject to change without advance notice.
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