

# 7100

Max. Lifting Capacity: 100 Metric Tons at 5.5 Meters

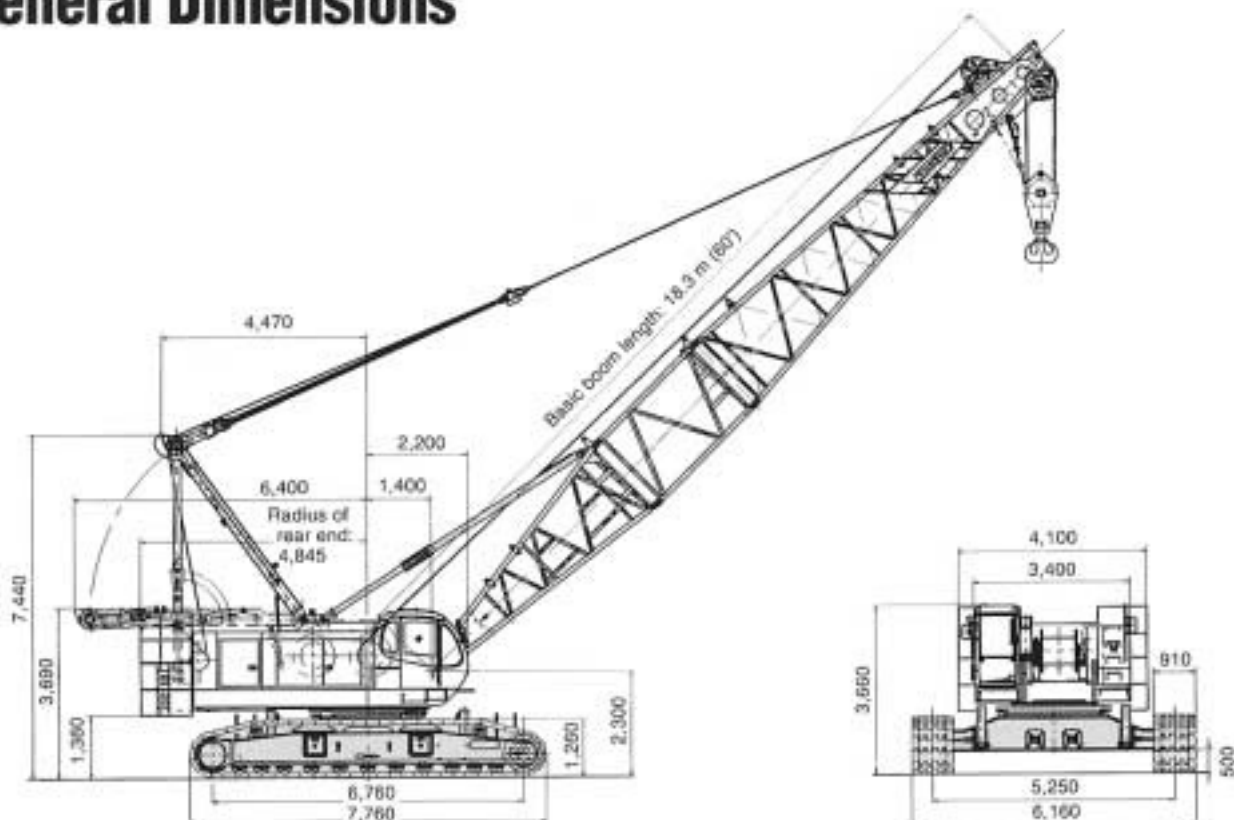
Max. Boom Length: 73.2 Meters

## Specifications

- Advanced winch system delivers a wide range of precisely controlled hoisting speeds, and the fastest hoisting in its class.
- Independent drum speed control system for main drum, auxiliary drum and boom hoisting simplify lateral shifting of suspended loads in complex operations.
- Large main and auxiliary drums can be run simultaneously or independently at different speeds and opposite directions, according to your needs.
- Two-speed propel system features high speed for travel, low for superior breakout force.
- Direct fuel injection in an turbo charged engine delivers dependable performance with top fuel economy.
- Neutral-free and neutral-brake swing control modes give more control over swing braking, to suit either tough, repetitive jobs (Clamshell etc.), or fine-control crane operations.

## General Dimensions

Unit: mm



# Configuration and Style of Attachment

---

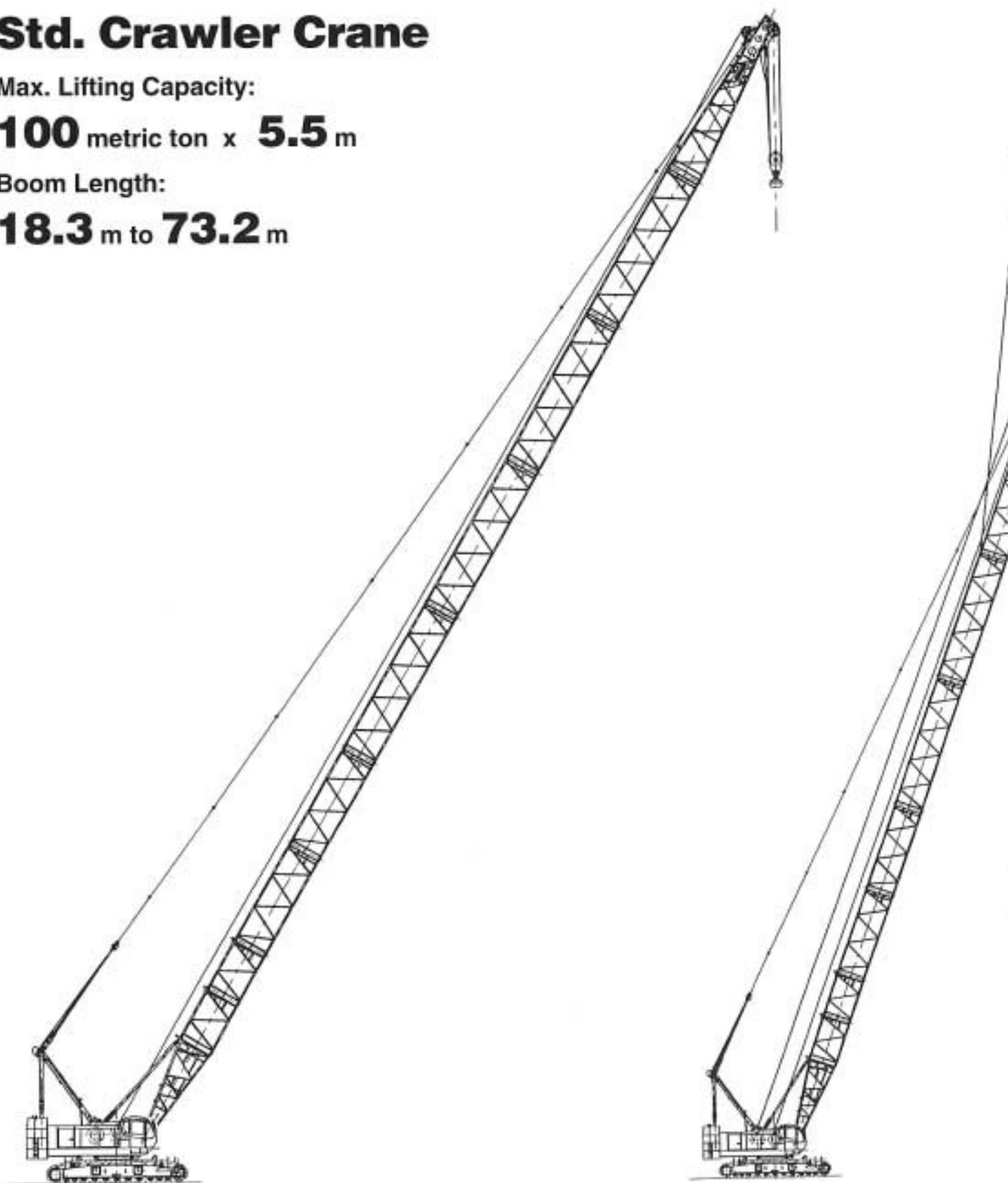
## Std. Crawler Crane

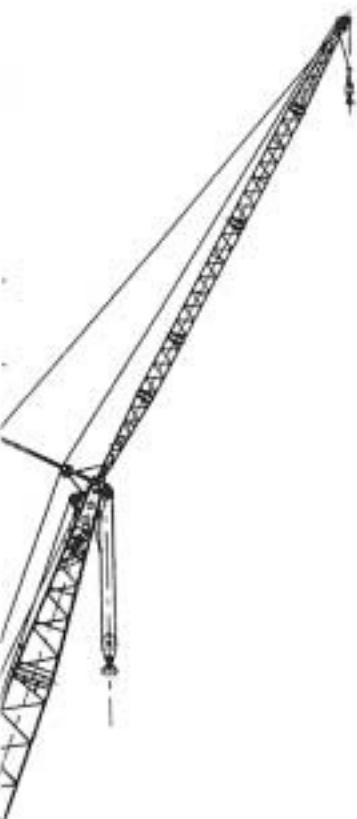
Max. Lifting Capacity:

**100** metric ton x **5.5** m

Boom Length:

**18.3** m to **73.2** m





## Fixed Jib

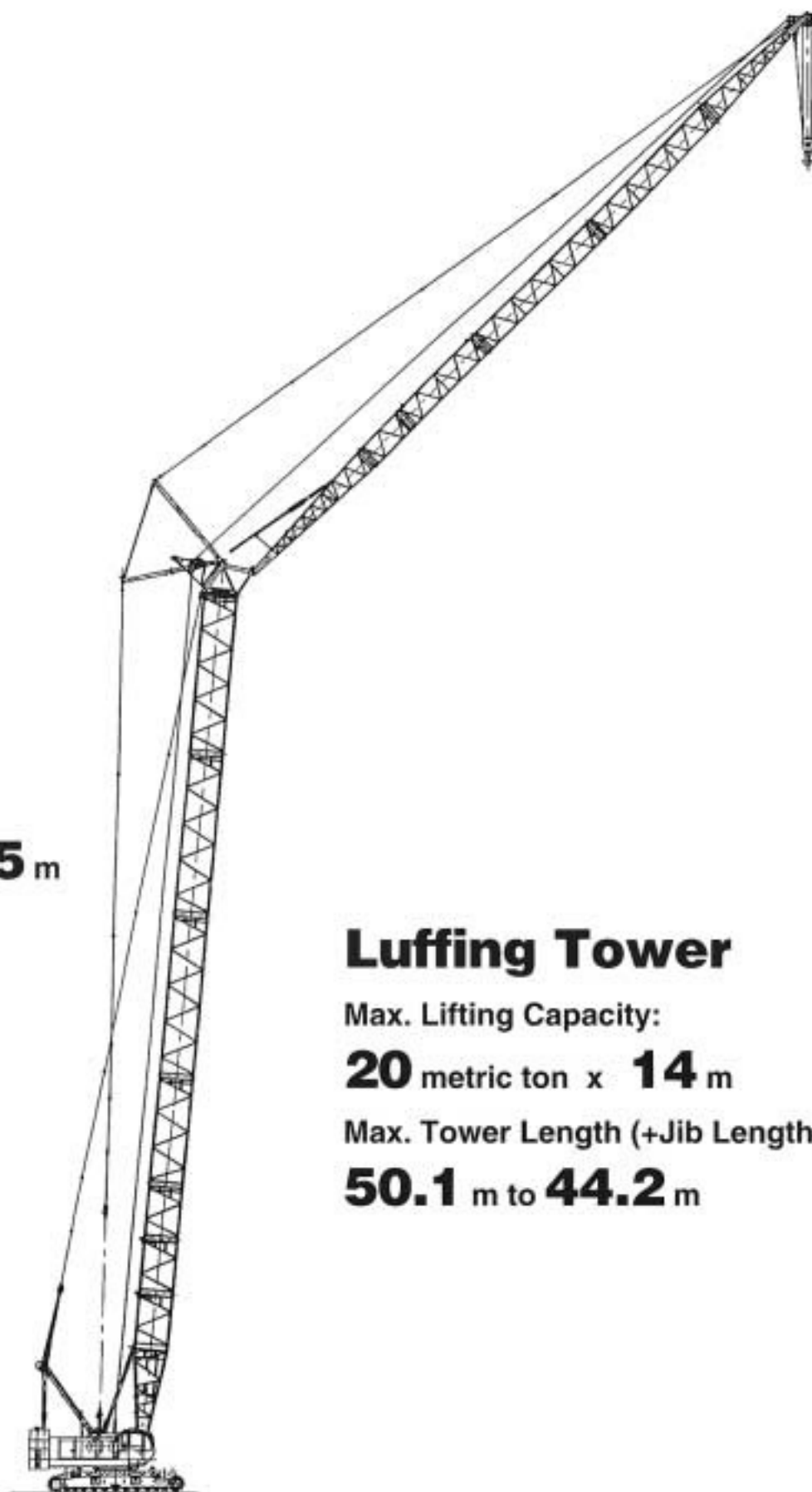
Max. Lifting Capacity:

**11** metric ton x **12.5** m

Max. Boom Length  
(+ Jib Length):

**64.0** m + **18.3** m/

**61.0** m + **24.4** m



## Luffing Tower

Max. Lifting Capacity:

**20** metric ton x **14** m

Max. Tower Length (+Jib Length)

**50.1** m to **44.2** m

# Specifications

## Upper machinery



### Power plant

**Model** ..... Mitsubishi 6D22-T  
**Type** ..... Water-cooled, direct fuel injection,  
with turbocharger

**No. of cylinder** ..... 6  
**Bore and stroke** ..... 130 mm x 140 mm  
**Displacement** ..... 11,149 liters  
**Rated power** ..... 184 kW (250 PS) at 2,000 min<sup>-1</sup>  
(JIS D1005)  
**Max. torque** ..... 1.03kN•m (105 kg•m) at 1,400 min<sup>-1</sup>  
(JIS D1005)

**Cooling system** ..... Liquid, recirculating bypass

**Starter** ..... 24 V, 5.5 kW

**Generator** ..... 24 V, 80 A

**Cycles** ..... 4

**Radiator** ..... Vertical tube and fin type core,  
thermostatically controlled

**Air cleaner** ..... Dry type with replaceable paper element

**Fuel tank capacity** ..... 400 liters

**Batteries** ..... Two 12V, 150 A-hr capacity batteries,  
series connected

**Fuel consumption** (at 1,400 min<sup>-1</sup>) ..... 211 g/kW•h  
(155 g/PS•h)

**Filtration** ..... Full flow and by-pass type with  
replaceable paper element

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



### Hydraulic system

**Pumps:** All five pumps are driven by heavy-duty pump drive. Twin variable displacement pumps and one displacement pump are used. One of twin variable displacement pumps is used in the left propel circuit, boom hoist circuit, and hook hoist circuit. Another is used in the right propel circuit and hook hoist circuit, and can accommodate an optional third hoist circuit. The one variable displacement pump is used in the swing circuit. In addition, one of two gear pumps are used in the control system and auxiliary equipment. One of these serves the clutch and brakes.

**Control:** Full-flow hydraulic control system for infinitely variable pressure to front and rear drums, and boom hoist. Controls respond instantly to the touch, delivering smooth function operation. Pumped fluid is filtered before returning to pump.

**Pressure:**

**Load hoist, boom hoist and propel system** ..... 30.9 Mpa (315 kg/cm<sup>2</sup>)

**Swing system** ..... 27.5 MPa (280 kg/cm<sup>2</sup>)

**Control system** ..... 6.37 MPa (65 kg/cm<sup>2</sup>)

**Reservoir capacity** ..... 325 liters

**Cooling:** Oil-to-air heat exchanger

**Filtration:** ..... Full flow filters with replaceable paper elements



### Boom hoisting system

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

**Brake:** A spring-set, hydraulically released multiple-disc brake mounted on the boom hoist motor and operated through a control valve. Safety pawl

(external ratchet) are fitted for locking the drum.

**Drum:** Single drum, grooved for 20 mm dia. wire rope.

**Line speed:** Single line on first drum layer

Hoisting ..... 1.5 to 45 m/min

Lowering ..... 1.5 to 45 m/min



### Load hoist system

Tandem drums powered by two hydraulic axial piston motors, through planetary reducers.

**Clutches:** Internally expanding band

clutches. 950 mm dia. x 125 mm wide  
**Brakes:** Brake valves and externally contracting, spring set, hydraulically released band brakes, with positive and negative actuation. 1,150 mm dia. x 150 mm. Safety pawls (external ratchet) for locking drums. Both positive and negative brake systems are available. Air cooling fins on brake drum.

**Drums:** (front and rear): 588 mm P.C.D. x 727 mm wide drums, each grooved for 26 mm wire rope. Rope capacity of 275 m working length and 410 m storage length.

**Line speed:** Single line on the first drum layer

(Front drum)

Hoisting ..... 100 to 60/50 to 30 m/min

Lowering ..... 100 to 60/50 to 30 m/min

(Rear drum)

Hoisting and lowering ..... 3 to 100 m/min



### Swing system

**Swing unit:** Powered by hydraulic axial motor driving spur gears through a planetary reducer, the swing system provides 360°

rotation.

**Swing speed** ..... 2.5 rpm

**Swing brake:** A spring-set, hydraulically released multiple-disc brake mounted on swing motor.

**Swing circle:** Single-row ball bearing with an internal, integral cut swing gear.

**Swing lock:** Four-position pin-in-hole lock (manually engaged)

**Swing brake mode:**

**Swing neutral-free mode** ..... Brake activated when swing lever is engaged in reverse direction.

**Swing neutral-brake mode** ..... Brake activated when swing lever is in neutral position.



### Operator's cab

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



### Controls

In front of the operator are foot pedals for front and rear drum brakes. At the operator's right are console-mounted adjustable short levers for front and rear drum controls, boom hoist control lever and positive/negative brake select switches for front and rear drum brakes. Beside the operator's seat on the right are two short levers for propel control. At the operator's left are: a console-

mounted swing lever, and front and rear drum pawl control switches; switches for ignition, engine stop, a down speed adjusting knobs for front drum, rear drum and boom hoist drum, swing and prope. Creep speed control switch for hoist and propel is on the hoist lever. A swing brake switch and a signal horn button are on the swing lever.

**Lights:** Two front flood lights and one cab inside light  
**Check & Safety Monitor**

**Gauges:** Fuel, water temperature for engine, hour meter, optional tachometer

**Warning lamps:** Engine oil pressure, hydraulic oil pressure, water temperature, battery charge, air cleaner and engine oil filter

**Safety devices:** Function lock lever, hook over-hoist alarm and shut-off switch, boom over-hoist limit switch, boom angle indicator, signal horn, boom hoist and front and rear drum locks, swing lock, free-fall warning lamps, free-fall interlock brakes, travel locking lever, boom back stops, hook safety latch and optional load moment limiter (overload protection device) are provided.



#### Gantry

Folding type, fitted with sheave frame for boom hoist reeving, lowers toward rear onto cab roof. Hydraulic lift is standard. Full up, full down positions with linkage.

#### Counterweight

Four-piece stack

Total weight ..... 40,500 kg



#### Tools

Tool set and accessories for routine machine maintenance are provided.

### Lower machinery

**Carbody:** Steel-welded carbody with axles.

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

**Crawler drive:** Independent hydraulic propel drive is built into each side frame. Each drive consists of a hydraulic motor propelling a driving tumbler through a planetary gear box.

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

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

**Track rollers:** 0 lower rollers and 0 upper rollers are fitted to each side frame, sealed and maintenance-free.

#### Shoes:

Number ..... 59 each side  
 Standard flat shoe width ..... 910 mm

#### Max. travel speed:

High range ..... 1.3 km/h  
 Low range ..... 0.8 km/h

**Max. gradeability:** 30%

**Trans-lifter:** As each of the four cylinders fixed with the carbody are used at the time of assemblage and disassemblage, loading and unloading onto the trailer are made easy.

### Crane attachment



#### Boom:

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

Max. lifting capacity	100,000 kg
Basic boom length	18.3 m (60')
Max. boom length	73.20 m (240')



#### Jib (optional):

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

	Fixed jib
Max. lifting capacity	11,000 kg
Max. jib length	24.40 m (80')
Max. total length (Boom length + jib length)	64.0 m (210') + 18.3 m (60') 61.0 m (200') + 24.4 m (80')



#### Hook blocks

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

Lifting capacity	100tons	65tons	50tons	30tons	11tons ball hook
No. of sheaves	5	3	3	1	0
Weight (kg)	1,800	1,100	850	700	450

#### Diameter of wire ropes

##### Standard:

Hook hoist ..... 26 mm  
 Aux. hoist ..... 26 mm  
 Boom hoist (12-part line) ..... 20 mm  
 Boom pendants (4-part line) ..... 28 mm

##### Optional:

Jib hook hoist ..... 26 mm  
 Jib back stay pendants (2-part line) ..... 26 mm

**Boom hoist reeving:** 12 parts of 20 mm dia. wire rope

**Boom backstops:** recommended for all boom lengths

#### Line pull

	Max. permissible
Front:	11,000 kg
Rear:	11,000 kg



#### Weight

##### Operating weight:

Approx. 113,900 kg (including 18.3 m (60 ft) boom and 100-ton hook block)

**Ground pressure:** 85 kPa (0.87 kg/cm<sup>2</sup>)  
 with 910 mm shoes

## Notes:

- Operating radius is the horizontal distance from the centerline of rotation to a vertical line through the centerline of gravity of the load.
- Rated loads included in the charts are the maximum allowable freely suspended loads at a given boom length, boom angle and radius, and have been determined for the machine standing level on firm supporting surface under ideal operating conditions. The user must limit or de-rate 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).
- Capacities do not exceed 75% of minimum tipping loads. Some of the rated crane loads are based on the structural strength, and overload could damage the boom, jib and frame, etc. without tipping.
- Areas on rated crane load table where no rating are shown, operation is not intended or approved.
- The loads can be lifted actually is obtained by deducting weight of hook block, slings and all other load handling accessories from the rated crane load.
- For arrangements of the boom, jib and guy lines and reeving of the boom hoist rope, strictly observe the instructions of the operator's manual.
- Gantry must be in fully raised position for all operations.

## 8. Max. hoisting load

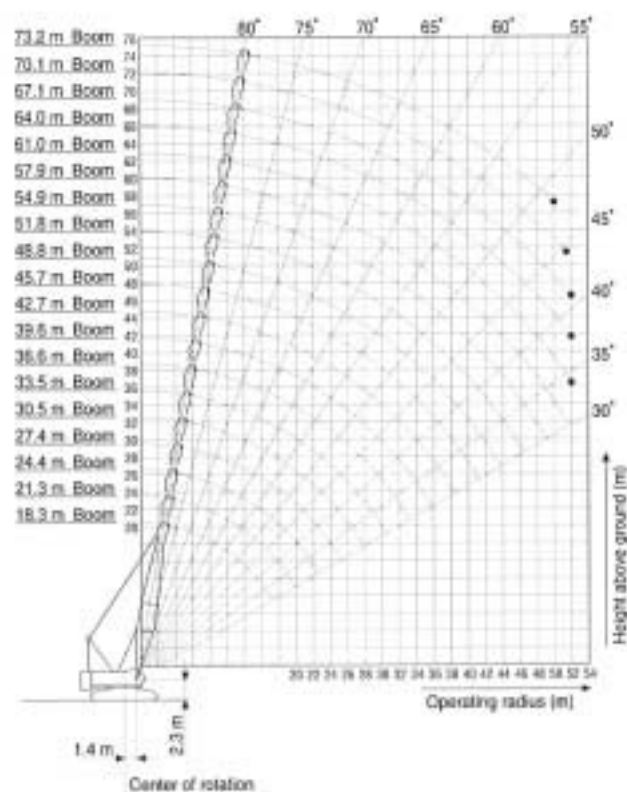
No. of parts of line	1	2	3	4	5
Max. load (metric ton)	11	20	30	40	50
No. of parts of line	6	7	8	9	10
Max. load (metric ton)	60	70	80	90	100

- The total loads that can be lifted over a jib is limited by rated jib loads. The total load that can be lifted over an auxiliary sheave is limited by rated aux. sheave load. Weight of hooks, hook blocks, slings and other lifting devices are a part of the total load. Their total weight must be subtracted from the rated load to obtain the weight that can be lifted.
- Boom lengths for jib mounting are 39.6 m (130') to 64.0 m (210').
- Boom lengths for aux. sheave mounting are 18.3 m (60') to 70.1 m (230').
- When erecting or lowering the boom and/or jib at the following combinations, the pillow plate must be used under the front of crawler.

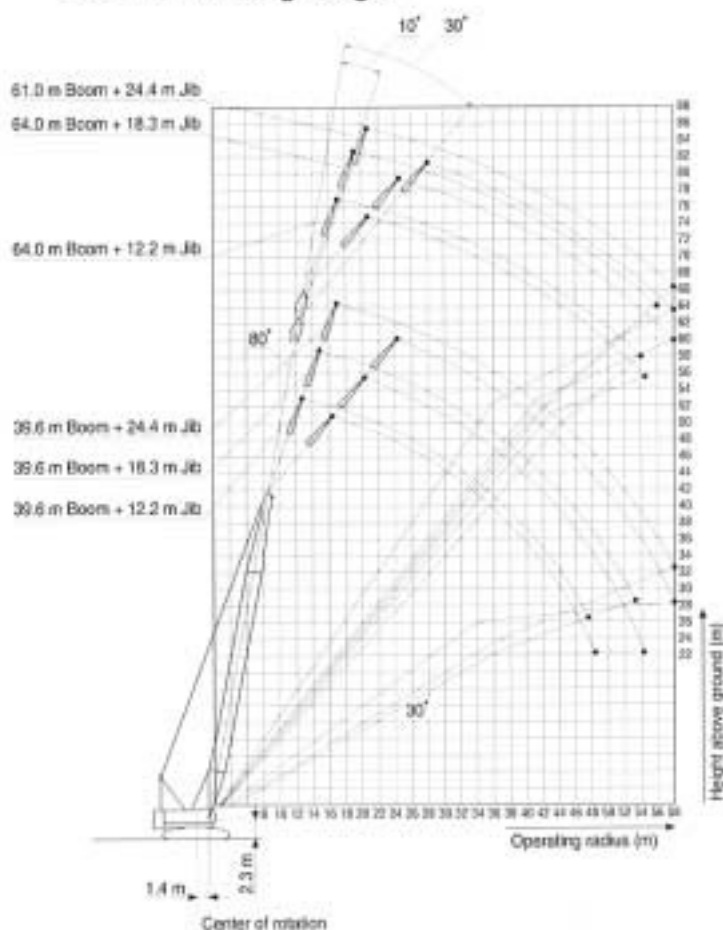
Boom length (m)	Jib length (m)
73.2 m (240')	-
64.0 m (209')	12.2 m (40') or 18.3 m (60')
61.0 m (200')	24.4 m (80')

- Insert boom with lug is required for jib mounting.

## Working Ranges



## Fixed Jib Working Ranges



# Boom Lifting Capacities

# 7100

Unit: metric ton

## Boom rated loads in metric tons for 360° working area

Crawlers fully extended

Operating radius (m)	Boom length m (ft)															Operating radius (m)
	18.3 (60)	21.3 (70)	24.4 (80)	27.4 (90)	30.5 (100)	33.5 (110)	36.6 (120)	39.6 (130)	42.7 (140)	45.7 (150)	48.8 (160)	51.8 (170)	54.9 (180)	57.9 (190)		
5.1	100.0														5.1	
5.5	100.0	90.0/5.6													5.5	
6.0	91.6	90.0	80.0/6.1	70.0/6.6											6.0	
7.0	78.7	77.9	76.7	70.0	60.0/7.2	56.7/7.7									7.0	
8.0	65.3	64.6	64.9	64.0	60.0	56.0	50.0/8.2	46.1/8.7							8.0	
9.0	54.7	54.6	54.4	54.3	54.2	53.7	50.0	45.7	40.0/9.3	40.0/9.8					9.0	
10.0	47.0	46.8	46.7	46.6	46.4	46.3	46.3	44.3	40.0	40.0	30.0/10.3	30.0/10.9	28.4/11.9	26.0/11.9	10.0	
12.0	36.5	36.3	36.1	36.1	35.9	35.7	35.7	35.5	35.4	35.3	30.0	30.0	27.9	25.9	12.0	
14.0	29.8	29.5	29.3	29.2	29.0	28.9	28.8	28.6	28.5	28.4	28.3	28.2	26.6	25.0	14.0	
16.0	24.1	24.8	24.6	24.5	24.3	24.1	24.0	23.8	23.7	23.6	23.5	23.3	23.2	23.0	16.0	
18.0	17.5/19.8	21.3	21.0	20.9	20.7	20.6	20.5	20.3	20.2	20.0	19.9	19.8	19.6	19.4	18.0	
20.0		17.2	16.4	18.2	18.0	17.8	17.8	17.5	17.4	17.3	17.2	17.0	16.9	16.6	20.0	
22.0		16.9/20.1	15.8	16.1	15.9	15.7	15.6	15.4	15.3	15.1	15.0	14.8	14.7	14.5	22.0	
24.0			14.6/22.7	14.4	14.1	14.0	13.9	13.8	13.5	13.4	13.2	13.1	12.9	12.7	24.0	
26.0				12.7/25.4	12.7	12.5	12.4	12.2	12.1	11.9	11.8	11.6	11.4	11.2	26.0	
28.0					11.0/28.0	11.3	11.2	10.9	10.8	10.7	10.5	10.4	10.2	10.0	28.0	
30.0						10.2	10.2	9.9	9.8	9.6	9.5	9.3	9.2	8.9	30.0	
32.0						9.6/30.7	9.3	9.0	8.9	8.7	8.6	8.4	8.3	8.0	32.0	
34.0							8.5/33.3	8.3	8.1	8.0	7.8	7.6	7.5	7.2	34.0	
36.0								7.3/35.9	7.4	7.3	7.1	6.9	6.8	6.5	36.0	
38.0									6.7	6.7	6.4	6.3	6.2	5.9	38.0	
40.0									6.4/38.6	6.1	6.0	5.8	5.6	5.4	40.0	
42.0										5.5/41.2	5.4	5.3	5.1	4.9	42.0	
44.0											4.7/43.9	4.8	4.7	4.4	44.0	
46.0												4.1	4.3	4.0	46.0	
48.0												3.9/46.5	3.6	3.5	48.0	
50.0													3.3/49.1	3.1	50.0	
52.0														2.5/51.8	52.0	

Note: Ratings shown in  are determined by the strength the boom or other structural components.

## Boom Arrangement

Operating radius (m)	Boom length m (ft)				
	61.0 (200)	64.0 (210)	67.1 (220)	70.1 (230)	73.2 (240)
5.1					
5.5					
6.0					
7.0					
8.0					
9.0					
10.0					
12.0	20.0/12.4	20.0/13.0	19.2/13.5		
14.0	20.0	20.0	19.0	17.8/14.1	15.8/14.8
16.0	20.0	20.0	18.1	16.8	15.2
18.0	19.4	19.2	17.3	16.0	14.5
20.0	16.6	16.5	16.3	15.3	13.8
22.0	14.4	14.3	14.1	13.9	12.9
24.0	12.6	12.5	12.3	12.1	11.9
26.0	11.2	11.0	10.8	10.6	10.4
28.0	9.9	9.8	9.6	9.4	9.2
30.0	8.9	8.7	8.5	8.3	8.1
32.0	8.0	7.8	7.6	7.4	7.2
34.0	7.2	7.0	6.8	6.6	6.4
36.0	6.5	6.3	6.1	5.9	5.7
38.0	5.9	5.7	5.5	5.3	5.0
40.0	5.3	5.1	4.9	4.6	4.3
42.0	4.8	4.6	4.3	4.1	3.8
44.0	4.3	4.1	3.8	3.5	3.2
46.0	3.8	3.6	3.0	3.1	2.8
48.0	3.4	3.2	2.9	2.6	2.3
50.0	3.0	2.8	2.5	2.3	2.0
52.0	2.6	2.4	2.1	2.0/51.5	

Boom length m (ft)	Boom arrangement
18.3 (60)	Base-A-Tip
21.3 (70)	Base-A-A'-Tip
24.4 (80)	Base-A-A'-A'-Tip, Base-A-B-Tip
27.4 (90)	Base-A-A'-B-Tip, Base-A-C-Tip
30.5 (100)	Base-A-A'-A'-B-Tip, Base-A-B-B-Tip, Base-A-A'-C-Tip
33.5 (110)	Base-A-A'-B-B-Tip, Base-A-A'-A'-C-Tip, Base-A-B-C'-Tip
36.6 (120)	Base-A-A'-B-C-Tip, Base-A-C-C-Tip
39.6 (130)	Base-A-A'-A'-B-C'-Tip, Base-A-B-B-C'-Tip, Base-A-A'-C-C'-Tip
42.7 (140)	Base-A-A'-B-B-C'-Tip, Base-A-B-C-C'-Tip, Base-A-A'-A'-C-C'-Tip
45.7 (150)	Base-A-A'-B-C-C'-Tip, Base-A-C-C-C'-Tip
48.8 (160)	Base-A-A'-A'-B-C-C'-Tip, Base-A-B-B-C-C'-Tip, Base-A-A'-C-C-C'-Tip
51.8 (170)	Base-A-A'-B-B-C-C'-Tip, Base-A-B-C-C-C'-Tip, Base-A-A'-A'-C-C-C'-Tip
54.9 (180)	Base-A-A'-B-C-C-C'-Tip, Base-A-C-C-C-C'-Tip
57.9 (190)	Base-A-A'-A'-B-C-C-C'-Tip, Base-A-B-B-C-C-C'-Tip, Base-A-A'-C-C-C-C'-Tip
61.0 (200)	Base-A-A'-B-B-C-C-C'-Tip, Base-A-A'-A'-C-C-C-C'-B-Tip, Base-A-B'-C-C-C-C'-Tip
64.0 (210)	Base-A-A'-B-C-C-C'-Tip
67.1 (220)	Base-A-A'-A'-B-C-C-C-C'-Tip, Base-A-B-B-C-C-C-C'-Tip
70.1 (230)	Base-A-A'-A'-B-B-C-C-C-C'-Tip
73.2 (240)	Base-A-A'-A'-B-B-C-C-C-C'-Tip

Base = 6.00 m (20'), Tip = 8.25 m (30')  
 Inserts: A = 3.0 m (10')—Basic insert boom, A' = 3.0 m (10'), B = 6.1 m (20'),  
 C = 9.1 m (30'), C' = 9.1 m (30') with lug