

New Dimensions  
in Motion

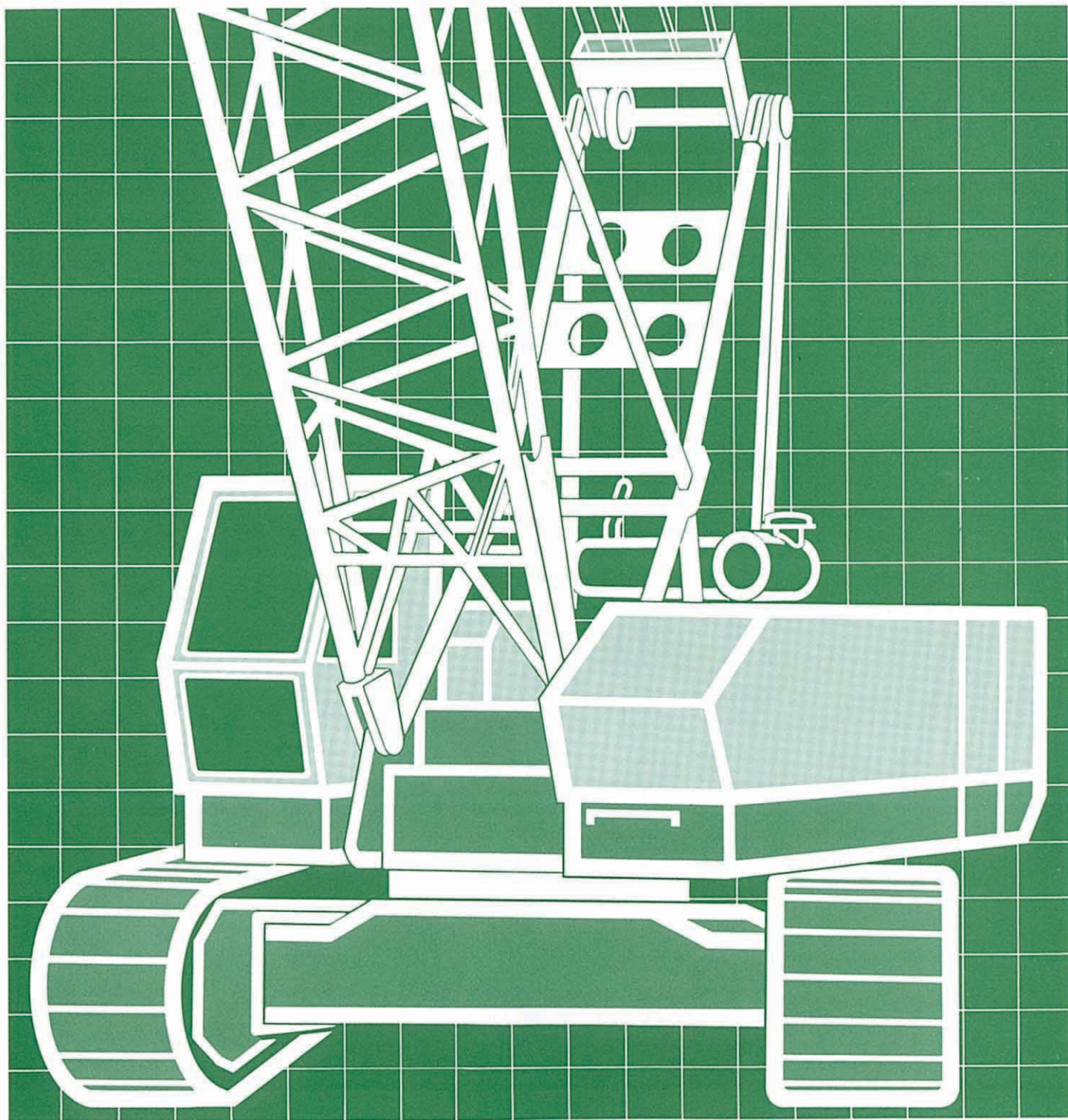
**SPECIFICATIONS**

 **HITACHI**

# **KH180-3**

## **HYDRAULIC CRAWLER CRANE**

Max. Rated Load : 50 000 kg





# Front Attachments

## Basic Machine

STD Basic Machine



Specialized Dragline Machine



Equipped with optional winches to meet excavation work

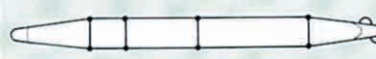
## Boom

### TOWER USE



19.0 m – 40.0 m  
(62'3" – 131'2")

### CRANE USE



Liftcrane: 13.0 m – 52.0 m  
(42'8" – 170'7")  
Clamshell: 13.0 m – 19.0 m  
(42'8" – 62'4")

### Angle Chord Boom



Dragline: 13 m – 19 m  
(42'8" – 62'4")

### Tower Jib

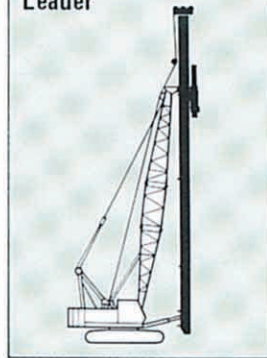
16.0 m – 28.0 m  
(52'6" – 91'9")



15-metric ton hook  
for tower crane



### Leader



### Clamshell

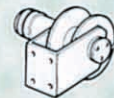
Bucket



0.8 – 1.2 m<sup>3</sup>  
(1.05 – 1.57 cu yd)

Tagline

Hydraulic type



Max. digging depth  
36 m (118'1")

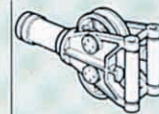
Bucket



0.8 – 1.0 m<sup>3</sup>  
(1.05 – 1.31 cu yd)

### Dragline

Fair-lead



15-metric ton hook



30-metric ton hook

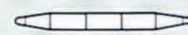


50-metric ton hook



### Jib

6.10 m – 15.25 m (20'0" – 50'0")



### Auxiliary Jib



### Jib hook

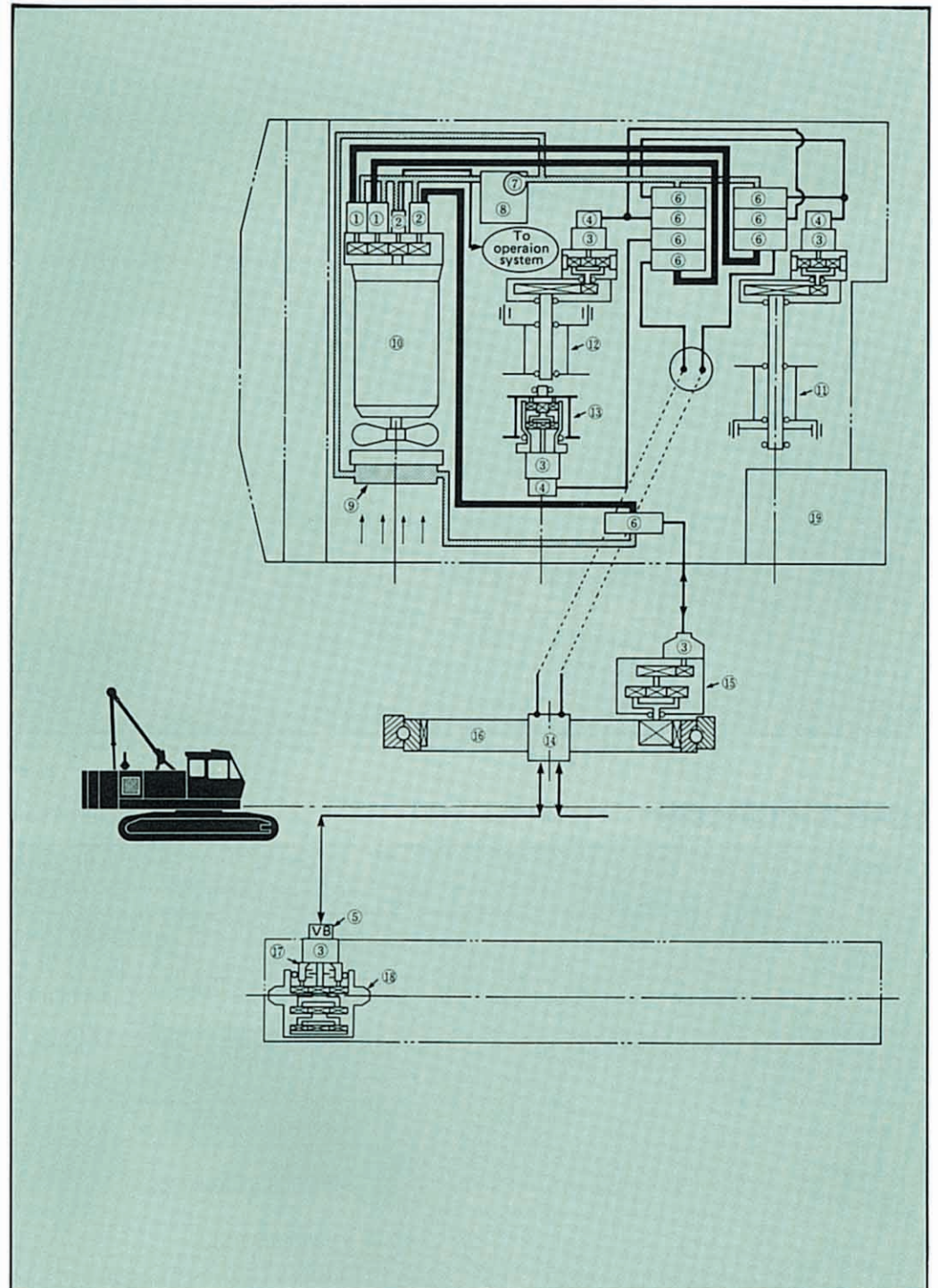
5-metric ton hook





# Power Transmission Mechanism and Hydraulic System

- 1 Variable displacement pump
- 2 Fixed displacement pump
- 3 Fixed displacement motor
- 4 Counterbalance valve
- 5 Brake valve
- 6 Control valve
- 7 Filter
- 8 Hydraulic tank
- 9 Oil cooler
- 10 Engine
- 11 Main hoist drum
- 12 Aux. hoist drum
- 13 Boom hoist drum
- 14 Center joint
- 15 Swing mechanism
- 16 Swing circle
- 17 Travel mechanism
- 18 Drive tumbler
- 19 Operator's cab

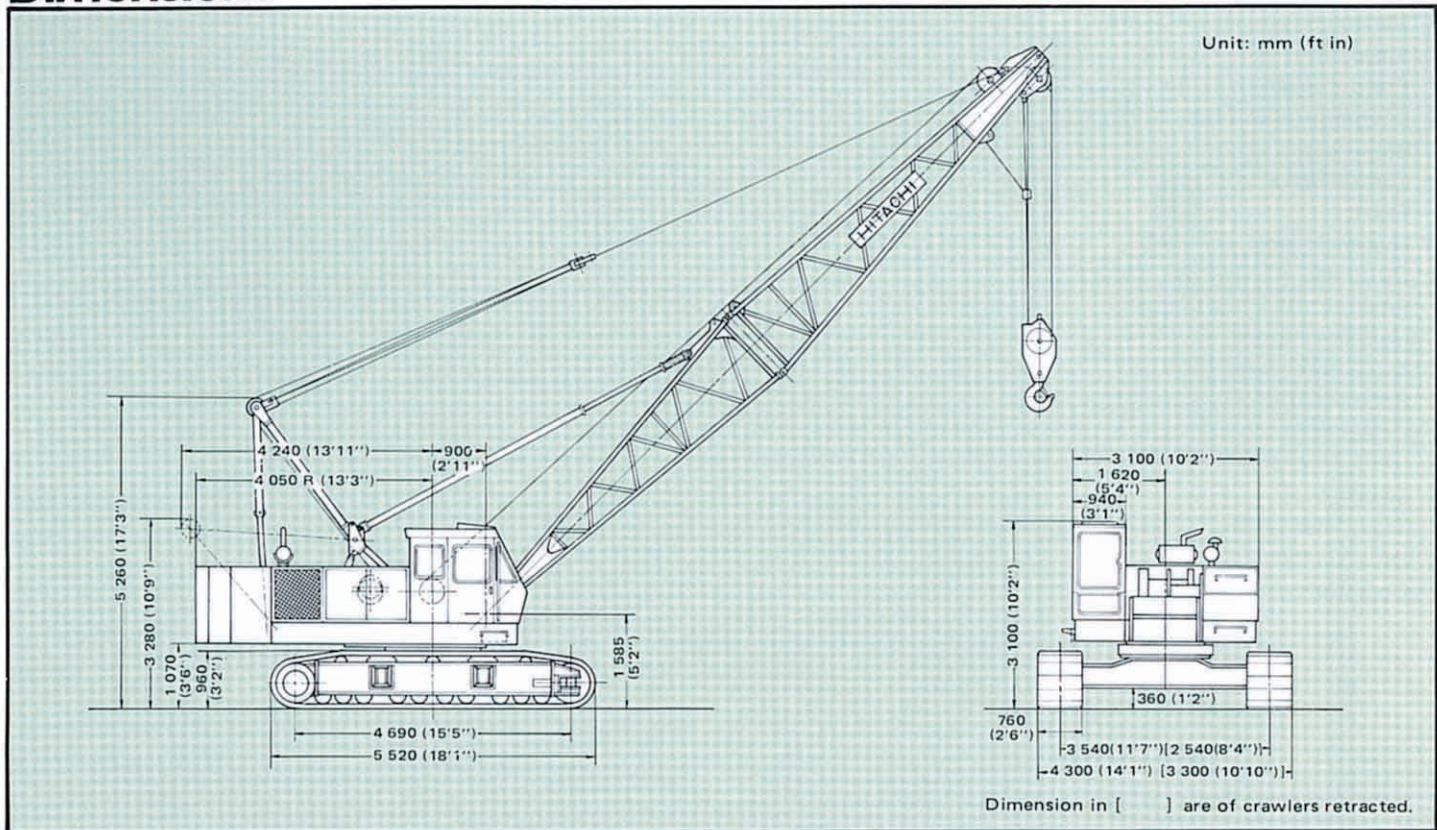




# CRAWLER CRANE

## With Tubular Chord CRANE Boom

### Dimensions



### Specifications

|                           |  |   |
|---------------------------|--|---|
| <b>Maximum rated load</b> |  | 50 000 kg (110 200 lb) at 3.7 m (12'2") working radius              |
| <b>Boom</b>               | Basic boom length  | 13.0 m (42'8")  |
|                           | Max. boom length   | 52.0 m (170'7")   |
|                           | Jib length   | 6.10 m (20'0") – 9.15 m (30'0") – 12.20 m (40'0") – 15.25 m (50'0") |
|                           | Max. boom length with jib  | 58.25 m (191'1") [43.0 m (141'0") + 15.25 m (50'0")]                |
| <b>Swing speed</b>        |  | 0 – 3.5 min <sup>-1</sup> (0 – 3.5 rpm)                             |
| <b>Travel speed</b>       |  | 0 – 1.5 km/h (0.93 mph)   |
| <b>Gradeability</b>       |  | 22° (40%)   |
| <b>Ground pressure</b>    |  | 0.61 bar (0.61 kgf/cm <sup>2</sup> , 8.67 psi)                      |
| <b>Operating weight</b>   | Equipped with basic boom, 50 000 kg (110 200 lb) capacity hook and 15 900 kg (35 100 lb) counterweight | 46 900 kg (103 000 lb)  |
| <b>Engine</b>             | Model  | HINO EM100  |
|                           | Rated horsepower   | 110 kW (150 PS) at 2 000 min <sup>-1</sup> (2 000 rpm)              |



## HOOKS

| Capacity                  | Weight               | Number of hoist reeving and maximum rated loads |                          |                          |                          |                          |                          |                          |                          |                         |                                 |
|---------------------------|----------------------|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------|---------------------------------|
|                           |                      | 9   | 8                        | 7                        | 6                        | 5                        | 4                        | 3                        | 2                        | 1                       |                                 |
| 50 000 kg<br>(110 200 lb) | 570 kg<br>(1 250 lb) | 50 000 kg<br>(110 200 lb)                       | 44 800 kg<br>(98 800 lb) | 39 900 kg<br>(87 900 lb) | 34 200 kg<br>(75 400 lb) | 28 500 kg<br>(62 800 lb) | 22 800 kg<br>(50 300 lb) | 17 100 kg<br>(37 700 lb) | 11 400 kg<br>(25 100 lb) |                         | Standard for<br>main boom       |
| 30 000 kg<br>(66 100 lb)  | 330 kg<br>(730 lb)   |   |                          |                          | 30 000 kg<br>(66 100 lb) | 28 500 kg<br>(62 800 lb) | 22 800 kg<br>(50 300 lb) | 17 100 kg<br>(37 700 lb) | 11 400 kg<br>(25 100 lb) |                         | Optional<br>for<br>main boom    |
| 15 000 kg<br>(33 100 lb)  | 280 kg<br>(620 lb)   |   |                          |                          |                          |                          |                          | 15 000 kg<br>(33 100 lb) | 11 400 kg<br>(25 100 lb) |                         |                                 |
| 5 000 kg<br>(11 000 lb)   | 130 kg<br>(290 lb)   |   |                          |                          |                          |                          |                          |                          |                          | 5 000 kg<br>(11 000 lb) | Optional for<br>jib or aux. jib |

## DRUMS

### Dimensions

|                 | Rope dia.      | Width           | Drum p.c.d.     | Max. rope capacity |
|-----------------|----------------|-----------------|-----------------|--------------------|
| Main hoist drum | 20 mm (0.787") | 369 mm (14.53") | 420 mm (16.54") | 267 m (876')       |
| Aux. hoist drum | 20 mm (0.787") | 306 mm (12.05") | 420 mm (16.54") | 220 m (722')       |

### Line speed and line pull

|                 | Max. line speed m/min (ft/min) |          |          |          | Effective<br>line pull                 | @ | Line speed               | Max. starting<br>line pull             | Max. running<br>line pull              |
|-----------------|--------------------------------|----------|----------|----------|--|---|--------------------------|--|--|
|                 | Hoisting                       |          | Lowering |          |  |   |                          |  |  |
| Main hoist drum | H                              | 70 (230) | H        | 70 (230) | 108 kN<br>(11 000 kgf)<br>(24 300 lbf) | @ | 34 m/min<br>(112 ft/min) | 140 kN<br>(14 300 kgf)<br>(31 600 lbf) | 153 kN<br>(15 600 kgf)<br>(34 400 lbf) |
|                 | L                              | 35 (115) | L        | 35 (115) |  |   |                          |  |  |
| Aux. hoist drum | H                              | 70 (230) | H        | 70 (230) | 108 kN<br>(11 000 kgf)<br>(24 300 lbf) | @ | 34 m/min<br>(112 ft/min) | 140 kN<br>(14 300 kgf)<br>(31 600 lbf) | 153 kN<br>(15 600 kgf)<br>(34 400 lbf) |
|                 | L                              | 35 (115) | L        | 35 (115) |  |   |                          |  |  |

H: High speed range L: Low speed range

- Notes: 1) Line speed and line pull are based on first layer of winding at rated engine rpm.  
 2) Hoisting line speed varies with load.  
 3) Line pull is based on a single line pull in high speed range.  
 4) Effective line pull is equivalent to available line pull of mechanical drive winch.

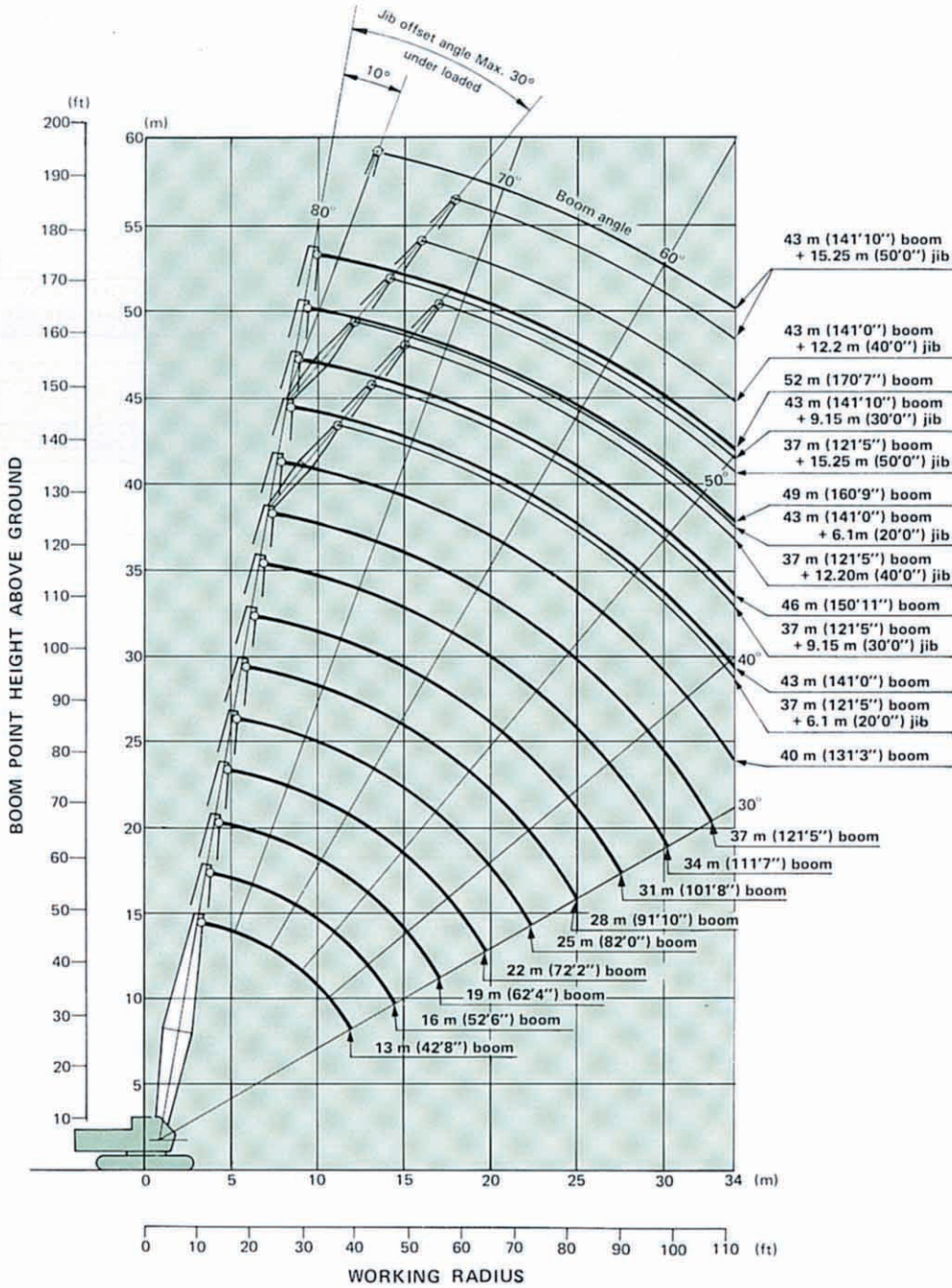
- 5) When starting, hydraulic motor is without rotating, the line pull is "Max. starting line pull" After motor rotating, the line pull becomes "Max. running line pull" shortly.

## BOOM HOIST DRUM

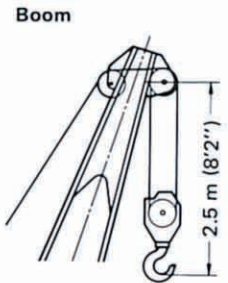
| Rope diameter | Hoisting line speed   | Lowering line speed   |
|---------------|-----------------------|-----------------------|
| 16 mm (0.63") | 60 m/min (197 ft/min) | 60 m/min (197 ft/min) |



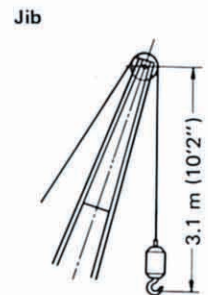
# Working Ranges



## HOOK CLEARANCE



50 000 kg (110 200 lb)  
Capacity hook



5 000 kg (11 000 lb)  
Capacity hook

See page 12, for construction



# Crane Ratings

## BS Rating:

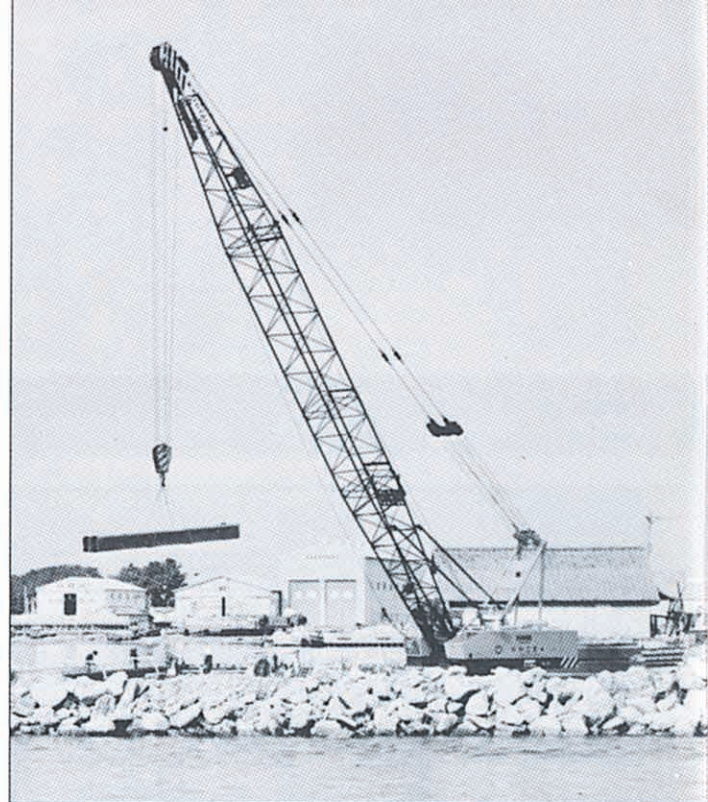
The rated loads are determined according to BS (British Standard, 1981) and the machine is stationed on firm level ground.

## PCSA Rating:

The rated loads, listed are determined according to PCSA (Power Crane and Shovel Association in U.S.A.) and do not exceed 75% of tipping load on condition that the machine is stationed on firm, level ground.

## JIS Rating:

The rated loads shown don't exceed 78% of tipping loads with the machine on firm level ground.



## Tubular Chord CRANE Boom in 360° Working Area

| Boom length<br>m (ft in) | Working radius |        | Boom angle<br>degree | Rated load       |           |         |             |         |
|--------------------------|----------------|--------|----------------------|------------------|-----------|---------|-------------|---------|
|                          | m              | ft in  |                      | JIS rating<br>kg | BS rating |         | PCSA rating |         |
|                          |                |        |                      | kg               | kg        | lb      | kg          | lb      |
| 13.0<br>(42'8")          | 3.7            | 12' 2" | 78.67                | 50 000           | 50 000    | 110 200 | 50 000      | 110 200 |
|                          | 4.0            | 13' 1" | 77.31                | 45 800           | 45 800    | 100 900 | 43 600      | 96 100  |
|                          | 4.5            | 14' 9" | 75.03                | 38 600           | 37 900    | 83 500  | 35 650      | 78 500  |
|                          | 5.0            | 16' 5" | 72.72                | 32 100           | 32 000    | 70 500  | 30 100      | 66 300  |
|                          | 5.5            | 18' 1" | 70.38                | 27 600           | 27 600    | 60 800  | 26 000      | 57 300  |
|                          | 6.0            | 19' 8" | 68.01                | 24 600           | 24 250    | 53 400  | 22 850      | 50 300  |
|                          | 7.0            | 23' 0" | 63.12                | 19 500           | 19 450    | 42 800  | 18 350      | 40 400  |
|                          | 8.0            | 26' 3" | 58.00                | 16 200           | 16 200    | 35 700  | 15 300      | 33 700  |
|                          | 9.0            | 29' 6" | 52.57                | 13 800           | 13 800    | 30 400  | 13 050      | 28 700  |
|                          | 10.0           | 32'10" | 46.68                | 12 100           | 12 050    | 26 500  | 11 350      | 25 000  |
|                          | 12.0           | 39' 4" | 32.49                | 9 500            | 9 500     | 20 900  | 9 000       | 19 800  |
| 12.3                     | 40' 4"         | 30.00  | 9 250                | 9 200            | 20 200    | 8 750   | 19 200      |         |
| 16.0<br>(52'6")          | 4.1            | 13' 5" | 79.36                | 44 200           | 44 200    | 97 400  | 41 500      | 91 400  |
|                          | 4.5            | 14' 9" | 77.89                | 38 550           | 37 800    | 83 300  | 35 550      | 78 300  |
|                          | 5.0            | 16' 5" | 76.05                | 32 000           | 31 900    | 70 300  | 30 000      | 66 100  |
|                          | 5.5            | 18' 1" | 74.19                | 27 500           | 27 500    | 60 600  | 25 900      | 57 100  |
|                          | 6.0            | 19' 8" | 72.31                | 24 500           | 24 150    | 53 200  | 22 750      | 50 100  |
|                          | 7.0            | 23' 0" | 68.49                | 19 400           | 19 350    | 42 600  | 18 250      | 40 200  |
|                          | 8.0            | 26' 3" | 64.56                | 16 100           | 16 050    | 35 300  | 15 150      | 33 400  |
|                          | 9.0            | 29' 6" | 60.48                | 13 700           | 13 700    | 30 200  | 12 950      | 28 500  |
|                          | 10.0           | 32'10" | 56.24                | 12 000           | 11 900    | 26 200  | 11 250      | 24 800  |
|                          | 12.0           | 39' 4" | 46.97                | 9 400            | 9 350     | 20 600  | 8 850       | 19 500  |
|                          | 14.0           | 45'11" | 35.95                | 7 800            | 7 650     | 16 800  | 7 250       | 15 900  |
| 14.9                     | 48'11"         | 30.00  | 6 800                | 6 800            | 14 900    | 6 750   | 14 800      |         |

Continued on next page. ➤



| Boom length      | Working radius |         | Boom angle | Rated load |           |        |             |        |
|------------------|----------------|---------|------------|------------|-----------|--------|-------------|--------|
|                  |                |         |            | JIS rating | BS rating |        | PCSA rating |        |
|                  | m (ft in)      | m       |            | ft in      | degree    | kg     | kg          | lb     |
| 19.0<br>(62'4")  | 4.6            | 15' 1"  | 79.53      | 36 800     | 36 300    | 80 000 | 34 150      | 75 200 |
|                  | 5.0            | 16' 5"  | 78.29      | 31 900     | 31 850    | 70 200 | 30 000      | 66 100 |
|                  | 5.5            | 18' 1"  | 76.74      | 27 400     | 27 400    | 60 400 | 25 850      | 56 900 |
|                  | 6.0            | 19' 8"  | 75.18      | 24 400     | 24 150    | 53 200 | 22 750      | 50 100 |
|                  | 7.0            | 23' 0"  | 72.03      | 19 300     | 19 300    | 42 500 | 18 200      | 40 100 |
|                  | 8.0            | 26' 3"  | 68.81      | 16 000     | 16 000    | 35 200 | 15 150      | 33 400 |
|                  | 9.0            | 29' 6"  | 65.52      | 13 600     | 13 600    | 29 900 | 12 900      | 28 400 |
|                  | 10.0           | 32' 10" | 62.14      | 11 900     | 11 850    | 26 100 | 11 200      | 24 600 |
|                  | 12.0           | 39' 4"  | 55.01      | 9 300      | 9 300     | 20 500 | 8 800       | 19 400 |
|                  | 14.0           | 45' 11" | 47.17      | 7 700      | 7 550     | 16 600 | 7 200       | 15 800 |
|                  | 16.0           | 52' 6"  | 38.13      | 6 500      | 6 350     | 13 900 | 6 050       | 13 300 |
| 17.5             | 57' 5"         | 30.00   | 5 600      | 5 600      | 12 300    | 5 400  | 11 900      |        |
| 22.0<br>(72'2")  | 5.1            | 16' 11" | 79.51      | 30 200     | 30 200    | 66 500 | 28 500      | 62 800 |
|                  | 5.5            | 18' 1"  | 78.58      | 27 300     | 27 300    | 60 100 | 25 800      | 56 800 |
|                  | 6.0            | 19' 8"  | 77.25      | 24 200     | 24 050    | 53 000 | 22 650      | 49 900 |
|                  | 7.0            | 23' 0"  | 74.55      | 19 200     | 19 200    | 42 300 | 18 150      | 40 000 |
|                  | 8.0            | 26' 3"  | 71.82      | 15 900     | 15 900    | 35 000 | 15 050      | 33 100 |
|                  | 9.0            | 29' 6"  | 69.05      | 13 500     | 13 500    | 29 700 | 12 850      | 28 300 |
|                  | 10.0           | 32' 10" | 66.22      | 11 800     | 11 750    | 25 900 | 11 150      | 24 500 |
|                  | 12.0           | 39' 4"  | 60.35      | 9 300      | 9 200     | 20 200 | 8 750       | 19 200 |
|                  | 14.0           | 45' 11" | 54.11      | 7 600      | 7 450     | 16 400 | 7 100       | 15 600 |
|                  | 16.0           | 52' 6"  | 47.31      | 6 400      | 6 200     | 13 600 | 5 950       | 13 100 |
|                  | 18.0           | 59' 1"  | 39.64      | 5 500      | 5 300     | 11 600 | 5 100       | 11 200 |
| 20.0             | 65' 7"         | 30.41   | 4 700      | 4 600      | 10 100    | 4 400  | 9 700       |        |
| 25.0<br>(82'0")  | 5.7            | 18' 8"  | 79.50      | 26 400     | 25 900    | 57 100 | 24 400      | 53 700 |
|                  | 6.0            | 19' 8"  | 78.80      | 24 100     | 24 000    | 52 900 | 22 650      | 49 900 |
|                  | 7.0            | 23' 0"  | 76.45      | 19 100     | 19 100    | 42 100 | 18 100      | 39 900 |
|                  | 8.0            | 26' 3"  | 74.07      | 15 700     | 15 700    | 34 600 | 15 000      | 33 000 |
|                  | 9.0            | 29' 6"  | 71.67      | 13 400     | 13 400    | 29 500 | 12 800      | 28 200 |
|                  | 10.0           | 32' 10" | 69.23      | 11 700     | 11 700    | 25 700 | 11 100      | 24 400 |
|                  | 12.0           | 39' 4"  | 64.21      | 9 150      | 9 100     | 20 000 | 8 650       | 19 000 |
|                  | 14.0           | 45' 11" | 58.97      | 7 500      | 7 400     | 16 300 | 7 050       | 15 500 |
|                  | 16.0           | 52' 6"  | 53.42      | 6 300      | 6 150     | 13 500 | 5 900       | 13 000 |
|                  | 18.0           | 59' 1"  | 47.42      | 5 400      | 5 200     | 11 400 | 5 000       | 11 000 |
|                  | 20.0           | 65' 7"  | 40.76      | 4 700      | 4 500     | 9 920  | 4 350       | 9 590  |
| 22.0             | 72' 2"         | 33.01   | 4 100      | 3 900      | 8 590     | 3 800  | 8 370       |        |
| 22.7             | 74' 6"         | 30.00   | 3 900      | 3 750      | 8 260     | 3 650  | 8 040       |        |
| 28.0<br>(91'10") | 6.2            | 20' 4"  | 79.60      | 22 800     | 22 700    | 50 000 | 21 450      | 47 200 |
|                  | 7.0            | 23' 0"  | 77.93      | 19 000     | 19 000    | 41 800 | 18 000      | 39 600 |
|                  | 8.0            | 26' 3"  | 75.82      | 15 500     | 15 500    | 34 100 | 14 950      | 32 900 |
|                  | 9.0            | 29' 6"  | 73.70      | 13 300     | 13 300    | 29 300 | 12 700      | 27 900 |
|                  | 10.0           | 32' 10" | 71.55      | 11 600     | 11 600    | 25 500 | 11 000      | 24 200 |
|                  | 12.0           | 39' 4"  | 67.16      | 9 050      | 9 000     | 19 800 | 8 550       | 18 800 |
|                  | 14.0           | 45' 11" | 62.62      | 7 400      | 7 250     | 15 900 | 6 950       | 15 300 |
|                  | 16.0           | 52' 6"  | 57.88      | 6 200      | 6 050     | 13 300 | 5 800       | 12 700 |
|                  | 18.0           | 59' 1"  | 52.87      | 5 300      | 5 100     | 11 200 | 4 900       | 10 800 |
|                  | 20.0           | 65' 7"  | 47.50      | 4 600      | 4 350     | 9 590  | 4 250       | 9 360  |
|                  | 22.0           | 72' 2"  | 41.61      | 4 000      | 3 800     | 8 370  | 3 700       | 8 150  |
| 24.0             | 78' 9"         | 34.93   | 3 500      | 3 300      | 7 270     | 3 250  | 7 160       |        |
| 25.3             | 83' 0"         | 30.00   | 3 200      | 3 050      | 6 720     | 3 000  | 6 610       |        |



| Boom length      | Working radius |         | Boom angle | Rated load |           |        |             |        |
|------------------|----------------|---------|------------|------------|-----------|--------|-------------|--------|
|                  |                |         |            | JIS rating | BS rating |        | PCSA rating |        |
|                  | m (ft in)      | m       | ft in      | degree     | kg        | kg     | lb          | kg     |
| 31.0<br>(101'9") | 7.0            | 23' 0"  | 79.11      | 18 900     | 18 900    | 41 600 | 18 000      | 39 600 |
|                  | 8.0            | 26' 3"  | 77.22      | 15 400     | 15 400    | 33 900 | 14 900      | 32 800 |
|                  | 9.0            | 29' 6"  | 75.32      | 13 200     | 13 200    | 29 100 | 12 650      | 27 800 |
|                  | 10.0           | 32' 10" | 73.39      | 11 500     | 11 500    | 25 300 | 10 950      | 24 100 |
|                  | 12.0           | 39' 4"  | 69.48      | 8 900      | 8 900     | 19 600 | 8 550       | 18 800 |
|                  | 14.0           | 45' 11" | 65.47      | 7 300      | 7 200     | 15 800 | 6 900       | 15 200 |
|                  | 16.0           | 52' 6"  | 61.31      | 6 100      | 5 950     | 13 100 | 5 750       | 12 600 |
|                  | 18.0           | 59' 1"  | 56.99      | 5 200      | 5 050     | 11 100 | 4 850       | 10 600 |
|                  | 20.0           | 65' 7"  | 52.43      | 4 500      | 4 300     | 9 470  | 4 150       | 9 140  |
|                  | 22.0           | 72' 2"  | 47.57      | 3 900      | 3 700     | 8 150  | 3 600       | 7 930  |
|                  | 24.0           | 78' 9"  | 42.29      | 3 400      | 3 250     | 7 160  | 3 200       | 7 050  |
|                  | 26.0           | 85' 4"  | 36.40      | 3 000      | 2 850     | 6 280  | 2 800       | 6 170  |
|                  | 27.9           | 91' 6"  | 30.00      | 2 550      | 2 550     | 5 620  | 2 500       | 5 510  |
| 34.0<br>(111'7") | 8.0            | 26' 3"  | 78.37      | 15 300     | 15 300    | 33 700 | 14 850      | 32 700 |
|                  | 9.0            | 29' 6"  | 76.64      | 13 100     | 13 100    | 28 800 | 12 600      | 27 700 |
|                  | 10.0           | 32' 10" | 74.90      | 11 400     | 11 400    | 25 100 | 10 900      | 24 000 |
|                  | 12.0           | 39' 4"  | 71.37      | 8 800      | 8 800     | 19 400 | 8 500       | 18 700 |
|                  | 14.0           | 45' 11" | 67.76      | 7 200      | 7 150     | 15 700 | 6 850       | 15 100 |
|                  | 16.0           | 52' 6"  | 64.05      | 6 000      | 5 900     | 13 000 | 5 700       | 12 500 |
|                  | 18.0           | 59' 1"  | 60.23      | 5 100      | 4 950     | 10 900 | 4 800       | 10 500 |
|                  | 20.0           | 65' 7"  | 56.24      | 4 400      | 4 200     | 9 250  | 4 100       | 9 030  |
|                  | 22.0           | 72' 2"  | 52.06      | 3 800      | 3 650     | 8 040  | 3 550       | 7 820  |
|                  | 24.0           | 78' 9"  | 47.62      | 3 300      | 3 150     | 6 940  | 3 100       | 6 830  |
|                  | 26.0           | 85' 4"  | 42.84      | 2 900      | 2 750     | 6 060  | 2 750       | 6 060  |
|                  | 28.0           | 91' 10" | 37.57      | 2 600      | 2 400     | 5 290  | 2 400       | 5 290  |
|                  | 30.0           | 98' 5"  | 31.57      | 2 300      | 2 150     | 4 730  | 2 150       | 4 730  |
| 30.5             | 100' 1"        | 30.00   | 2 250      | 2 100      | 4 620     | 2 100  | 4 620       |        |
| 37.0<br>(121'5") | 8.0            | 26' 3"  | 79.32      | 15 300     | 15 300    | 33 700 | 14 800      | 32 600 |
|                  | 9.0            | 29' 6"  | 77.74      | 13 000     | 13 000    | 28 600 | 12 550      | 27 600 |
|                  | 10.0           | 32' 10" | 76.15      | 11 300     | 11 400    | 25 100 | 10 800      | 23 800 |
|                  | 12.0           | 39' 4"  | 72.93      | 8 800      | 8 800     | 19 400 | 8 400       | 18 500 |
|                  | 14.0           | 45' 11" | 69.65      | 7 200      | 7 050     | 15 500 | 6 750       | 14 800 |
|                  | 16.0           | 52' 6"  | 66.30      | 6 000      | 5 800     | 12 700 | 5 600       | 12 300 |
|                  | 18.0           | 59' 1"  | 62.86      | 5 100      | 4 850     | 10 600 | 4 700       | 10 300 |
|                  | 20.0           | 65' 7"  | 59.31      | 4 400      | 4 150     | 9 140  | 4 050       | 8 920  |
|                  | 22.0           | 72' 2"  | 55.62      | 3 800      | 3 550     | 7 820  | 3 450       | 7 600  |
|                  | 24.0           | 78' 9"  | 51.76      | 3 300      | 3 050     | 6 720  | 3 000       | 6 610  |
|                  | 26.0           | 85' 4"  | 47.67      | 2 850      | 2 650     | 5 840  | 2 650       | 5 840  |
|                  | 28.0           | 91' 10" | 43.30      | 2 500      | 2 300     | 5 070  | 2 350       | 5 180  |
|                  | 30.0           | 98' 5"  | 38.53      | 2 250      | 2 050     | 4 510  | 2 050       | 4 510  |
| 32.0             | 105' 0"        | 33.19   | 1 900      | 1 800      | 3 960     | 1 850  | 4 070       |        |
| 33.0             | 108' 3"        | 30.00   | 1 750      | 1 650      | 3 630     | 1 700  | 3 740       |        |

Continued on next page. ➔



| Boom length       | Working radius   |         | Boom angle | Rated load |           |        |             |        |
|-------------------|------------------|---------|------------|------------|-----------|--------|-------------|--------|
|                   |                  |         |            | JIS rating | BS rating |        | PCSA rating |        |
|                   | m (ft in)        | m       | ft in      | degree     | kg        | kg     | lb          | kg     |
| 40.0<br>(131'3")  | 9.0              | 29' 6"  | 78.67      | 12 900     | 12 900    | 28 400 | 12 450      | 27 400 |
|                   | 10.0             | 32' 10" | 77.21      | 11 200     | 11 300    | 24 900 | 10 750      | 23 600 |
|                   | 12.0             | 39' 4"  | 74.25      | 8 750      | 8 700     | 19 100 | 8 300       | 18 200 |
|                   | 14.0             | 45' 11" | 71.24      | 7 100      | 6 950     | 15 300 | 6 700       | 14 700 |
|                   | 16.0             | 52' 6"  | 68.18      | 5 900      | 5 700     | 12 500 | 5 500       | 12 100 |
|                   | 18.0             | 59' 1"  | 65.05      | 5 000      | 4 750     | 10 400 | 4 600       | 10 100 |
|                   | 20.0             | 65' 7"  | 61.84      | 4 300      | 4 000     | 8 810  | 3 950       | 8 700  |
|                   | 22.0             | 72' 2"  | 58.52      | 3 700      | 3 450     | 7 600  | 3 400       | 7 490  |
|                   | 24.0             | 78' 9"  | 55.08      | 3 200      | 2 950     | 6 500  | 2 950       | 6 500  |
|                   | 26.0             | 85' 4"  | 51.49      | 2 750      | 2 550     | 5 620  | 2 550       | 5 620  |
|                   | 28.0             | 91' 10" | 47.71      | 2 400      | 2 200     | 4 850  | 2 250       | 4 960  |
|                   | 30.0             | 98' 5"  | 43.68      | 2 150      | 1 900     | 4 180  | 1 950       | 4 290  |
|                   | 32.0             | 105' 0" | 39.33      | 1 850      | 1 650     | 3 630  | 1 750       | 3 850  |
|                   | 34.0             | 111' 7" | 34.52      | 1 600      | 1 450     | 3 190  | 1 550       | 3 410  |
| 43.0<br>(141'1")  | 9.0              | 29' 6"  | 79.48      | 12 800     | 11 600    | 25 500 | 12 350      | 27 200 |
|                   | 10.0             | 32' 10" | 78.12      | 11 100     | 11 200    | 24 600 | 10 650      | 23 400 |
|                   | 12.0             | 39' 4"  | 75.37      | 8 700      | 8 600     | 18 900 | 8 250       | 18 100 |
|                   | 14.0             | 45' 11" | 72.60      | 7 000      | 6 850     | 15 100 | 6 600       | 14 500 |
|                   | 16.0             | 52' 6"  | 69.77      | 5 800      | 5 600     | 12 300 | 5 400       | 11 900 |
|                   | 18.0             | 59' 1"  | 66.90      | 4 900      | 4 650     | 10 200 | 4 550       | 10 000 |
|                   | 20.0             | 65' 7"  | 63.96      | 4 200      | 3 900     | 8 590  | 3 850       | 8 480  |
|                   | 22.0             | 72' 2"  | 60.95      | 3 600      | 3 350     | 7 380  | 3 300       | 7 270  |
|                   | 24.0             | 78' 9"  | 57.84      | 3 100      | 2 850     | 6 280  | 2 850       | 6 280  |
|                   | 26.0             | 85' 4"  | 54.62      | 2 700      | 2 450     | 5 400  | 2 450       | 5 400  |
|                   | 28.0             | 91' 10" | 51.27      | 2 350      | 2 100     | 4 620  | 2 150       | 4 730  |
|                   | 30.0             | 98' 5"  | 47.74      | 2 050      | 1 800     | 3 960  | 1 850       | 4 070  |
|                   | 32.0             | 105' 0" | 44.01      | 1 750      | 1 550     | 3 410  | 1 650       | 3 630  |
|                   | 34.0             | 111' 7" | 40.00      | 1 500      | 1 350     | 2 970  | 1 450       | 3 190  |
| 46.0<br>(150'11") | 10.0             | 32' 10" | 78.90      | 11 000     | 9 700     | 21 300 | 10 650      | 23 400 |
|                   | 12.0             | 39' 4"  | 76.35      | 8 550      | 8 550     | 18 800 | 8 200       | 18 000 |
|                   | 14.0             | 45' 11" | 73.77      | 6 900      | 6 800     | 14 900 | 6 550       | 14 400 |
|                   | 16.0             | 52' 6"  | 71.15      | 5 700      | 5 550     | 12 200 | 5 400       | 11 900 |
|                   | 18.0             | 59' 1"  | 68.49      | 4 800      | 4 600     | 10 100 | 4 500       | 9 920  |
|                   | 20.0             | 65' 7"  | 65.78      | 4 100      | 3 850     | 8 480  | 3 800       | 8 370  |
|                   | 22.0             | 72' 2"  | 63.01      | 3 500      | 3 300     | 7 270  | 3 250       | 7 160  |
|                   | 24.0             | 78' 9"  | 60.17      | 3 000      | 2 800     | 6 170  | 2 800       | 6 170  |
|                   | 26.0             | 85' 4"  | 57.24      | 2 500      | 2 400     | 5 290  | 2 400       | 5 290  |
|                   | 28.0             | 91' 10" | 54.22      | 2 200      | 2 050     | 4 510  | 2 100       | 4 620  |
|                   | 30.0             | 98' 5"  | 51.07      | 1 900      | 1 750     | 3 850  | 1 800       | 3 960  |
|                   | 32.0             | 105' 0" | 47.77      | 1 600      | 1 500     | 3 300  | 1 600       | 3 520  |
|                   | 34.0             | 111' 7" | 44.29      | 1 300      | 1 300     | 2 860  | 1 400       | 3 080  |
|                   | 49.0<br>(160'9") | 10.1    | 33' 2"     | 79.47      | 10 750    | 8 320  | 18 300      | 10 450 |
| 12.0              |                  | 39' 4"  | 77.20      | 8 400      | 7 750     | 17 000 | 8 150       | 17 900 |
| 14.0              |                  | 45' 11" | 74.79      | 6 800      | 6 750     | 14 800 | 6 500       | 14 300 |
| 16.0              |                  | 52' 6"  | 72.34      | 5 600      | 5 450     | 12 000 | 5 300       | 11 600 |
| 18.0              |                  | 59' 1"  | 69.87      | 4 700      | 4 500     | 9 920  | 4 450       | 9 810  |
| 20.0              |                  | 65' 7"  | 67.35      | 4 000      | 3 800     | 8 370  | 3 750       | 8 260  |
| 22.0              |                  | 72' 2"  | 64.79      | 3 400      | 3 200     | 7 050  | 3 200       | 7 050  |
| 24.0              |                  | 78' 9"  | 62.17      | 2 900      | 2 700     | 5 950  | 2 700       | 5 950  |
| 26.0              |                  | 85' 4"  | 59.48      | 2 400      | 2 300     | 5 070  | 2 350       | 5 180  |
| 28.0              |                  | 91' 10" | 56.72      | 2 100      | 1 950     | 4 290  | 2 000       | 4 400  |
| 30.0              |                  | 98' 5"  | 53.86      | 1 800      | 1 650     | 3 630  | 1 750       | 3 850  |
| 32.0              |                  | 105' 0" | 50.90      | 1 500      | 1 400     | 3 080  | 1 500       | 3 300  |
| 34.0              |                  | 111' 7" | 47.80      | 1 200      | 1 200     | 2 640  | 1 300       | 2 860  |



| Boom length      | Working radius |         | Boom angle | Rated load |           |        |             |        |
|------------------|----------------|---------|------------|------------|-----------|--------|-------------|--------|
|                  |                |         |            | JIS rating | BS rating |        | PCSA rating |        |
|                  | m (ft in)      | m       | ft in      | degree     | kg        | kg     | lb          | kg     |
| 52.0<br>(170'7") | 12.0           | 39' 4"  | 77.95      | 8 200      | 6 650     | 14 600 | 8 050       | 17 700 |
|                  | 14.0           | 45' 11" | 75.68      | 6 700      | 6 200     | 13 600 | 6 400       | 14 100 |
|                  | 16.0           | 52' 6"  | 73.39      | 5 500      | 5 350     | 11 700 | 5 250       | 11 500 |
|                  | 18.0           | 59' 1"  | 71.08      | 4 600      | 4 400     | 9 700  | 4 350       | 9 590  |
|                  | 20.0           | 65' 7"  | 68.73      | 3 900      | 3 700     | 8 150  | 3 650       | 8 040  |
|                  | 22.0           | 72' 2"  | 66.34      | 3 300      | 3 100     | 6 830  | 3 100       | 6 830  |
|                  | 24.0           | 78' 9"  | 63.90      | 2 800      | 2 600     | 5 730  | 2 650       | 5 840  |
|                  | 26.0           | 85' 4"  | 61.41      | 2 350      | 2 200     | 4 850  | 2 250       | 4 960  |
|                  | 28.0           | 91' 10" | 58.87      | 2 000      | 1 850     | 4 070  | 1 950       | 4 290  |
|                  | 30.0           | 98' 5"  | 56.25      | 1 700      | 1 550     | 3 410  | 1 650       | 3 630  |
|                  | 32.0           | 105' 0" | 53.54      | 1 400      | 1 300     | 2 860  | 1 400       | 3 080  |
|                  | 34.0           | 111' 7" | 50.74      | 1 100      | 1 050     | 2 310  | 1 200       | 2 640  |

## Rated Load for Main Boom

- Notes: 1) The rated loads shown are based on the machine on firm level ground without traveling.  
 2) The rated loads shown include the weights of all lifting attachments, such as hook and bucket. The load to be actually lifted is the rated load minus the weight of all lifting attachments.  
 3) When the jib or the auxiliary jib is attached, the load to be actually lifted is the rated load minus the weight listed below.

| Jib length           | 6.10 m<br>(20'0")    | 9.15 m<br>(30'0")    | 12.20 m<br>(40'0")     | 15.25 m<br>(50'0")     | Aux. jib           |
|----------------------|----------------------|----------------------|------------------------|------------------------|--------------------|
| Weight to be reduced | 700 kg<br>(1 540 lb) | 850 kg<br>(1 870 lb) | 1 000 kg<br>(2 200 lb) | 1 150 kg<br>(2 540 lb) | 200 kg<br>(440 lb) |

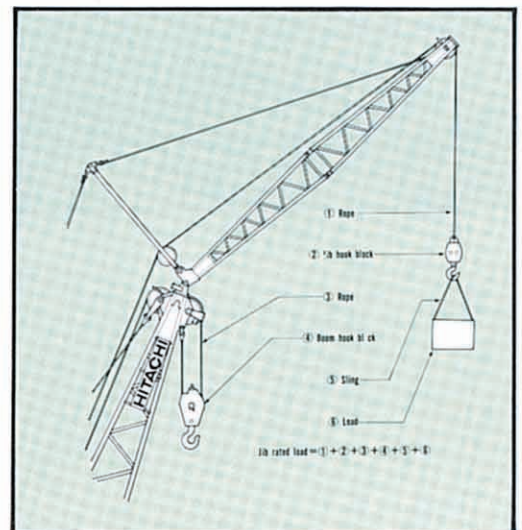
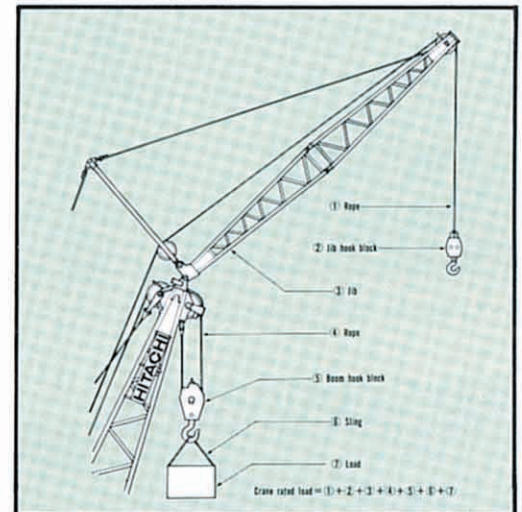
- 4) The jib can be attached to boom of 22.0 m (72'2") to 43.0 m (141'0") long.  
 5) The auxiliary jib can be attached to boom of 13.0 m (42'8") to 49.0 m (160'8") long.  
 6) The rated load for auxiliary jib is equal to that of main boom at the same working radius, but do not exceed maximum rated load 5 000 kg (11 100 lb).  
 7) Counterweight is 15 900 kg (35 100 lb).  
 8) In operation, crawlers must be extended.

## Rated Load for Jib

### Maximum jib rating

| Jib length      |                  | 6.10 m<br>(20'0")       | 9.15 m<br>(30'0")       | 12.20 m<br>(40'0")     | 15.25 m<br>(50'0")     |
|-----------------|------------------|-------------------------|-------------------------|------------------------|------------------------|
| Max. rated load | Jib offset angle |                         |                         |                        |                        |
|                 | 10°              | 5 000 kg<br>(11 020 lb) | 5 000 kg<br>(11 020 lb) | 4 000 kg<br>(8 820 lb) | 3 250 kg<br>(7 170 lb) |
|                 | 30°              | 5 000 kg<br>(11 020 lb) | 4 600 kg<br>(10 140 lb) | 3 650 kg<br>(8 050 lb) | 3 050 kg<br>(6 720 lb) |

- Notes: 1) The rated load for jib is equal to that of the main boom at the same working radius, but should not exceed maximum jib ratings shown. The jib offset angle to the main boom is 10° and 30° under loaded condition.  
 2) The maximum working radius of the jib do not exceed that of the main boom used.





# Boom & Jib Construction

## Main Boom Construction

| Element \ Boom length             | 13.0 m<br>(42'8")           | 16.0 m<br>(52'6") | 19.0 m<br>(62'4") | 22.0 m<br>(72'2")  | 25.0 m<br>(82'0") | 28.0 m<br>(91'10")         | 31.0 m<br>(101'8") | 34.0 m<br>(111'7") | 37.0 m<br>(121'5") | 40.0 m<br>(131'3") | 43.0 m<br>(141'0")         | 46.0 m<br>(150'11") | 49.0 m<br>(160'9") | 52.0 m<br>(170'7") |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-----------------------------------|-----------------------------|-------------------|-------------------|--|-------------------|----------------------------|--------------------|--------------------|--------------------|--------------------|----------------------------|---------------------|--------------------|--------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Upper Boom 6.5 m (21'4")          | 1                           | 1                 | 1                 | 1  | 1                 | 1                          | 1                  | 1                  | 1                  | 1                  | 1                          | 1                   | 1                  | 1                  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Lower Boom 6.5 m (21'4")          | 1                           | 1                 | 1                 | 1  | 1                 | 1                          | 1                  | 1                  | 1                  | 1                  | 1                          | 1                   | 1                  | 1                  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 3.0 m (9'10") Boom insert         | -                           | 1                 | 2                 | -  | 1                 | -                          | 2                  | -                  | 1                  | 1                  | -                          | 2                   | -                  | 1                  | 2 | - | 1 | - | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 6.0 m (19'8") Boom insert         | -                           | -                 | -                 | 1  | 1                 | -                          | 1                  | 2                  | -                  | 2                  | 1                          | -                   | 1                  | 2                  | 3 | 3 | 1 | 2 | 2 | 3 | 1 | 4 | 3 | 1 | 4 | 3 | 2 | 5 | 4 | 2 | 5 | 4 | 3 | 6 | 5 | 3 |
| 9.0 m (29'6") Boom insert         | -                           | -                 | -                 | -  | 1                 | -                          | -                  | 1                  | -                  | 1                  | 1                          | -                   | -                  | 1                  | 1 | 1 | - | 2 | - | 1 | 2 | - | 1 | 2 | - | 1 | 2 | - | 1 | 2 | - | 1 | 2 | - | 1 | 2 |
| Available hook                    | 50 000 kg (110 200 lb) hook |                   |                   |  |                   | 30 000 kg (66 100 lb) hook |                    |                    |                    |                    | 15 000 kg (33 100 lb) hook |                     |                    |                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Number of rope reeving            | 9                           | 9                 | 7                 | 6  | 5                 | 5                          | 4                  | 3                  | 3                  | 3                  | 3                          | 2                   | 2                  | 2                  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Boom available with jib           |                             |                   |                   | Jib length 6.10 m (20'0")<br>Jib length 9.15 m (30'0")<br>Jib length 12.20 m (40'0")<br>Jib length 15.25 m (50'0") |                   |                            |                    |                    |                    |                    |                            |                     |                    |                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Boom available with Auxiliary jib |                             |                   |                   |  |                   |                            |                    |                    |                    |                    |                            |                     |                    |                    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

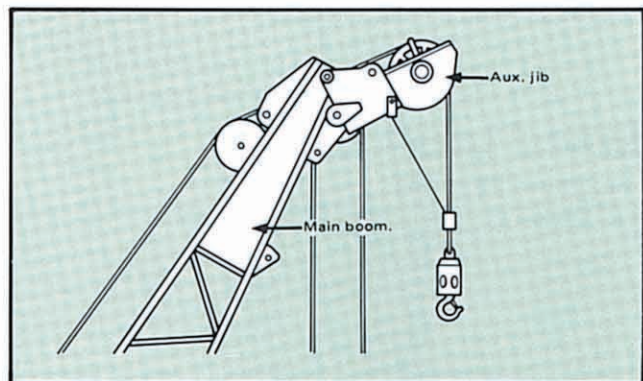
For the boom construction corresponding to the column , the boom length can not always be realized at a 3 m pitch.

## Jib Construction

| Element \ Jib length | 6.10 m<br>(20'0")         | 9.15 m<br>(30'0") | 12.20 m<br>(40'0") | 15.25 m<br>(50'0") |   |
|----------------------|---------------------------|-------------------|--------------------|--------------------|---|
| Lower Jib            | 3.05 m<br>(10'0")         | 1                 | 1                  | 1                  | 1 |
| Upper Jib            | 3.05 m<br>(10'0")         | 1                 | 1                  | 1                  | 1 |
| Jib Insert           | 3.05 m<br>(10'0")         | -                 | 1                  | 2                  | 3 |
| Available hook       | 5 000 kg (11 000 lb) hook |                   |                    |                    |   |

### Auxiliary Jib (Optional)

Attachable to main boom top for hoisting light-weight load quickly with a single rope used. (Never use the main and auxiliary hooks at the same time.)





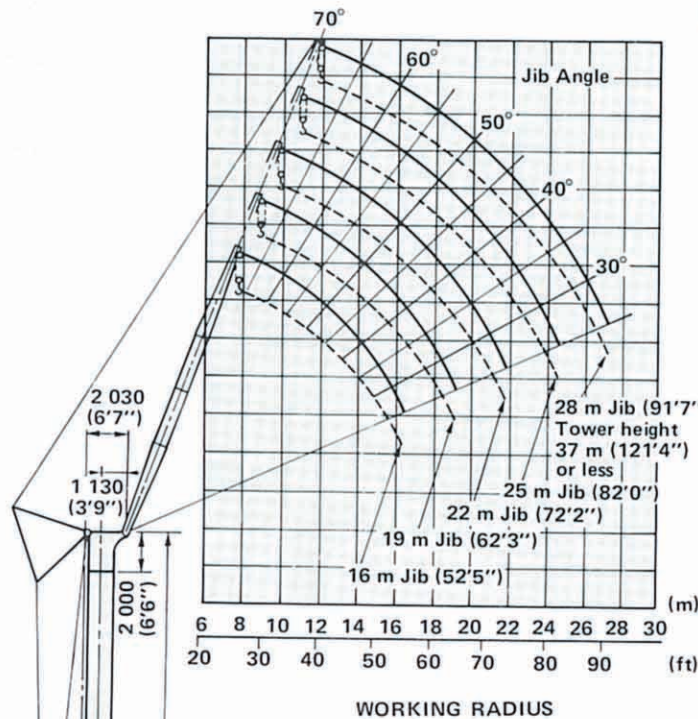




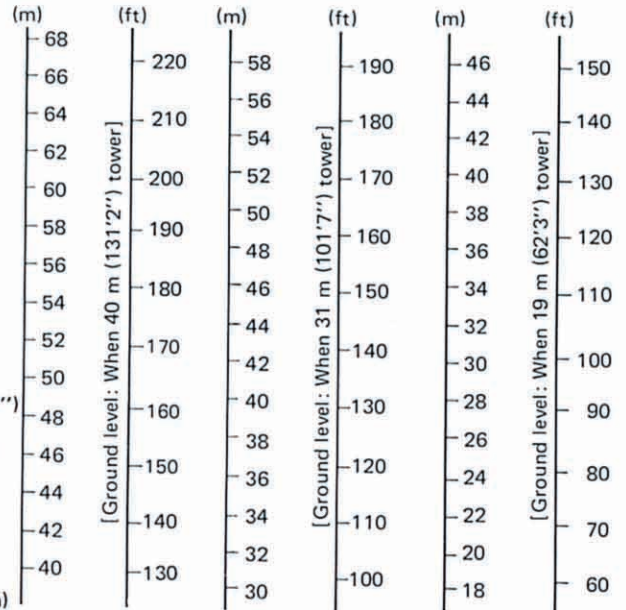
# TOWER CRANE

## With Tubular Chord TOWER Boom

### Working Ranges



### Lifting Height Above Ground



### Specifications

|   |  |
|---|--|
| Maximum rated load  | 11 400 kg at 10.3 m (25 000 lb at 37'4")           |
| Tower boom length   | 19.0 m (62'3") to 40.0 m (131'2")                  |
| Jib length  | 16.0 m (52'6") to 28.0 m (91'9")                   |
| Max. tower boom + Jib boom  | 65.0 m (213'3") [40.0 m (131'2") + 25.0 m (82'0")] |
| Tower boom point maximum height above ground                          | 41.6 m (136'5")                                    |
| Working radius  | 8.5 m (27'9") to 27.5 m (90'2")                    |
| Maximum lifting height above ground                                   | 63.0 m (206'7")                                    |
| Ground pressure   | 0.68 bar (0.69 kgf/cm <sup>2</sup> 9.8 psi)        |
| Operating weight [40.0 m (131'2") tower boom plus 25.0 m (82'0") Jib] | 52 400 kg (115 500 lb)                             |

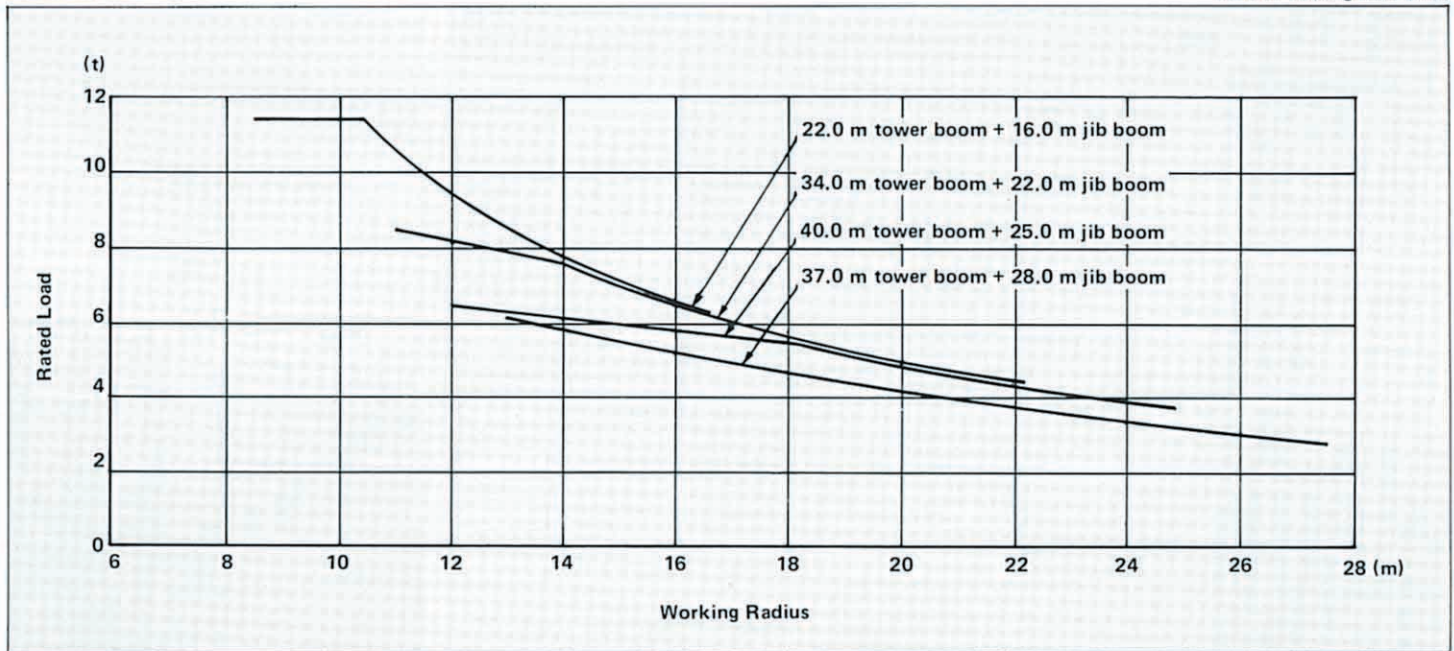
Note: For common specifications which are not listed above, refer to P.4 and P.5.

Unit: mm (ft) 1 585 (5'2")



# Rated Load Curves

78% of tipping load (JIS)



# Rated Loads

78% of tipping load (JIS)

| Tower length<br>Jib length<br>Working radius | 19.0 m, 22.0 m    |                   | 25.0 m, 28.0 m    |                   |                   | 31.0 m, 34.0 m    |                    |                   |                   |                   | 37.0 m, 40.0 m    |                   |                   |                   | 37.0 m            |                   |  |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--|
|  | 16.0 m            | 19.0 m            | 16.0 m            | 19.0 m            | 22.0 m            | 25.0 m            | 16.0 m             | 19.0 m            | 22.0 m            | 25.0 m            | 28.0 m            | 16.0 m            | 19.0 m            | 22.0 m            | 25.0 m            | 28.0 m            |  |
| 8.0 m  | 8.5m x 11.4tonne  |                   |                   |                   |                   |                   |                    |                   |                   |                   |                   |                   |                   |                   |                   |                   |  |
| 9.0 m  | 11.4tonne         | 9.5m x 11.25tonne | 11.4tonne         |                   |                   |                   | 10.40tonne         |                   |                   |                   |                   | 8.60tonne         |                   |                   |                   |                   |  |
| 10.0 m                                       | 10.3m x 11.4tonne | 10.90tonne        | 9.5m x 11.4tonne  | 10.5tonne         | 11.0m x 9.40tonne |                   | 10.00tonne         | 9.35tonne         | 11.0m x 8.40tonne |                   |                   | 8.40tonne         | 7.80tonne         | 11.0m x 7.10tonne |                   |                   |  |
| 12.0 m                                       | 9.40tonne         | 11.1m x 10.3tonne | 10.7m x 10.9tonne | 11.6m x 9.75tonne | 9.00tonne         | 8.20tonne         | 11.95m x 9.45tonne | 8.70tonne         | 8.10tonne         | 7.55tonne         | 13.0m x 6.15tonne | 8.05tonne         | 7.45tonne         | 6.90tonne         | 6.45tonne         | 13.0m x 6.15tonne |  |
| 14.0 m                                       | 7.75tonne         | 7.70tonne         | 7.75tonne         | 7.70tonne         | 12.5m x 8.80tonne | 7.30tonne         | 7.75tonne          | 13.1m x 8.35tonne | 14.2m x 7.55tonne | 7.05tonne         | 5.75tonne         | 7.75tonne         | 15.2m x 6.95tonne | 6.50tonne         | 6.10tonne         | 5.75tonne         |  |
| 16.0 m                                       | 6.60tonne         | 6.55tonne         | 6.60tonne         | 6.55tonne         | 6.50tonne         | 15.5m x 6.70tonne | 6.60tonne          | 6.55tonne         | 6.50tonne         | 15.5m x 6.70tonne | 5.15tonne         | 6.60tonne         | 6.55tonne         | 16.7m x 6.15tonne | 5.75tonne         | 5.15tonne         |  |
| 18.0 m                                       | 16.6m x 6.30tonne | 5.65tonne         | 16.6m x 6.30tonne | 5.65tonne         | 5.60tonne         | 5.55tonne         | 16.6m x 6.30tonne  | 5.65tonne         | 5.60tonne         | 5.55tonne         | 4.65tonne         | 16.6m x 6.30tonne | 5.65tonne         | 5.60tonne         | 18.2m x 5.50tonne | 4.65tonne         |  |
| 20.0 m                                       |                   | 19.3m x 5.20tonne |                   | 19.3m x 5.20tonne | 4.95tonne         | 4.90tonne         |                    | 19.3m x 5.20tonne | 4.95tonne         | 4.90tonne         | 4.15tonne         |                   | 19.3m x 5.20tonne | 4.95tonne         | 4.90tonne         | 4.15tonne         |  |
| 22.0 m                                       |                   |                   |                   |                   | 4.40tonne         | 4.35tonne         |                    |                   | 4.40tonne         | 4.35tonne         | 3.75tonne         |                   |                   | 4.40tonne         | 4.35tonne         | 3.75tonne         |  |
| 24.0 m                                       |                   |                   |                   |                   | 22.1m x 4.38tonne | 3.90tonne         |                    |                   | 22.1m x 4.38tonne | 3.90tonne         | 3.35tonne         |                   |                   | 22.1m x 4.38tonne | 3.90tonne         | 3.35tonne         |  |
| 26.0 m                                       |                   |                   |                   |                   |                   | 24.8m x 3.70tonne |                    |                   |                   | 24.8m x 3.70tonne | 3.00tonne         |                   |                   |                   | 24.8m x 3.70tonne | 3.00tonne         |  |
| 28.0 m                                       |                   |                   |                   |                   |                   |                   |                    |                   |                   |                   | 27.5m x 2.70tonne |                   |                   |                   |                   | 27.5m x 2.70tonne |  |

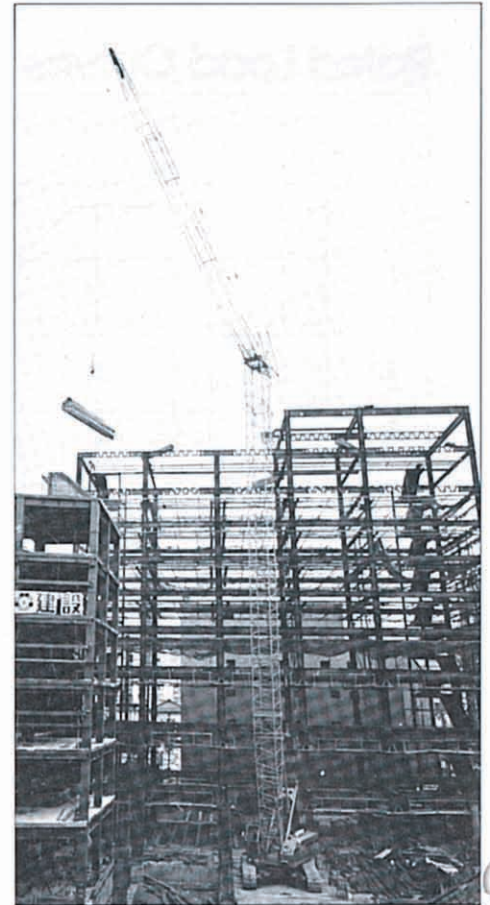
- Notes:
- The rated total loads given in the table above are values taken at the time when the load is to be lifted with the machine placed on a flat, firm ground, not exceeding 78% of tipping loads and with the forward stability of 1.15 or more as specified in the Travelling Crane Construction Standards.
  - The load to be actually lifted will be the value of each rated total load given in the table above minus total weight of all lifting means such as hook.
  - Hook weight: 15-tonne capacity hook (for tower crane) ..... 0.4 tonne.



# Tower Crane Boom & Jib Construction

## Tower Boom Construction

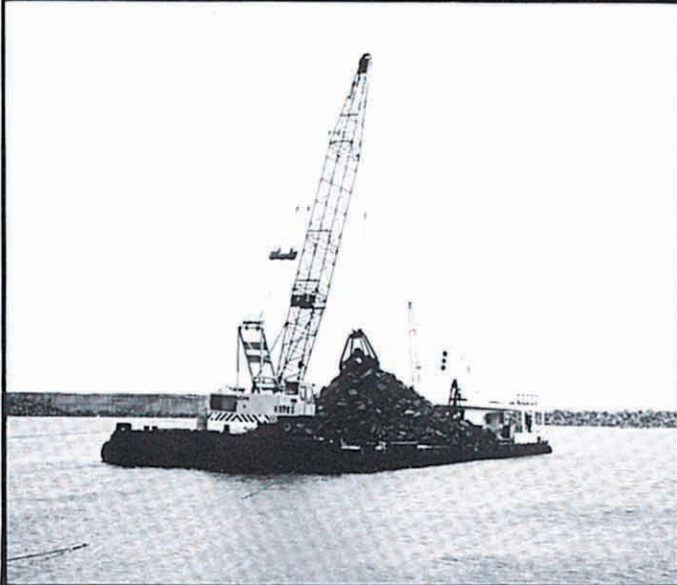
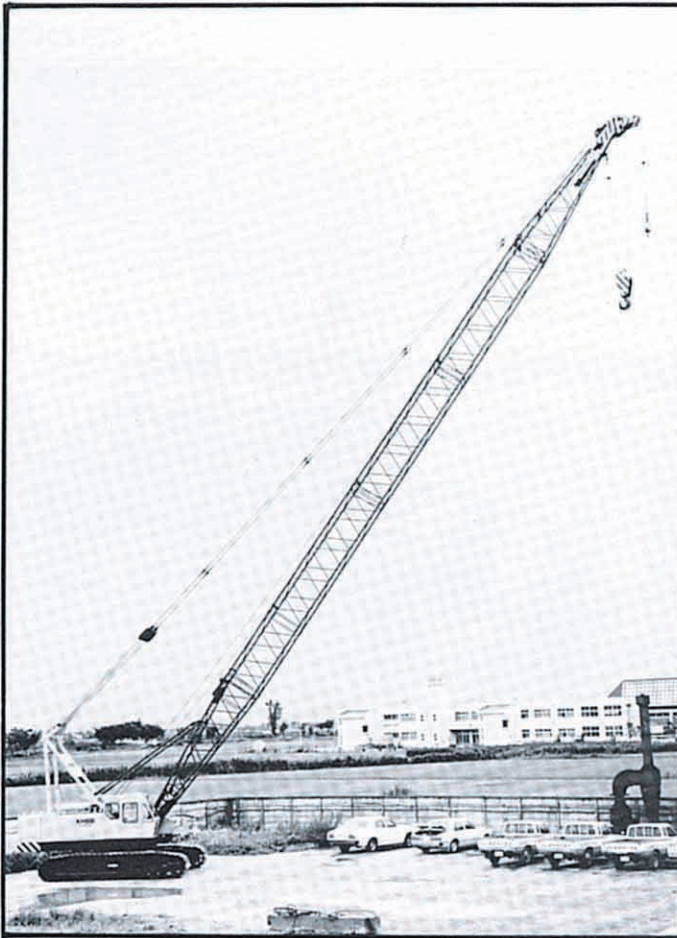
| Tower boom length<br>Element   | 19.0m<br>(62'4") | 22.0m<br>(72'2") | 25.0m<br>(82'0") | 28.0m<br>(91'10") | 31.0m<br>(101'9") | 34.0m<br>(111'7") | 37.0m<br>(121'5") | 40.0m<br>(131'3") |
|--------------------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Lower tower<br>6.5m<br>(21'4") | 1                | 1                | 1                | 1                 | 1                 | 1                 | 1                 | 1                 |
| Upper tower<br>2.0m<br>(6'6")  | 1                | 1                | 1                | 1                 | 1                 | 1                 | 1                 | 1                 |
| Insert<br>1.5m<br>(4'11")      | 1                | 1                | 1                | 1                 | 1                 | 1                 | 1                 | 1                 |
| Insert<br>3.0m<br>(9'10")      | —                | 1                | 2                | 1                 | 2                 | 1                 | 2                 | 1                 |
| Insert<br>6.0m<br>(19'8")      | —                | —                | —                | 1                 | 1                 | 2                 | 2                 | 3                 |
| Insert<br>9.0m<br>(29'6")      | 1                | 1                | 1                | 1                 | 1                 | 1                 | 1                 | 1                 |
| Available jib                  |                  |                  |                  |                   |                   |                   |                   |                   |



## Jib Construction

| Jib boom length<br>Element    | 16.0m<br>(52'6") | 19.0m<br>(62'4") | 22.0m<br>(72'2") | 25.0m<br>(82'0") | 28.0m<br>(91'10") |
|-------------------------------|------------------|------------------|------------------|------------------|-------------------|
| Jib: lower<br>5.0m<br>(16'5") | 1                | 1                | 1                | 1                | 1                 |
| Jib: upper<br>5.0m<br>(16'5") | 1                | 1                | 1                | 1                | 1                 |
| 3.0m (9'10")<br>Jib insert    | 2                | 1                | 2                | 1                | 2                 |
| 6.0m (19'8")<br>Jib insert    | —                | 1                | 1                | 2                | 2                 |



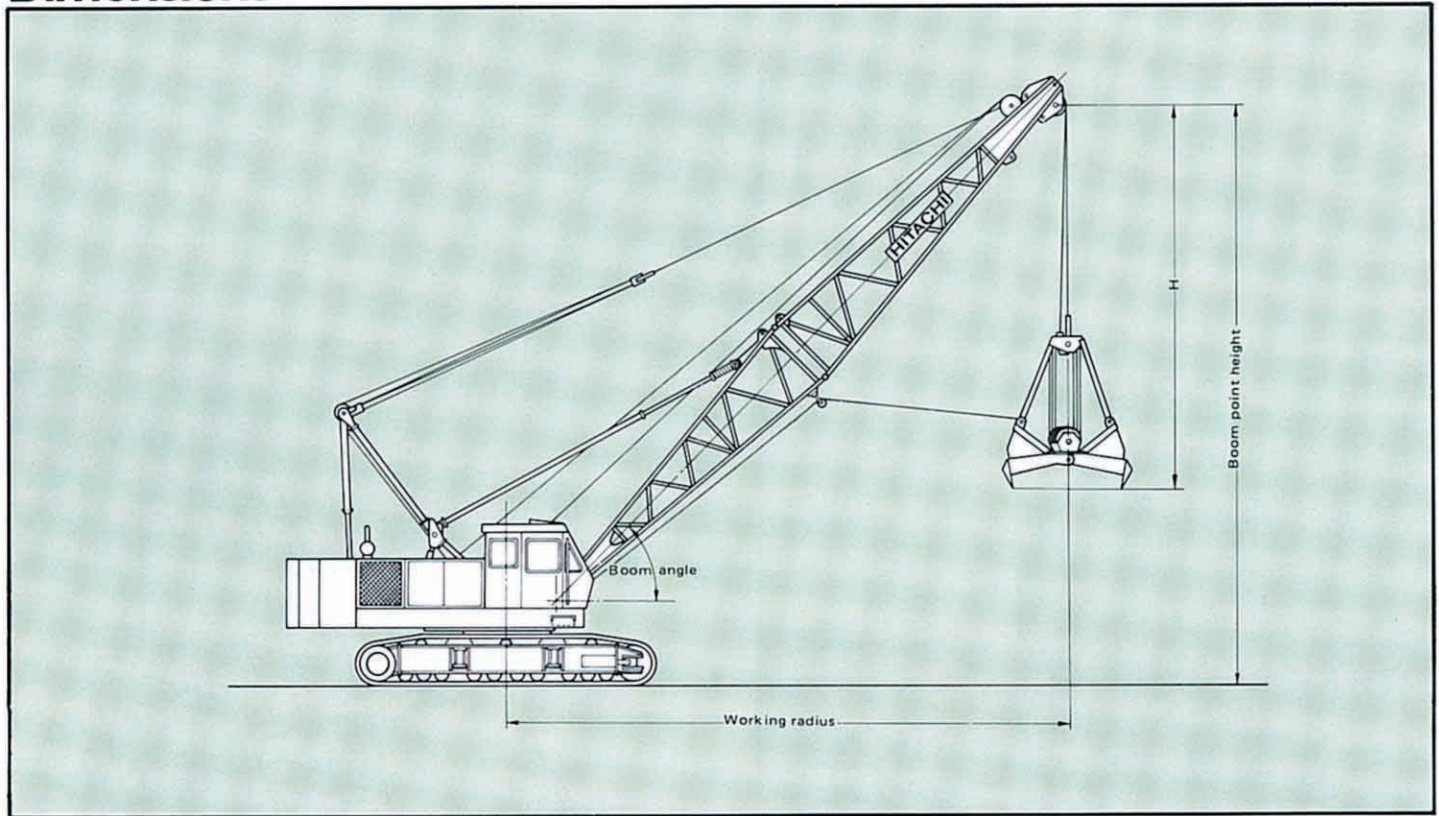




# CLAMSHELL

## With Tubular CRANE Boom

### Dimensions



### Specifications

|                         |  |
|-------------------------|--|
| <b>Bucket capacity</b>  | 0.6 m <sup>3</sup> (0.78 cu yd), 0.8 m <sup>3</sup> (1.05 cu yd), 1.0 m <sup>3</sup> (1.31 cu yd), 1.2 m <sup>3</sup> (1.57 cu yd)               |
| <b>Boom length</b>      | 13.0 m (42'8"), 16.0 m (52'6"), 19.0 m (62'4")   |
| <b>Gradeability</b>     | 22° (40%)  |
| <b>Ground pressure</b>  | 0.64 bar (0.64 kgf/cm <sup>2</sup> , 9.10 psi)   |
| <b>Operating weight</b> | 48 400 kg (106 700 lb)<br>When equipped with 13.0 m (42'8") boom, 1.0 m <sup>3</sup> (1.31 cu yd) bucket and 15 900 kg (35 100 lb) counterweight |

Note: For common specifications which are not listed above, refer to p. 4 and p. 5.



## BUCKETS

| Capacity                          | Self weight         | Bucket clearance : H |
|-----------------------------------|---------------------|----------------------|
| 0.6 m <sup>3</sup> (0.78 cu yd)   | 1 600 kg (3 530 lb) | 5.1 m (16'9")        |
| 0.8 m <sup>3</sup> (1.05 cu yd)   | 2 000 kg (4 410 lb) | 5.4 m (17'9")        |
| 1.0 m <sup>3</sup> (1.31 cu yd)   | 2 450 kg (5 400 lb) | 5.7 m (18'8")        |
| * 1.2 m <sup>3</sup> (1.57 cu yd) | 2 400 kg (5 290 lb) | 5.7 m (18'8")        |

\* 1.2 m<sup>3</sup> (1.57 cu yd) bucket is light-duty service.

## TAGLINE

|                         | Maximum digging depth |
|-------------------------|-----------------------|
| Hydraulic operated type | 36.0 m (118'1")       |

## Clamshell Ratings and Working Ranges

| Boom length<br>m (ft in) | Working radius<br>m ft in |        | Boom angle<br>degree | Boom point height<br>m ft in |        | Rated loads |               |        |               |        |                 |        |                 |        |
|--------------------------|---------------------------|--------|----------------------|------------------------------|--------|-------------|---------------|--------|---------------|--------|-----------------|--------|-----------------|--------|
|                          |                           |        |                      |                              |        | JIS rating  | BS rating (1) |        | BS rating (2) |        | PCSA rating (1) |        | PCSA rating (2) |        |
|                          |                           |        |                      |                              |        | kg          | kg            | lb     | kg            | lb     | kg              | lb     | kg              | lb     |
| 13.0<br>(42'8")          | 6.7                       | 22'0"  | 65                   | 13.3                         | 43'8"  | 5 000       | 6 000         | 13 230 | 5 000         | 11 020 | 6 000           | 13 230 | 5 000           | 11 020 |
|                          | 8.7                       | 28'7"  | 55                   | 12.1                         | 39'8"  | 5 000       | 6 000         | 13 230 | 5 000         | 11 020 | 6 000           | 13 230 | 5 000           | 11 020 |
|                          | 10.4                      | 34'2"  | 45                   | 10.6                         | 34'9"  | 5 000       | 6 000         | 13 230 | 5 000         | 11 020 | 6 000           | 13 230 | 5 000           | 11 020 |
|                          | 11.8                      | 38'9"  | 35                   | 8.9                          | 29'2"  | 5 000       | 6 000         | 13 230 | 5 000         | 11 020 | 6 000           | 13 230 | 5 000           | 11 020 |
| 16.0<br>(52'6")          | 8.0                       | 26'3"  | 65                   | 16.0                         | 52'6"  | 5 000       | 6 000         | 13 230 | 5 000         | 11 020 | 6 000           | 13 230 | 5 000           | 11 020 |
|                          | 10.4                      | 34'2"  | 55                   | 14.6                         | 47'11" | 5 000       | 6 000         | 13 230 | 5 000         | 11 020 | 6 000           | 13 230 | 5 000           | 11 020 |
|                          | 12.6                      | 41'5"  | 45                   | 12.7                         | 41'8"  | 5 000       | 6 000         | 13 230 | 5 000         | 11 020 | 6 000           | 13 230 | 5 000           | 11 020 |
|                          | 14.3                      | 46'11" | 35                   | 10.6                         | 34'9"  | 5 000       | 5 900         | 13 010 | 5 000         | 11 020 | 6 000           | 13 230 | 5 000           | 11 020 |
| 19.0<br>(62'4")          | 9.3                       | 30'6"  | 65                   | 18.7                         | 61'4"  | 5 000       | 6 000         | 13 230 | 5 000         | 11 020 | 6 000           | 13 230 | 5 000           | 11 020 |
|                          | 12.2                      | 40'1"  | 55                   | 17.0                         | 55'9"  | 5 000       | 6 000         | 13 230 | 5 000         | 11 020 | 6 000           | 13 230 | 5 000           | 11 020 |
|                          | 14.7                      | 48'3"  | 45                   | 14.9                         | 48'11" | 5 000       | 5 650         | 12 460 | 5 000         | 11 020 | 6 000           | 13 230 | 5 000           | 11 020 |
|                          | 16.8                      | 55'2"  | 35                   | 12.3                         | 40'4"  | 5 000       | 4 750         | 10 470 | 4 750         | 10 470 | 5 100           | 11 240 | 5 000           | 11 020 |

- Notes:
- The rated loads shown include the bucket weight. The load to be actually lifted is the rated load minus bucket weight.
  - The BS (1) and PCSA (1) rated loads shall apply to the power load lowering operation, or free fall operation in the case when buckets self weight are less than 2 500 kg (5 510 lb).
  - The BS (2) and PCSA (2) rated loads shall apply to the free fall operation where buckets self weight are over 2 500 kg (5 510 lb).

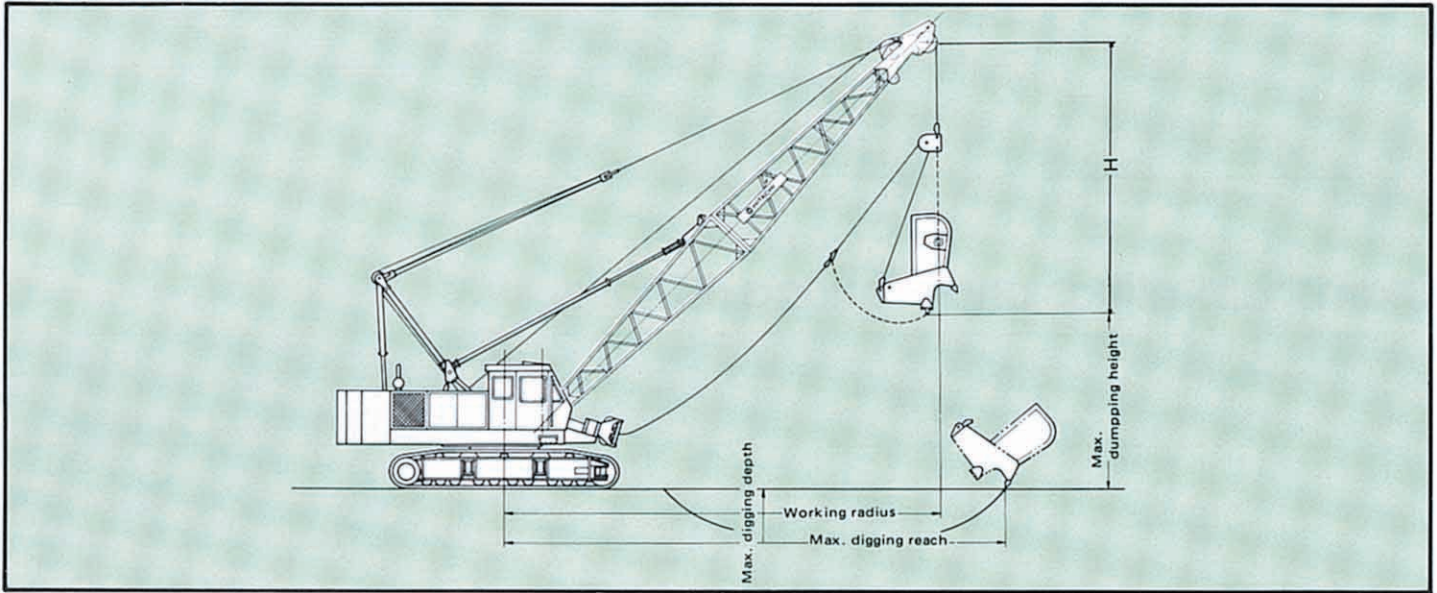
- In operation, crawlers must be extended.
- Counterweight is 15 900 kg (35 100 lb).
- Permissible boom length for clamshell operation is 13 m (42'8") to 19 m (62'4").
- The bucket supporting/operating rope length varies with the boom length and excavation depth.
- For bucket fall operation, please use the power fall and free fall by half-braking (The standard free fall stroke is preferably to be set at 10 m (32'10") or less.) in combination.



# DRAGLINE

## Angle Chord DUTY CYCLE Boom

### Dimensions



### Specifications

|   |  |
|---|--|
| Bucket capacity                         | 0.8 m <sup>3</sup> (1.05 cu yd) — 1.0 m <sup>3</sup> (1.31 cu yd)  |
| Boom length                             | 13 m (42'8") — 19 m (62'4")  |
| Gradeability                            | 22° (40%)  |
| Operating weight with 19 m (62'4") boom | 48 700 kg (107 400 lb) with 0.8 m <sup>3</sup> (1.05 cu yd) bucket |
| Ground pressure                         | 0.65 bar (0.65 kgf/cm <sup>2</sup> , 9.24 psi)                     |

Note: For common specification which are not listed above, refer to P.4 and P.5.

### Buckets

| Capacity                        | Self weight         | Bucket Clearance : H | Application |
|---------------------------------|---------------------|----------------------|-------------|
| 0.8 m <sup>3</sup> (1.05 cu yd) | 1 200 kg (2 650 lb) | 4.0 m (13'1")        | Heavy-duty  |
| 1.0 m <sup>3</sup> (1.31 cu yd) | 1 600 kg (3 530 lb) | 4.2 m (13'9")        | Medium-duty |



## Dragline Ratings and Working Ranges

| Boom length     | Working radius |        | Boom angle | Max. dumping height |        | Max. digging reach |        | Max. digging depth |        | Rated load |           |       |             |       |
|-----------------|----------------|--------|------------|---------------------|--------|--------------------|--------|--------------------|--------|------------|-----------|-------|-------------|-------|
|                 |                |        |            |                     |        |                    |        |                    |        | JIS rating | BS rating |       | PCSA rating |       |
| m (ft in)       | m              | ft in  | degree     | m                   | ft in  | m                  | ft in  | m                  | ft in  | kg         | kg        | lb    | kg          | lb    |
| 13.0<br>(42'8") | 12.5           | 41'0"  | 30         | 3.0                 | 9'10"  | 16.1               | 52'10" | 9.1                | 29'10" | 3 300      | 3 300     | 7 280 | 3 300       | 7 280 |
|                 | 11.2           | 36'9"  | 40         | 4.8                 | 15'9"  | 15.6               | 51'2"  | 8.8                | 28'10" | 3 300      | 3 300     | 7 280 | 3 300       | 7 280 |
|                 | 9.7            | 31'10" | 50         | 6.5                 | 21'4"  | 14.8               | 48'7"  | 8.2                | 26'11" | 3 300      | 3 300     | 7 280 | 3 300       | 7 280 |
| 16.0<br>(52'6") | 15.1           | 49'6"  | 30         | 4.5                 | 14'9"  | 19.3               | 63'4"  | 11.5               | 37'9"  | 3 300      | 3 300     | 7 280 | 3 300       | 7 280 |
|                 | 13.5           | 44'3"  | 40         | 6.8                 | 22'4"  | 18.8               | 61'8"  | 11.2               | 36'9"  | 3 300      | 3 300     | 7 280 | 3 300       | 7 280 |
|                 | 11.6           | 38'1"  | 50         | 8.8                 | 28'10" | 17.8               | 58'5"  | 10.4               | 34'1"  | 3 300      | 3 300     | 7 280 | 3 300       | 7 280 |
| 19.0<br>(62'4") | 17.7           | 58'1"  | 30         | 6.0                 | 19'8"  | 22.6               | 74'2"  | 14.0               | 45'11" | 3 300      | 3 300     | 7 280 | 3 300       | 7 280 |
|                 | 15.8           | 51'10" | 40         | 8.7                 | 28'7"  | 21.2               | 69'7"  | 13.0               | 42'8"  | 3 300      | 3 300     | 7 280 | 3 300       | 7 280 |
|                 | 13.5           | 44'3"  | 50         | 11.1                | 36'5"  | 20.7               | 67'11" | 12.6               | 41'4"  | 3 300      | 3 300     | 7 280 | 3 300       | 7 280 |

- Notes: 1) The rated loads shown include the bucket weight. The load to be actually lifted is the rated load minus bucket weight.  
2) Maximum digging reach/depth may vary considerably depending on digging condition and the skill

- of the operator.  
3) In operation, crawlers must be extended.  
4) Counterweight is 15 900 kg (35 100 lb).  
5) Permissible boom length for dragline operation is 13 m (42'8") to 19 m (62'4").

### DRUMS Dimensions

|                 | Rope dia.      | Width           | Drum p.c.d.     | Max. rope capacity |
|-----------------|----------------|-----------------|-----------------|--------------------|
| Main hoist drum | 22 mm (0.866") | 360 mm (14.17") | 462 mm (18.19") | 224 m (735')       |
| Aux. hoist drum | 22 mm (0.866") | 313 mm (12.32") | 462 mm (18.19") | 194 m (636')       |

(9th layer)

### Line speed and line pull

|                 | Max. line speed m/min (ft/min) |          |          |          | Effective line pull                    | @ | Line speed               | Max. starting line pull                | Max. running line pull                 |
|-----------------|--------------------------------|----------|----------|----------|--|---|--------------------------|--|--|
|                 | Hoisting                       |          | Lowering |          |  |   |                          |  |  |
| Main hoist drum | H                              | 70 (230) | H        | 70 (230) | 108 kN<br>(11 000 kgf)<br>(24 300 lbf) | @ | 34 m/min<br>(112 ft/min) | 140 kN<br>(14 300 kgf)<br>(31 600 lbf) | 153 kN<br>(15 600 kgf)<br>(34 400 lbf) |
|                 | L                              | 35 (115) | L        | 35 (115) |  |   |                          |  |  |
| Aux. hoist drum | H                              | 70 (230) | H        | 70 (230) | 108 kN<br>(11 000 kgf)<br>(24 300 lbf) | @ | 34 m/min<br>(112 ft/min) | 140 kN<br>(14 300 kgf)<br>(31 600 lbf) | 153 kN<br>(15 600 kgf)<br>(34 400 lbf) |
|                 | L                              | 35 (115) | L        | 35 (115) |  |   |                          |  |  |

H: High speed range L: Low speed range

- Notes: 1) Line speed and line pull are based on first layer of winding at rated engine rpm.  
2) Hoisting line speed varies with load.  
3) Line pull is based on a single line pull in high speed range.  
4) Effective line pull is equivalent to available line pull of mechanical drive winch.  
5) When starting, hydraulic motor is without rotating, the line pull is "Max. starting line pull". After motor rotating, the line pull becomes "Max. running line pull" shortly.  
6) Main and auxiliary hoist drums have spiral rope grooves.

### BOOM HOIST DRUM

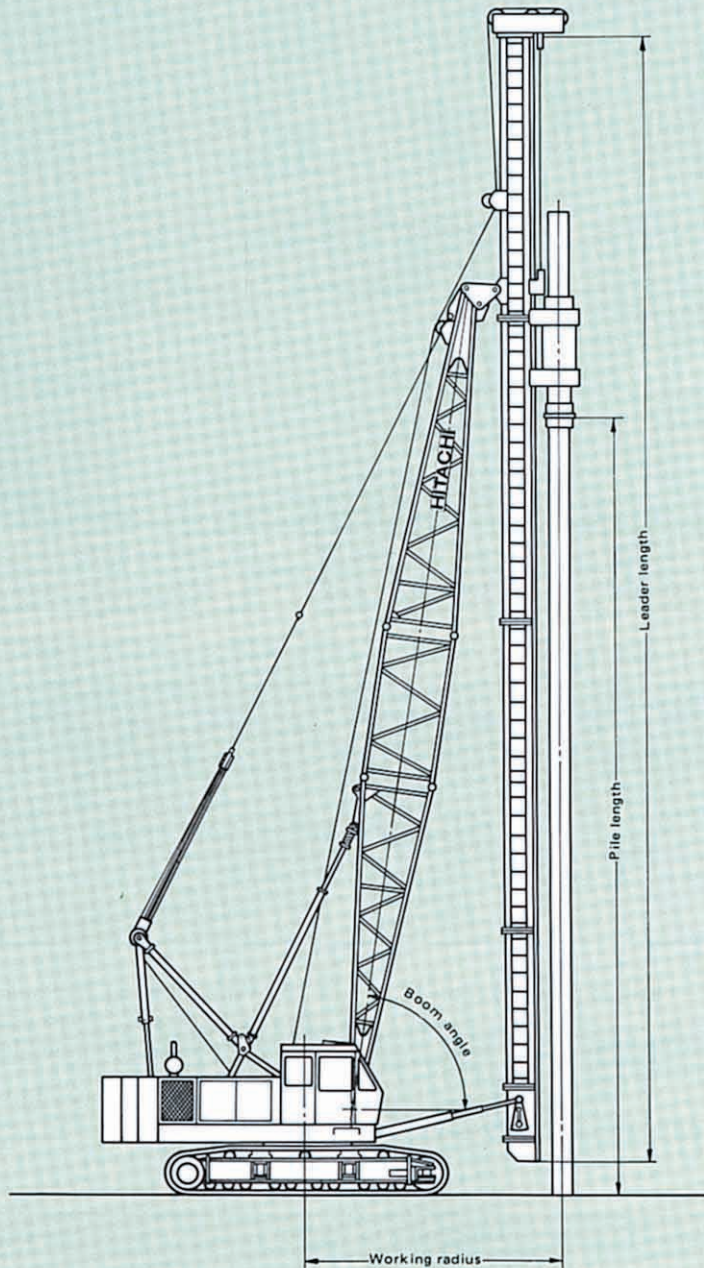
| Rope diameter | Hoisting line speed   | Lowering line speed   |
|---------------|-----------------------|-----------------------|
| 16 mm (0.63") | 60 m/min (197 ft/min) | 60 m/min (197 ft/min) |



# BOOM-SUPPORT TYPE PILE DRIVER

With Tubular CRANE  
Boom

## Dimensions





# Specifications

|  |  |                                       |  |                                       |  |                                       |  |                                       |
|--|--|---------------------------------------|--|---------------------------------------|--|---------------------------------------|--|---------------------------------------|
| <b>Leader model</b>                        | 45 S   |                                       |  |                                       |  |                                       |  |                                       |
| <b>Counterweight</b>                       | 15 900 kg (35 100 lb)                          |                                       |  |                                       |  |                                       |  |                                       |
| <b>Hammer</b>                              | 35   |                                       |  |                                       | 45   |                                       |  |                                       |
| <b>Hammer weight</b>                       | 7 500 kg (16 500 lb)                           |                                       |  |                                       | 10 500 kg (23 100 lb)                          |                                       |  |                                       |
| <b>Cap weight</b>                          | 1 000 kg (2 200 lb)                            |                                       |  |                                       | 1 800 kg (3 970 lb)                            |                                       |  |                                       |
| <b>Boom length</b>                         | 16.0 m (52'6")                                 |                                       | 19.0 m (62'4")                                 |                                       | 16.0 m (52'6")                                 |                                       | 19.0 m (62'4")                                 |                                       |
| <b>Leader length</b>                       | 22.0 m (72'2")                                 |                                       | 25.0 m (82'0")                                 |                                       | 22.0 m (72'2")                                 |                                       | 25.0 m (82'0")                                 |                                       |
| <b>Pile length</b>                         | 14.0 m (45'11")                                |                                       | 17.0 m (55'9")                                 |                                       | 14.0 m (45'11")                                |                                       | 17.0 m (55'9")                                 |                                       |
| <b>R: Working radius<br/>W: Rated load</b> | R  | W                                     | R  | W                                     | R  | W                                     | R  | W                                     |
| <b>Boom angle (degree)</b>                 | 82°  | 4.9 m (16'1")<br>7 000 kg (15 400 lb) | 5.3 m (17'5")<br>7 000 kg (15 400 lb)          | 5.0 m (16'5")<br>7 000 kg (15 400 lb) | 5.4 m (17'9")<br>7 000 kg (15 400 lb)          | 5.4 m (17'9")<br>7 000 kg (15 400 lb) | 5.7 m (18'8")<br>7 000 kg (15 400 lb)          | 5.8 m (19'0")<br>5 700 kg (12 600 lb) |
|  | 81°  | 5.2 m (17'1")<br>7 000 kg (15 400 lb) | 6.0 m (19'8")<br>7 000 kg (15 400 lb)          | 5.6 m (18'4")<br>7 000 kg (15 400 lb) | 5.8 m (19'0")<br>7 000 kg (15 400 lb)          |                                       |  |                                       |
|  | 80°  | 5.5 m (18'1")<br>7 000 kg (15 400 lb) |  |                                       |  |                                       |  |                                       |
|  | 79°  | 5.8 m (19'0")<br>7 000 kg (15 400 lb) |  |                                       |  |                                       |  |                                       |
|  | 78°  | 6.0 m (19'8")<br>7 000 kg (15 400 lb) |  |                                       |  |                                       |  |                                       |
| <b>Operating weight</b>                    | 62 000 kg (136 700 lb)                         |                                       | 62 900 kg (138 700 lb)                         |                                       | 65 800 kg (145 100 lb)                         |                                       | 66 700 kg (147 050 lb)                         |                                       |
| <b>Ground pressure</b>                     | 0.82 bar (0.82 kgf/cm <sup>2</sup> , 11.6 psi) |                                       | 0.83 bar (0.83 kgf/cm <sup>2</sup> , 11.8 psi) |                                       | 0.87 bar (0.87 kgf/cm <sup>2</sup> , 12.3 psi) |                                       | 0.88 bar (0.88 kgf/cm <sup>2</sup> , 12.5 psi) |                                       |



# Specifications



## SUPERSTRUCTURE



### Engine

|                     |   |
|---------------------|---|
| Model               | HINO EM100  |
| Type                | Water-cooled, 4-cycle,<br>6-cylinder, direct fuel injection<br>type diesel engine. 175g/ps-hr |
| Rated horsepower    | 110 kW (150 PS) at<br>2 000 min <sup>-1</sup> (2 000 rpm)                                     |
| (DIN 6 270, Net)    |   |
| Maximum torque      | 588 N·m (60 kgf·m, 434 ft·lbf)<br>at 1 600 min <sup>-1</sup> (1 600 rpm)                      |
| Piston displacement | 9.4 l (575 cu in)   |
| Fuel tank capacity  | 250 l (55 Imp gal, 66 U.S. gal)   |
| Electric system     | 24 V DC. AC generating  |



### Main and Auxiliary Hoist Mechanism

Both main and auxiliary hoist drums are driven independently by swash plate type axial piston motors through reduction gear. Load hoisting/lowering are done by normal/reverse rotation of motor. Smooth, precise power lowering is made possible by the hydraulic brake. A single lever gives a choice of two speeds, high or low, for hoisting/lowering. Hoist/lower speeds are proportioned to the lever stroke, allowing easy matching to job conditions.

Option: One motor driven type winch for main and auxiliary drums is available.

**Clutches** Clutches are of the spring-set, hydraulic-released internal-expanding friction band type; main and auxiliary clutches are alike in size and type, with interchangeable clutch linings.

**Brakes** External contracting friction band-type mechanical brakes, integrated with link lever, operate under normal load. For a larger load, a spring-type boost device is provided to ensure fatigue-free operation. Mechanical brake locks are equipped as standard. Furthermore, while in neutral position the hoist lever is doubly secured in position by a hydraulic brake and an automatic brake. An automatic brake system or hydraulic positive brake system, in neutral position of the hoist lever, can be selected according to job application.

**Drums** Main and auxiliary hoist drums are of special alloy cast iron. Both hoist drums are mounted on the lifetime-lubricated antifriction ball bearings.

**Drum locks** Drum pawl locks are provided for integral lock of drums. They are manually controllable from the operator's seat.



### Boom Hoist Mechanism

Completely independent operation.

Boom hoisting/lowering is done by normal/reverse rotation of the bent axis motor. Boom lowering is made by power lowering through the hydraulic system. Instant hoisting/lowering of boom is possible. Both hydraulic brake and spring-set hydraulic-released multiplate disc type brake offer positive and safe stopping of boom. When boom is hoisted or lowered, brakes are automatically released.

**Boom Brakes** Spring-set, hydraulic-released multiplate disc type. Brake is automatically actuated when control lever is at neutral position.

**Drum Locks** Drum pawl lock is manually controlled from operator's seat.



### Swing Mechanism

Completely independent operation. Driven by high-torque piston motor through reduction gear, swing speeds are freely controllable within the 0 to maximum speed with single lever stroking.

**Swing Brake** A disc type swing brake can be hydraulically actuated by the brake switch on the swing lever.

**Swing Lock** Manually operated mechanical lock with a roc tip which is engaged in a holder of track frame during transportation.

**Swing Circle** Single-row shear-type ball bearing with heat-treated internal gear.



### Revolving Frame

All steel welded construction, stress-relieved, precision-machined unit, especially designed for rigidity and strength.

**Gantry** Lowerable for transportation.

**Counterweight** Welded structure. Total weight 15 900 kg (35 100 lb)

Consists of 2 sections: One: 7 500 kg (16 500 lb)  
One: 8 400 kg (18 400 lb)



### Boom

**Tubular Chord CRANE Boom** 1 300 mm (51") wide by, 1 300 mm (51") deep at connection, lattice construction, high tensile strength steel tubular chord.

Basic boom . . . . . 2-piece, total length 13.0 m (42'8");  
upper section 6.5 m (21'4") and lower  
section 6.5 m (21'4").



|                             |   |
|-----------------------------|---|
| Boom point . . . . .        | Offset boom point, 5 sheaves [420 mm (16.5") p.c.d.] mounted on anti-friction bearings on boom peak.  |
| Boom insert . . . . .       | 3.0 m (9'10"), 6.0 m (19'8") and 9.0 m (29'6") long available with appurtenant pendants.  |
| Connection type . . . . .   | Pin-connected   |
| Boom backstop . . . . .     | Dual-rail, telescopic tubular construction with spring bumper.  |
| Boom hoist bridle . . . . . | Serves as connection between pendants and boom hoist wire rope reeving, equipped with 6 sheaves [340 mm (13.4") p.c.d.] for 12-part boom hoist wire rope reeving. |

**Crane Jib** 550 mm (22") wide by 480 mm (19") deep at connection, lattice construction, high tensile strength steel tubular chord.

|                           |   |
|---------------------------|---|
| Basic jib . . . . .       | 2-piece, total length 6.10 m (20'0"), upper section 3.05 m (10'0"), and lower section 3.05 m (10'0"). |
| Jib point . . . . .       | 1 sheave [400 mm (15.7") p.c.d.] mounted on anti-friction bearings on jib peak.                       |
| Jib insert . . . . .      | 3.05 m (10'0") long available.  |
| Connection type . . . . . | Pin-connected   |
| Auxiliary jib . . . . .   | Optional  |

Attachable to main boom top for hoisting lightweight load quickly with a single rope used.

**Note:** Boom insert, crane jib, or auxiliary jib can be attached to the basic boom when needed. However both, crane jib and auxiliary jib cannot be attached simultaneously to the boom and used.

**Angle Chord DRAGLINE Boom** 1 202 mm (47") wide by 1 102 mm (43") deep at connection, lattice construction, high tensile strength steel angle chord.

|                             |   |
|-----------------------------|---|
| Basic boom . . . . .        | 2-piece, total length 13.0 m (42'8"); upper section 6.5 m (21'4") and lower section 6.5 m (21'4").  |
| Boom point . . . . .        | Offset boom point, single sheave [sheave p.c.d.; 530 mm (20.9")] mounted on anti-friction bearing on boom peak.   |
| Boom insert . . . . .       | 3.0 m (9'10") and 6.0 m (19'8") long available with appurtenant pendants.   |
| Connection type . . . . .   | Bolt connected.   |
| Boom backstop . . . . .     | Dual-rail, telescopic tubular construction with spring bumper.  |
| Boom hoist bridle . . . . . | Serves as connection between pendants and boom hoist wire rope reeving, equipped with 6 sheaves [300 mm (12") p.c.d.] for 12-part boom hoist wire rope reeving. |

**Tubular Chord TOWER CRANE Boom** 1 300 mm (51") wide by 1 300 mm (51") deep at connection, lattice construction, high tensile strength steel tubular chord.

|                             |   |
|-----------------------------|---|
| Tower boom length . . . . . | Minimum: 19 m (62'3")<br>Maximum: 40 m (131'2") |
|-----------------------------|---|

|                        |  |
|------------------------|--|
| Tower insert . . . . . | 3.0 m (9'10"), 6.0 m (19'8") and 9.0 m (29'6") tower insert are in common with each crane boom insert. |
|------------------------|--|

|                           |  |
|---------------------------|--|
| Connection type . . . . . | Pin-connected.   |
| Tower backstop . . . . .  | Dual-rail, telescopic tubular construction with spring dumper. |

|                              |  |
|------------------------------|--|
| Tower hoist bridle . . . . . | Serves as connection between tower boom pendants and tower boom hoist wire rope reeving, equipped with 6 sheaves [340 mm (13.4") p.c.d.] mounted on anti-friction bearing. |
|------------------------------|--|

**Tower Jib**  
Jib . . . . . 940 mm (37") wide by 750 mm (30") deep at connection, lattice construction, high tensile strength steel tubular chord.

|                           |   |
|---------------------------|---|
| Jib length . . . . .      | 16.0 m (52'6") to 28.0 m (91'9")                |
| Jib insert . . . . .      | 3.0 m (9'10") and 6.0 m (19'8") long available. |
| Connection type . . . . . | Pin-connected.                                  |



## Operator's Cab

All-weather, well-ventilated, all-round visibility, roomy operator's cab. The completely independent cab is insulated against noise and vibration. Sliding, fold-in front window swings up and stores in roof. Fully adjustable reclining seat.



## UNDERCARRIAGE

**Traction mechanism** Each track is driven by a bent axis motor through reduction gear. This mechanism allows counter-rotation of tracks for maximum maneuverability in close quarters. When lever is at neutral position, both hydraulic brake and spring-set/hydraulic-released multiplate disc brake are automatically actuated to effect reliable stopping. Upper and lower rollers, sprockets and idlers are lifetime-lubricated. A hydraulic track adjuster is provided for easy tension adjustment of each track.

**Track Frame** All-welded, stress relieved, box section construction.

**Side Frame** Side frames of all-welded construction can be retracted for transportation.

**Side Frame Extending/Retracting Device** Side frame extending/retracting is done with the cylinder provided inside the track frame. Hydraulic power source for this extending/retracting cylinder is common with that for the left track. All that's required is to operate the switching valve installed inside the track frame and shift the left travel lever. Then, side frame extending/retracting can easily be done in a short time eliminating troublesome piping, etc.



**Track Link Disengaging Prevention Device** Track link disengaging prevention device goes up and down together with the track link to prevent it from coming off.

**Track Shoes** Heat treated alloy steel castings with induction hardened roller path and driving lugs. Shoes are connected by induction-hardened steel pins.

No. of upper rollers (on each side) . . . . . 3  
 No. of lower rollers (on each side) . . . . . 10  
 No. of track shoes (on each side) . . . . . 59  
 Shoe width . . . . . 760 mm (30')

## HYDRAULIC SYSTEM

2 variable displacement piston pumps + 1 gear pump hydraulic system allows both independent and combined operations of all functions. Variable-displacement piston pumps not only adequately control operating speeds, but also utilize engine horsepower to maximum.

|                  | Pump-1   | Pump-2   |
|------------------|--|--|
| Type of pump     | Variable displacement pump                       |  |
| Pressure setting | 300 bar<br>(300 kgf/cm <sup>2</sup> , 4 270 psi) | 300 bar<br>(300 kgf/cm <sup>2</sup> , 4 270 psi) |
| Oil flow         | 200 l/min<br>(44.0 Imp gpm,<br>52.7 U.S. gpm)    | 200 l/min<br>(44.0 Imp gpm,<br>52.7 U.S. gpm)    |

|                  | Pump-3   | Pump-4                                       |
|------------------|--|--|
| Type of pump     | Gear pump  |  |
| Pressure setting | 210 bar<br>(210 kgf/cm <sup>2</sup> , 2 990 psi) | 45 bar<br>(45 kgf/cm <sup>2</sup> , 640 psi) |
| Oil flow         | 134 l/min<br>(29.5 Imp gpm,<br>35.0 U.S. gpm)    | 32 l/min<br>(7.0 Imp gpm,<br>8.4 U.S. gpm)   |

**Main and Auxiliary Hoist Motor** (Common Motor)  
Swash plate type axial piston motor with counterbalance valve.

**Boom Hoist Motor** Bent axis motor with counterbalance valve.

**Swing Motor** High torque radial piston motor.

**Travel Motor** Bent axis motor with brake valve and spring-set/hydraulic-released multiplate disc brake.

**Relief and Brake Valves** Each hydraulic circuit incorporates large-capacity relief valves to protect circuit from overload or shock load. Counterbalance valves (compensates safe, positive load lowering and prevents accidental load drop when hydraulic power is suddenly reduced) are provided for hoist motor. Brake valves (consisting of relief valve and counterbalance valve) are provided for travel circuit.

## Pressure Setting

### MAIN CIRCUIT

- Main relief valves
  - Hoist (main and aux.) . . . . . 300 bar  
(300 kgf/cm<sup>2</sup>, 4 270 psi)
  - Swing . . . . . 210 bar  
(210 kgf/cm<sup>2</sup>, 2 990 psi)

- Overload relief valves
  - Hoist (main and aux.) circuit . . . . . 305 bar  
(305 kgf/cm<sup>2</sup>, 4 340 psi)
  - Boom hoist circuit . . . . . 265 bar (265 kgf/cm<sup>2</sup>, 3 770 psi)
  - Travel circuit . . . . . 280 bar (280 kgf/cm<sup>2</sup>, 3 980 psi)

### PILOT CIRCUIT

- Main relief valve . . . . . 45 bar (45 kgf/cm<sup>2</sup>, 640 psi)

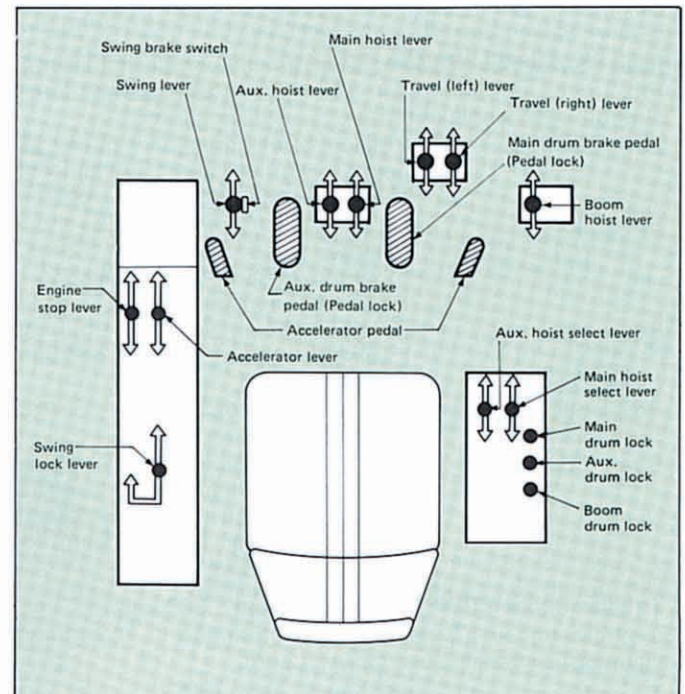
**Line Filters** High filtration 10 $\mu$  full-flow filter element is provided to keep hydraulic oil clean and ensure long-term, trouble-free operation. Pilot filter and suction filter are provided for each circuit.

## CONTROLS

**Boom, Main and Auxiliary Hoist and Travel** Remote controlled hydraulic servo. Working speed can be precisely controlled by changing lever stroke.

**Swing** Mechanical linkage type.

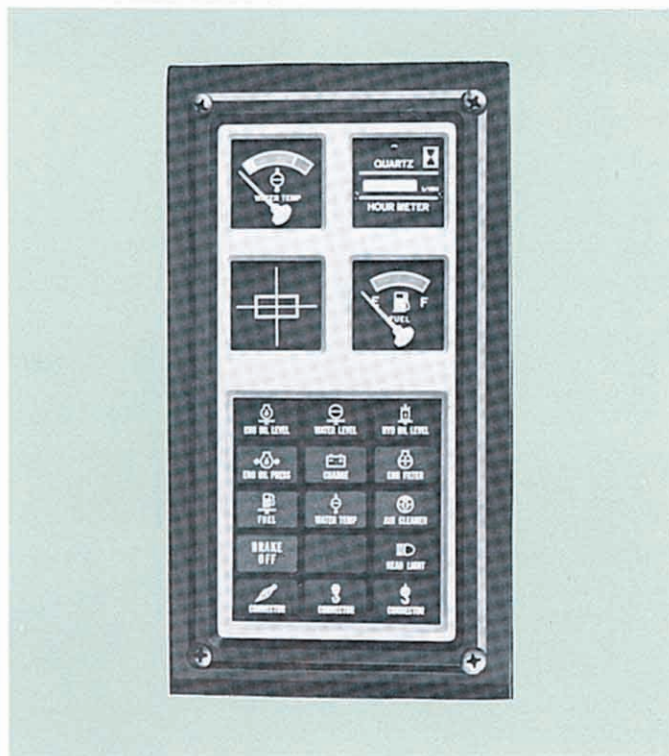
**Fuel Control** Two foot throttle (accelerator) pedals and hand throttle (accelerator) controls equipped as standard.





**This monitor has the following functions**

- **Instruments** Machine conditions are shown on meters.
- **Start up inspection monitor** To check the machine condition and safety device before starting operation.
- **Safety monitor** To warn the abnormality of the machine during operation and carelessness.



## SAFETY DEVICES

**Boom Angle Indicator** Mechanical type boom angle indicator is provided at boom foot.

**Counterbalance Valve (Brake Valve)** A counterbalance valve is incorporated in travel motors, boom hoist motor, main and auxiliary hoist motor respectively. In case the hydraulic line is broken, this valve is automatically actuated to prevent motor rotation.

**Spring-set/Hydraulic-released Multiplate Disc Type Travel Brakes**

**Swing Lock and Swing Parking Brake**

**Drum Lock** A pawl type drum lock is adopted for main drum, auxiliary drum and boom drum.

### For Lift Crane

- **Moment Limiter "Hi-Limiter"** The "Hi-Limiter" electrically detects the lifting load, and working radius from the boom angle. The detected data is calculated by a built-in micro-computer. When the lifting load reaches its alarm limit the "Hi-Limiter" buzzes, and when reaching the load limit, the control becomes inoperative.
- **Hook Overhoist Prevention Device** When the hook reaches its safety hoist limit, an alarm bell rings and an auto-stop device automatically actuates at the same time.
- **Boom Overhoist Prevention Device** When the boom reaches its safety angle limit, a buzzer alarm sounds and boom hoisting automatically stops at the same time. A telescopic type boom backstop is also installed.

## SERVICE REFILL CAPACITIES

|   | Liters | Imp gal | U.S. gal |
|---|--------|---------|----------|
| Fuel tank . . . . .                                   | 250.0  | 55.0    | 66.0     |
| Engine coolant . . . . .                              | 44.0   | 9.7     | 11.6     |
| Engine oil . . . . .                                  | 19.0   | 4.2     | 5.0      |
| Pump transmission . . . . .                           | 2.7    | 0.59    | 0.71     |
| Boom and winch hoist motor reduction device . . . . . | 5.6    | 1.2     | 1.5      |
| Winch hoist motor reduction device . . . . .          | 13.0   | 2.9     | 3.4      |
| Swing reduction device . . . . .                      | 10.0   | 2.2     | 2.6      |
| Travel final device (On each) . . . . .               | 16.0   | 3.52    | 4.23     |
| Hydraulic system (including tank capacity) . . . . .  | 285.0  | 62.7    | 75.2     |
| Hydraulic tank . . . . .                              | 205.0  | 45.1    | 54.1     |

## OPTIONAL EQUIPMENT

**Operator's Cab** Electric fan, cab cooler

**Third Drum**

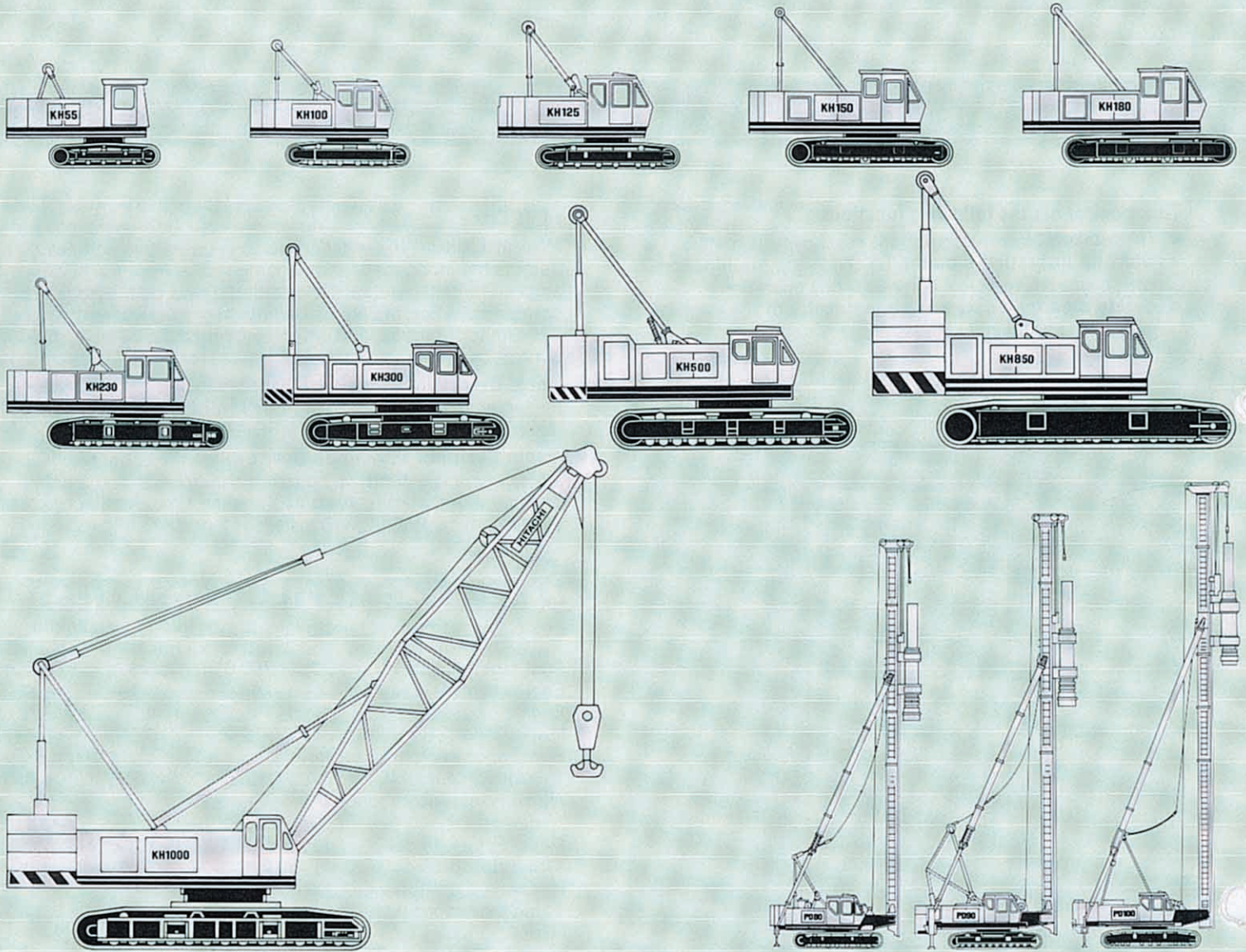
**P.T.O.** Driving a generator.

A built-in type lifting magnet or a welder can be installed.

**Auxiliary Jib for Crane Boom** Can be attached to the top of main boom for auxiliary hook-hoisting operation.



# KH AND PD SERIES



These specifications are subject to change without notice.

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