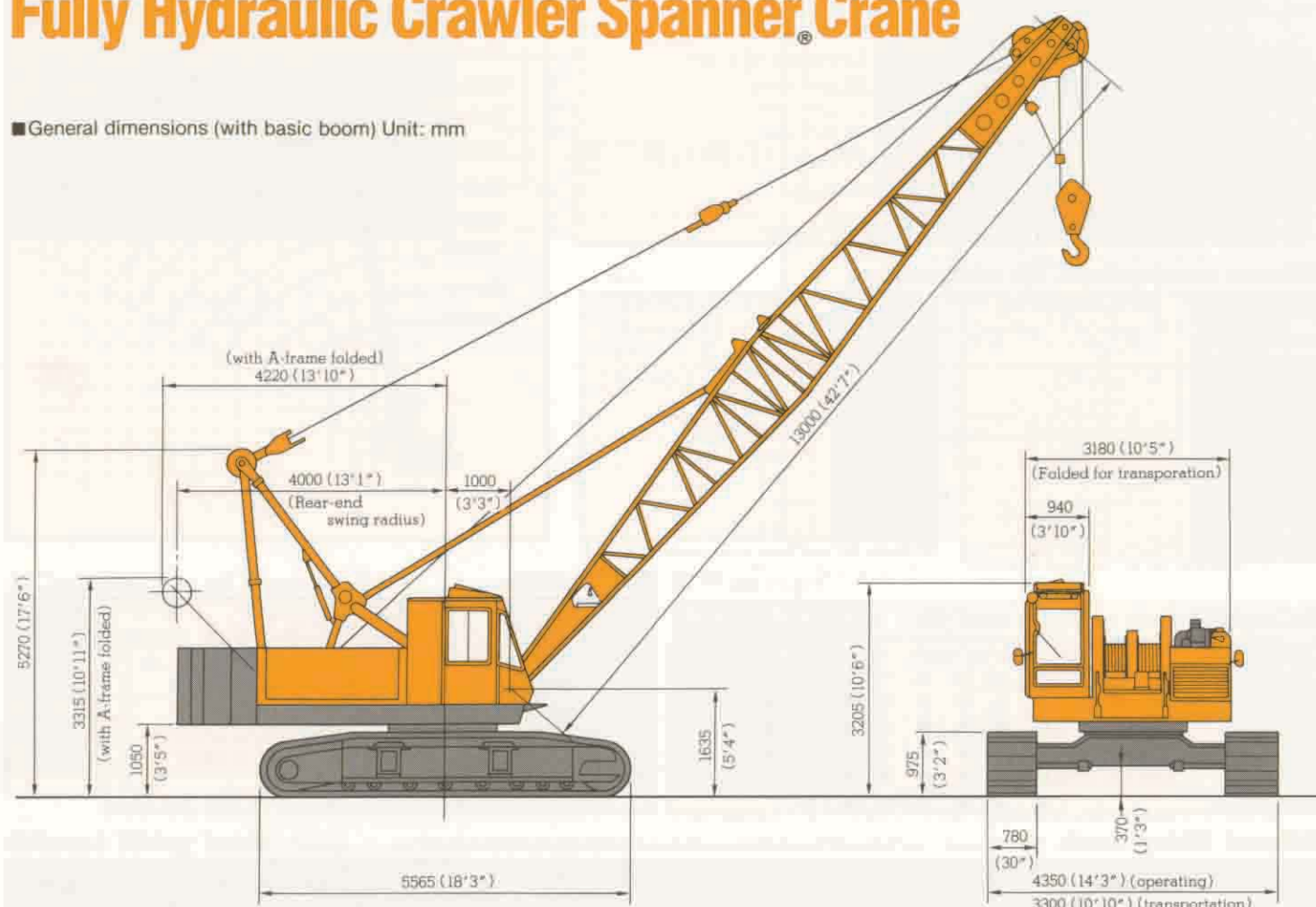


**IHI**

# CCH500-2

## Fully Hydraulic Crawler Spanner Crane

■ General dimensions (with basic boom) Unit: mm



### ■ Specifications

| Performance                 |                                                                    |
|-----------------------------|--------------------------------------------------------------------|
| Swing speed                 | 3.3 rpm                                                            |
| Travel speed                | 1.5km/h (0.9 mph)                                                  |
| Gradeability                | 40% (Approx. 22°)<br>(with 42.7ft boom and 110,230 lbs hook block) |
| Operation system            |                                                                    |
| Power source                | Hydraulic                                                          |
| Transmission system         | Hydraulic                                                          |
| Drum type                   | Independent two drum on single shaft (DOUBLE WING)                 |
| Swing system                | Swing bearing                                                      |
| Hydraulic pump              | Variable displacement axial plunger pump×3<br>Gear pump×2          |
| Engine                      |                                                                    |
| Model                       | NISSAN DIESEL NE6T                                                 |
| Type                        | 4-cycle, water cooled, overhead valve                              |
| Combustion chamber          | Direct injection diesel                                            |
| Cylinder bore stroke        | 6-110mm×130mm (6-4"×5")                                            |
| Total displacement          | 7.412ℓ                                                             |
| Rated output                | 160PS/2,100rpm (with turbocharger)                                 |
| Max. torque                 | 59kg·m/1500rpm                                                     |
| Rated fuel consumption rate | 172g/PS·h (at rated output)                                        |
| Fuel tank capacity          | 225ℓ                                                               |

### ■ Safety equipment

- Counterbalance valve, check valve, relief valve.
- Multi-disc traction brake
- Swing lock, swing parking brake
- Drum lock
- Emergency drum brake
- Boom angle indicator
- Telescopic boom stop
- Boom overhoisting prevention
- Hook overwinding prevention

### ■ Optional equipment

- Electronic moment limiter
- Third drum
- Car cooler
- Combustion type heater
- Flood light, yellow rotary lamp
- Wireless helmet phone
- Electric level gauge
- Spark arrester

The machine is manufactured in compliance with the Japanese Labor Ministry's "Structural Standards for Mobile Cranes," and it meets the requirements of "Safety Regulations for Crane and Related Machines".

**Ishikawajima Construction Machinery Co., Ltd.**



CCH500-2

# Crane

## Specifications

|                                                             |                                |                                            |
|-------------------------------------------------------------|--------------------------------|--------------------------------------------|
| Maximum lifting load x working radius                       |                                | 50 tons x 3.7m                             |
| Maximum lift above ground                                   |                                | 48.4m (52m boom)                           |
| Rope speed                                                  | Boom hoisting and lowering     | 60m/min (1st layer on drum)                |
|                                                             | Load hoisting and lowering     | High speed 80 m/min,<br>Low speed 40 m/min |
|                                                             | Jib load hoisting and lowering | High speed 80 m/min,<br>Low speed 40 m/min |
| Part lines                                                  | Boom hoisting                  | 12-part lines                              |
|                                                             | 50-ton hook                    | 10-part lines                              |
|                                                             | 5-ton hook                     | 1-part line                                |
| Counterweight                                               |                                | 15.5 tons (5.6 + 5.9 + 4.0)                |
| Crane total weight<br>(with 13m boom and 50-ton hook block) |                                | 47.5 tons                                  |
| Average ground bearing pressure                             |                                | 0.62 kgf/cm <sup>2</sup>                   |

## Boom composition / Jib composition

(Unit: m)

| Boom length | Boom composition          | Jib length | Jib composition       |
|-------------|---------------------------|------------|-----------------------|
| 13          | 6.5 (inner) + 6.5 (outer) | 1          | 1 (auxiliary jib)     |
| 16          | 6.5 + 3 + 6.5             | 6          | 3 (inner) + 3 (outer) |
| 19          | 6.5 + 3 + 3 + 6.5         | 9          | 3 + 3 + 3             |
| 22          | 6.5 + 3 + 6 + 6.5         | 12         | 3 + 6 + 3             |
| 25          | 6.5 + 3 + 3 + 6 + 6.5     | 15         | 3 + 3 + 6 + 3         |
| 28          | 6.5 + 3 + 6 + 6 + 6.5     |            |                       |
| 31          | 6.5 + 3 + 6 + 9 + 6.5     |            |                       |
| 34          | 6.5 + 3 + 3 + 6 + 9 + 6.5 |            |                       |
| 37          | 6.5 + 3 + 6 + 6 + 9 + 6.5 |            |                       |
| 40          | 6.5 + 3 + 6 + 9 + 9 + 6.5 |            |                       |

⑨ denotes 9m insert boom w/lug: which is required for boom length over 43m.

## Combination of boom and jib

(● available combination)

| Jib length (m) | Boom length (m) |    |    |    |    |    |    |    |    |    |    |    |
|----------------|-----------------|----|----|----|----|----|----|----|----|----|----|----|
|                | 13              | 16 | 19 | 22 | 25 | 28 | 31 | 34 | 37 | 40 | 43 | 46 |
| 1              | ●               | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●  |
| 6              |                 |    |    | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●  |
| 9              |                 |    |    | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●  |
| 12             |                 |    |    | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●  |
| 15             |                 |    |    | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●  |

## Rated lifting loads (360° through out; within 78% of tipping load; forward stability factor over 1.15)

(Unit: ton)

| Working Radius (m) | Boom Length |      |      |      |      |      |      |      |      |      |      |      |      |           |
|--------------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|-----------|
|                    | 13          | 16   | 19   | 22   | 25   | 28   | 31   | 34   | 37   | 40   | 43   | 46   | 49   | 52        |
| 3.7                | 50.0        |      |      |      |      |      |      |      |      |      |      |      |      |           |
| 4.0                | 46.0        | 45.9 |      |      |      |      |      |      |      |      |      |      |      |           |
| 4.5                | 39.6        | 39.5 | 39.4 |      |      |      |      |      |      |      |      |      |      |           |
| 5.0                | 33.3        | 33.2 | 33.1 | 33.0 |      |      |      |      |      |      |      |      |      |           |
| 5.5                | 28.7        | 28.6 | 28.5 | 28.4 | 28.3 |      |      |      |      |      |      |      |      |           |
| 6.0                | 25.2        | 25.1 | 25.0 | 24.9 | 24.8 | 24.7 |      |      |      |      |      |      |      |           |
| 7.0                | 20.2        | 20.1 | 20.0 | 19.9 | 19.8 | 19.7 | 19.6 | 19.5 |      |      |      |      |      |           |
| 8.0                | 16.8        | 16.7 | 16.6 | 16.5 | 16.4 | 16.3 | 16.2 | 16.1 | 16.1 | 16.0 |      |      |      |           |
| 9.0                | 14.3        | 14.2 | 14.1 | 14.0 | 13.9 | 13.8 | 13.7 | 13.6 | 13.6 | 13.5 | 13.4 |      |      |           |
| 10.0               | 12.5        | 12.4 | 12.3 | 12.2 | 12.1 | 12.0 | 11.9 | 11.8 | 11.8 | 11.7 | 11.6 | 11.5 | 11.4 |           |
| 12.0               | 9.8         | 9.7  | 9.6  | 9.5  | 9.4  | 9.3  | 9.2  | 9.1  | 9.1  | 9.0  | 8.9  | 8.8  | 8.7  | 13m x 8.0 |
| 14.0               |             | 8.0  | 7.9  | 7.8  | 7.7  | 7.6  | 7.5  | 7.4  | 7.4  | 7.3  | 7.2  | 7.1  | 7.0  | 6.9       |
| 16.0               |             |      | 6.6  | 6.5  | 6.4  | 6.3  | 6.2  | 6.1  | 6.1  | 6.0  | 5.9  | 5.8  | 5.7  | 5.6       |
| 18.0               |             |      |      | 5.6  | 5.5  | 5.4  | 5.3  | 5.2  | 5.2  | 5.1  | 5.0  | 4.9  | 4.8  | 4.7       |
| 20.0               |             |      |      | 4.8  | 4.7  | 4.6  | 4.5  | 4.4  | 4.4  | 4.3  | 4.2  | 4.1  | 4.0  | 3.9       |
| 22.0               |             |      |      |      | 4.1  | 4.0  | 3.9  | 3.8  | 3.8  | 3.7  | 3.6  | 3.5  | 3.4  | 3.3       |
| 24.0               |             |      |      |      |      | 3.6  | 3.5  | 3.4  | 3.3  | 3.2  | 3.1  | 3.0  | 2.9  | 2.8       |
| 26.0               |             |      |      |      |      |      | 3.1  | 3.0  | 2.9  | 2.8  | 2.7  | 2.6  | 2.5  | 2.4       |
| 28.0               |             |      |      |      |      |      |      | 2.6  | 2.5  | 2.4  | 2.3  | 2.2  | 2.1  | 2.0       |
| 30.0               |             |      |      |      |      |      |      | 2.3  | 2.3  | 2.2  | 2.1  | 2.0  | 1.8  | 1.7       |
| 32.0               |             |      |      |      |      |      |      |      | 1.8  | 1.7  | 1.6  | 1.5  | 1.5  | 1.4       |
| 34.0               |             |      |      |      |      |      |      |      |      | 1.6  | 1.5  | 1.3  | 1.2  | 1.1       |

● All loads are based on a firm level, uniformly supporting surface without traveling.  
 ● The weight of the slings, hook block(s) and auxiliary lifting devices are considered to be part of the load.

Main hook block (50 ton capacity) ..... 0.49 tons  
 Jib hook block (5 ton capacity) ..... 0.12 tons

● Depending on the number of part lines, rated lifting load is limited as follows.

1-part line - up to 5 tons  
 2-part line - up to 10 tons  
 3-part line - up to 15 tons  
 4-part line - up to 20 tons  
 5-part line - up to 25 tons

6-part line - up to 30 tons  
 7-part line - up to 35 tons  
 8-part line - up to 40 tons  
 9-part line - up to 45 tons  
 10-part line - up to 50 tons

● When boom is equipped with jib, main hook ratings must be reduced by the following weight.

| Jib length | 1m | 6m | 9m | 12m | 15m |
|------------|----|----|----|-----|-----|
|------------|----|----|----|-----|-----|

Weight to be reduced 0.5t 0.75t 0.95t 1.2t 1.45t

● The rated loads for jib when the main hook is installed must be reduced by the total weight of the main hook and the jib hook.

● The maximum boom length to which jib boom can be installed is as follows:

With the crawler frame extended, up to 43m + 15m or 49m + 1m.

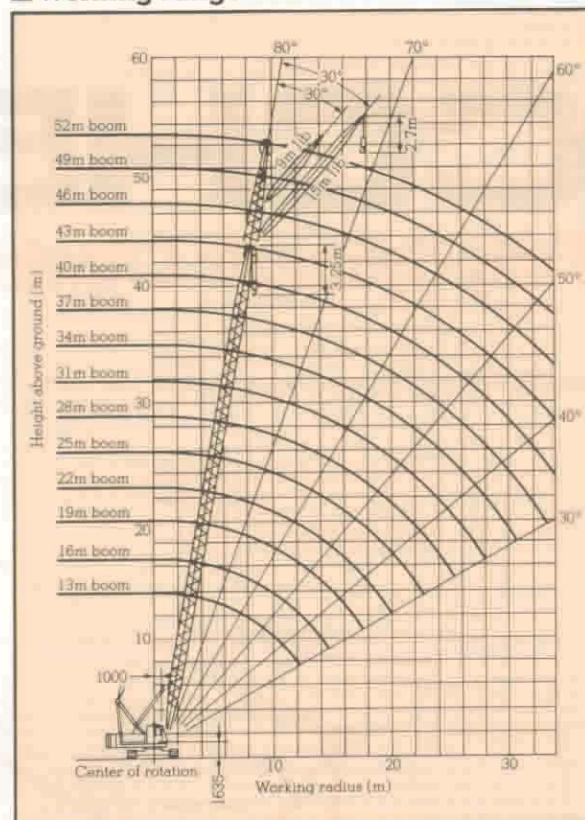
● Bucket and lifting magnet operations cannot be performed by jibs.

● The rated load for jib should not exceed the value in the table below.

| Jib angle | Jib boom length |          |          |          |
|-----------|-----------------|----------|----------|----------|
|           | 1m              | 6m       | 9m       | 15m      |
| 15°       | 5.0 tons        | 4.6 tons | 3.7 tons | 2.8 tons |
| 30°       |                 | 4.1 tons | 3.2 tons | 2.3 tons |

● The angle formed by the extension line of the main boom and the center line of the jib boom should not exceed 30° under load conditions.

## Working range





CCH500-2

# Lifting Magnet

## ■ Specifications

|                                              |                            |                                          |
|----------------------------------------------|----------------------------|------------------------------------------|
| Rope speed                                   | Boom hoisting and lowering | 60m/min (1st layer of drum)              |
|                                              | Load hoisting and lowering | High speed 80m/min,<br>Low speed 40m/min |
| Part lines                                   | Boom hoisting and lowering | 12-part lines                            |
|                                              | Load hoisting and lowering | 1-10-part lines                          |
| Counterweight (exclusive for lifting magnet) |                            | 15.5 tons (5.6 + 5.9 + 4.0)              |
| Total weight (13m boom + $\phi$ 1500 magnet) |                            | 50.0 tons                                |
| Average ground bearing pressure              |                            | 0.65 kgf/cm <sup>2</sup>                 |

## ■ Magnet specifications

|                    |             |                 |                        |
|--------------------|-------------|-----------------|------------------------|
| Electromagnet      | Diameter    | $\phi$ 1500     | $\phi$ 1800 (optional) |
|                    | Weight      | 2.7 tons        | 4.2 tons               |
| Voltage            |             | DC-220V         | DC-220V                |
| Generator capacity |             | 16.5kW/1,800rpm | 22kW/1,800rpm          |
| Lifting capacity   | Ingot       | 24 tons         | 30 tons                |
|                    | Punch scrap | 0.5-0.9 tons    | 0.75-1.3 tons          |
|                    | Iron scrap  | 1.2-1.9 tons    | 1.65-2.8 tons          |
|                    | Pig iron    | 1.3-1.9 tons    | 1.8-2.8 tons           |

## ■ Wire rope

|                        |                                        |                         |           |
|------------------------|----------------------------------------|-------------------------|-----------|
| Place of use           | Rope diameter (mm)× overall length (m) | Guaranteed strength (t) | Rope type |
| Lifting magnet         | $\phi$ 20×210                          | 30.0                    | A         |
| Boom hoisting          | $\phi$ 16×145                          | 19.2                    | A         |
| Boom suspension        | $\phi$ 31.5                            | 74.9                    | A         |
| Hydraulic type tagline | $\phi$ 10×49                           | 5.5                     | B         |

Rope type A: 6×F1 (29) IWRC preformed regular Z lay  
B: 6×19 hemp core regular Z lay

## ■ Rated lifting capacity (90% of crane load)

(Unit: ton)

| Boom length<br>(m) | Working radius (m) |      |      |      |      |      |      |      |      |      |     |     |     |
|--------------------|--------------------|------|------|------|------|------|------|------|------|------|-----|-----|-----|
|                    | 3.7                | 4    | 4.5  | 5    | 5.5  | 6    | 7    | 8    | 9    | 10   | 12  | 14  | 16  |
| 13                 | 34.7               | 34.7 | 34.7 | 31.3 | 27.4 | 23.9 | 18.9 | 15.8 | 13.5 | 11.7 | 9.3 |     |     |
| 16                 |                    | 34.7 | 34.7 | 31.2 | 27.3 | 23.8 | 18.8 | 15.7 | 13.4 | 11.6 | 9.2 | 7.5 |     |
| 19                 |                    |      | 34.7 | 31.1 | 27.2 | 23.7 | 18.7 | 15.6 | 13.3 | 11.5 | 9.1 | 7.4 | 6.2 |

● The weight of hook block, magnet and auxiliary lifting devices are considered to be a part of the load.

50-ton hook --- 490kg

15-ton hook --- 200kg

● Depending on the number of part lines, rated lifting load is limited as follows.

1-part line --- up to 5 tons

6-part line --- up to 30 tons

2-part line --- up to 10 tons

7-part line --- up to 35 tons

3-part line --- up to 15 tons

8-part line --- up to 40 tons

4-part line --- up to 20 tons

9-part line --- up to 45 tons

5-part line --- up to 25 tons

10-part line --- up to 50 tons



# Flying Leader

## ■ Specifications

|                                                        |                              |              |                                            |
|--------------------------------------------------------|------------------------------|--------------|--------------------------------------------|
| Rope speed                                             | Boom hoisting and lowering   |              | 60m/min (1st layer on drum)                |
|                                                        | Hammer hoisting and lowering |              | High speed 80 m/min,<br>Low speed 40 m/min |
|                                                        | Pile hoisting and lowering   |              | High speed 80 m/min,<br>Low speed 40 m/min |
| Part lines                                             | Boom hoisting                |              | 12-part lines                              |
|                                                        | Hammer hoisting              | IDH-25       | 2-part lines                               |
|                                                        |                              | IDH-35       | 3-part lines                               |
|                                                        |                              | IDH-45       | 3-part lines                               |
|                                                        | Pile hoisting                | Under 5 tons | 1-part lines                               |
|                                                        |                              | 5-10 tons    | 2-part lines                               |
| Counterweight                                          |                              |              | 15.5 tons (5.6 + 5.9 + 4.0)                |
| Possible travelling weight (on Pile driver attachment) |                              |              | 68 tons                                    |
| Allowable average ground bearing pressure              |                              |              | 0.89 kgf/cm <sup>2</sup>                   |

## ■ Wire rope

| Place of use    | Rope diameter (mm)× overall length (m) | Guaranteed strength (t) |
|-----------------|----------------------------------------|-------------------------|
| Boom hoisting   | φ16×145                                | 19.2                    |
| Boom suspension | φ31.5                                  | 74.9                    |
| Hammer hoisting | φ20×170                                | 30.0                    |
| Pile hoisting   | φ20×120                                | 30.0                    |

All the ropes are of 6×F1 (29) IWRC preformed regular Z lay.

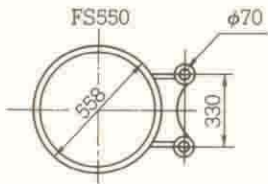
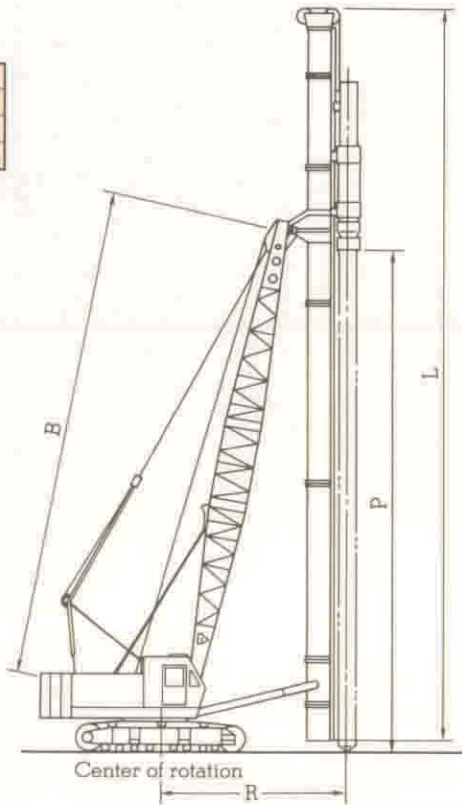
## ■ Working performance R: Working radius (m) W: Pile weight (t)

| Leader type         |  | FS550                                      |       |       |       |     |     |     |     |        |       |       |       |     |     |     |     |        |       |       |     |     |     |   |   |
|---------------------|--|--------------------------------------------|-------|-------|-------|-----|-----|-----|-----|--------|-------|-------|-------|-----|-----|-----|-----|--------|-------|-------|-----|-----|-----|---|---|
| Hammer type         |  | IDH-25                                     |       |       |       |     |     |     |     | IDH-35 |       |       |       |     |     |     |     | IDH-45 |       |       |     |     |     |   |   |
| Hammer weight (t)   |  | 5.5                                        |       |       |       |     |     |     |     | 7.8    |       |       |       |     |     |     |     | 11.0   |       |       |     |     |     |   |   |
| Cap weight (t)      |  | 0.5                                        |       |       |       |     |     |     |     | 1.0    |       |       |       |     |     |     |     | 1.8    |       |       |     |     |     |   |   |
| Boom length (m) B   |  | 16                                         | 19    | 19    | 22    |     |     |     |     | 16     | 19    | 19    | 22    |     |     |     |     | 16     | 19    | 19    |     |     |     |   |   |
| Leader length (m) L |  | 20.85                                      | 23.85 | 26.85 | 29.85 |     |     |     |     | 20.85  | 23.85 | 26.85 | 29.85 |     |     |     |     | 20.85  | 23.85 | 26.85 |     |     |     |   |   |
| Pile length (m) P   |  | 14                                         | 17    | 20    | 23    |     |     |     |     | 13.5   | 16.5  | 19.5  | 22.5  |     |     |     |     | 13     | 16    | 19    |     |     |     |   |   |
|                     |  | R = Working radius (m) W = Pile weight (t) |       |       |       |     |     |     |     |        |       |       |       |     |     |     |     |        |       |       |     |     |     |   |   |
| Boom angle          |  | R                                          | W     | R     | W     | R   | W   | R   | W   | R      | W     | R     | W     | R   | W   | R   | W   | R      | W     | R     | W   | R   | W   | R | W |
| 82                  |  | 5.2                                        | 6.5   | 5.6   | 6.5   | 5.6 | 6.5 | 6.0 | 6.5 | 5.2    | 8.0   | 5.6   | 8.0   | 5.6 | 8.0 | 6.1 | 6.5 | 5.3    | 6.0   | 5.7   | 5.5 | 5.7 | 4.5 |   |   |
| 81                  |  | 5.4                                        | 6.5   | 5.9   | 6.5   | 5.9 | 6.5 | 6.4 | 6.5 | 5.5    | 8.0   | 6.0   | 7.0   | 6.0 | 7.0 | 6.4 | 4.5 | 5.6    | 6.0   | 6.1   | 4.0 | 6.1 | 3.5 |   |   |
| 80                  |  | 5.7                                        | 6.5   | 6.2   | 6.5   | 6.2 | 6.5 | 6.8 | 6.0 | 5.8    | 8.0   | 6.3   | 6.5   | 6.3 | 6.0 | 6.8 | 3.0 | 5.9    | 6.0   | 6.4   | 2.0 | 6.4 | 1.5 |   |   |
| 79                  |  | 6.0                                        | 6.5   | 6.5   | 6.5   | 6.5 | 6.5 | 7.1 | 4.5 | 6.0    | 8.0   | 6.6   | 5.0   | 6.6 | 4.5 | 7.2 | 1.5 | 6.1    | 4.0   | 6.7   | 1.0 |     |     |   |   |
| 78                  |  | 6.3                                        | 6.5   | 6.9   | 6.5   | 6.9 | 6.0 | 7.5 | 3.5 | 6.3    | 7.0   | 6.9   | 4.0   | 6.9 | 3.5 |     |     | 6.4    | 2.5   |       |     |     |     |   |   |
| 77                  |  | 6.5                                        | 6.5   | 7.2   | 5.5   | 7.2 | 5.0 | 7.9 | 2.0 | 6.6    | 6.0   | 7.3   | 2.5   | 7.3 | 2.0 |     |     | 6.7    | 1.5   |       |     |     |     |   |   |
| 76                  |  | 6.8                                        | 6.5   | 7.5   | 4.5   | 7.5 | 4.0 | 8.2 | 1.0 | 6.9    | 4.5   | 7.6   | 1.5   | 7.6 | 1.0 |     |     |        |       |       |     |     |     |   |   |
| 75                  |  | 7.1                                        | 6.5   | 7.8   | 3.5   | 7.8 | 3.0 |     |     | 7.1    | 3.5   |       |       |     |     |     |     |        |       |       |     |     |     |   |   |
| 74                  |  | 7.3                                        | 5.5   |       |       |     |     |     |     | 7.4    | 2.5   |       |       |     |     |     |     |        |       |       |     |     |     |   |   |

- Angle of pile pulling rope with leader below 10°.
- It is not possible to work with leader forward.
- Pile pulling will be affected with leader in vertical position.
- Permissible weight for pile pulling does not exceed a range in vertical positioning specified in working capacity table.

## ■ Boom combination

| Boom length | Boom composition |
|-------------|------------------|
| 16          | 6.5+3+6.5        |
| 19          | 6.5+3+3+6.5      |
| 22          | 6.5+3+6+6.5      |



(Unit: mm)



CCH500-2

# Clamshell

## ■ Specifications

|                                                    |                                         |                                                |
|----------------------------------------------------|-----------------------------------------|------------------------------------------------|
| Maximum lift above ground                          |                                         | 13.3m<br>(19m boom + 1.0m <sup>3</sup> bucket) |
| Rope speed                                         | Boom hoisting and lowering              | 60m/min (1st drum layer)                       |
|                                                    | Bucket opening and closing              | High speed 80m/min,<br>Low speed 40m/min       |
|                                                    | Bucket suspension hoisting and lowering | High speed 80m/min,<br>Low speed 40m/min       |
| Part lines                                         | Boom hoisting                           | 12 part lines                                  |
|                                                    | Bucket opening and closing              | 6 part lines<br>(for all types of buckets)     |
|                                                    | Bucket suspension                       | 1 part line<br>(for all types of buckets)      |
| Counterweight                                      |                                         | 15.5 tons (5.6 + 5.9 + 4.0)                    |
| Total weight (13m boom + 1.0m <sup>3</sup> bucket) |                                         | 50.2 tons                                      |
| Average ground bearing pressure                    |                                         | 0.65kgf/cm <sup>2</sup>                        |

## ■ Clamshell bucket specifications

| Classification | Typ | Capacity (m <sup>3</sup> ) | Weight (t) |
|----------------|-----|----------------------------|------------|
| Optional       | HD  | 0.6                        | 3.0        |
| Optional       | GP  | 0.8                        | 2.2        |
| Standard       | GP  | 1.0                        | 2.5        |
| Optional       | WR  | 1.0                        | 2.0        |
| Optional       | WR  | 1.25                       | 1.6        |

Bucket type (purpose)

HD: Heavyduty (civil engineering, construction)

GP: General purpose (heavy load handling)

WR: Wide rehandling (medium load rehandling)

## ■ Wire rope

| Place of use               | Rope diameter (mm) | Guaranteed strength (t) | Rope type | Length (m)                               |
|----------------------------|--------------------|-------------------------|-----------|------------------------------------------|
| Bucket opening and closing | φ20                | 30.0                    | A         | 69 (with 19m boom)                       |
| Bucket holding             | φ20                | 30.0                    | A         | 55 (with 19m boom)                       |
| Boom hoisting              | φ16                | 19.2                    | A         | 145 (12 part lines)                      |
| Boom suspension (pendant)  | φ31.5              | 74.9                    | A         | 6.1 (for outer boom)                     |
|                            |                    |                         |           | 3 (for 3m insert boom)                   |
|                            |                    |                         |           | 6 (for 6m insert boom)                   |
| Weight type tagline        | φ10                | 5.5                     | B         | 34 (for 16m boom)*<br>49 (for 19m boom)* |
| Spring type tagline        | φ10                | 5.5                     | B         | 30*                                      |
| Hydraulic type tagline     | φ10                | 5.5                     | B         | 49                                       |

Rope type

A: 6×F<sub>i</sub> (29) IWRC preformed regular Z lay

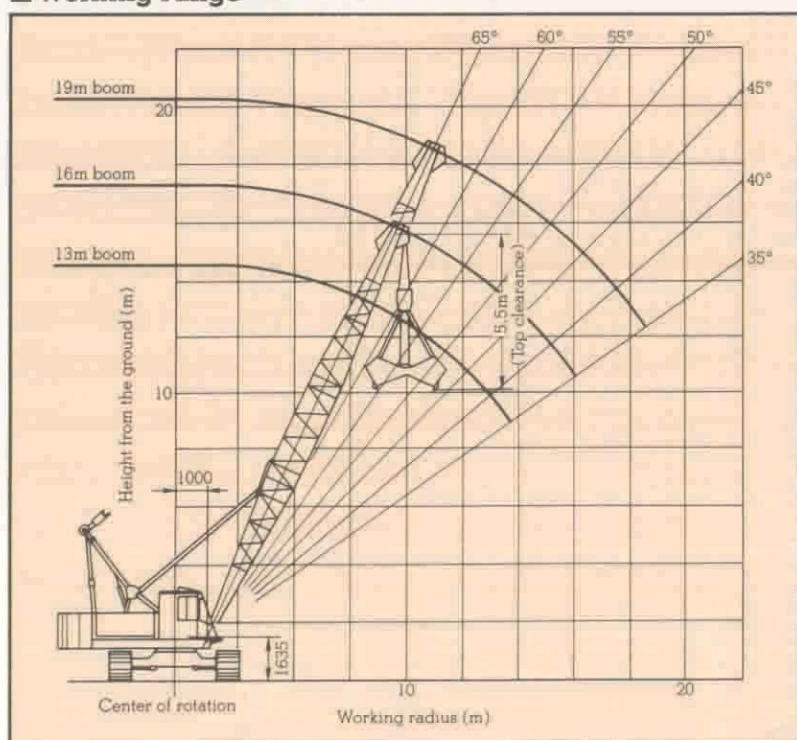
B: 6×19 hemp core regular Z lay

\* optional.

## ■ Working range and allowable loads

| Boom length (m)            |              | 13        |      |     |     | 16   |      |      |      | 19   |      |      |      |
|----------------------------|--------------|-----------|------|-----|-----|------|------|------|------|------|------|------|------|
| Boom angle                 |              | 35°       | 45°  | 55° | 65° | 35°  | 45°  | 55°  | 65°  | 35°  | 45°  | 55°  | 65°  |
| Working radius (m)         |              | 12.0      | 10.6 | 8.9 | 6.9 | 14.4 | 12.7 | 10.6 | 8.2  | 16.9 | 14.8 | 12.3 | 9.5  |
| Rated lifting load (t)     |              | 5.0       | 5.0  | 5.0 | 5.0 | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Maximum dumping height (m) |              | 3.4       | 5.2  | 6.7 | 7.8 | 5.1  | 7.3  | 9.1  | 10.5 | 6.8  | 9.4  | 11.6 | 13.3 |
| Maximum digging depth (m)  | Tagline type | Weight    |      |     |     | 12   |      |      |      | 22   |      |      |      |
|                            |              | Hydraulic |      |     |     | 36   | 36   | 36   | 36   | 36   | 36   | 36   | 36   |
|                            |              | Spring    |      |     |     | 15   |      |      |      | 13   |      |      |      |

## ■ Working range



● Rated lifting load is the upper limit of the "bucket weight + load" during clamshell work.

Use a bucket suitable for the kind of the load required so that the allowable load figures in the table are not exceeded.

● The maximum dumping height is for a standard 1.0m<sup>3</sup> bucket.

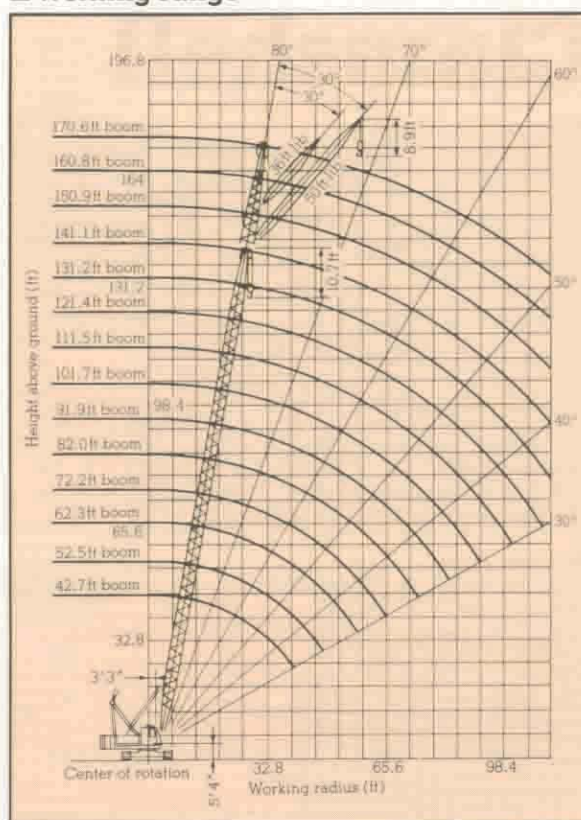


# Crane

## Specifications

|                                                                      |                                |                                                |
|----------------------------------------------------------------------|--------------------------------|------------------------------------------------|
| Maximum lifting load × working radius                                |                                | 110,230 lbs × 12.1 ft                          |
| Maximum lift above ground                                            |                                | 159 ft (170.6 ft boom)                         |
| Rope speed                                                           | Boom hoisting and lowering     | 197 ft/min (1st layer on drum)                 |
|                                                                      | Load hoisting and lowering     | High speed 262 ft/min,<br>Low speed 131 ft/min |
|                                                                      | Jib load hoisting and lowering | High speed 262 ft/min,<br>Low speed 131 ft/min |
| Part lines                                                           | Boom hoisting                  | 12 part lines                                  |
|                                                                      | 50 ton hook                    | 10 part lines                                  |
|                                                                      | 5 ton hook                     | 1 part line                                    |
| Counterweight                                                        |                                | 34,171 lbs (12,346 + 13,007 + 8,818)           |
| Crane total weight<br>(with 42.7 ft boom and 110,230 lbs hook block) |                                | 104,719 lbs                                    |
| Average ground bearing pressure                                      |                                | 8.82 lbs/in <sup>2</sup>                       |

## Working range



## Combination of Boom and Jib (●: available combination)

| Jib length (ft) | Boom length (ft) |      |      |      |      |      |       |       |       |       |       |       |       |       |  |  |
|-----------------|------------------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|
|                 | 42.7             | 52.5 | 62.3 | 72.2 | 82.0 | 91.9 | 101.7 | 111.5 | 121.4 | 131.2 | 141.1 | 150.9 | 160.8 | 170.6 |  |  |
| 3'3"            | ●                | ●    | ●    | ●    | ●    | ●    | ●     | ●     | ●     | ●     | ●     | ●     | ●     | ●     |  |  |
| 20'             |                  |      |      |      | ●    | ●    | ●     | ●     | ●     | ●     | ●     | ●     | ●     | ●     |  |  |
| 30'             |                  |      |      |      | ●    | ●    | ●     | ●     | ●     | ●     | ●     | ●     | ●     | ●     |  |  |
| 40'             |                  |      |      |      | ●    | ●    | ●     | ●     | ●     | ●     | ●     | ●     | ●     | ●     |  |  |
| 50'             |                  |      |      |      | ●    | ●    | ●     | ●     | ●     | ●     | ●     | ●     | ●     | ●     |  |  |

## Wire rope

| Place of use         | Rope diameter (ft) × overall length (ft) | Guaranteed strength (lbs) |
|----------------------|------------------------------------------|---------------------------|
| Load hoisting        | 25/32" × 689'                            | 66,138                    |
| Boom hoisting        | 5/8" × 476'                              | 42,328                    |
| Boom suspension      | 1/4"                                     | 165,125                   |
| Jib load hoisting    | 25/32" × 394'                            | 66,138                    |
| Jib boom suspension  | 7/8"                                     | 82,893                    |
| Jib strut suspension | 7/8"                                     | 82,893                    |

Rope type is 6 × Fi (29) IWRC Preformed Regular Z Lay for all purposes

## Rated lifting loads (Through out 360°; within 78% of tipping load; forward stability factor over 1.15)

(Unit: lbs)

| Working Radius (ft) | Boom Length (ft) |         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------|------------------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                     | 42.7             | 52.5    | 62.3   | 72.2   | 82.0   | 91.9   | 101.7  | 111.5  | 121.4  | 131.2  | 141.1  | 150.9  | 160.8  | 170.6  |        |        |
| 12.1                | 110,230          |         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 13.1                | 101,412          | 101,191 |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 14.8                | 87,302           | 87,082  | 86,861 |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 16.4                | 73,413           | 73,193  | 72,972 | 72,752 |        |        |        |        |        |        |        |        |        |        |        |        |
| 18.0                | 63,272           | 63,052  | 62,831 | 62,611 | 62,390 |        |        |        |        |        |        |        |        |        |        |        |
| 19.7                | 55,556           | 55,335  | 55,115 | 54,895 | 54,674 | 54,454 |        |        |        |        |        |        |        |        |        |        |
| 23.0                | 44,533           | 44,312  | 44,092 | 43,872 | 43,651 | 43,431 | 43,210 | 42,990 |        |        |        |        |        |        |        |        |
| 26.2                | 37,037           | 36,817  | 36,596 | 36,376 | 36,155 | 35,935 | 35,715 | 35,494 | 35,274 |        |        |        |        |        |        |        |
| 29.5                | 31,526           | 31,305  | 31,085 | 30,864 | 30,644 | 30,423 | 30,203 | 29,983 | 29,762 | 29,542 |        |        |        |        |        |        |
| 32.8                | 27,558           | 27,337  | 27,117 | 26,896 | 26,676 | 26,455 | 26,235 | 26,014 | 25,794 | 25,573 | 25,353 | 25,132 |        |        |        |        |
| 39.4                | 21,605           | 21,385  | 21,164 | 20,944 | 20,723 | 20,503 | 20,282 | 20,062 | 19,841 | 19,621 | 19,400 | 19,180 | 18,960 | 18,740 | 18,520 | 18,300 |
| 45.9                |                  | 17,637  | 17,416 | 17,196 | 16,975 | 16,755 | 16,535 | 16,314 | 16,094 | 15,873 | 15,653 | 15,432 | 15,212 |        |        |        |
| 52.5                |                  |         | 14,550 | 14,330 | 14,109 | 13,889 | 13,669 | 13,448 | 13,228 | 13,007 | 12,787 | 12,566 | 12,346 |        |        |        |
| 59.1                |                  |         |        | 12,346 | 12,125 | 11,905 | 11,684 | 11,464 | 11,243 | 11,023 | 10,803 | 10,582 | 10,362 |        |        |        |
| 65.6                |                  |         |        | 10,582 | 10,362 | 10,141 | 9,921  | 9,700  | 9,480  | 9,259  | 9,039  | 8,818  | 8,598  |        |        |        |
| 72.2                |                  |         |        |        | 9,039  | 8,818  | 8,598  | 8,377  | 8,157  | 7,937  | 7,716  | 7,496  | 7,275  |        |        |        |
| 78.7                |                  |         |        |        |        | 7,937  | 7,716  | 7,496  | 7,275  | 7,055  | 6,834  | 6,614  | 6,393  | 6,173  |        |        |
| 85.3                |                  |         |        |        |        |        | 6,834  | 6,614  | 6,393  | 6,173  | 5,952  | 5,732  | 5,512  | 5,291  |        |        |
| 91.9                |                  |         |        |        |        |        |        | 5,732  | 5,512  | 5,291  | 5,071  | 4,850  | 4,630  | 4,409  |        |        |
| 98.4                |                  |         |        |        |        |        |        |        | 5,071  | 4,850  | 4,630  | 4,409  | 4,188  | 3,968  | 3,748  |        |
| 105.0               |                  |         |        |        |        |        |        |        |        | 3,968  | 3,748  | 3,527  | 3,307  | 3,086  |        |        |
| 111.5               |                  |         |        |        |        |        |        |        |        |        | 3,527  | 3,307  | 3,086  | 2,866  | 2,646  | 2,425  |

● All rated loads shown are based on the machine being on a firm level, uniformly supporting surface without tipping.

● The weight of the slings, hook block(s) and auxiliary lifting devices are considered to be a part of the load. Main hook block (110,230 lbs capacity) — 7,000 lbs; Jib hook block (110,230 lbs capacity) — 360 lbs.

● Depending on the number of part rated lifting load is limited as follows.

1 part line — up to 11,023 lbs  
2 part line — up to 22,046 lbs  
3 part line — up to 33,069 lbs  
4 part line — up to 44,092 lbs  
5 part line — up to 55,115 lbs

6 part line — up to 66,138 lbs  
7 part line — up to 77,161 lbs  
8 part line — up to 88,184 lbs  
9 part line — up to 99,207 lbs  
10 part line — up to 110,230 lbs

● When boom is equipped with jibs, main hook ratings must be reduced the following weight.

| Jib length (ft)            | 3'3" | 20' | 30' | 40' | 50' |
|----------------------------|------|-----|-----|-----|-----|
| Weight to be reduced (lbs) | 20   | 30  | 40  | 45  | 50  |

● The rated loads for jib when the main hook is installed must be reduced by the total weight of the main hook and the jib hook.

● The maximum boom length to which jib boom can be installed are as follows:  
With the crawler frame extended, up to 141.1' + 50° or 160.8' + 3'3".

● Bucket and lifting magnet operations cannot be performed by jib.

● The rated load for jib should not exceed the value in the table below.

| Jib angle | Jib boom length |       |        |       |
|-----------|-----------------|-------|--------|-------|
|           | 3'3"            | 20'   | 30'    | 50'   |
| 15°       |                 |       | 16,141 | 8,157 |
| 30°       | 11,023          | 8,039 | 7,055  | 5,071 |

● The angle formed by the extension line of the main boom and the center line of the jib boom should not exceed 30° under load condition.



# Tower Crane

## Specifications

|                                           |                                          |
|-------------------------------------------|------------------------------------------|
| Maximum lifting capacity × working radius | 10t × 10.5m                              |
| Maximum lift above ground                 | 57.8m (38.5m post + 22m jib)             |
| Jib hoisting/lowering                     | 40m/min (4th drum layer)                 |
| Load hoisting/lowering                    | High speed 80m/min,<br>Low speed 40m/min |
| Post hoisting/lowering                    | 60m/min                                  |
| Jib hoisting                              | 8-part line                              |
| Hook hoisting                             | 2-part line                              |
| Post hoisting                             | 12-part line                             |

## Combination of tower post and jib

(● available combination)

| Jib length (m) | Post length (m) |      |      |      |      |      |      |      |
|----------------|-----------------|------|------|------|------|------|------|------|
|                | 17.5            | 20.5 | 23.5 | 26.5 | 29.5 | 32.5 | 35.5 | 38.5 |
| 13             | ●               | ●    | ●    |      |      |      |      |      |
| 16             | ●               | ●    | ●    | ●    | ●    |      |      |      |
| 19             |                 | ●    | ●    | ●    | ●    | ●    | ●    | ●    |
| 22             |                 |      | ●    | ●    | ●    | ●    | ●    | ●    |
| 25             |                 |      |      | ●    | ●    | ●    |      |      |

## Wire rope

| Place of use          | Rope type | Rope dia. (mm) × length (mm) | Guaranteed strength (t) |
|-----------------------|-----------|------------------------------|-------------------------|
| Load hoisting         | B         | 20 × 190                     | 27.3                    |
| Tower jib hoisting    | A         | 20 × 120                     | 30.0                    |
| Tower post hoisting   | A         | 16 × 145                     | 19.2                    |
| Tower jib suspension  | C         | 28                           | 59.3                    |
| Jib strut suspension  | C         | 28                           | 59.3                    |
| Tower post suspension | A         | 31.5                         | 74.9                    |
| Jib limit stop        | A         | 14                           | 13.5                    |

Rope type A: 6 × F<sub>i</sub> (29) IWRC preformed regular Z lay

B: 4 × F (a + 40) Monorope Sp C: 6 × F<sub>i</sub> (25) IWRC

## Tower crane working range and lifting loads

## Rated lifting loads

(360° throughout; within 78% of tipping load; forward stability factor over 1.15)  
(Unit: ton)

| Working radius (m) | Post length (m) |             |            |             |             |
|--------------------|-----------------|-------------|------------|-------------|-------------|
|                    | Under 32.5      | 35.5 ~ 38.5 | Under 32.5 | 35.5 ~ 38.5 | 26.5 ~ 32.5 |
|                    | Jib length (m)  |             |            |             |             |
|                    | Under 19        | Under 19    | 22m        | 22m         | 25m         |
| 6.7                | 10.0            | 8.0         |            |             |             |
| 8.7                | 10.0            | 8.0         |            |             |             |
| 9.7                | 10.0            | 8.0         | 7.8        | 6.5         |             |
| 10.5               | 10.0            | 8.0         | 7.8        | 6.5         |             |
| 10.8               | 9.7             | 8.0         | 7.8        | 6.5         | 4.7         |
| 12.0               | 8.7             | 8.0         | 7.8        | 6.5         | 4.7         |
| 13.0               | 8.0             | 8.0         | 7.2        | 6.5         | 4.7         |
| 14.0               | 7.3             | 7.3         | 6.5        | 6.5         | 4.7         |
| 16.0               | 6.2             | 6.2         | 5.6        | 5.6         | 4.1         |
| 18.0               | 5.4             | 5.4         | 4.9        | 4.9         | 3.6         |
| 19.3               | 5.0             | 5.0         | 4.6        | 4.6         | 3.3         |
| 20.0               |                 |             | 4.4        | 4.4         | 3.2         |
| 22.0               |                 |             | 4.0        | 4.0         | 2.9         |
| 24.0               |                 |             |            |             | 2.6         |
| 24.7               |                 |             |            |             | 2.5         |

- All loads are based on a firm level, uniformly supporting surface without traveling.
- Net lifting capacity will be reduced by the weight of rope fittings: 410kgs for 10 ton hook.

