

Load chart refresher

Load charts are technical documents provided by crane manufacturers. These charts help the crane operator determine the crane's lift capacity. The lift capacity is the maximum weight that can be lifted when a crane is in a particular configuration.

The lift capacity of a crane is affected by how the crane is physically set up. The following factors all have significant effects on the lift capacity:

- The vertical or horizontal angle of a boom or jib.
- The length of a boom or jib.
- The position of a load-supporting trolley.
- The use or position of outriggers (to increase the stability of the crane).
- The position of the boom relative to the midline of the crane's body.
- Hoisting devices and attachments that are being used.

For safety reasons, it is critical for the crane operator to use a load chart to determine the actual lift capacity. In general, WorkSafeBC requires that a load chart is either:

- Permanently posted on the crane or hoist, or
- Given to the operator, who must keep it available at all times when operating the crane or hoist.

How to read a load chart

In short, each crane's load chart describes how the crane's lift capacity varies when considering distance and angle. A load chart includes the following information:

- **Dimensions and weight** — This includes the crane's dimensions with and without the outriggers extended, the crane's transport weight, and its steering dimensions.
- **Lift capacity** — The maximum weight that can be lifted.

The maximum weight is typically measured by the shortest boom length, usually in front of the cab, and with the outriggers fully extended.

- **Lift range** — A range diagram is usually included in every chart. This diagram shows how much boom length is needed to lift a load at a particular distance (radius) and height.
- **Lift angle** — This chart shows the maximum weight if a luffing or fixed jib is used. With higher angles of lift, the maximum weight decreases. With a luffing jib, the angle can be automatically adjusted from the operator's cab. With a fixed jib, the angle is fixed.
- **Crane in motion** — This shows the lift capacity for a pick and carry. This chart illustrates the total weight that can be:
 - Picked up at a 360-degree angle while stationary on wheels.
 - Supported while slowly rolling with the load.

Even though many lifts can be planned using computer simulations, the crane operator needs to know how to read crane load charts. The operator can determine from the chart when the crane is in the most stable, "strongest" configuration. This is achieved when the crane uses the shortest boom length and the greatest boom angle.

OHS Regulation reference: section [14.5](#).

For more information, please also view the document – [Load Chart Figure Booklet](#).

Project:

Address:

Employer:

Supervisor:

Date:

Time:

Shift:

Number in crew:

Number attending:

Other safety concerns or suggestions:

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Record of those attending:

Name: (please print)	Signature:	Company:
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Manager's remarks:

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Manager:
(Signature)

Supervisor:
(Signature)

For more information on health and safety requirements for crane operations in BC, refer to the *Workers Compensation Act* and the OHS Regulation at worksafebc.com.