

June 2021

## Sharing the Load: Tandem Lift Cranes

A Tandem Lift is when two or more cranes pick up the same object at the same time. The reason why an object may be lifted in tandem could be the size of the object. Imagine having one pick point centered on a 50-foot object versus one pick point on each end.

Tandem lift and *Cranes in the same bay at the same time* are not synonymous with one another. Contrary to Tandem Lift, Cranes that operate in the same bay at the same time are assumed to pick up two separate objects and be operating at the same time. See Figure 1 for a sketch showing when it is appropriate to include Tandem Lift in the project Order Document.

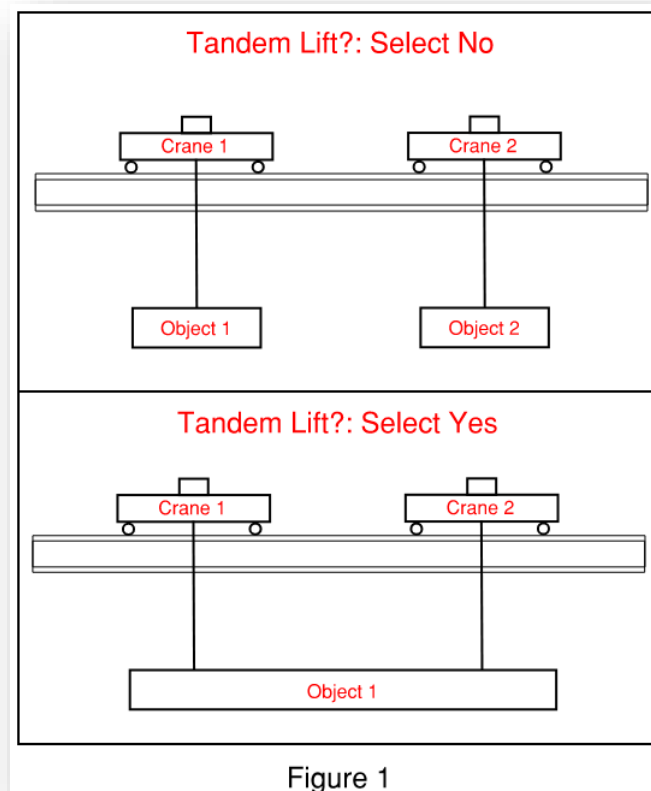


Figure 1

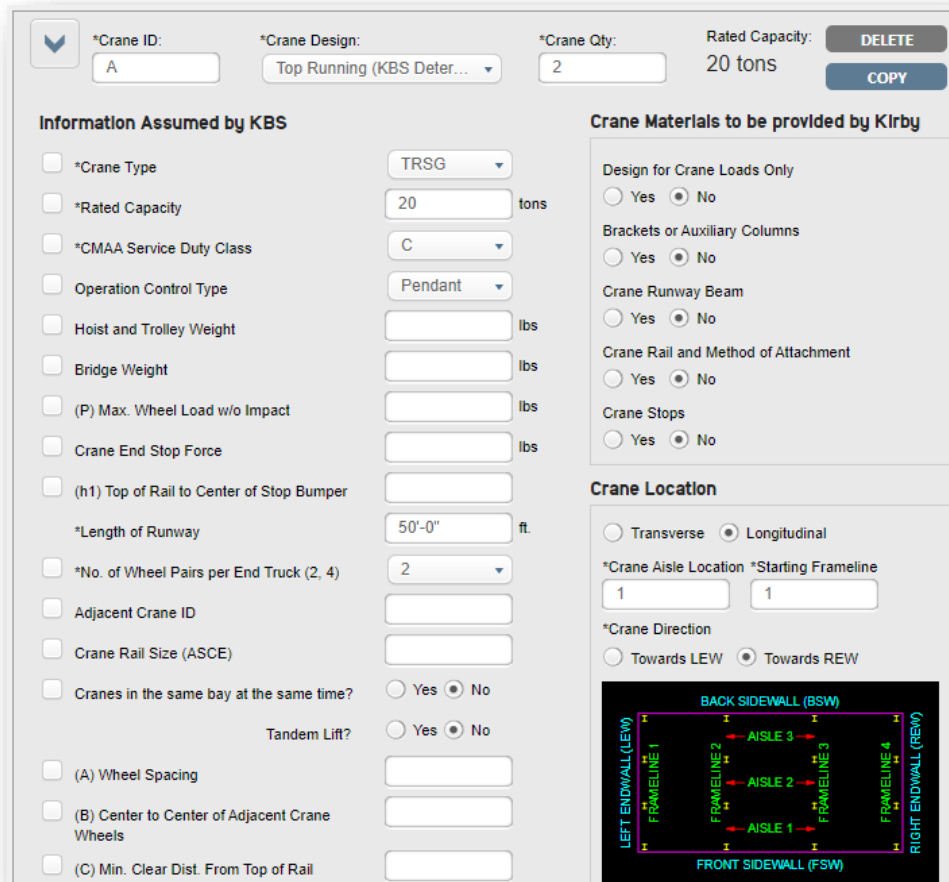
### Why is Tandem Lifting Important?

The loading created by cranes is due to the anticipated movement of those cranes. When there are multiple cranes, the building codes consider that those cranes won't be operating in unison. In other words, the cranes won't be lifting, starting, stopping, or swaying side to side at the same time. If the cranes were to move in unison, it would put higher loads into the framing system. When multiple cranes

pick up the same object, the cranes will move in unison and therefore the building design needs to incorporate the appropriate loading from this crane usage.

## Communicating to NBG

When entering multiple cranes within a single crane aisle in eQuote, you may have noticed a new question on the input screen. The question asks if the cranes are “Tandem Lift?”



The screenshot displays the Kirby eQuote software interface for configuring cranes. At the top, there are input fields for \*Crane ID (A), \*Crane Design (Top Running (KBS Deter...)), \*Crane Qty (2), and Rated Capacity (20 tons), along with DELETE and COPY buttons. The main interface is divided into several sections:

- Information Assumed by KBS:** This section contains a list of checkboxes and dropdown menus for various crane specifications:
  - \*Crane Type: TRSG
  - \*Rated Capacity: 20 tons
  - \*CMAA Service Duty Class: C
  - Operation Control Type: Pendant
  - Hoist and Trolley Weight: lbs
  - Bridge Weight: lbs
  - (P) Max. Wheel Load w/o Impact: lbs
  - Crane End Stop Force: lbs
  - (h1) Top of Rail to Center of Stop Bumper: ft
  - \*Length of Runway: 50'-0"
  - \*No. of Wheel Pairs per End Truck (2, 4): 2
  - Adjacent Crane ID:
  - Crane Rail Size (ASCE):
  - Cranes in the same bay at the same time? Yes No
  - Tandem Lift? Yes No
  - (A) Wheel Spacing:
  - (B) Center to Center of Adjacent Crane Wheels:
  - (C) Min. Clear Dist. From Top of Rail:
- Crane Materials to be provided by Kirby:** This section includes radio buttons for:
  - Design for Crane Loads Only: Yes No
  - Brackets or Auxiliary Columns: Yes No
  - Crane Runway Beam: Yes No
  - Crane Rail and Method of Attachment: Yes No
  - Crane Stops: Yes No
- Crane Location:** This section includes radio buttons for:
  - Transverse Longitudinal
  - \*Crane Aisle Location: 1
  - \*Starting Frameline: 1
  - \*Crane Direction: Towards LEW Towards REW
- Diagram:** A diagram at the bottom right shows a crane layout with labels for BACK SIDEWALL (BSW), FRONT SIDEWALL (FSW), LEFT ENDWALL (LEW), and RIGHT ENDWALL (REW). It also indicates AISLE 1, AISLE 2, and AISLE 3, and FRAMELINE 1, FRAMELINE 2, FRAMELINE 3, and FRAMELINE 4.

## Summary

It is important to work closely with the Engineer of Record and End User to understand how the cranes will be used in the building. The new selection of Tandem Lift was added to eQuote to more clearly identify the type of crane operation described above. By identifying the Tandem Lift scenario at the quote stage, you can ensure that your building is adequately designed for the cranes and avoid delays in the design and fabrication of the project.