



Top tips for assembling tower cranes

IMAGE SOURCE: Manitowoc

Top tips for assembling tower cranes

27 September 2024 by Manitowoc

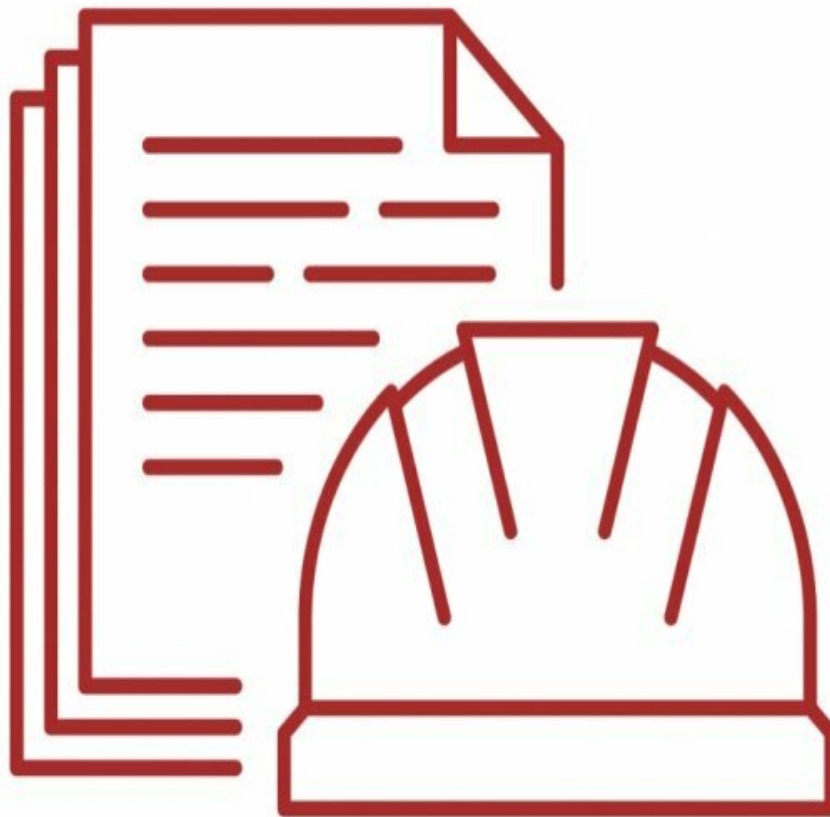
- Contractors are increasingly seeking large tower cranes for bigger and taller building projects worldwide.
- Potain service technician Chen Tao emphasizes the importance of reviewing the operation manual and procuring PPE for safe crane assembly.
- A thorough ground inspection by a qualified engineer is crucial for ensuring stability and support for the crane.
- Stronger mobile cranes are necessary to handle the heavier components of larger tower cranes like the Potain MCT 1105.

- Precise assembly of the jib, counter jib, and ballast is essential, with specific instructions provided in the operating manual.
- Proper reeving and calibration of limiters and sensors are critical steps before the crane is ready for operation.

What does it take to assemble some of the world's largest and tallest tower cranes today? Looking Up explores the key elements and steps required for an efficient erection process that gets the biggest tower cranes up and running.

Contractors are increasingly looking for large tower cranes to handle *bigger* and *taller* building projects worldwide. Taking the right approach to erecting these cranes is crucial for an efficient and successful deployment.

Potain service technician Chen Tao is highly experienced in assembling large tower cranes. He offers some useful reminders:



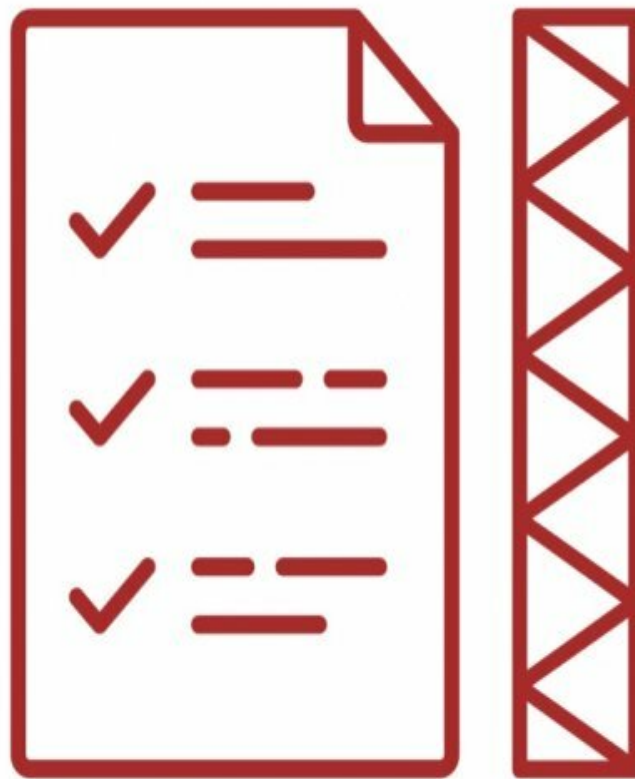
Top tips for assembling tower cranes

IMAGE SOURCE: Manitowoc

Review the operation manual and procure PPE

All personnel involved must fully study and understand the operation manual before setting up a tower crane. The manual provides specific instructions from the manufacturer, ensuring the correct and safe operation of the crane.

Obtain all Personal Protective Equipment (PPE), as it is essential for operators to protect themselves from various workplace hazards, ensure compliance with regulations, maintain productivity, and adopt a culture of accident prevention on the jobsite.



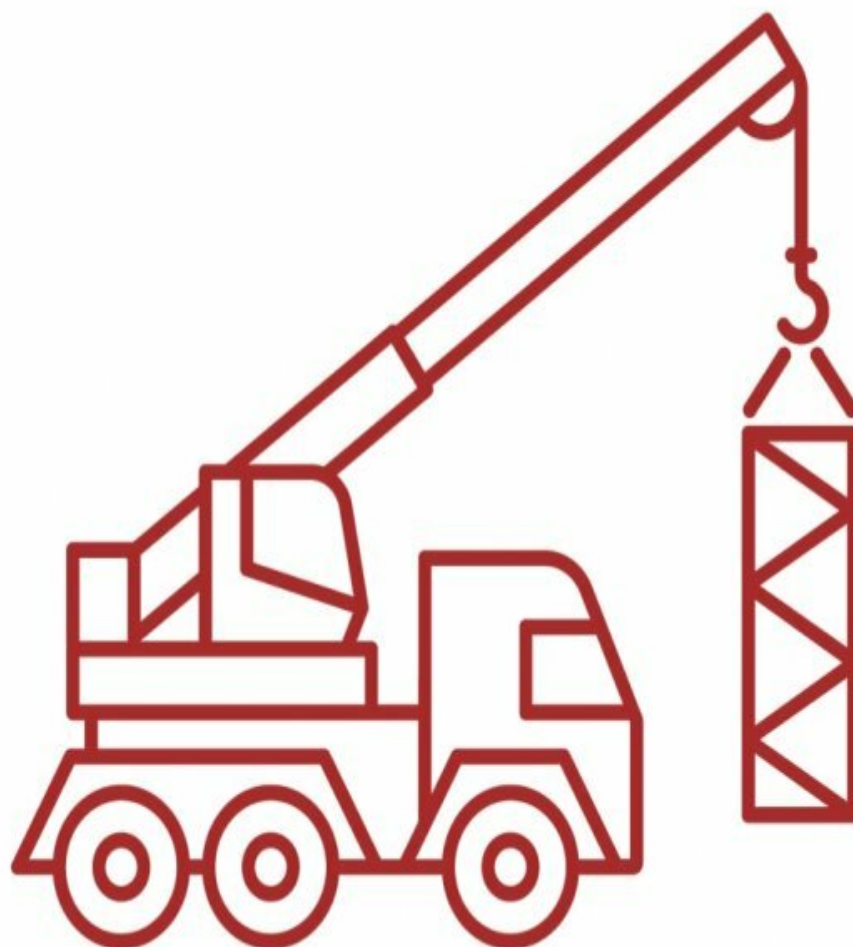
Top tips for assembling tower cranes

IMAGE SOURCE: Manitowoc

Start at the bottom and work up

Ensure that a qualified, licensed, or professional civil engineer conducts a thorough inspection of the ground area where the crane will be positioned. The professional must make sure that the area is stable, level, and capable of supporting the crane's weight and loads.

Next, it's important to get the base right. For instance, cranes such as the Potain MCT 1105 feature a fixing angle mechanism to guarantee stability during erection and operation. Familiarize yourself with its operation and adjust as needed. Follow the assembly process according to the operation manual.



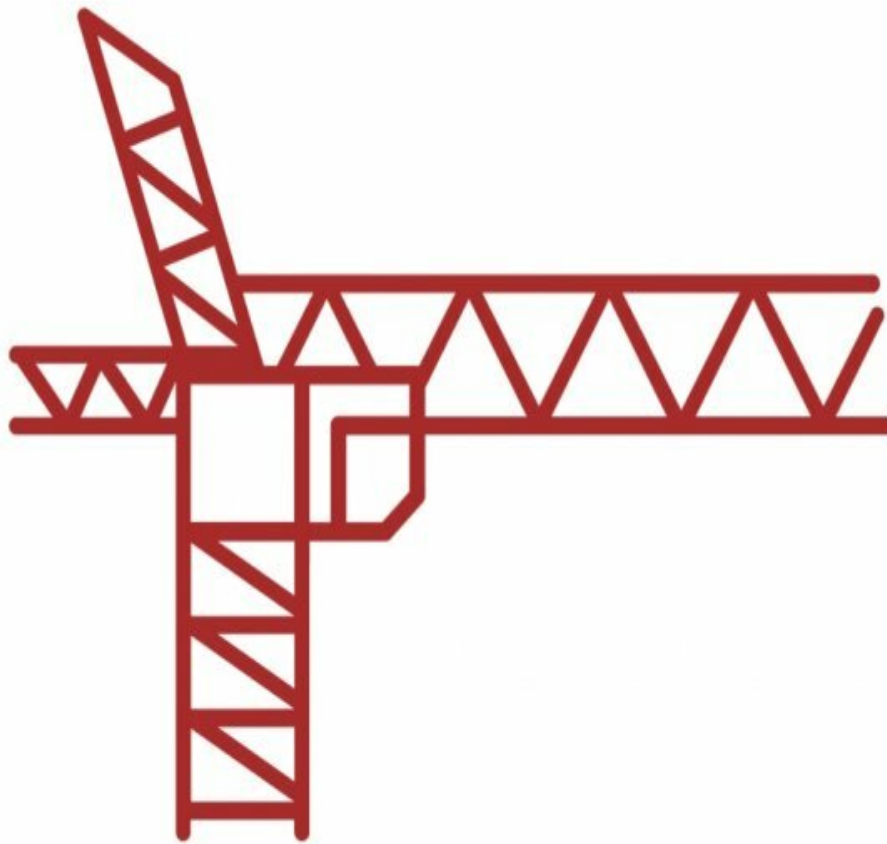
Top tips for assembling tower cranes

IMAGE SOURCE: Manitowoc

Make sure you've got enough muscle

Larger and taller tower cranes naturally have heavier components and therefore require stronger mobile cranes to assist with erection. For example, two of the heaviest parts on the MCT 1105 are the slewing unit with cabin, which weighs 19 t, and the 20 m of counter jib, which weighs 22 t.

For bigger tower cranes, the lifting capacity of the assist crane is critical as the weight of the components is greater. It's also important to consider the assist crane's working radius and lifting height. If possible, have a compact mobile crane on site to assist too, for assembling minor components like the handrail, ladder, wind plates, and auxiliary derrick.



Top tips for assembling tower cranes

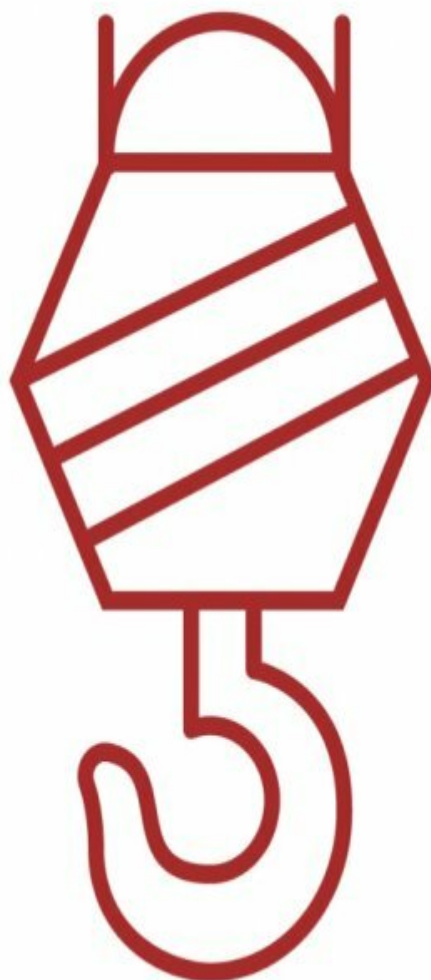
IMAGE SOURCE: Manitowoc

Be precise with the jib, counter jib, and ballast

Follow the operating manual and locate the correct nameplate during jib assembly. The time it takes for ground-level jib assembly will depend on the jobsite space and the mobile crane's capacity.

In a standard tower crane, the counter jib comprises one layer. However, for a larger crane like the MCT 1105, it consists of two layers. Counter jibs of varying lengths possess distinct centers of gravity, meaning varied sling points.

When installing the ballast, each jib configuration requires a specific ballast installation process, outlined in the manual. Pay attention to this—for example, the ballasts for the MCT 1105 feature a new design, so familiarize yourself with that.



Top tips for assembling tower cranes

IMAGE SOURCE: Manitowoc

Get the reeving right, then prepare for action

The wire ropes are generally thicker for larger tower cranes, so be sure to factor that into the reeving process. As described in Potain operating manuals, you'll need to use a trolley winch or derrick winch to assist.

Once erection is complete calibrate the crane's limiters and sensors to ensure correct operation from the outset. Test tasks like hoisting up and decelerating limiters, adjusting trolley front and rear limiters, Visu+ adjustment, and more. Finally, be sure to get the appropriate sign-off and acceptance certificate from the local authorities as necessary.

That's it! You should be ready to go. But of course, be sure to constantly monitor crane performance.

Source: Manitowoc

CRANES

TOWER CRANES

MOBILE CRANES