

## Tower Cranes

Tower Crane Rentals and Sales Vermont - Cranes are a globally recognized form of industrial equipment that is commonly used in the materials handling industry. Depending on the application, cranes may have wire ropes, sheaves, chains or a hoist rope. These products allow cranes to hoist materials vertically and transport them horizontally. Shipping containers, giant crates, heavy machinery and other items can be transported efficiently. Freight Transportation Cranes are utilized to move items in terms of making loading and unloading easier and safer. Their lifting capacity varies depending on the model. Cranes deliver a major mechanical advantage, allowing people to lift tremendous amounts of freight. Cranes are found in many industries and often seen on construction sites. Specified Use Small jib cranes are ideal for cramped environments such as workshops. Giant tower cranes are a different breed that is useful for high-rise construction. There is a crane perfectly suited for a variety of applications. They can help provide access to tight spaces. Floating cranes can be useful for salvaging sunken ships and other marine items. They may also be used on oil rigs.

**Tower Cranes** A tower crane is a model that is fixed on a concrete slab to the ground. This model is commonly attached to the sides of structures. It offers precise height and lifting reliability. These cranes are used in residential and commercial construction. The base is mounted to the mast which can create further reach by extension. The mast is connected to the slewing unit of the crane that enables it to rotate. On top of the slewing portion are three parts known as the operator's cab, the shorter counter-jib and the long horizontal jib. The main component responsible for carrying the load is the long horizontal jib. The counterweight is created by the counter-jib that may utilize concrete blocks. The jib contains the load to and from the crane's center. Typically, the operator is found inside of a cab located on top of the tower that is attached to the turntable; however, it can be mounted on the jib alternatively. The operator may rely on a radio remote control apparatus from the ground. The crane operator uses electric motors to operate the lifting hook and control wire rope cables within a system of sheaves. The sizeable horizontal arm contains the cargo hook along with its' motor. The operator commonly works together with a rigger to safely hook and unhook loads. Hand signals are an important part of daily safety. The rigger dictates the lifting schedule for the crane and is responsible to ensure all loads and subsequent rigging is safe and reliable.

**Truck-Mounted Cranes** Truck mounted cranes consist of two parts including the boom and the carrier. The carrier and the boom have an attached turntable to enable the upper component to swing from side to side. Typically, modern hydraulic truck cranes feature single engines. The engine supplies power to both the undercarriage and the crane. The pump mounted on the lower area of the crane supplies power to the upper part of the crane via hydraulics and a turntable. Earlier hydraulic crane trucks commonly had two engines. One engine controlled the hydraulic pump for the outriggers and the jacks while the other engine was responsible for the crane's travel. Some operators prefer the older dual-engine models since there are often turntable leaks many newer units. Cranes often need to travel on roads to different locations, eliminating the need for industrial transportation unless there are size and weight restrictions. Local transportation laws are in place. Larger machines may have trailers to distribute the load over a variety of axles. Certain cranes can be taken apart to meet certain requirements. Often an additional truck will follow the crane. The truck has the counterweights that have been disassembled for travel.

**Outriggers & Stability** Outriggers horizontally extend from the cranes' chassis to provide stability. These are used vertically to stabilize the machine and keep it level during hoisting and stationary activities. Some truck crane units can travel at slow speeds even while carrying a suspended load. Care is taken to ensure the load doesn't swing sideways from the direction of travel. Most of the anti-tipping capability is related to how stiff the chassis suspension is. Many models include moving counterweights to be adjusted to enhance stabilization farther than what the outriggers provide. Suspended loads are among the most stable due to the majority of the crane's weight acting as a counterweight. Electronic safeguards are in place to monitor the maximum safe loads for stationary work and traveling speeds. Overhead and Bridge

Cranes A bridge crane is a type of overhead crane. This concept features a hook-and-line mechanism and a crane with a horizontal beam that is made to run along rails. These cranes are similar to gantry cranes that are typically found in factory buildings. They attach to rails which run alongside two walls. Overhead cranes may feature single or double beam construction and may use regular steel or complex box girder beams. A control pendant may be used to operate the crane. Locations requiring heavy lifting from ten tons and higher may use a double girder bridge. The box girder style produces a system with a lower deadweight but offers higher system integrity. Cargo can be lifted with a hoist and the trolley that can travel along the bridge along with the bridge component covered by the crane. The steel industry is familiar with overhead cranes throughout the manufacturing process. Steel is typically handled by an overhead crane until it is transformed into a finished piece and leaves the factory. From raw materials to pouring hot steel and moving finished product, overhead cranes handle steel at every stage. Steel items are moved onto trucks via overhead cranes. Metal fabricators and stampers and the automobile industry rely on these machines. Pulp & Paper Mills Bridge cranes are often relied on for regular pulp mill maintenance including removing equipment such as heavy press rolls. Paper machines rely on bridge cranes during construction to install massive equipment including cast iron paper drying drums and other heavy apparatus. Loader Crane Electrically powered with an articulated arm attached to a trailer or a truck and specified for unloading and loading, the loader crane consists of many jointed components that enable the machine to be folded into a small space between uses. Telescopic sections are common. Certain models are equipped to stow themselves or load themselves without any instruction from the operator. The operator needs to move around the vehicle for viewing access to the load. Hydraulic controls that are mounted on the crane may work with a portable cabled control system and a radio-linked system. Gantry Crane A gantry crane features a hoist located on a trolley running horizontally along rails, often fitted on two beams or a single beam or in a fixed machinery house. The crane frame is supported on a gantry system with equalized beams and wheels that run on the gantry rail, usually perpendicular to the trolley travel direction. The gantry cranes are available in numerous sizes. Some models can move extremely heavy loads for industrial and shipyard applications.