

## Tower Cranes

Tower Crane Rentals and Sales Eugene - A popular machine within the materials handling family is the crane. 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. Cranes make transporting cumbersome loads including machinery, shipping containers and crates much easier. Freight Transportation Cranes can lift difficult loads to make unloading and loading safer and more efficient. Different models have various lifting capacities. They provide a huge mechanical advantage and enable people to lift thousands of pounds of freight. Cranes are popular in a variety of industries and found in many locations. Specified Use Jib cranes can be tiny and are suited for cramped and smaller environments including workshops while giant tower cranes can be employed to construct high-rises. There is a crane perfectly suited for a variety of applications. Some cranes can allow 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 This type of crane is fixed on a concrete slab to the ground. It is often seen attached to sides of structures as it provides excellent lifting and height capacity. Popular for building tall commercial buildings and residential structures, the base is mounted to the mast to create even further reach once extended. The slewing unit of the crane and it's connected mast allow rotation of the crane. Above the slewing component, the operator cab is situated, along with the long horizontal jib and the counter jib. The long horizontal jib is the main crane component responsible for carrying the load. Concrete blocks may be used with the counter-jib to create the counterweight. The jib handles the load to and from the center of the crane. Normally the crane operator stays inside of a cab found on top of the tower attached to the turntable; although, it may be mounted on the jib instead. The operator may rely on a radio remote control apparatus from the ground. The operator relies on electric motors to control wire rope cables in a system of sheaves and control the lifting hook. The sizeable horizontal arm contains the cargo hook along with its' motor. The operator often works with a rigger to coordinate hooking and unhooking loads. Hand signals are an important part of daily safety. The rigger has an important job dictating the crane's lifting schedule. They are responsible for making sure all rigging is reliable and safe. 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. Original, older hydraulic crane truck models commonly featured dual engines. One engine controlled the hydraulic pump for the outriggers and the jacks while the other engine was responsible for the crane's travel. There are operators who would rather run the older two-engine models due to the frequent turntable leaks that often occur in some of the newer designs. Cranes often need to travel on roads to different locations, eliminating the need for industrial transportation unless there are size and weight restrictions. Local laws may be in place regarding transportation. Typically, larger cranes are outfitted with trailers to help distribute the load over numerous axles. Some models can be disassembled to meet specific requirements. Often an additional truck will follow the crane. The truck has the counterweights that have been disassembled for travel. Outriggers & Stability Stability is achieved by horizontal outriggers extending from the chassis of the crane. Vertical stability is achieved by the outriggers to keep the machine level while completing hoisting and stationary applications. Specific crane truck models can slowly travel with a suspended load. Care is given to ensure the load doesn't swing during travel. The stiffness of the chassis suspension delivers most of the anti-tipping aspect. Moving counterweights are included in a variety of models to amplify stabilization further than what the outriggers offer. Suspended loads are among the most stable due to the majority of the crane's weight acting as a counterweight. Safeguards are in place electronically to monitor the maximum safe loads for traveling speeds and stationary

work. Overhead and Bridge Cranes An overhead crane is a kind of crane commonly called a bridge 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. Double beam or single beam construction model crane designs are available for overhead cranes, which may rely on complex box girder beam or regular steel beams. Certain overhead cranes have the ability to use a control pendant for operation. Areas that need heavy lifting around ten tons or more can rely on a double girder bridge. Higher system integrity and a lower deadweight may be delivered via the box girder style. 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 leaves the factory as a finished piece. All steel is handled by an overhead crane from raw materials being poured to storing hot steel for cooling and transporting finished coils. Steel components are loaded by overhead crane and lifted onto trucks. Metal stampers and fabricators rely on this equipment daily as does the automobile industry to handle raw materials. 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 Powered electrically with an articulated arm attached to a truck or trailer, specific for loading and unloading, the loader crane has numerous joints to allow 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 To complete viewing access of the load, the operator must move around the vehicle. Modern models may rely on a radio-linked system or a portable cabled control system that works alongside hydraulic controls that are mounted on the crane. 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 via beams and wheels on a gantry system and runs on the gantry rail which is generally perpendicular to the trolley direction of travel. These cranes come in all sizes, and some can move very heavy loads, particularly the extremely large examples used in shipyards or industrial installations.