

Tower Cranes

Tower Crane Rentals and Sales Arizona - Cranes are a popular kind of industrial equipment commonly used in the materials handling industry. These machines may be outfitted with sheaves, a hoist rope, wire ropes or chains. These items allow cranes to lower and lift items vertically while transporting them horizontally. Heavy crates, shipping containers, machinery and similar items can be efficiently moved thanks to a variety of crane models. 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 offer a great job site support and the mechanical advantage of an extended lifting capacity. Cranes are commonly found on construction sites and a variety of industries. Specified Use There are different cranes for many applications. Jib cranes can be used for tighter environments including workshops. Extensive tower cranes can be seen in construction. There are numerous cranes suited for many different jobs. 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 unit is often seen mounted to sides of structures to provide superior lifting and height. 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. 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 handles the load to and from the center of the crane. 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. There is a radio remote control feature that operators can access 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 cargo hook, along with its motor is found in the long horizontal arm. The operator often works with a rigger to coordinate hooking and unhooking loads. Daily safety requires many important hand signals. 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. Updated hydraulic truck cranes are typically single-engine units. The same engine is responsible for providing power to the crane and the undercarriage. Hydraulics are necessary for delivering power to the upper portion of the crane through the turntable located from the pump attached to the bottom portion. 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. 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. You may have witnessed cranes traveling on roads to travel from site to site. This can eliminate the need for industrial transportation requirements unless the crane is of sizeable weight with size restrictions. Transportation falls under local laws. Generally, bigger cranes have trailers to help the load become distributed over many axles. There are some crane models that can be taken apart to accommodate particular requirements. A crane will often be followed by another truck containing the counterweights that are disassembled for travel. Outriggers & Stability Stability is achieved by horizontal outriggers extending from the chassis of the crane. 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. The majority of the anti-tipping aspect is related to the stiffness of the chassis suspension. 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. There are electronic safeguards in place to regulate 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. Cranes can be made with single or double beam construction and may rely on complex box girders or regular steel beams. Some overhead cranes have the capacity to be operated with a control pendant. 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. The hoist is another item that is utilized to lift the cargo, the bridge spanning the portion covered by the crane and a trolley to move along the bridge. The manufacturing process of the steel industry utilizes cranes frequently. An overhead crane typically handles steel until it exits the factory as a completed item. 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 commonly used in pulp mill maintenance. They are responsible for removing equipment including heavy press rolls. Bridge cranes utilized in paper machine construction help to install large apparatus' and equipment including huge components such as cast-iron paper drying drums and similar items.

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. These telescoping abilities are useful. Some models can even load or stow themselves on their own without any operator intervention. 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 gantry system supports the crane frame with equalized beams. Wheels are running along the gantry rail, typically perpendicular to the direction the trolley travels. The gantry cranes are available in numerous sizes. Some models can move extremely heavy loads for industrial and shipyard applications.