Tower Cranes

Tower Crane Rentals and Sales Mesa - 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 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 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 commonly found on construction sites and a variety of industries. 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 are numerous cranes suited for many different jobs. Some cranes can allow access to tight spaces. Floating crane models may be employed to salvage sunken marine items including ships or used in oil rigs. Tower Cranes The type of crane that is fixed on a concrete slab is a tower crane. This model is commonly attached to the sides of structures. It offers precise height and lifting reliability. Popular for building tall commercial buildings and residential structures, the base is mounted to the mast to create even further reach once extended. The crane is capable of rotating thanks to the mast that connects to the slewing unit. 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 majority of the load is carried via 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. Operators can use a radio remote control unit 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 long horizontal arm houses the cargo hook and its' motor. The operator often works with a rigger to coordinate hooking and unhooking loads. Hand signals are a huge safety component used daily. 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 The boom and the carrier are two parts found on truck-mounted cranes. These two pieces rely on a turntable to attach them and allow the upper portion to swing from side to side. Modern hydraulic truck cranes are generally single-engine machines. This engine has the responsibility of providing power to 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. 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. Local transportation laws are in place. Larger machines may have trailers to distribute the load over a variety of axles. There are some crane models that can be taken apart to accommodate particular requirements. Typically, another truck with the disassembled counterweights will follow the crane. Outriggers & Stability Outriggers horizontally extend from the cranes' chassis to provide stability. The outriggers help to vertically stabilize the machine and keep it level during stationary and hoisting jobs. Specific crane truck models can slowly travel with 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. 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 apparatus consists of a crane with a horizontal beam and a hook-and-line mechanism that is designed to run along widely spaced rails. These cranes are similar to a gantry crane and are often found in long factory buildings and attach to rails that run down two long 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. Higher system integrity and a lower deadweight may be delivered via the box girder style. The hoist can lift the cargo along with the bridge portion covered by the crane and the trolley that can travel along the bridge. The manufacturing process of the steel industry utilizes cranes frequently. 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 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 Pulp mill maintenance commonly relies on bridge cranes. They are responsible for removing items including 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. Telescoping sections are popular. There are models that have the ability to stow or load themselves without any operator instruction. The operator needs to move around the vehicle for viewing access to the load. Current models often feature a portable cabled control system or radio-linked system that works beside 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 gantry system supports the crane frame with equalized beams. Wheels are running along the gantry rail, typically perpendicular to the direction the trolley travels. These cranes come in all sizes, and some can move very heavy loads, particularly the extremely large examples used in shipyards or industrial installations.