

## Tower Cranes

Tower Crane Rentals and Sales Tempe - Cranes are a popular kind of industrial equipment commonly used in the materials handling industry. Oftentimes, they are equipped with chains, wire ropes, a hoist rope or sheaves. 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. The lifting capacity depends on the model. 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** 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 utilized for maritime applications such as salvaging sunken items or 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. These cranes are used in residential and commercial construction. The base is mounted to the mast which can create further reach by extension. The slewing unit of the crane and it's connected mast allow rotation of the crane. The long horizontal jib, the shorter counter-jib and the operator's cab are all found above the slewing portion. The majority of the load is carried via the long horizontal jib. Concrete blocks may be used with the counter-jib to create the counterweight. The jib houses the crane's load to and from the center. Usually, the operator of the crane resides in a cab situated on top of the tower, attached to the turntable; however, it may be capable of being mounted on the jib. There is a radio remote control feature that operators can access from the ground. Electric motors are used to operate the lifting hook and control wire rope cables located within a sheaves system. The long horizontal arm houses the cargo hook and its' motor. The operator commonly works together with a rigger to safely hook and unhook 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. These two items have a turntable to attach them, allowing the higher portion the ability to swing from side-to-side. Typically, modern hydraulic truck cranes feature single engines. The same engine is responsible for providing power to the crane and the undercarriage. 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. The first engine enabled the crane to travel down the road while the second engine controlled the hydraulic pump for the outriggers and jacks. 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. 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** Outriggers are extended horizontally from the chassis of the crane. 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. 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** A bridge crane is a type of overhead crane. This mechanism features a crane with a hook-and-line mechanism and horizontal beam that is designed to run along rails that are spaced widely. 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. Certain overhead cranes have the ability to use a control pendant for operation. 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 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. An overhead crane handles all kinds of steel including raw materials being pored to transporting finished oils and storing hot steel. 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. Bridge cranes are used in the construction of paper machines as they facilitate the installation of giant equipment and apparatus including the cast iron paper drying drums and other massive 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. Telescoping sections are popular. There are models that have the ability to stow or load themselves without any operator instruction. 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 has a hoist in a fixed machinery house or on a trolley that runs horizontally along rails, usually fitted on a single beam or two beams. 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.