

Tower Cranes

Tower Crane Rentals and Sales Irvine - 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. 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. 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 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 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 The type of crane that is fixed on a concrete slab is a tower crane. It is often seen attached to sides of structures as it provides excellent lifting and height capacity. Commonly used for building residential and commercial tall buildings, the base is attached to the mast which may extend for further reach. 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 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 houses the crane's load to and from the 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 operator relies on electric motors to control wire rope cables in a system of sheaves and control the lifting hook. 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 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 The boom and the carrier are two parts found on truck-mounted cranes. The carrier and the boom have an attached turntable to enable the upper component to swing from side to side. Modern hydraulic truck cranes are generally single-engine machines. The engine supplies power to both the undercarriage and the crane. Hydraulics are responsible for providing power to the upper via the turntable from the pump mounted on the lower portion. Original, older hydraulic crane truck models commonly featured dual 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. 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. 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 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. Specific crane truck models can slowly travel with a suspended load. Care is given to ensure the load doesn't swing during travel. The majority of the anti-tipping aspect is related to the stiffness of the chassis suspension. Counterweights can be moved and adjusted on certain models to enhance stabilization even more than what the outriggers deliver. 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. This type of crane resembles a gantry crane. They are common within factory buildings and attach to rails that run down two walls. Cranes can be made with single or double beam construction and may rely on complex box girders 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. The box girder design creates a system featuring higher system integrity with a lower deadweight. 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 steel industry relies on overhead cranes for much of the manufacturing. 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. Overhead cranes lift steel components onto trucks. Metal fabricators and stampers use this equipment every day including the auto industry to transport raw materials. Pulp & Paper Mills Pulp mill maintenance commonly relies on bridge cranes. They are responsible for removing items 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 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. Telescoping sections are popular. There are models that have the ability to stow or load themselves without any operator instruction. The operator can move around the machine in order to view 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 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 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 are available in many sizes and capable of moving heavy and cumbersome loads for industrial applications and in shipyards.