

Tower Cranes

Tower Crane Rentals and Sales Pasadena - A popular machine within the materials handling family is the crane. 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. Shipping containers, giant crates, heavy machinery and other items can be transported efficiently. Freight Transportation Cranes can lift difficult loads to make unloading and loading safer and more efficient. The lifting capacity depends on the model. Cranes offer a great job site support and the mechanical advantage of an extended lifting capacity. Cranes are found in many industries and often seen on construction sites. 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 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 This type of crane 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. 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 main component responsible for carrying the load is the long horizontal jib. Concrete blocks may be used with the counter-jib to create the counterweight. The jib contains the load to and from the crane's 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. 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. Often, the operator works alongside a rigger to accurately coordinate unhooking and hooking loads. Daily safety requires many important hand signals. The rigger determines the crane's lifting schedule and is responsible to make sure everything load and rigging wise is reliable and safe.

Truck-Mounted Cranes Truck mounted cranes consist of two parts including the boom and the carrier. 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. 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. Back in the day, older models of hydraulic crane trucks often had two engines. One engine allowed the crane to be pulled down the road while the other engine controlled the hydraulic pump for the jacks and outriggers. 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 laws may be in place regarding transportation. Typically, larger cranes are outfitted with trailers to help distribute the load over numerous axles. Certain cranes can be taken apart to meet certain 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. Vertical stability is achieved by the outriggers to keep the machine level while completing hoisting and stationary applications. Certain truck crane models have the capacity to travel slowly while maintaining 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. Moving counterweights are included in a variety of models to amplify stabilization further than what the outriggers offer. Suspended loads are some of the most stable with most of the crane's weight functioning like 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 often referred to as a bridge 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. This type of crane resembles a gantry crane. They are common within factory buildings and attach to rails that run down 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. Some overhead cranes have the capacity to be operated with a control pendant. A double girder bridge can be used in places that require heavy lifting such as 10 tons or more. 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. An overhead crane typically handles steel until it exits the factory as a completed item. From raw materials to pouring hot steel and moving finished product, overhead cranes handle steel at every stage. Steel items are moved onto trucks via overhead cranes. Metal fabricators and stampers and the automobile industry rely on these machines. Pulp & Paper Mills Pulp mill maintenance commonly relies on bridge cranes. They are responsible for removing items including 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

Powered with an electric articulated arm attached to a trailer or truck for loading and unloading, the loader crane is complete with many joints to facilitate folding the machine into a small space between jobs. 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. Hydraulic controls that are mounted on the crane may work with a portable cabled control system and a radio-linked system.

Gantry Crane

There is a hoist on the gantry crane found in a fixed machinery house or a horizontal trolley that runs along rails often fitted between two beams or a single beam. 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.