

Tower Cranes

Tower Crane Rentals and Sales Michigan - 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. Cranes make transporting cumbersome loads including machinery, shipping containers and crates much easier. Freight Transportation Cranes simplify loading and unloading and moving items. 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 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 This type of crane is fixed on a concrete slab to the ground. This model is commonly attached to the sides of structures. It offers precise height and lifting reliability. Commonly used for building residential and commercial tall buildings, the base is attached to the mast which may extend for further reach. 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 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. The operator may rely on a radio remote control apparatus from the ground. Electric motors are used to operate the lifting hook and control wire rope cables located within a sheaves system. The sizeable horizontal arm contains the cargo hook along with 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 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. 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. 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. 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. Certain operators prefer the two-engine models due to the turntable leaks that commonly occur in newer design models. 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. Typically, another truck with the disassembled counterweights will follow the crane. Outriggers & Stability Outriggers are extended horizontally from the chassis of the crane. Vertical stability is achieved by the outriggers to keep the machine level while completing hoisting and stationary applications. Some truck crane units can travel at slow speeds even while carrying a suspended load. Care is given to ensure the load doesn't swing during travel. The stiffness of the chassis suspension delivers most of the anti-tipping aspect. Many models include moving counterweights to be adjusted to enhance stabilization farther than what the outriggers provide. Some of the most stable loads are suspended loads since the weight of the crane serves 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

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. 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. Cargo can be lifted with a hoist and the trolley that can travel along the bridge along with the bridge component covered by the crane. 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. An overhead crane handles all kinds of steel including raw materials being poured to transporting finished oils and storing hot steel. 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 Bridge cranes are commonly used in pulp mill maintenance. They are responsible for removing equipment 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. 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 on a gantry system with equalized beams and wheels that run on the gantry rail, usually perpendicular to the trolley travel direction. These cranes are available in many sizes and capable of moving heavy and cumbersome loads for industrial applications and in shipyards.