

Vision-based crane manipulation increases safety and simplifies precise positioning tasks. CAMotion Crane Vision™ is the combination of advanced motion control and machine vision technologies.



PRINCIPLE OF OPERATION

CAMERA Sensory information about hook position is obtained by using an industrial machine-vision camera, together with robust hook-tracking software. The camera is mounted on the trolley, near the cable drum, and is oriented downward. In this configuration, the hook is always visible to the camera. The camera captures and analyzes 20 images of the hook each second. Hook position information is issued to the Crane Vision controller.

HOOK To facilitate reliable hook tracking, a pattern of retro-reflective fiducial markers are fastened to the hook. Fiducial markers are easily discernable from the other features in the workspace. They permit the camera to track the hook consistently and with a positioning accuracy of less than an inch.

CRANE When Crane Vision is enabled, the crane smoothly, automatically, and continuously positions itself directly over the suspended load. This behavior reduces payload swing, eliminates "side-pull" lifts, and enables an operator to move the crane simply by pushing on the payload.



BENEFITS AT A GLANCE

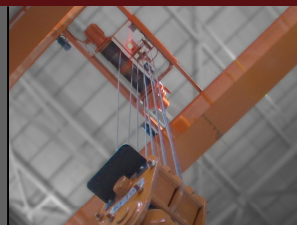
AUTOMATIC LOAD CENTERING Crane Vision prevents "side-pull" lifts by adjusting bridge and trolley position so that the crane is directly centered over the load. Adjustments happen automatically during hoisting.



PUSH & PULL CONTROL Crane Vision continually adjusts the position of the crane over the load. This enables crane motions to be made by simply pushing or pulling on the load. This type of haptic control simplifies precise load positioning.



DISTURBANCE REJECTION Payload swing caused by an inexperienced operator, or from external disturbances like wind, can be quickly damped out by enabling Crane Vision.



COMPATIBLE Crane Vision is compatible with existing VFDs. Enabling & disabling Crane Vision can be accomplished with existing wired or radio pendants.

RETROFITABLE Integration onto existing hardware platform is possible. 1-Day installation time, typical.

MODULAR Crane Vision can be used stand-alone, or in conjunction with CAMotion's other crane control technology: Expert Operator™, Safe Move™, and Auto Move™.

PROVEN Crane Vision technology has a proven industrial track record with applications on heavy equipment production cranes, primary metals coil cranes, and general purpose single & double girder bridge cranes.