

Thern

Product Application

Construction



Winch System Delivers Safe, Efficient Lifting Solution For Baffle Positioning in Concrete Tank Construction

Based out of El Cajon, California, DYK Inc., a leader in design, construction and post-tensioning of circular water tanks, has been developing concrete water tanks for cities and communities covering much of the West Coast and Midwest. As a pioneer in the industry, DYK continues to be innovators in every aspect of the business—including construction techniques.

The Company, which boasts the most sophisticated finite element design analysis and the most technologically advanced construction, has developed a safer, more effective method for installing baffles within large water storage tanks. Utilizing heavy-duty power winches from Thern, DYK is able to hoist up baffles in less time, with better results and with a higher-degree of safety.

As the concrete tank construction industry continues to be reshaped by new technology and better methodology, companies like DYK are always looking to improve worksite performance through safer, more effective construction techniques. Although not terribly complex, the process of installing the baffles in larger tanks has proven to be both time-consuming and dangerous when connecting the baffles at such heights.

To solve their construction concerns the Company purchased multiple Thern series-4WP2T8 high-speed power winches to be used for mounting to the floor. During construction projects, crews would then use the winches to hoist the large 40-foot baffles up to the ceiling and easily attached them to the eyebolts.



Thern's 4WP2T8-2000-8 Series electric winch.

As in many large volume water tanks, baffles play a critical role in diverting water throughout the tank. The inlet and the outlet are usually placed side-by-side, roughly 20 feet away from each other in most cases, and the baffles create a path for the water to effectively run through the tanks. When it comes time to install baffles in the larger tanks hoisting and positioning has proven to be tricky job, in fact it can be quite frightening. However, with the use of the floor mounted winches and pre-inserted eyebolts, DYK has eliminated the use of multiple man lifts and the opportunity for injury.

In order to attach the baffles to the ceiling of the tanks, DYK attaches an eyebolt on the ceiling along with a pulley. These "eyebolts" are installed prior to the ceiling being erected, generally when the concrete is being poured. The Thern winches, bolted down to the ground, allow crews to run a cable through the pulley and attached to the curtain on the floor. Winches then work together and pull up the baffles until they can be attached to the ceiling





with the assistance of workers on one-man lift. The baffles hang from 16-inch stainless steel cables, which sandwich the baffles between two stainless steel angles.

Prior to using the winch system, two man lifts were used to balance, lift and connect the baffles to the ceiling of the tanks. Situated across for each other, the man lifts would carry both the baffles and the workers to the ceiling of the storage tank, where the baffles were then attached. Workers would rest the baffles on the basket and head on up, as high as 35-feet. Often times the lifts would rock back and forth from all the weight being balanced. Once workers were lifted near the ceiling with the baffles, they would then try to hook it up to the cable all while standing on a rocking lift.

“You tried to do all the prepping you could before you going up, but there wasn’t much you could do till you got up there,” says Mr. Valenzuela. “With the old method, you were essentially doing the pulling and bolting at the same time—it wasn’t easy to say the least.” Mr. Valenzuela points out that it’s a scary way of hoisting the baffles due to the amount of weight being supported by both the lifts. “The winches solve the problem by holding the baffles in position relieving our crews from having to lift all that weight using lifts.”

The Thern winches, positioned on the ground, feature a 2,000 lb load capacity along with a single-phase electric motor. The machine cut worm gears provide accurate operation for the controllers while the internal mechanical brake makes sure operators have positive load control when they are lifting the baffles. The dual function cable anchor also helps crews by offering a quick disconnect of wire rope once baffles are in position for safe positioning.

“Not only did we make it safer, but we made it more efficient,” says Mr. Valenzuela. “With the old

method, if the man lifts weren’t positioned just right, you’d have to come all the way down and reposition the man lifts and head up again—it was very time consuming.”

Through continued research and development, DYK has helped establish itself as one of the premier water tank builders in the West. And, as technology and design innovations continue to be refined builders like DYK are able to design and build better water storage facilities for communities throughout the entire U.S.

**Learn more about the 4WP2 and
other Thern products at**

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