

MAGNETEK ENGINEERED SYSTEMS

Tiffin Loader Crane Testing Equipment Project



Project — Tiffin Loader Crane Testing Equipment

Location — Tiffin, Ohio

Integrator — S. G. Morris

Application — Scale Testing Winch and Trolley Radio Controller

Products Used

- Flex Pro™ Transmitter
- Enrange™ MHR Radio Controller

CHALLENGE

- Improve performance of equipment in precision mobile transporters
- Replace restrictive wired control systems
- Stabilize functions of loading ramp
- Train customer in operations of new install products

Tiffin Loader Crane's primary focus is providing innovative lifting, loading, and handling solutions for customers' unique material handling problems. The previous system of wired controls for calibrating and testing truck and rail weighing scales led to high shock loading, and reduced component life, and make it difficult to perform fine movements. Proactively seeking wireless solutions in an industry that does not typically utilize them, Tiffin installed a custom-engineered system to better operate their trolley and winch functions.

SOLUTION

- Magnetek custom-engineered wireless controls to operate trolley system and winch functions
- Increased efficiency of onboard adjustment capabilities
- Modified ramp acceleration and deceleration operations
- Provided on-site setup and training support

Magnetek and S. G. Morris created a system solution that offers an integrated package of wireless control and hydraulics, allowing for smoother and easier operations. Enhancing equipment performance and simplifying adjustment capabilities were the goals of the new system install on the industrial scale certifying equipment.

Scale test and calibration equipment determines the amount of loaded cargo and ensures the load is within road or rail limits. Several turnkey packages are available including enclosed Class 8 Truck van bodies or knuckle-boom flatbed configurations. Precision weights, which are carried by a mobile transporter in the truck body, are dispatched via trolley and winch systems that raise and lower the carrier and weights to and from the ground. 3,000-6,000 and 8,000 pound test carts calibrate the railroad and heavy capacity truck scales.



A receiver output energizes the blocking valve, which can impede movement, to allow hydraulics to enable the trolley and winch control valves. An external limit switch is used to break the command signal to the winch coil at the proper time. This prevents the winch function from lifting a load too far and damaging itself. If the emergency stop button on the Flex Pro is used, the blocking valve signal is interrupted and inhibits oil from entering the hydraulic control valves.

ADVANTAGES OF USING MAGNETEK'S WIRELESS CONTROLS

- Experts in providing innovative, cost-effective, custom-engineered wireless communication products
- Meets application specifications to reduce internal engineering and costs, improve time to market and enhance performance
- Manufactured and tested at our U.S. facility
- Customized application software designed at our Bridgeville, PA, facility
- Aftermarket service in our Ontario, Canada, and U.S. facilities

The Flex Pro/ MHR wireless radio control system operates the trolley function that transfers the scale carrier and testing weights in and out of the truck trailer. The wireless transmitter allows the operator to run the trolley further from the drop zone than the previous system, integrating a safer design. A Flex Pro radio remote control incorporates proportional technology and offers precise management and smooth movement of all functions. The MHR controller is easily adjustable, which allows it to be modified to operate correctly with existing valves.

Adjustments were made on-site and Tiffin had no problems with startup and operation processes. A plug-and-play installation detected and replaced the previous system. The new controls produced smoother tracking and lifting motions for the trolley and winch as well as softer acceleration and deceleration movements for the truck ramp. Steadier movements decreased the risk of dropped loads and potential damage to equipment. The system improvement included simpler adjustment and training periods, which diminished the necessary on-site repairs.

Tiffin experienced improved equipment performance with adjustability of the valve controllers and easier onboard capabilities at the receiver. Improved and smoother performance correlates to an increase in productivity and sales. Tiffin was trained to modify the system without utilizing a computer, which allowed the company to save time and money. Sourcing for Tiffin was eased by S. G. Morris' integration of a complete hydraulic system including Magnetek's industry-leading wireless controls.

