

MAGNETEK ENRANGE RADIO CONTROL SYSTEMS

Chassis-only Mini Derrick Machines



Project — Pitman Utility Products, Inc.

Location — Grandview, MO

Application — Chassis-only Mini Derrick

Products Used —

- Enrange Flex 8 Pro™ Wireless Transmitter
- Enrange MHR Radio Controller

CHALLENGE

- Provide a wireless control system to accommodate a chassis-only machine application with joystick control for cattracks in a hand-held package
- Reduce installation time and cost of a control system to partner with a state-of-the-art hydraulic system
- Integrate machine control box control logic with the wireless control system that also works interference-free near high voltage electrical lines

SOLUTION

- Magnetek improved the performance, productivity and safety of the chassis-only mini derrick by implementing a wireless control system that is scalable to meet the specific needs of the application and is the heart and brains of the hydraulic control system.
- Designed an innovative receiver solution that combines the components of a radio receiver and hydraulic controller into a convenient single unit reducing installation time and overall costs
- Increased mobile hydraulic machine operation efficiency and safety with wireless control

Pitman Utility Products, Inc. continues to be the leader in mobile hydraulic crane innovation and reliability for the utility and construction industries since its founding in 1950. Pitman's unique position in the industry has allowed it to improve its products for an ever-changing market providing customers with high-quality, custom equipment.

The Pitman Tiiger derrick chassis is a mini cat-track carrier that is perfect for applications in backyards, narrow right-of-ways, and remote hard-to-get-to locations. This machine has sliding tracks that adjust the width allowing it to fit through narrow spaces. These particular chassis-only machines are sold to customers that retrofit each unit with application packages such as tree trimming kits.

The mini derrick chassis is controlled by a fully proportional hydraulic system for machine travel and site setup operations. The radio control system controls the tracks in a forward and reverse motion and the cat tracks can be slid in or out to adjust the width for greater stability of the machine. As well as providing outputs, this control system also has inputs from toggle switches located on the machine-mounted control box. The radio system has custom control logic for ease of operation, as well as added safety from the radio system and the machine mounted controls.



Because of its control type flexibility, Magnetek provided the Enrange Flex 8 Pro handheld transmitter with the radio system because it offered proportional and digital on-off pushbutton control all in one compact package. The ergonomically designed contoured case is comfortable for the operator, and it offers easy to operate push buttons for reduced finger fatigue to further enhance operator comfort and controllability.

ADVANTAGES OF USING MAGNETEK'S RADIO REMOTE 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 Canonsburg, PA, facility
- Aftermarket service in our Ontario, Canada, and U.S. facilities

The Flex Pro's unique speed control includes four proportional operating modes. Speed outputs can be adjusted by 25, 50, 75 or 100 percent. For example, in a tight area the operator can select 25 percent output, which provides 0 to 25 percent output over the full travel of the transmitter's pushbutton. This gives the machine operator more precise control where and when needed. The modes are toggled by the key switch and the transmitter's four LEDs light up to indicate which mode is active.

The Magnetek Flex 8 Pro is perfect for mobile hydraulic applications such as the Pitman Tiiger, with a durable fiberglass, nylon housing made to withstand shock. The Flex Pro is rated NEMA 4 (IP66) and is sealed to withstand harsh environments. By using reliable frequency generation and an access code system, the signal only operates the intended equipment. The Flex Pro provides 100 hours of operation with only two double-A batteries, reducing down time. Its light-weight, ergonomic design allows for belt clip mounting and one-hand operation for improved working capability and increased safety; the belt clip also helps prevent accidental loss or damage at the work site.

Magnetek provided the revolutionary Enrange MHR wireless controller. The controller is one of the first of its kind in the industry with components of a radio receiver and hydraulic controller combined into a convenient single control box that significantly reduces costs and frees up valuable space on these small machines.

The MHR offers an LCD graphic display that allows for viewing of system settings and a series of readouts that monitor the overall operation of the system. These are not just alpha-numeric codes; the actual description is clearly spelled out for ease of troubleshooting. The display shows the status of the machine in general and in the event of a malfunction, error messages are displayed, pinpointing the issue. The MHR manages the output to the hydraulic valve bank as the transmitter is actuated. This ensures repeatable and constant performance at all temperatures and loads. The result is smooth ramp up and ramp down of each crane function independent of any other functions for increased operation efficiency and safety. The MHR made use of the six available inputs for a chassis enable, and slide in and out digital inputs. These are additional features for safety and for control consolidation that allow the operator to perform all functions with this small control system.

Magnetek is an expert in providing innovative, cost-effective, custom-engineered wireless communication products that meet application specifications.