FALL 2009

MAGNETEK
MATERIAL HANDLING

Evolution

A MAGNETEK MATERIAL HANDLING PUBLICATION

YOUR ONE-STOP SOURCE FOR MATERIAL HANDLING CONTROL SOLUTIONS

MAKING THE CASE

Magnetek's Engineered Systems Group Drives Peterbilt's Automation Project

CONTROL PRODUCTS USED

- IMPULSE®•VG+ Series 3 Drives
- IMPULSE®•G+ Series 3 Drives
- PulseStar® Radio Remote Control System
- Off-board console for Human Machine Interface
- Supervisory Programmable Logic Controller
- Ethernet connection to plant network
- Wireless I/O
- SBP2 Pendant

Peterbilt's reputation is built on providing innovative design and superior-quality features in custom-engineered trucks. Each truck is custom manufactured to user specifications. Magnetek's Engineered Systems Group is helping Peterbilt continue this legacy through the design of automated systems for the line of vehicles produced at the customer's Denton, Texas, facility.

To achieve both increased production efficiency and output, every line in the factory was updated. Magnetek provided the engineering expertise and state-of-the-art control systems to create custom automated monorails resulting in tangible benefits to Peterbilt's end customers. The highly automated systems result in superior quality and increased production.

THE CONTROL SYSTEMS

The 10 carrier cab set monorail system begins with three lanes where cabs are picked and queued. As each cab is loaded, the operator uses a barcode scanner to read the cab production data. This scan associates the cab with the carrier, which is important later in the production process. Truck chassis move under a larger section of the monorail and are also read by a barcode scanner. When this is done, the cab that is required for that chassis automatically moves into place and the cab-to-chassis assembly process begins. During assembly, the carrier automatically matches the line speed of the chassis conveyor, making it easier for the operator to attach the cab to the chassis.

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Magnetek SBP2 Pushbutton Pendant Stations are used to control the carrier over the lanes where the cabs are picked providing optimal control and performance in a compact design. Magnetek's PulseStar radios are used for setting the cabs on the chassis during the assembly process, and a maintenance transmitter is also available to manually operate a carrier around the entire monorail line. Magnetek IMPULSE•G+ Series 3 Adjustable Frequency Drives control the travel and hoist motions on each carrier, and reversing contactors control the grab in-and-out motions.

Red and amber beacons illuminate on the carrier as a clear indication to personnel in the area that the carrier is moving automatically if a fault has occurred. Blue and yellow beacons notify the operators as to which radio transmitter is in control during the assembly process.

A second 10 carrier monorail system was installed for delivering and assembling axles to the truck chassis. On this monorail loop, carriers move from the load station and travel onto and off of two interlocking bridge cranes that are positioned above the on-ground chassis conveyor. Empty carriers are dispatched automatically back to the load area where the cycle repeats itself. This system contains both a clockwise and counterclockwise sequence of operation, with only one direction operational at a time.

SBP2 Pushbutton Pendant Stations are used to control the carriers and PulseStar radios are used to control the bridge cranes. IMPULSE•G+ Series 3 Drives control the trolley and bridge motions.

Once again, a series of red, amber and blue beacons are used to inform personnel when the carrier is moving automatically, if faulted conditions arise, and whether the bridge interlocks are functioning properly.

The fifth wheel monorail system consists of three carriers that synchronize in speed with the on-ground chassis conveyor. After moving a loaded carrier to the assembly line, the operator activates the line synchronization feature that synchronizes the speed of the carrier to that of the chassis conveyor, allowing for an easier assembly process and more flexibility for the operator. Empty carriers are then dispatched automatically back to the load station queue area.

Manual control of the carriers is provided through SBP2 Pushbutton Pendant Stations suspended from the carriers. Two speed reversing contactors control the hoist motions, and IMPULSE•G+ Series 3 Drives control the travel motions. All of the controls are mounted in NEMA 4 enclosures on the carriers.

Each fifth wheel carrier is equipped with a red motion beacon that is energized when the carrier is moving. The amber beacon on each carrier turns on steady when the system detects a problem with the carrier and flashes fast when the dispatch button is pressed.

Magnetek provided the engineering expertise and state-of-the-art control systems to create custom automated monorails resulting in tangible benefits to Peterbilt's end customers.

Each of the three independent operating monorail systems is controlled by a floor mounted ControlLogix PLC. Touch screen operator interfaces display system information and allow the operators to control track switches, call carriers, and establish which carriers are active on line. In addition, each carrier contains I/O that talks with the on-ground PLC over 802.11a wireless communication.

To further increase production efficiency, the carriers are positioned at various stages along the monorail loops using a barcode-type positioning system. This positioning system not only provides for accurate positioning of the carriers, but it also allows the main system PLC to track the carriers and perform collision avoidance between carriers as they traverse around the system.

Magnetek's Engineered Systems Group contributed to improving the production efficiency and throughput at Peterbilt's Denton, Texas, facility by providing a complete turn-key controls solution. The automated monorail control systems were designed by Magnetek engineers, using IMPULSE Adjustable Frequency Drives, PulseStar Radio Remote Controls, and SBP2 Pushbutton Pendants. The system further incorporates programmable logic controllers, touch screen operator interfaces and RF data communication, all programmed by Magnetek. And to ensure that the system operated per the end user's requirements, Magnetek's system engineers performed on-site start-up services, along with maintenance and operator training.

Read the complete case study on our website at www.magnetekmh.com/solutions_engineeredsys.htm

Magnetek Introduces
the Telemotive XLTX™ Bellybox Transmitter

Our new Telemotive XLTX Radio Remote Control further expands Magnetek's radio remote control product portfolio, giving customers the latest technology to meet the needs of a variety of applications and industries. The sophisticated Telemotive XLTX bellybox transmitter incorporates the latest electronic technology in a lightweight, comfortably contoured, yet durable case.

Feature-Rich Radio Transmitter

- Graphic display with system diagnostics
- Available two-way and high-power RF
- Frequency options: 72MHz, 400MHz, 900MHz, and 2.4GHz
- Choose up to 8 paddles, 4 joysticks or any combination
- New detented/stepped joysticks with a variety of handle shapes
- Side mounted key switch and code plug
- Numerous combinations of toggles, selector switches, and potentiometers
- Available with stepless proportional controls
- Tethered hardwired option
- Custom engraving on transmitters per application

This rugged and reliable transmitter has super-tough nylon housing made to withstand shock. It is designed to minimize power consumption, providing one of the longest life batteries in the industry today. Magnetek can build a system to your specifications — with our 18K, Flex M, or *intele*Smart receivers – that is completely customizable.

Visit our website to learn more about the Telemotive XLTX and our entire line of Telemotive and Enrange brand radio remote controls and receivers or call an Inside Sales application professional at 800.288.8178 or your local Magnetek Sales Representative.

New Radio Remote Controls
Coming Soon!

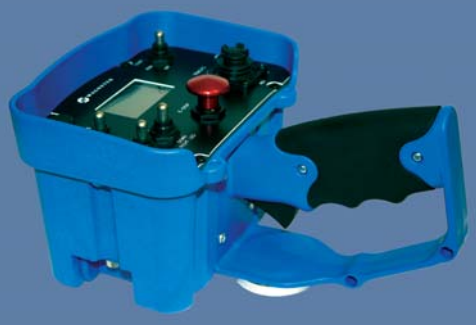
Magnetek will be launching its new Enrange™ MBT and PGT Transmitters. These radio remote controls offer versatile, ergonomic styling and the latest electronic technology to meet the needs of a variety of applications and are ideally suited for harsh industrial environments. The MBT and PGT are already in operation in mobile hydraulic applications, and Enrange brand versions will soon be available for the overhead material handling market.

The MBT and PGT are designed for material handling applications requiring a limited number of functions and offer basic information feedback. Both transmitters feature rugged nylon housings to withstand shock and are rated NEMA 4 (IP66).

The MBT Transmitter is one of the smallest and lightest bellybox controls available. It offers the control features of larger bellyboxes in a compact, durable case. The PGT features the controls like those found on Magnetek's bellybox transmitters, but with a contoured grip and in a size and weight similar to most handhelds. These radio remote controls are designed to customer specifications, reducing internal engineering and manufacturing costs, improving time to market, and enhancing equipment performance.

Watch for an Announcement Soon!

MBT



PGT

First Brake Rebuild in New Wisconsin Mondel Facility Delivered

Before

After

On Sept. 24, 2009, Magnetek's new Mondel brake facility in Menomonee Falls, Wis., delivered its first brake rebuild. The 16-inch Mondel MBT brake had seen over 10 years of hard duty in a steel mill and was in need of repair. The customer turned to Magnetek's Service Group after slow response from a local brake rebuilder. Magnetek diagnosed the problems and had a quote back to the customer in four days after receiving the brake. The refurbished brake was delivered back to the customer within the quote deadline.

The scope of the refurbishment project included replacement of the Auto Adjust Assembly, all bushing assemblies and all assembly hardware including Bellville Washers. A missing cover on the thruster J-box was also replaced. The brake was sandblasted and the structural components were repainted. The ED80/6C Thruster was tested and cleaned. Finally, the brake was reassembled and tested.

All of the work was completed by Wisconsin service personnel using the inventory on hand at the new location. According to Jim Swenor, Magnetek's Director of Service and Technical Support, all brake rebuilds were previously done at Mondel's Canadian facility, which resulted in increased costs due to export fees and freight charges and longer out-of-service times due to shipping distance. The U.S. facility will reduce these costs and provide shorter turn-around times to return brakes to service. "With the Wisconsin service facility in place, we are in a better position now to service our U.S.-based customers with repairs," Swenor said.

Magnetek's highly trained team of service technicians offers superior aftermarket support and is on call 24/7. For technical support or repair on all Magnetek Material Handling products, including brakes, call 1.866.MAG.SERV (1.866.624.7378).

Transition from IMPULSE®•P3 Series 2 to IMPULSE®•G+ Mini

The IMPULSE•G+ Mini Adjustable Frequency Crane Control has been operating in the field for over 10 months with strong customer acceptance. The IMPULSE•G+ Mini replaces our IMPULSE•P3 Series 2. As production is reduced, availability will become limited. Please plan to convert to the new drive by December 2009. Magnetek will continue to support and service the IMPULSE•P3 Series 2 Crane Control until 2013.

The compact, low-horsepower IMPULSE•G+ Mini is designed with an expanded HP range (up to 20HP) and an identical dimensional footprint as the IMPULSE•P3 Series 2 (up to 5HP) and a smaller footprint beyond 5HP. It incorporates user-friendly standard programming for basic applications, and advanced programming capability for high performance environments. All this, plus assured reliability make the IMPULSE•G+ Mini Adjustable Frequency Crane Control the low-cost drive of choice for overhead material handling applications.

If you have any questions about the transition, contact one of our Inside Sales application professionals at 800.288.8178, sales@magnetek.com, or your local Magnetek Sales Representative.

NEW TANDEM TROLLEY/HOIST
versions Available in Flex EX Remote Controls

Two new versions of Tandem Trolley/Hoists controls are available in Magnetek's Enrange Flex EX series of radio remote controls. The first is the Flex 8EX-AB which allows one operator to select up to two trolley/hoists on one bridge crane for single or dual operation. The Enrange Flex 8EX-AB offers up to five motions, two speed controls with a trolley/hoist A/B/Both selector switch and one auxiliary function.

The second version is a Flex-8EX-TM which allows one operator to select up to two trolley/hoists on a monorail for single or dual operations. The Enrange Flex-8EX-TM offers up to four motions and two speed controls with a trolley/hoist A/B/Both selector switch.

These new versions are an addition to the current Flex Tandem systems, the Flex 8EX-T and Flex 12EX-T. The Flex-8/12EX-T systems allow two operators to select up to two bridge cranes for single or dual operation. The Enrange Flex 8/12EX-T offers up to five motions, two speed controls with a crane 1/2/both selector switch and one auxiliary function.

These flexible and reliable radios are also available in four-button and 12-button styles to meet a variety of overhead material handling applications. The Enrange Flex EX series of radio remote controls provides a cost-effective solution to the restrictive use of hardwired cabling.

For more information on the entire Flex EX Series, visit our website at www.magnetekmh.com/remoteradio_trans-flexex.htm.

Static Stepless Simulation Software Whitepaper Available for Download

A new whitepaper, written by Aaron S. Kureck, Controls Products & Development Engineering Manager, is available that focuses on Static Stepless Simulation Software. This unique concept for controlling a cab operated crane is embedded in the software designed for IMPULSE®•VG+ Series 3 Drives to provide an effective means to slow or stop the motion of the bridge or trolley.

Static Stepless Simulation Software allows the operator to use a footbrake to either augment or completely control the deceleration and/or stopping of the crane while at the same time provides improved Reverse-Plugging response, eliminates motor current spikes, and reduces open circuit motor decay.

Static Stepless Software provides the best of all worlds, by combining the intellect, judgment, dexterity of the crane operator with the latest in crane control technology and safety. It is the ideal control for high performance cab controlled overhead cranes.

This user-friendly whitepaper highlights the advantages of IMPULSE•VG+ Series 3 Drives for many applications. An article discussing the benefits of static stepless simulation appeared in the July/August 2009 edition of Overhead Crane & Hoist. To download the full version of the Static Stepless Simulation white paper go to http://www.magnetekmh.com/whitepaper.htm.

Reference Files

New and updated Magnetek Material Handling product brochures are available on-line at http://www.magnetekmh.com/brochures.htm:

CONTROL PRODUCTS

IMPULSE®•G+/VG+ Series 3 Full Brochure
OmniPulse DDC Digital DC Drive
Complete Control Panels
MAC•2000

RADIO REMOTE CONTROLS

Telemotive XLTX
Enrange WIC-2400 Wireless Transcevier

For additional information contact one of our Inside Sales application professionals at 800.288.8178, sales@magnetek.com, or your local Magnetek Sales Representative.

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Evolution is published by Magnetek Material Handling. Questions and comments can be directed to: Attn: Editor-Evolution, Magnetek, P.O. Box 13615, Milwaukee, WI 53213