

Railcar dumper system upgrades

Electrical, instrumentation, and controls

Laser positioning system

A laser distance measuring device used to accurately determine positioner location. Mounted off-board the positioner, the device is not subject to the shock and stresses of the positioner's movement. It also eliminates slippage of fifth wheel during inclement weather condition and does not require re-calibration.

Limit switches

Traditional fork lever and arm actuated limit switches experience several problems originating from corrosion to broken trip devices and arms. To avoid these issues, Metso has developed many non-contact replacements for older type position sensors.

Resolver

Metso's resolver upgrade is a replacement for a dumper drive encoder and cam limit switches. It eliminates the need for a reduction gearbox and enables car clamps to be locked and released at specific points of the dumper rotation. This makes the resolver very easy to set and change.

PLC controls and HMI interface

Engineered PLC systems with Human Machine Interface (HMI) providing critical information and enhanced troubleshooting assistance. This upgrade features custom designed software and pre-wired control panels to interface with the existing system. The system integrates multiple devices to fully automate the coordination of the complex functions of the dumper/positioner. The operator gains full control of all machine functions and receives in-depth messages regarding machine status, operations, maintenance, and safety.

Control system

To gain the latest technology and functionality, Metso has many system upgrades available:

- Upgrade PLC processor to latest version processors. Re-use existing I/O modules, upgrade to latest version I/O modules or upgrade for systems or machines in stages
- Upgrade PLC communication network to Ethernet/IP, ControlNet and DeviceNet, or wireless platforms
- Remote I/O upgrades to minimize wiring
- Replace analog and digital I/O interface to motor controllers. Replace existing field device I/O with distributed I/O or with PLC platform communication ready devices

Variable speed drives

Replaces existing single speed and two speed dumper controllers with a true four quadrant adjustable speed controlled torque drive system. It provides controlled acceleration and deceleration which softens the impacts that occur during speed changes and at the beginning and finish of the dump/return cycle. Brake wear is minimized as stopping of the dumper and positioner is accomplished by regenerative motor torque. Dumping cycle can also be decreased by increasing motor speed without changing gearing.

