Transfer line? How about an AGV system that acts like a transfer line.

An automotive powertrain supplier turns to Creform Corporation for custom AGV system to support its process equipment

Greer, SC—An automotive powertrain supplier was looking to optimize its production facility and called on Creform engineers to help develop the right system for “round the clock” operation to support its manufacturing operations. With detailed requirements from the customer, the Creform solution was to provide bi-directional AGVs with dual-conveyor deck that essentially act as transfer vehicles between work stations.

The AGVs feature two powered conveyor decks. The parts are transferred off both sides to preserve load orientation. The top deck handles two sub-assemblies atop internally used pallets, transferring it to the next step in the manufacturing process, while the lower deck returns two empty pallets back to the line. The conveyor sections of the AGV are covered to help keep carried parts clean, while removable panels provide access for easy maintenance. An added feature is that drip pans are situated under each conveyor to ensure that no process lubricant from the parts drips on floor.

Photocells were placed along the AGV’s path for slow-down and stop functions. The cells are also used for secure load verification while the AGV is traveling. Any load shift is detected and will stop AGV. Mechanical load-safety stops drop down when pulling into stations to allow transfers and they rise when leaving transfer point to ensure that the load is secure.

The bi-directional AGV (shown) is a model FH-B50066 bolt-on AGV drive unit that is mounted on a heavy-duty fabricated steel base for strength and rigidity, all to ensure precise load transfers. The footprint of the unit is 55 in. L X 28 in. W (1400 x 700 mm). Each end of the AGV follows a magnetic guidepath independently to ensure accurate and repeatable movement and is ideal in space restrictive areas.
The unit can travel with speeds up to 164 ft. (50 M)/min and can carry a load capacity of up to 1460 lb. (660kg). This application uses an approximate 150-feet of guide path. Another unique feature of the AGV system is that forklift tubes are integrated into frame’s design to allows for easy and safe lifting for easy maintenance.

The AGV is PLC controlled and features an HMI touch-screen for user and maintenance interface. Operator interface panels include push buttons at both front and rear of AGV. It uses floor positioned RFID tags for routing, speed changes and obstacle sensor view changes.

The power pack is an easy-access, 24-volt system powered by two 12V AGM batteries, covered and with side-mounted opportunity charging to automatically maintain peak performance levels. The opportunity charging system minimizes the need for the user to change batteries as they are automatically charged by just pulling into the charging station positioned along the route. No human intervention is necessary.

The AGV features complete equipment for compliance to safety category 3 and includes safety circuit to cut power, audible warning device, flashing light, E-stops and laser scanners (one at either end).

The Creform System is used to create an array of material handling and efficiency enhancing devices and is a proven component in Continuous Improvement and Lean Manufacturing programs. The company partners with customers in developing and implementing these programs.

Online at creform.com for additional information regarding Creform Corporation and its products.

CRE-597 Caption: Bi-directional AGV with dual conveyor deck from Creform.