AGV delivery system with powered conveyor help increase productivity.

An automotive parts supplier turns to Creform Corporation for custom AGV system to enhance its production.

Greer, SC—An automotive parts manufacturer was looking to optimize its production facility and called on Creform engineers to help develop a system to transfer parts from its sub-assembly line to the main assembly line. With specific requirements from the customer, the Creform solution was to provide single direction AGV with conveyor deck that essentially acts as transfer vehicles between workstations. The AGV works two eight hour shifts per day.

The single direction AGV travels in a loop with two stops. At the unload station, the powered conveyor will move the product off the powered conveyor deck to a floor-side conveyor. A manual mechanical gate drops down for load transfers with line side decking. This simple but effective mechanism ensures loads are held securely aboard the AGV during travel.

The AGV is PLC controlled with HMI touch screen and provides for 50 course 128 command control, programming. Floor positioned RFID tags used for command initiation and to mark the stop positions along the course with a unique address. Aisle crossings are metered by a wireless system controller as well as other custom functions. If needed, a powered engage/disengage foot lever allows the cart to be moved easily if taken offline. Once disengaged, the unit works like a typical pushcart.

The AGV (shown) is a model HA-A50060 single-direction AGV drive unit with 90° and 180° spin/turn capability. It is custom designed with a fabricated steel frame constructed for strength and durability. Creform was responsible for the design and assembly of both the AGV and system controls. Projects are turnkey with Creform...from the initial project design to the final installation, Creform will guide and support the entire project.

The AGV follows a magnetic guideway independently to ensure accurate and repeatable movement and is ideal in space restrictive areas. The magnetic tape guideway is easily and quickly installed and routes can easily be changed or repaired.

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AGV delivery system…2/ with photo and caption.
Embedded photo is for reference only. Hi-res photo is attached as separate file.

The unit can travel with speeds up to 164 fpm (50 M/min) and can carry a load capacity of up to 1320 lb. (600kg). The AGV is WIFI enabled and features an HMI touch screen for user and maintenance interface. Operator interface panels include push buttons at both front and rear of AGV.

The power pack is an easy-access, 24-volt system powered by two 12V, 110AH, AGM batteries and is equipped with wireless touch 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 a laser obstacle scanner on the front utilizing 16 settable zones, safety circuit to cut power, audible warning device, flashing light, and E-stops. Multi-color LED lights are built into the overhead aluminum frame to indicate the various running conditions. The overhead also provides cover for the parts on the conveyor.

Creform offers preventive maintenance agreements to ensure long-term performance and reliability. The company also offers to train plant maintenance personnel to help ensure that the necessary on-site with immediate support available.

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 enhancing these programs.

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CRE-691 Caption: Single-direction AGV with conveyor deck from Creform.