



## Low Profile Guided Vehicle System Maximizes Production Efficiency

### Features and Benefits

- Less Product Damage due to handling
- Reduced Labor Costs
- Increased Safety
- Streamlined Production Operation
- Flexible Solution for Plant's Changing Production Demands
- No Plant Interruptions During Installation

**Industry Group:** Automatic Guided Vehicle Systems (AGVS)



*Low profile design allows SGV to drive under conveyor stands to pickup and deliver refrigerators*

Ten (10) unit load Automatic Guided Vehicles (AGVs) transfer four (4) refrigerators each at a time between three pick stands and three drop automated conveyor stands as links in all three production lines. The refrigerator manufacturer operates three 8-hour shifts, 7 days per week.

The AGV system uses discrete remote I/O panels to monitor the status of the pickup and drop off conveyors.

The pickup conveyor has sensors to detect when four (4) loads are ready for transfer. The AGV Manager host software generates an order for an AGV when the discrete input from the pickup conveyor is sensed.

When the AGV arrives at the conveyor, it will request permission to enter using a discrete output. The conveyor controller then makes sure that it is safe for the AGV to interface with the stand, and sets a discrete input.

The SGV then enters the station, lifts the deck, and drives out with the 4 refrigerators on-board. The drop conveyor also has retro-reflective sensors to detect that the drop location is clear for additional loads to be transferred.

When the AGV arrives, it requests permission to enter using a discrete output and waits for a

response from the conveyor controller (via discrete input).

The AGV lifts the load, enters the drop conveyor stand, and lowers the deck, depositing the 4 refrigerators on the transfer conveyor.

The lead acid batteries are manually swapped out approximately once every 16 hours. AGVs are sequenced through the battery change area at a fixed time in order to maximize the labor efficiency of battery changes. The system also monitors the battery level and sends the SGV to the change area if the battery reaches a critical level.



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