

Removing Chaos

The Problem:

A large retail clothing manufacturer warehouse's receiving area was typically in chaos. Trucks at their receiving docks were manually unloaded with the cartons hand-palletized for warehouse picking operations. The hand-palletizing requirements were often very different per truck and per order across multiple trucks so that an ever-shifting maze of pallet pick positions (and thus hand stacking laborers) was required at any given time. At peak periods (which are common in clothing retail); trucks were often stranded at the dock waiting to be unloaded. To make matters worse, not all of their suppliers consistently identified individual cartons correctly and sometimes even contents were missing. So, a labor-intensive manual carton identification, checking, and re-labeling process was utilized. For a given truck or order, they typically knew ahead of time the carton quantity and contents of each carton. If they had some way of planning their palletizing requirements ahead of time and then automatically sorting cartons; they could get received product into the warehouse faster and with less manual labor. Also, automatically detecting missing contents of individual cartons would be an added bonus.

The Solution:

The Buschman Co. teamed with Insight Automation to provide a material handling and control system solution for their problem. A carton conveyor path was established to allow quick carton unloading from trucks and subsequent conveyance of cartons to labeling stations with further conveyance to a sortation unit that diverted cartons to palletizing positions. Prior to conveyance to carton labeling, an automatic scan and weighing system was placed in order to identify and examine each carton.

Insight Automation provided a combination PLC and PC based solution including Sortation Management Controller (SMC) custom software. This clothing retailer would examine their expected receipts to determine the preferred method of carton palletizing (i.e. by size, color, style, etc.), and electronically download to the SMC PC the expected carton bar code ID data along with the assigned palletizing position and its expected weight. When the trucks arrived and were unloaded, the cartons were conveyed to the automatic bar code scan / weigh system. The SMC would then examine the carton ID and its weight and direct the PLC as to the disposition of the carton. Valid carton ID's within acceptable weight limits were directed to the palletizing sortation conveyor. Invalid ID's and/or unacceptable weighing results caused the SMC to direct the PLC to convey the cartons to the labeling area. The SMC provided flexible operator choices as to the disposition destination for failed, unknown, and unidentifiable cartons. These were used by this customer to "fine tune" the material handling characteristics of their system to accommodate known truck load conditions.