

Viewpoint

Pick Solutions in Conveyor-Controlled Environments

Material handling equipment can be a big help in increasing the speed in which product gets out the door. Increased product movement can certainly lead to increased profits. But if the pick sequence is not configured to the design of the equipment, profits can suffer.

Many material handling systems employ a circular design, which allows cartons to reach any area from any point in the warehouse. However, in those situations where the conveyor flows in only one direction or goes from one level to another without returning, inefficiencies can arise. In such situations, picks need to be sequenced so those located close to the beginning of the conveyor are completed before those at the end.

A more uncommon – but not unusual – situation arises when a warehouse or manufacturing facility employs a mixture of conveyors with various processes. For example, in a facility with a mezzanine, the conveyor may have a circular pattern on the lower level, but once it leaves the floor, it cannot return without manual intervention.

Problem Solved

If you have a split-level work area, the best solution is to space out the starting pick locations so that no one pick zone gets overloaded up front. You'll need to address this issue during plan execution, assuming you have some configuration completed beforehand.

Your warehouse management system (WMS) will need to know which zones cannot be revisited once they have been passed. For example, say your warehouse has eight pick zones on the lower level, two in the first half of the mezzanine, and two in the second half, for a total of 12 zones. Once the carton leaves the lower level, it cannot return, and once it passes the two pick zones in the mezzanine, it cannot return to those spots either.

Now, assign the eight pick zones on the lower level with a value of A, the two in the first half the of the mezzanine with a value of B, and the remaining two zones with a value of C. During plan execution, any carton with a pick in an A-value zone will take precedence over a B or C, but if there are picks in multiple zones with a value of A, the WMS can sort those so that zones are not overloaded.

During plan execution, your WMS will need to keep a running total of the number of cartons that start in each zone. When carton 12345 has picks in zones 1, 4 and 7 – all of which have a value of A – the system will check to see which zone has the least number of cartons originating there, and then will sequence the picks to begin at that zone.

Efficiency Achieved

This small but quite effective change eliminates the need to move workers around based upon plan release. The amount of work is evened out throughout the duration of the picking phase. No longer will pick zone 1 get overloaded at the beginning of the picking phase, with very little work in the middle and ending stages.

It is an efficient solution that maximizes both labor and equipment processes.

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