Narrow Aisle Putaway Algorithm

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Contents

1 Narrow Aisle Putaway Algorithm

The auto-putaway process has an algorithm dedicated to narrow aisles utilising P&D locations. This document describes the functionality of that algorithm.

Algorithm Y is optimised for use with the WCS. It also incorporates some searches that are not done in other algorithms, and also brings most search mechanisms together in one algorithm.

1.1 Putaway Algorithm Y

The algorithm is based on the stock locations entered (WARE_STOCK_LOC).

The algorithm does not search these locations in strict order, but in the sequence the locations are defined on the file.

So, if the locations are defined as:

1. Pick face
2. Bulk
3. Narrow Aisle

The pick face will be checked first.

If the locations are defined as:

1. Narrow Aisle
2. Bulk
3. Pick

The pick face will be checked last.

If set up to do so, the putaway algorithm will initially suggest a default putaway location (BUILD_UP_LOCN8).

The WCS will then request a location to be suggested at the point of scanning the pallet for putaway. If no location is found at that point, the WCS and WMS can be configured to leave the pallet for later.

The algorithm can search in the following manner:

- Pick face
- Product Location Class, then Normal Search Bulk
- Narrow Aisle (High Bay) search
- Multi-pallet Location search

Depending on the sequence of the locations that are the anchor points set for each stock code.

The first two searches above are as normal; the last two are new.

Advantages:

- Checks P&D utilisation (high bay)
- Checks aisle availability (high bay)
- Prioritises aisles if WCS/NADC in use
- Checks multi-pallet locations
- Does all the normal algorithm A checks, for compatibility
- Has integration with WCS that other algorithms don?t have

Disadvantages:

- High Bay search is not location efficient
- Simplified multi-pallet location strategy

1.1.1 High Bay Narrow Aisle Search

Narrow aisle search is started if the stock item has an anchor point within a high-bay aisle (i.e. with P&Ds).

The system searches each bulk aisle with P&D locations (High Bay), in both directions, starting at the anchor point aisle, in Aisle Sequence.

For example, if there are 10 aisles in the warehouse and the anchor point aisle is aisle 5 but there are no available locations then the high bay narrow aisle search routine will search the other narrow aisles in Aisle Sequence sequence 6, 4, 7, 3, 8, 2, 9, 1 and 10 until an available location is suggested.

Note: Aisles in High Bay must be set up with no opposite and next locations.

All aisles at availability P are searched first. Status P is set by using the WCS as follows:

Whenever a truck is in a narrow aisle (defined in the WCS) using Dual Cycling options, the system can optionally send a message to UNISON, informing it that the aisle should be prioritised. When the truck leaves, the aisle is set back to status Y. This is configurable.

All aisles at availability Y are searched next.

Aisles with availability N are never searched.

The system will not search an aisle where the number of pallets being put away in that aisle equals (or exceeds) the number of slots available in the P&D location.

The anchor point is set at start of the chosen aisle, then the closest location found within that aisle only.

1.1.1.1 Multi-Pallet Location Search (Block Stack)

Find a multi-pallet location already containing that stock. The pallet to be put away is checked that it is compatible, based on the anchor point location validation rules:

- Same stock, batch number and owner batch. (Loc Validation ?4?)
- Same stock. (Loc Validation ?5?)
- Same stock and sell by date. (Loc Validation ?6?)
- Last receipt location for pallets containing the same GRN and stock. (Loc Validation ?7?)
- Same stock and manufacturing date. (Loc Validation ?8?)

If no location is found, the algorithm searches for an empty multi-pallet location (to start a new load).