

Claims

1. Method of fulfilling orders by making orders available in order units by picking from product units in a storage facility wherein,
 - 5 - the storage facility has a routed product order picking area;
 - the storage facility has an automated storage and retrieval racking area;
 - the automated storage and retrieval racking area is arranged upstream from the routed products order picking area and is connected to the routed products order picking area by a routing conveyor;
 - 10 - the automated storage and retrieval racking area comprises:
 - a storage racking comprising a plurality of multilevel storage racks in which order and/or product units are stored, wherein the storage racks are disposed back-to-back in pairs and have an aisle between pairs;
 - at least one automatic storage and retrieval device provided for each storage racking aisle, wherein the order and/or product units are stored and retrieved from the storage racks by the automatic storage and retrieval device, and wherein order and/or product units are exchanged directly between two adjoining storage racks from a source storage rack to an adjacent destination storage rack via cross conveyance locations in the storage racks themselves using only the least one automatic storage and retrieval device;
 - 15 - at least one storage-entry conveyor provided for feeding order and/or product units into the storage racking;
 - at least one storage-exit conveyor provided for retrieval of order and/or product units from the storage racking;
 - 20 - at least one lifting device used, in order to transfer the order and/or product units from a storage level of the storage rack to the at least one storage-exit conveyor;
 - at least one fully or semiautomatic picking station for picking from product units into order units for fulfilling orders, to which order and/or product units are fed by the at least one storage-exit conveyor and from which order and/or product units are dispatched by the at least one storage-entry conveyor;
 - 25 - the routing conveyor is connected to the at least one inbound storage-entry conveyor and the at least one storage-exit conveyor of the storage racking;
 - the routed products order picking area comprising manual picking stations supplied and arranged along the extension of the routing conveyor and
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supplying the routing conveyor with order units picked at the manual picking stations, the routing conveyor supplying donor units to the routed products order picking area and discharging finished order units;

characterized in that

5 order fulfillment of orders requiring products from product units requiring many exchanges between adjoining storage racks from a source storage rack to an adjacent storage rack via cross conveyance locations in the storage racks themselves to reach a destination storage rack are reassigned to the routed products order picking area for parallel order fulfillment and product units requiring many exchanges
10 via cross conveyance locations for fulfillment of a specific order are discharged from the automated storage and retrieval racking area to the routed products picking area.

2. Method as claimed in claim 1, in which such product units expecting batch pick effect are discharged from the automated storage and retrieval racking area to the
15 routed products order picking area.

3. Method as claimed in claim 1, in which such product units requiring many exchanges via cross conveyance locations are discharged from the automated storage and retrieval racking area to the fully or semiautomatic picking station
20 belonging to the same racking area then products are dirty batch picked and routed to a put wall.

4. Method as claimed in claim 1, in which the routed products order picking stations comprise put-walls.

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5. Method as claimed in a previous claim, in which the routing conveyor loops back to the automated storage and retrieval racking area after leaving the routed products order picking area.

30 6. Method as claimed in a previous claim, in which the routed products order picking area comprises picking stations supplied and arranged along an outer aisle of the automated storage and retrieval racking area and supplying the routing conveyor with order units picked at the picking stations.

35 7. Method as claimed in a previous claim, in which the routed products order

picking area is used for order consolidation of donors belonging to particular orders at the at least one fully or semiautomatic picking station.

5 8. Method as claimed in a previous claim, in which orders are reassigned to the routed products area when the efficiency of the at least one automatic storage and retrieval device falls below a predetermined threshold.

10 9. Method as claimed in claim 8, in which the predetermined efficiency threshold is based upon the feed rate of items to the at least one fully or semiautomatic picking station.

15 10. Method as claimed in a previous claim, in which orders requiring many items stored in many different aisles of the storage racking are reassigned to the routed products area.

20 11. Method as claimed in a previous claim, in which orders requiring items with many needed exchanges via cross conveyance locations are reassigned to the routed products order picking area by the routing conveyor, wherein the routed products order picking area is physically and/or logically separated from the automated storage and retrieval racking area.