



REB Storage Systems International

Storage Systems International

Today's Agenda

1. *Semiautomated and fully automated pallet runners.*
2. *Voice picking.*
3. *Pick-to-light and put-to-light.*
4. *Transportation conveyors.*
5. *Accumulation conveyors.*
6. *Sortation conveyors.*



Voice Picking



Pick-to-Light & Put-to-Light



Conveyors



Pallet Runners & Pallet Shuttles

SEMI-AUTOMATED PALLET RUNNER

How It Works

- Delivers the product via a cart that runs on a track within the racking system.
- Pallets are loaded into the system by a lift truck then transported and placed on the rack by an automated cart.
- Unloading is the same: the cart collects and transports pallets out of the system while an operator moves between the lane and the shipping dock or other destinations.



FULLY AUTOMATED PALLET RUNNER

How It Works

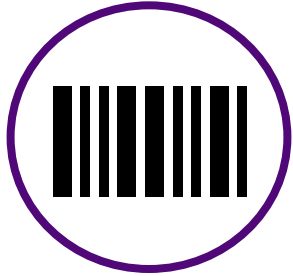
- Utilizes AGVs to load product on carts.
- The product is transferred throughout the rack system via a cart that runs on a track.
- Carts include a Wi-Fi device that allows for full automation.

Wi-Fi Unit

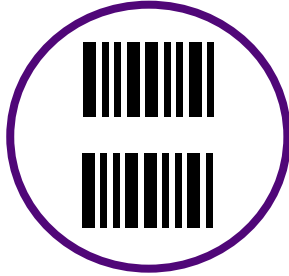


PALLET RUNNER

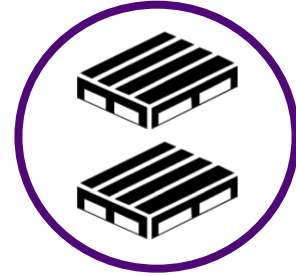
Ideal Operation Features: *is it right for you?*



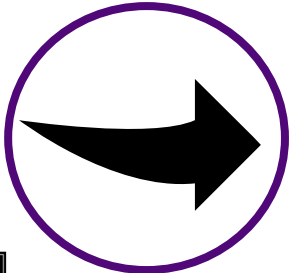
High number of pallets of the same SKU.



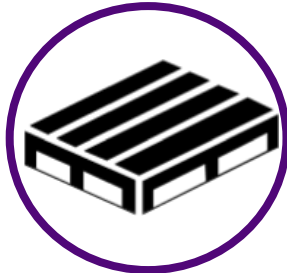
Low number of SKUs.



Require specialized pallet configuration.



REB Fast throughput.



Maintain good-quality pallets.

PALLET RUNNER

Commonly Seen Advantages Over **Drive-in Rack**

Each level is independently accessible, resulting in less honeycombing.



Deeper lanes, providing higher storage density.

Reduced rack and product damage.

PALLET RUNNER

Commonly Seen Advantages Over **Push Back Rack**

Can be designed
for both FIFO and
LIFO.

Deeper lanes,
reducing aisle
requirements.

Does not require
particular lift
trucks.



Does not require
product-to-product
contact to work
correctly.

PALLET RUNNER

Commonly Seen Advantages Over **Pallet Flow Rack**

Pallet runner is not affected by varying pallet weights.



Controlled product flow, no relying on gravity.

Level system, no need for pitch.

VOICE PICKING

How It Works

- Utilizes headsets and wireless scanners.
- Operator is directed by the voice command via the headset for each step in the process.
- Voice command can be customized to each company's specific operation.



Voice
command:
'cart pick'.

Operator:
indicates
they've made
it to the cart
pick location.

Voice command:
put box size A in
position 1, box
size C in position
2.

Operator:
completed.

Voice
command: go
to pick location
1, place item
in position 1.

VOICE PICKING

Commonly Seen Advantages

New employee
training time reduced
by up to 50%.

Safety incidents
reduced by 5% to
20%.



Increased pick
accuracy – up
to 99.9%

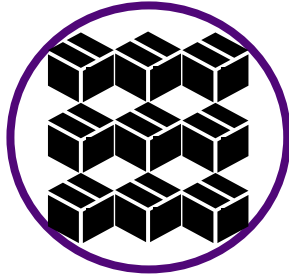
Increased pick
volume per
worker.

VOICE PICKING

Ideal Operation Features: *is it right for you?*



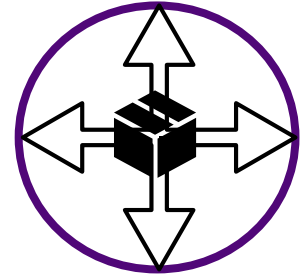
DCs that distribute items which are regulated and require a scan verification.



Large DCs that distribute high volumes of SKUs.



DCs that fluctuate the number of workers needed based on seasons.



DCs that regularly reconfigure pick locations.

PICK-TO-LIGHT

How It Works

- Comprised of lighted displays attached to the pick face of each SKU.
- Lighting configuration can be customized to the distribution center's needs.



Operator scans
order identifier in
zone 1.

Lighted display
for items turns
from red to
green.

Operator goes to
first location,
scans barcode on
pick face.

Numbered display on
pick face will indicate
the quantity of item
to pick.

PUT-TO-LIGHT

How It Works

Totes of product are brought to the put wall.

Operator scans first tote.

Each cube lights up that requires that product.

Operator puts products into cube.



Numina Group

PICK-TO-LIGHT & PUT-TO-LIGHT

Commonly Seen Advantages

Reduction in picking
and placing errors.

Reduced training time
for new employees.

Reduced labor costs.

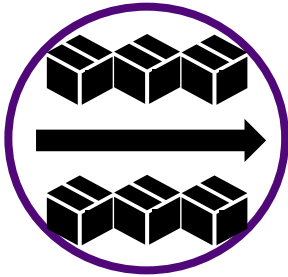


Low hardware and
install cost for
automation.

Shortened order
fulfillment cycle times.

PICK-TO-LIGHT

Ideal Operation Features: *is it right for you?*



High-density,
high-speed
picking
applications.



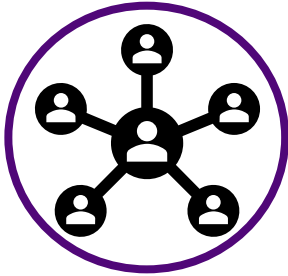
DCs that have a
team-based
approach to
order fulfillment.



DCs that fluctuate
the number of
workers needed
based on seasons.

PUT-TO-LIGHT

Ideal Operation Features: *is it right for you?*



Operations that pick across multiple zones to a central location.



DCs that have a team-based approach to order fulfillment.



DCs that fluctuate the number of workers needed based on seasons.

TRANSPORTATION CONVEYORS

How It Works

Gravity

Pitched so that gravity moves product from one point to the next or allow product to be moved manually down the line.

Belt

Uses pulleys supported by rollers to move materials at a set speed on an incline or decline.

Live Roller

Applies power to either some or all the rollers to move products from one point to the next.

ACCUMULATION CONVEYORS

How It Works

Zero Pressure

Allows for light contact between products when the system signals the queue to accumulate.

Zero Contact

Leaves space between products when the system signals a queue to accumulate by dividing the conveyor into zones.

Minimum Contact

Maintains a light but constant drive force on products waiting in accumulation.

SORTATION CONVEYORS

How It Works

Shoe Sorter

Supports product on tubes and a “shoe” positively diverts product to either side of the sorter by sliding across the tubes.

Pop-Up Wheel

A belt conveyor with added rows of angled wheels which pop-up to direct each load to its required route.

Right Angle Transfer

A transfer head pushes the product off a conveyor onto a perpendicular or parallel conveyor.

Pusher Style

As product moves in front of the divert lane, the pusher extends to quickly send the product down the desired divert lane.

SORTATION CONVEYORS CONT.

How It Works

Narrow Belt

Wheels rise up between the belts at the divert areas to move product at a 30- to 90-degree angle down the divert lane.

Tilt Tray

Utilizes a tilting tray at divert points to slide each item onto an appropriate chute.

Cross Belt

Activates a series of individual belted trays when an item needs to divert off one conveyor onto another.

THANK YOU



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Now that you have a better understanding of warehouse automation options, we'd appreciate the opportunity to help you further.

REB Storage Systems International offers all automation options mentioned in this guide. We know your options and will make sure your system is the best fit for your SKU profiles, space, and growth projections. We work with you to provide a turnkey system. From engineering, design, products procurement, subcontractor management, install, and permitting support, REB handles it all for you.

If you require further information, please reach out to the presenter of this presentation, Michael Lawrence.



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