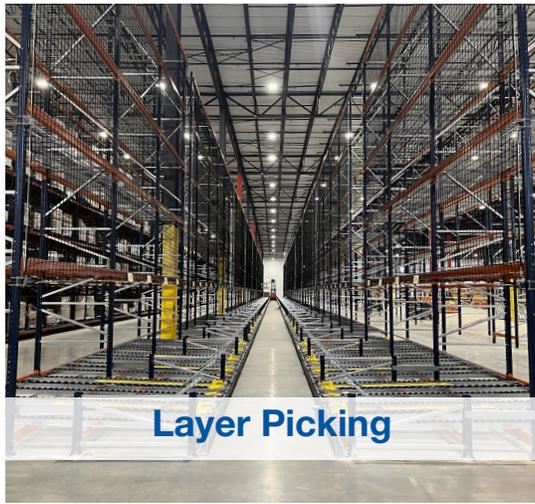




BACK PRESSURE GONE. SAFETY ON. PALLET FLOW STRONG.



Case Picking



Layer Picking



Deep-Lane Spacing

PALLET SEPARATOR & APPLICATIONS



Enhanced Separators for Safer Picks and More Pallet Flow Applications

Pallet separators are essential for eliminating back pressure in pallet flow lanes. By isolating the lead pallet, they enable safe, obstruction-free case, layer, or full-pallet picking—completely pressure-free. Plus, the controlled gap they establish between loads now helps facilities satisfy the latest fire-safety and insurance requirements for high-density storage.

Case-Pick Separator



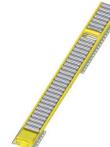
CP100 (page 3)



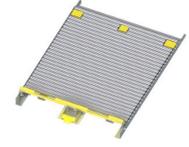
FS200 (page 4)



FS201 (page 4)



FS202 (page 4)



FRFS202 (page 4)

Fork Lift Separator



Downstream Upstream
FL300 (page 5)



Downstream Upstream
FL301 (page 5)

Dual Pallet Separator



DP601 (page 8)

Layer Pick Separator



Downstream Upstream
FL400 (page 6)

Downstream Upstream
FL401 (page 6)

Back Pressure Formula

06 x (pallet load weight) x # of pallets behind the front

E.g., 3-deep system with 2,500 lb loads
Back Pressure - $.06 \times 2,500 \times 2$ pallets = 300 lbs of excess pressure.

E.g., 20-deep system with 2,500 lb loads
Back Pressure - $.06 \times 2,500 \times 19$ pallets = 2,850 lbs of excess pressure.

CASE PICK SEPARATOR (CP 100)



Hold Back Pressure—Release Productivity

Safely pick cases and clear empty pallets in seconds with the Case-Pick Separator. It holds rear pallets 4 to 6 inches back, isolating the front pallet and eliminating back pressure. Tap the foot latch to release and allow the trailing pallets to glide forward. Perfect for quick turn case picking in lanes 2-4 pallets deep.

Case Pick Separator Advantages

- Boost case pick productivity
- Protect workers from back pressure
- Clear empty pallets faster
- Glide rear pallets forward with a foot-tap
- Works seamlessly with AGVs & robotic pickers

CP 100 Design Consideration

- Use with GMA, CHEP & pallets with cross boards
- Minimal separation between 1st & 2nd pallet
- Use with pallet depths of 32" - 48"
- Max 4-deep lane (3 pallets behind separator)
- Install adjacent to the center rail
- Not for use with forklifts
- Raised to allow cleaning underneath



FLEX SEPARATOR (FS SERIES)

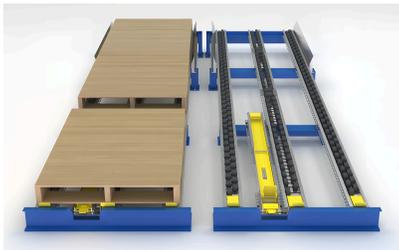


Deeper Lane Case Picking Keeps Throughput Rolling

Maximize case-pick throughput in deep-lane pallet flow with Mallard's Flex Separator. Designed for floor-mounted tracks 4–8 pallets deep, it holds trailing loads 4 to 6 inches behind the pick face, eliminating back pressure and protecting operators. A heavy-duty foot latch releases the queue only after clearing the empty pallet, enabling smooth, strain-free change-outs.

Flex Separator Advantages

- Eliminate back pressure in floor-mounted pallet flow
- Options for all Mallard wheeled & roller flow products
- Integrates seamlessly with AGVs & robotic pickers
- Clear empty pallets quickly and safely
- Streamline case picking 4–8 pallets deep
- Advance rear pallets with a foot latch



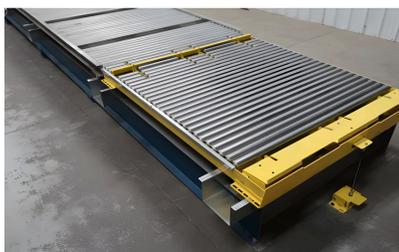
FS 200 Design Considerations

- Compatible with GMA, CHEP & pallets with cross boards
- Use with uniform pallet depths of 32" - 48"
- Requires 12" separation between 1st & 2nd pallet
- Install beside the center rail for wheeled 3-rail system



FS 201 Design Considerations

- Compatible with plastic pallets
- Use with uniform pallet depths of 32" - 48"
- Requires 12" separation between 1st & 2nd pallet
- Install in the center rail of the lane
- FS 202 for heavy-duty applications -- pallet depths from 32" – 60"



FRFS Full Roller Flex Separator Design Considerations

- Compatible with 1.9" pallet flow rollers
- Suitable for non-standard, plastic pallets, and a variety of pallets
- Adapts to pallets of different sizes
- Mount with low-profile or heavy-duty brackets

FORKLIFT SEPARATOR (FL SERIES)



Safe Lifting in High-Density Lanes

Gain deep-lane capacity and satisfy today's fire- and insurance-code spacing rules with Mallard's Forklift Separator. Deployed in multi-level systems, the FL-300 & FL 301 units create the required gap both upstream and downstream, preserving the sprinkler-penetration space mandated by code:

- **Downstream (latching)** — locks rear pallets until the lead pallet is removed, preventing forklift mast strain and ensuring safe, easy change-outs at elevation.
- **Upstream (non-latching)** — releases automatically as loads advance.

Used together, they isolate the pick-face pallet, eliminate back pressure, satisfy compliance rules, and keep inventory moving swiftly through high-density storage.

Downstream (Latching) Wheeled | Roller Upstream (Non-Latching) Wheeled | Roller



Forklift Separator Series Advantages

- **Meet fire- and insurance-code spacing with automatic pallet gapping**
- Eliminate back pressure for strain-free forklift and AGV handling
- Boost throughput in deep-lane, multi-level pallet-flow systems
- Compatible with Mallard wheeled and roller lanes
- Auto-advance rear loads the instant the lead pallet is cleared



FL 300 Design Considerations

- Use with GMA, CHEP & pallets with bottom cross boards
- Handles uniform pallet depths of 32" – 48"
- Requires 12" separation between 1st & 2nd pallets
- Install on the side of the wheeled lane



FL 301 Design Considerations

- Use with plastic pallets in split roller lanes
- Handles uniform pallet depths of 32" – 48"
- Requires 12" separation between 1st & 2nd pallets
- Install in the center rail of the lane

LAYER PICK SEPARATOR (LP SERIES)



Give Mixed-SKU Pallet Building a Lift

Boost pick rates and reduce labor costs with Mallard's Layer Pick Separator. Pick one or more case layers at a time to build mixed-SKU pallets for custom orders. Ideal for high-volume staging or mixing centers, LP Series separators isolate the pick-face pallet for faster empty-pallet removal.

For lanes deeper than four pallets, an upstream separator automatically resets while the downstream, delayed-release unit holds trailing loads until the empty pallet is fully cleared. The separators maintain the code-required safety gap without slowing flow. Rear pallets then advance instantly, eliminating restocking delays.

Layer Pick Separator Advantages:

- Increase productivity with safe, easy empty pallet removal
- Improve forklift and operator safety
- Compatible with Mallard wheeled and roller lane designs
- Rear pallets automatically release when empty pallet is removed
- Requires minimal slope
- Facilitates integration with AGVs by removing pallet back pressure



LP 400 Design Considerations

- Compatible with GMA & CHEP style pallets
- Use with pallet depths of 32" - 48"
- Pallet depth must be uniform
- Add up to 24" clearance for layer-picking attachment
- Maximum of 4 pallets behind the rear paddle
- Mallard supports are required in the last two positions for proper function
- Empty pallet must be heavy enough to resist back pressure until removed
- Use is limited to floor-level lanes



LP 401 Design Considerations

- Layer picking of plastic pallets (full roller transitions to 3-rail split-roller)
- Use with pallet depths of 32" - 48"
- Pallet depth must be uniform
- Use on floor-level lanes
- Add up to 24" clearance for layer-picking attachment
- Maximum of 4 pallets behind rear paddle
- Mallard supports required in the last two positions for proper function
- Empty pallet must be heavy enough to resist back pressure until removed

ERGO CELL PNEUMATIC SEPARATOR (PS SERIES)



Elevate Pallets—Lower Strain

Improve case-pick speed and worker safety with Mallard's Ergo Cell Separator System. Pneumatic pop-up separators hold back rear pallets for easy inventory access and pallet removal.

Pair with a hydraulic lift table to improve ergonomic positioning—no bending, no reach strain. Workers can access all sides, then lower the lift table and remove the empty pallet. A simple tap on the release button flows the next pallet into place.

To keep back pressure in check, add extra separator sets for deeper lanes. Ergo Cell turns every pick aisle into an efficient, injury-reducing work cell.

Ergo Cell Separator Advantages

- Supports ergonomic case picking
- Eliminates back pressure of rear pallets
- Isolates empty pallet for easy removal
- Protects workers from repetitive injuries
- Cost-effective vs. powered conveyor

PS 500 Design Considerations

- Compatible with GMA, CHEP & PECO pallets
- Use pallets with cross boards and voids in bottom
- Fail-safe pneumatic controls
- Air pop-up controls hold back 2-5 pallets (3-6 deep)
- Rear cylinder must be allowed to enter beneath pallet to capture and provide separation



DUAL PALLET SEPARATORS (DP SERIES)



Code-Safe Control for 20-Deep Pallet Flow

Ensure safe, efficient deep-lane pallet flow with Mallard's Dual Pallet Separators—*fully compliant with the latest fire codes and insurance rules for concentrated storage rack systems*. Engineered for deep and extra-deep lanes (20+ pallets), the separators relieve rear-pallet back-pressure at key points while isolating the front pallet. Once that pallet is removed, the separators sequentially release the rear pallets to flow, preventing surge and strain.

Dual Pallet Separators Advantages

- **Complies with fire & insurance regulations on pallet spacing in deep-lane systems**
- Relieves the back pressure on the lift truck
- Promotes dependable restart and controlled flow
- Increases productivity with easier forklift handling

DP 600 Design Considerations

- Install beside the center rail in 3-rail lane
- Requires an additional 24" of overall lane depth
- Must use a full-surface captive pallet
- 30,000 lbs. max per lane
- Full pallet in/out – no case picking

DP 601 Design Considerations

- Mounts in center rail upstream on both wheeled and 3-rail roller systems
- Requires an additional 24" of overall lane depth
- 30,000 lbs. max per lane
- Full pallet in / out – no case picking
- Must use a full-surface captive pallet



EMPTY PALLET RETURN LANES (ERP SERIES)



Reverse-Flow Lanes for Fast, Damage-Free Pallet Returns

Boost pick-aisle efficiency and protect crews with Mallard's Empty Pallet Return (EPR) Lanes. Built on a reverse-pitch track, EPR systems carry empty pallets away from the pick aisle to the opposite aisle for quick removal, keeping the pick aisle clean and productive. Specify horizontal or vertical lane design to suit your space. EPR lanes are compatible with manual, pallet-jack, or forklift extraction.

4 Empty Pallet Return Lane Options

- Single Empty Pallet Return
- Stacked Empty Pallet Return
- Vertical Pallet Return
- Double-Sided Vertical Pallet Return

Empty Pallet Return Lane Advantages

- Improve pick area efficiency
- Enhance worker safety
- Protect pallets from damage
- Increase restocking efficiency
- Reduce pick aisle congestion

ERP 700 Design Considerations

- Compatible with GMA, CHEP & plastic picture frame pallets
- Designed for pallet flow case-pick applications
- Use with wheeled or roller pallet flow
- EPR lanes are typically located every 4th or 5th bay for optimal productivity



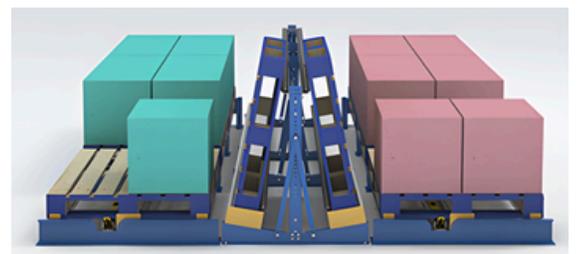
Single Pallet Return Lane



Single Vertical Pallet Return



Stacked Empty Pallet Return



Double Vertical Pallet Return

ERGO BUILD PALLET SEPARATOR (EB 800)



Semi-Automated Mixed-SKU Pallet Building

Replace yesterday's layer-pick stations with Ergo Build™ — Mallard's semi-automated system for high-volume, mixed-SKU pallet building. Ergo Build couples outbound pallet-building lanes with inbound pallet-flow pick lanes, creating one seamless work cell for forklifts with layer-pick attachments or robotic pickers.

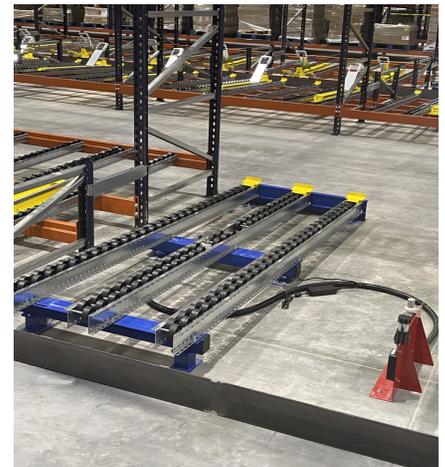
This gravity-flow design slashes labor 11:1 compared with manual picking and costs 4–5 times less than powered-conveyor alternatives—delivering faster throughput at a fraction of the expense.

Ergo Build Advantages

- Significantly boost productivity - 11:1 vs manual
- Continuous workflow
- Remote-activated pallet release
- Faster takeaway of completed pallets
- Built-in safety features

Ergo Build (EB-800) Design Considerations

- Position pedestal lights beside the outbound lane
- Pneumatic pop-up separators install in the outbound lanes
- Include clearance for layer pick attachment - forklift clamp or robotic arm
- Mallard supports required in the last two positions for proper function
- Maximum 2-5 pallets (3-6 deep) behind the pop-up



Next Level Mixed-SKU Pallet Building

- Inbound and outbound pallet flow lanes frame the pick aisle.
- SKU-designated lanes flow pallets in for layer picking, with LP 400 separators isolating the front pallet for case selection. After removing the front pallet, the separator releases the rear pallets to refill the pick position.
- Outbound Ergo Build lanes hold empty pallets for mixed-SKU pallet building. Once complete, the operator triggers the pneumatic separator to release the pallet to the opposite aisle for takeaway.

Watch Ergo Build in Action!

