



MALLARD
MANUFACTURING
YOUR GRAVITY FLOW SPECIALISTS



Pallet Flow Separators

REMOVE BACK PRESSURE FOR FASTER, SAFER PALLET REMOVAL

SEPARATOR FAMILY

Case-Pick Separator

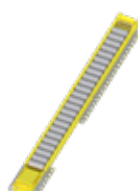


CP100 (page 3)

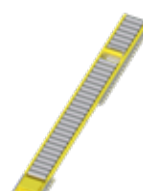
Flex Separators



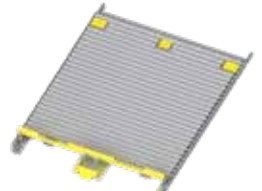
FS200 (page 4)



FS201 (page 4)



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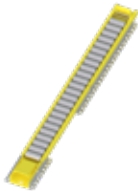


FRFS202 (page 5)

Forklift Separators



FL300 (page 6)

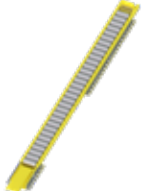


FL301 (page 6)

Layer Pick Separators

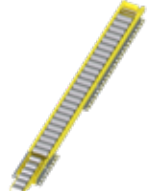


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Dual Pallet Separator



DP601 (page 9)

Pallet separators are a critical safety component in many case pick modules, deep flow lanes, and custom configured pallet flow systems. Since pallet flow lanes rely on gravity to flow pallets, there is a resulting buildup of back pressure on the discharge pallet that can be a safety hazard if not addressed. The pallet separator holds and locks rear pallets a few inches behind the discharge pallet to allow it to be easily extracted without back pressure. Once the front pallet is removed, the pallet separator is released and the rear pallets flow forward. This brochure details the types of pallet separators Mallard has available. Contact the Mallard team to order the pallet flow solution best suited for your needs.

PALLET SEPARATOR ADVANTAGES

Deep-Lane Systems

- » Relieves the back pressure on the lift truck
- » Allows the pallets to safely index forward
- » Increases productivity of lift truck operator
- » Prevents product damage
- » Provides easy integration with AGVs by removing rear back pressure

Lower Level Case-Pick Systems

- » Eliminates back pressure on front pallet during order picking
- » Allows pallets to safely index forward
- » Allows operators to easily remove front pallets
- » Reduces repetitive motion and back injuries
- » Allows for case picking using AGVs and robotic picking

Back Pressure = .06 x (maximum pallet load weight) x # of pallets. E.g. 3-deep system, 2,500 lb. load.

Back pressure = .06 x 2,500 lbs. x 2 pallets = 300 lbs. 20-deep system, 2,500 lb. load.

Back pressure = .06 x 2,500 lbs. x 19 pallets = 2,850 lbs.

CASE-PICK PALLET SEPARATOR (CP SERIES)

Safely pick cases and quickly remove empty pallets using [Case-Pick Separator](#). Rear pallets are held back a comfortable 4" to 6" behind the pick face pallet isolating it and removing all back pressure. Rear pallets release with a simple foot-operated latch once the empty pallet is removed.

Case picking using pallet flow is ideal for high-density order fulfillment. This design allows for fast, accurate case selection with dense reserve storage directly behind the pick line. In addition, the case-pick pallet separator ensures streamlined and safe removal of the empty pallet and automatic pick face replenishment with a simple foot-operated release. Without the pallet separator, the rear pallets push forward on the discharge pallet making it difficult, if not hazardous, to remove the pallets. Case-pick separator removes the back pressure ensuring a smooth removal of the empty pallet.

Case-Pick Separator is recommended for case picking from pallet applications of 2-4 deep.



Case Pick Separator Advantages

- » Eliminate dangerous back pressure
- » Boost case pick efficiency
- » Remove empty pallets quickly
- » Release rear pallets easily with foot pedal
- » Allows for case picking using AGVs and robotic picking

CP 100 Design Considerations

- » Use with GMA, CHEP and pallets with cross boards
- » Minimal separation between 1st & 2nd pallet
- » For use with pallet depths of 32" - 48"
- » Case picking for lanes no deeper than 3 pallets behind the separator
- » Install beside center rail of wheeled 3-rail system
- » Not for use with forklifts

FLEX SEPARATOR (FS SERIES)

Improve the efficiency of your high-volume case picking with floor-mounted pallet flow equipped with Mallard's **Flex Separator**. The flex separator mounts within the pallet flow lane to isolate the pick face pallet. Rear pallets are held back and locked into place at a comfortable distance. Separation between the front pallet and the rear pallets removes back pressure creating a safer work space that is more ergonomic and allows for faster, easier empty pallet removal.

Flex Separator Advantages

- » Eliminate back pressure in floor-mounted pallet flow
- » Remove empty pallets safely and easily
- » Install in case picking applications 4-8 pallets deep
- » Choose from Mallard wheeled and roller pallet flow systems
- » Release rear pallets with a simple foot pedal
- » Allows for case picking using AGVs and robotic picking

FS 200 Design Considerations

- » Compatible with GMA, CHEP & pallets with cross boards
- » For use with pallet depths of 32" - 48"
- » All pallets must be the same depth
- » Requires 12" separation between 1st & 2nd pallet
- » Installed beside center rail for wheeled 3-rail system

FS 201 Design Considerations

- » Case picking of plastic pallets (full roller transitions to 3-rail split-roller)
- » For use with pallet depths of 32" - 48"
- » All pallets must be the same depth
- » Requires 12" separation between 1st & 2nd pallet
- » Installed in center rail of the lane
- » FS 202 for heavy-duty applications -- pallet depths from 32" - 60"

FS200



FS201



FULL ROLLER FLEX SEPARATOR (FRFS SERIES)

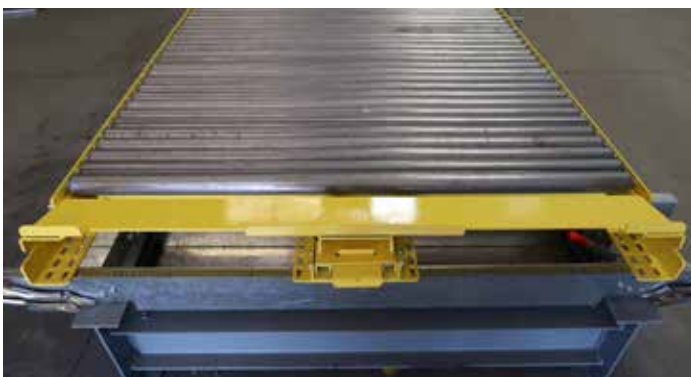
Case picking from floor-mounted full roller pallet flow keeps high-throughput operations moving with ready-reserve inventory and automatic pick face replenishment. The Flex Separator for Full Roller Pallet Flow, is uniquely designed to install into new or existing full roller systems from 4- 8 pallets deep. The flex separator for full roller automatically releases once the empty pallet is removed. The separator also doubles as a ramp stop to stop and secure the pallet at the pick face until it is removed.

FRFS 202



Full Roller Flex Separator Design Considerations

- » Available for use with 1.9" pallet flow rollers
- » Suitable for non-standard or plastic pallets OR applications with a variety of pallets
- » Adapts to pallets of different sizes
- » Secures with custom low-profile or heavy-duty use mounting brackets



FORKLIFT SEPARATOR (FL SERIES)

Deep-lane, multi-level pallet flow configurations are highly efficient for high-density, full-pallet storage. Mallard's **Forklift Separator** isolates the pick face pallet from the back pressure of the rear pallets. Isolating the front pallet and removing that pressure is even more critical at higher elevations where forklift mast capacity is reduced. Once the pallet is extracted by the forklift, the remaining pallets automatically advance filling the pick face. Rear pallets, again, are locked safely into place.

Forklift Separator Series Advantages

- » Increases productivity with easier forklift handling
- » Improves forklift and operator safety
- » Designed for deep-lane, multi-level pallet flow systems
- » Choose from Mallard wheeled and roller pallet flow systems
- » Automatic release flows rear pallets forward when empty pallet is removed
- » Provides easy integration with AGVs by removing rear back pressure

FL 300 Design Considerations

- » Compatible with GMA, CHEP & pallets with cross boards
- » For use with pallet depths of 32" - 48"
- » All pallets must be the same depth
- » Requires 12" separation between 1st & 2nd pallets
- » Installed beside center rail of wheeled 3-rail system

FL 301 Design Considerations

- » Forklift removal of plastic pallets (full roller transitions to 3-rail split-roller)
- » For use with pallet depths of 32" - 48"
- » All pallets must be the same depth
- » Requires 12" separation between 1st & 2nd pallets
- » Installed in center rail of the lane



LAYER PICK SEPARATOR (LP SERIES)

Increase pick rates and decrease labor costs with pallet flow lanes equipped with Mallard's **Layer Pick Separator**. Pick one or more case layers at a time to build a rainbow of mixed pallets for custom order fulfillment. Ideal for high-volume, case-pick staging or mixing centers. LP Series separators isolate the pick face pallet for uninhibited access to one or more layers at a time and faster, easier empty pallet removal. Rear pallets automatically flow forward when the empty pallet is removed.

Better than picking from floor stacked pallets, pallet flow stores ready reserve inventory reducing delays and simplifying restock operation.

Layer Pick Separator Advantages

- » Increase productivity with safe, easy empty pallet removal
- » Improve forklift and operator safety
- » Choose from Mallard wheeled and roller pallet flow systems
- » Automatic release flows rear pallets forward when empty pallet is removed
- » Minimal slope required
- » Provides easy integration with AGVs by removing rear back pressure

LP 400 Design Considerations

- » Compatible with GMA & CHEP style pallets
- » For use with pallet depths of 32" - 48"
- » All pallets must be the same depth
- » Installed beside center rail in 3-rail lane
- » 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
- » Only to be used on floor level

LP 401 Design Considerations

- » Layer picking of plastic pallets (full roller transitions to 3-rail split-roller)
- » For use with pallet depths of 32" - 48"
- » All pallets must be the same depth
- » Installed in center rail of the lane
- » 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
- » Only to be used on floor level



ERGO CELL PNEUMATIC SEPARATOR (PS SERIES)

Technology and productivity combine to improve pick rates and protect workers. Mallard's [Ergo Cell pneumatic separator and lift table](#) optimize full and split-case picking from pallet flow. Pneumatic controls elevate the front pallet on the lift table creating a comfortable range of motion for the worker, (a.k.a. the Golden Zone) preventing repetitive injuries and improving pick rates. The pop-up Ergo Cell separators isolate the rear pallets holding them back several inches from the pick face.

Perfect for high-volume fulfillment of heavy cases picked from pallets, i.e. beverage, auto parts, hardware, and more where orders often contain full cartons of multiple SKUs.



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 and 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)

Ensure safe, productive function of deep-lane pallet flow with Mallard's [Dual Pallet Separators](#). Uniquely designed to work in tandem in deep-lane and extra-deep-lane pallet flow systems (lanes 20+ pallets deep), dual pallet separators remove the back pressure of rear pallet weights and isolate the discharge pallet for easy extraction. Multiple pallet separators are installed along the lane to stop groups of pallets and hold them until the discharge pallet has been removed. Then, the separators automatically release the rear pallets to flow down the lane.

Dual Pallet Separators Advantages

- » Relieves the back pressure on the lift truck
- » Prevents product damage
- » Promotes dependable restart and controlled flow
- » Increases productivity with easier forklift handling

DP 600 Design Considerations

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

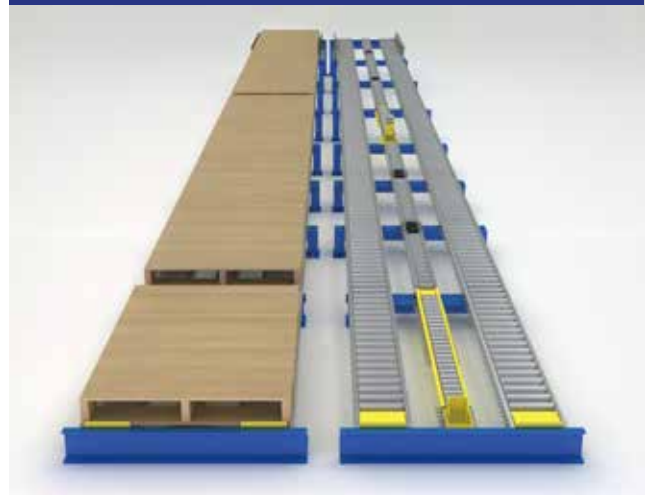
DP 601 Design Considerations

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

DP600



DP601



EMPTY PALLET RETURN LANE (EPR SERIES)

Improve pick aisle efficiency and safeguard pallet stock and workers with Mallard's [Empty Pallet Return Lanes](#) (EPR Series). EPR lanes are reverse engineered pallet flow designed to flow empty pallets away from the pick aisle to the opposite aisle for removal. Mallard offers both horizontal and vertical lane configurations as well as manual or forklift / pallet jack extraction of the empty pallets. Empty pallets arrive undamaged and ready for return or restocking.

4 Empty Pallet Return Lane Options:

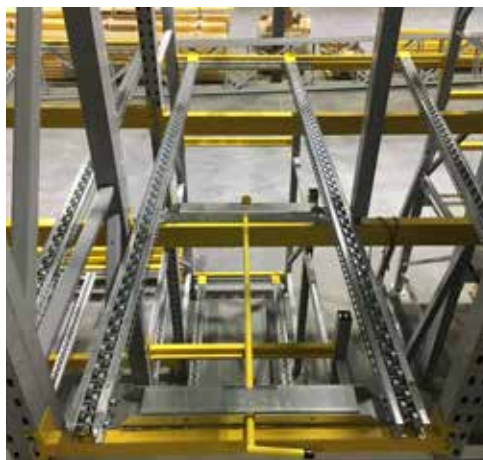
- » Single Empty Pallet Return
- » Stacked Empty Pallet Return
- » Vertical Pallet Return
- » Double-Sided Vertical Pallet Return

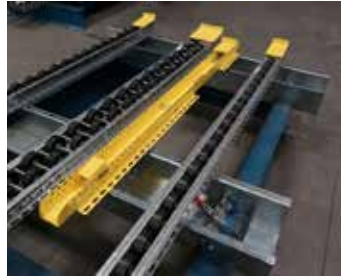
Empty Pallet Return Lane Advantages

- » 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





ABOUT MALLARD MANUFACTURING

Mallard is a market leader in innovative, solutions-oriented, dependable gravity flow products: Pallet Flow, Carton Flow and Gravity Flow Conveyor Systems.

Our Simple Promises to You:

We will be the industry's most knowledgeable resource.

We will be the most responsive to inquiries.

We will ensure performance and offer competitive pricing.

We will ship on time and tirelessly support what we manufacture.

THE MALLARD DIFFERENCE

The Mallard difference is the concentration of experienced and dedicated material handling professionals that work to solve customer storage and inventory flow challenges each and every day. We strive for excellence in the quality of our products, the creativity of our solutions and the professionalism of our team.

