

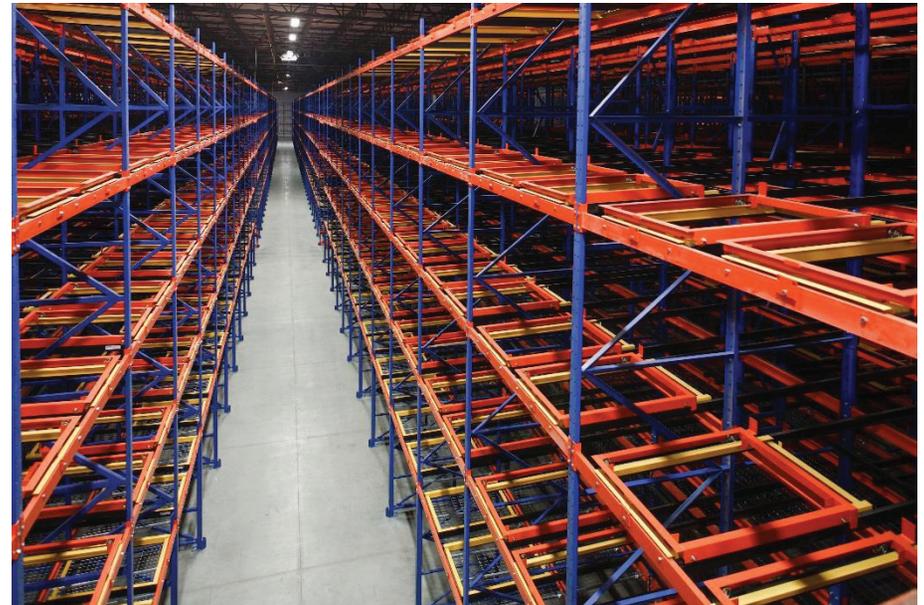
## RECONFIGURING PUSHBACK SYSTEMS

Pushback Systems are designed for specific pallet types, loads and rack configurations. For example, a legacy system designed for a GMA 5 bottom board pallet, may not perform as well when used with a CHEP 9 block pallet. When reconfiguring a pushback system or changing the pallets/loads used in the system, Advance recommends that you follow these steps:

1. Obtain the original design records for the system (Advance or your distributor can provide if you do not have a copy).
2. Validate that the current system is still used and configured as shown in the original design records.
3. Document the planned changes (loads, pallets, rack configuration, etc...) and submit to your distributor or Advance for review.
4. Your distributor or Advance can create new system drawings and perform an appropriate engineering review of the system, plus determine if new building permits may be required.
5. After final drawings are completed and approved, proceed with the reconfiguration.



# ADVANCE PUSHBACK OPERATION INSTRUCTIONS



**WARNING**

Failure to read and follow all instructions in this manual can result in serious injuries or death.

**ADVERTENCIA**

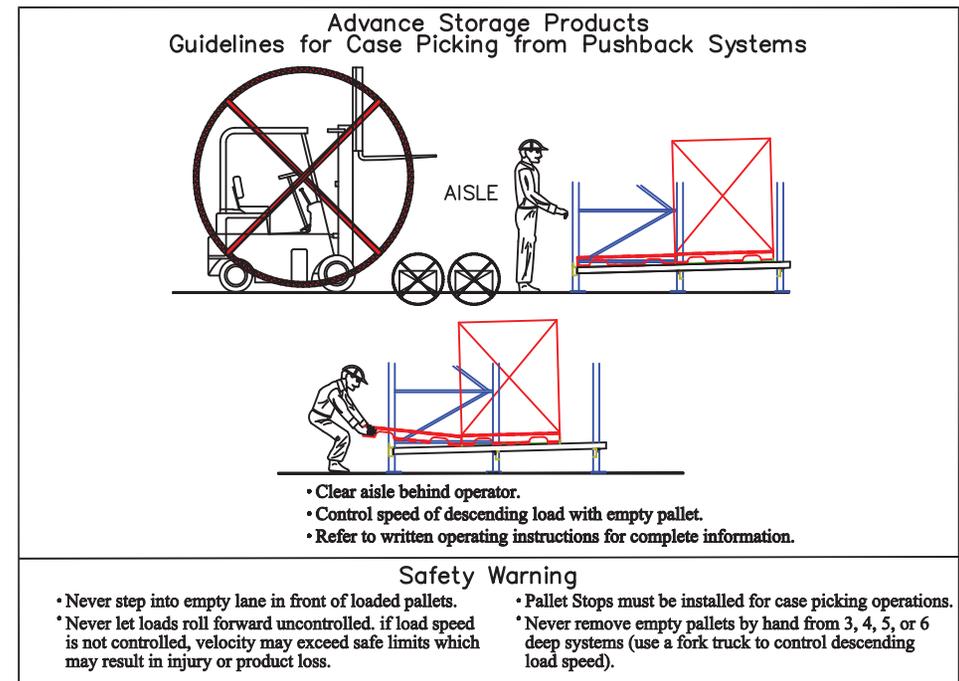
Falta de leer y seguir todas las instrucciones en este manual puede ocasionar graves lesiones o la muerte. Si no se puede leer este manual, por favor notificar a su supervisor y solicitar una traducción.

To remove the empty pallet (refer to Figure 4): lift the front of the empty pallet so that it is above the pallet stop; gradually walk backward into the aisle letting the empty pallet control the speed of the descending load. Gradually ease the loaded pallet forward until it is with 12" of the front load beam and pallet stop; at this point it is acceptable to pull the empty pallet completely out of the system.

**WARNING!** When removing pallets, do not let the loads roll freely, as they could strike or pin the user or jar boxes loose.

**WARNING!** If the cart becomes stuck, never step into the lane to pull it forward. Use either a hook device or a forklift to free the cart and allow it to descend in a controlled manner. Failure to do so could result in the load suddenly releasing without warning, causing the user to be struck or pinned.

Fig. 4



## Case Picking from Pushback Systems

In some cases customers may choose to support a case picking operation from floor level 2 deep pushback systems (Advance does not recommend case picking from pushback above the floor level, nor using 3-6 deep systems for case picking). If using a 2 deep system for case picking, Advance should be consulted to ensure that the system is properly configured.

When case picking it is important to follow a few basic principles:

1. Ensure that the pushback system is positioned low enough for the operator to safely reach all cases.
2. Ensure that beam mounted pallet stops are installed at all locations. These are required to keep a partially loaded pallet in place.

**WARNING!** If a beam pallet stop is not in place, a partially loaded pallet can be pushed into the aisle and injure the operator. Do not use 3-6 deep systems for case picking since the beam mounted stops will not prevent rear pallets from sliding forward.

Never step on partially loaded pallets when case picking.

## Removal of Empty Pallets with a Fork Lift

Advance recommends removal of empty pallets by lift truck to prevent personal injury. When removing the empty pallet, lift the pallet slowly to a point above the pallet stop. When removing it from the system, use the lift truck to control the speed of the descending pallets (“controlled removal”).

**WARNING!** Do not let the descending pallets roll forward in an uncontrolled manner as loose boxes can be jarred from the pallet and fall, resulting in an injury or death.

## Removal of Empty Pallets by Hand

In some cases customers may choose to remove empty pallets by hand. It is important to keep in mind that there is back pressure (which can be quite high with heavy loads) Ensure the lane behind the operator is completely clear of any obstructions or forklifts.

**WARNING!** If a lift truck or other obstruction is directly behind the operator the empty pallet can potentially pin the operator.

## GENERAL WARNINGS

- Only use pallets approved for use with the specific system installed at the site. Changes in pallets can affect system performance and safety.
- Do not use damaged pallets.
- Ensure all loads are shrink-wrapped or unitized.
- Follow all loading and unloading procedures outlined in Advance Pushback Operations Manual.
- Never step in front of a jammed load; it can roll forward at any time.
- Do not continue to operate damaged pushback or rack systems. Unload and repair.
- Always control the speed of the load with the fork lift truck, do not let loads roll uncontrolled.
- Do not overload the system. Unless being used in a 2 deep picking operation, all loads in a single lane must be the same weight.
- Always post system safety and operations information in a readily accessible location.
- Do not assume that an existing system will work in a new application. When reconfiguring, contact your distributor or Advance to review the application for safety.

## STANDARD CART LOADING PROCEDURES

### Validate that the pallet is of the style approved for use in the system

Advance standard Lo Pro Pushback systems are designed to support conventional hardwood GMA or CHEP 9 block styles of pallets (refer to system approval drawings for exact pallet specifications.) Contact Advance to verify if other styles of pallets are to be used.

**WARNING!** Pallets not approved for use by Advance with this Pushback System can create an unsafe working condition resulting in injury, system failure, load or product damage.

### Inspect Pallet Condition

Examine the bottom of the pallet before placing in the system. All boards should be free of splits and cracks, with no broken boards, and no fasteners exposed. If the pallet is defective in any way, place the load on an acceptable pallet before loading into the system. There should not be any overhang from a pallet which could cause the cart to hang up (slip sheets, carton flaps, improperly stacked boxes or cartons, loose shrink wrap, etc.). All boxes or other items must be properly secured (shrink wrapped) or unitized with the pallet.

**WARNING!** Failure to inspect and prepare pallets as instructed could cause improper operation of the Pushback System resulting in loose boxes being jarred from the pallet and falling, resulting in an injury or death.

### First Pallet Insertion

1. Lift the pallet approximately 3 to 4 inches above the top cart, centering the pallet over the cart or to the load beam pallet stop, and tilting the forks of the lift truck slightly rearward (see diagram below) to match the slope of the system.
2. Insert the pallet into the system until it contacts the rear vertical support of the top cart.
3. Lower the pallet slowly onto the cart. The operator should locate the pallet flush with the front of the cart or overhang the front of the cart, by no more than 1". In this position the pallet front bot-

**WARNING!** If a man must tie off to the rack system, validate the load bearing capacity of the tie off point with Advance to ensure that it meets OSHA standards. For example, pallet rack bracing is normally not approved as a tie off point.

**WARNING!** The pallets may release at any time without warning, and may result in the user being struck by the pallet, or thrown from the rack resulting in serious injury or death.

## HOUSEKEEPING

Advance recommends periodic inspections and cleanings to ensure that systems are not damaged, loose debris and other material is removed from the system. No wheel lubrication is required.

Advance recommends against power washing or use of harsh cleaning chemicals (except for galvanized systems designed for wet environments).

## SPECIAL NOTES

### Pushback Pallet Friction

Pushback systems rely on a combination of friction between pallets and the pushback carts and rails, in addition to physical skid stops or beam stops to keep pallets in place.

**WARNING!** Ice, lubricants or liquids on the pushback rails or carts can potentially reduce the friction between the pallet and the pushback system allowing pallets to slide forward. Ensure that there is no buildup of ice or lubricants (e.g. spilled oils) in the pushback systems.

### Same Pallet Weight in all Lanes

Advance systems are designed assuming that all pallets in a single lane (except for 2 deep pushback used for picking) are the same weight. If a mix of heavy and light pallets is stored in a lane, there is a potential for a heavier pallet to push a lighter pallet out of the system due to insufficient friction between the lighter pallet and the cart that the pallet is resting on.

Raise the pallet about 4 inches off the cart, and then slowly back out of the system. Be sure to watch the rear of the forklift to prevent running into obstructions. Once clear of the system, lower the pallet safely and exit the area.

## PROCEDURE IF CARTS JAM IN THE SYSTEM

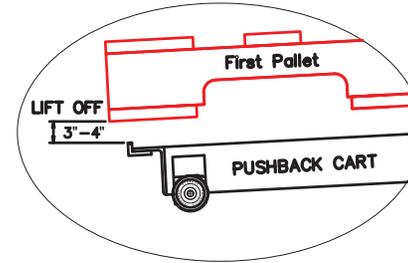
Carts may become jammed in the system due to these or other causes:

1. Rear pallet misalignment
2. Product overhang from the pallet
3. Debris on the pushback rails
4. Shrink wrap around the wheels
5. Improper stacking on the rear pallet position
6. Adjacent pallet misalignment

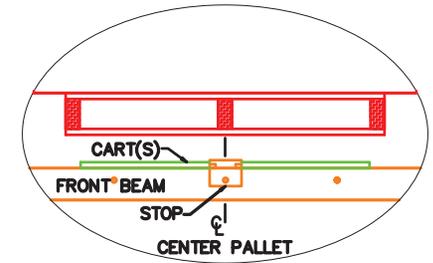
### Steps to Unjam a Pushback Lane:

1. Never climb into the lane in front of the jammed pallet.
2. Remove all pallets with a lift truck from an adjacent pushback lane.
3. Position a lift truck to hold the jammed lane in position while repairs are made.
4. With a man-lift, enter into the adjacent open lane and free the load, or unload the product from the jammed pallet to safely remove it, always working from the side.
5. Follow safety instructions regarding the man-lift usage and tie off in the rack.
6. Once the obstruction is cleared, unload the jammed lane with a lift truck.
7. Check the pushback rails for damage or debris and clean as necessary.

tom board will rest on top of the serrated skid stop. If the pallet is placed behind the stop, the next pallet may catch on the stop when inserted. Do not drop the pallet onto the cart. The bottom boards may break.



Tilt pallet back to match rail pitch.

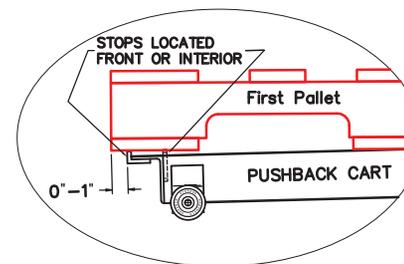


Center pallet with pushback cart or center beam stop.

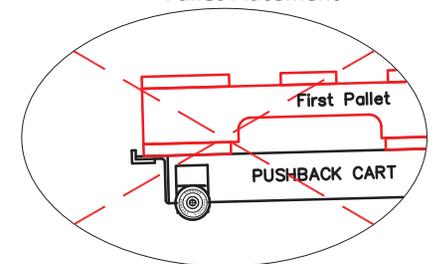
4. Remove the forks from the pallet slowly. Do not tilt the forks forward. The system slopes uphill and this action may damage the pallet or the pushback system.

**WARNING!** Loose boxes can be jarred from the pallet and fall, resulting in an injury or death.

**Correct**  
Pallet Placement



**NOT correct**  
Pallet Placement



### Inserting Additional Pallets

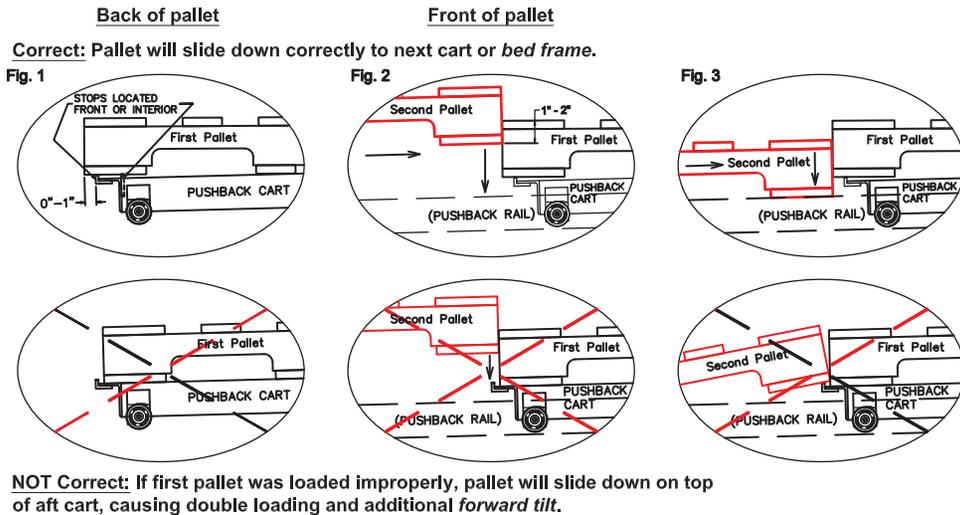
1. Lift the pallet to the system as before, but raise it to a position where the bottom of the pallet is positioned to contact the pallet already loaded about 4 inches above the cart. This allows the lift truck operator to push pallet against pallet eliminating cart loading hang-up. (fig. 1)

2. Push the pallet into system until the front of the pallet is flush with the front of the cart or overhanging the front of the cart by no more than 1". (fig. 2)
3. Slowly lower the pallet into position and remove the forks from the pallet as above. (fig.3)
4. If there is any resistance while loading, stop and find out what is causing the issue before proceeding. Make sure the pallet is properly centered, not hitting the rack system, not hitting the cart system, etc. If necessary, back out, reposition the load, and start again.

**WARNING!** Contact between pallets and the rack system can cause boxes to be jarred from the pallet and fall, resulting in an injury or death.

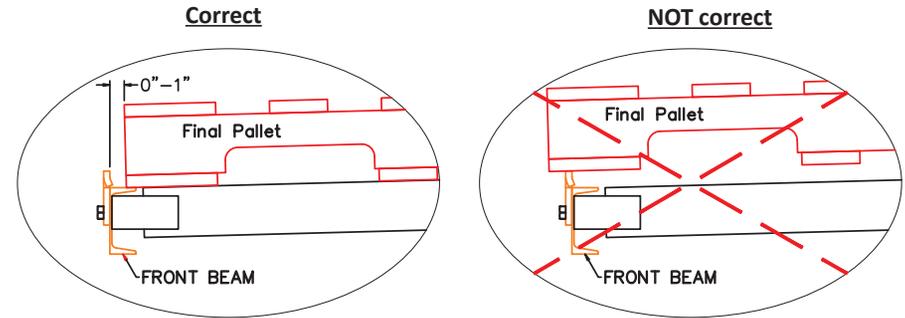
Do not side shift the pallet while it is resting on the cart, as this may damage the system.

If you have a problem adding the middle pallets because the first pallet is improperly placed, do not add any additional pallets until the first one is properly placed. See First Pallet Insertion for first pallet placement instructions.



## Inserting Final Pallet

The final pallet will rest on the pushback system rails. If a beam pallet stop is attached to the load beam, the pallet should be placed behind the beam pallet stop (not on top of it).



## CART UNLOADING PROCEDURES

### Insertion of Forks

Raise the forks up to the level of the pallet to be unloaded. Tilt the forks slightly rearward to match the slope of the system, and insert the forks slowly into the pallet.

### Operator Controlled Removal

When using a pushback system, the operator must always control the speed of all of the loads in the system. Never allow the pallets to roll forward in an uncontrolled manner. Control the speed with the lift truck. The appropriate speed to remove a pallet from the system is never faster than the speed of the remaining pallets flowing down the system. If the remaining pallets are allowed to flow faster than "Controlled Removal" (i.e. by quickly exiting the system), the remaining loads may impact the front of the Pushback System hard enough to dislodge the product.

**WARNING!** Loose boxes can be jarred from the pallet and fall, resulting in an injury or death. It is critical to use the forklift and always practice "OPERATOR CONTROLLED REMOVAL".