



# Advance and Retreat Stacking

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**Advance and Retreat Stacking**

Mobile conveyors typically operate in two stacking methods, advance and retreat stacking. A mobile conveyor can usually be configured to allow it to stack by either method, just by reversing the direction of the tripper cross conveyor belt.

**Advance Stacking (Figure 1)**

When advance stacking, the mobile conveyor builds the pile in front of its tracks that it will travel over later. It is basically building its own place to stand in the future.

**ADVANCE STACKING ADVANTAGES:**

- Height of lift not limited by machine design. Strictly a geotechnical issue, the machine can stack any height that the material can competently support.
- No preparation is needed of target area since the mobile conveyor builds its own surface. Valleys and hills can be stacked over.
- The tripper can be supplied with a bypass chute allowing material to be stacked off the head pulley of the mobile conveyor for more flexibility while stacking.
- Can usually use a shorter cross conveyor, just long enough to miss the mobile conveyor tracks. That helps keep the tripper and other components lighter.

**ADVANCE STACKING DISADVANTAGES:**

- Some compaction of material can occur under the tracks, but that is only about 1.5% of the entire pile surface area.
- Feed to the mobile conveyor must be maintained. Since the surface is being built by the mobile conveyor, whatever feed conveyor supplies it needs to have some method of keeping up with and continually feeding the mobile conveyor.

**Retreat Stacking (Figure 2)**

When retreat stacking, the mobile conveyor builds the pile behind itself, and travels away from the approaching toe of the pile. It is basically leaving the pile behind it in its path.

**RETREAT STACKING ADVANTAGES:**

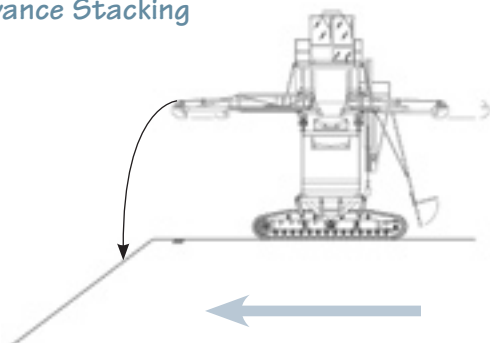
- No equipment ever operates on top of the pad being stacked. Compaction from stacking equipment is therefore never an issue.
- Drop height of material is very short, usually 1m or less once the pad is full height. Material degradation and particle separation is minimized.
- When used on a prepared pad surface, very close control is possible of the lift height.
- Dedicated feed conveyor usually does not need to be moved, and can be erected permanently at grade.

**RETREAT STACKING DISADVANTAGES:**

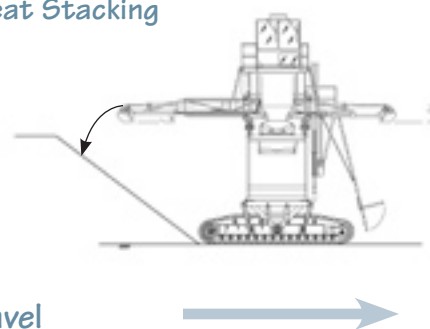
- Pad lift height is limited to the height of the tripper cross conveyor. If the pad lift height needs to be much over 10m, the tripper and cross conveyor become very heavy, driving up the size and weight of the trusses and tracks.
- Cross conveyor is typically longer and heavier in order to reach far enough away from the mobile conveyor that the pad can be built without burying the mobile conveyor tracks.
- No tripper bypass is usually installed. Retreat stacking mobile conveyors operate on prepared pad surfaces with access roads and/or solution ditches at the sides of the pad that would be buried if material were stacked off the head of the mobile conveyor.

It is possible for a mobile conveyor to advance stack a pile some distance, then drive back and retreat stack behind itself. The mobile conveyor can make two lifts while traveling on a single level with no movement of the feed conveyor system required. ■

**Figure 1:**  
*Advance Stacking*



**Figure 2:**  
*Retreat Stacking*



Motion of Travel