



**RAISING THE BAR**



**IMPROVING STEEL  
DISTRIBUTION EFFICIENCY**





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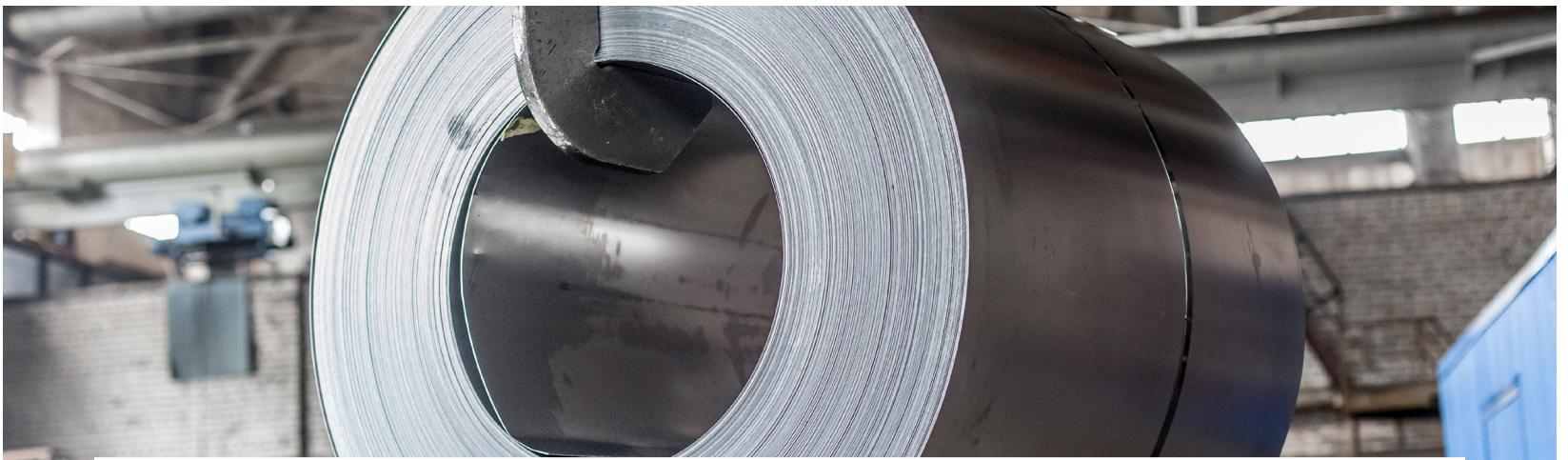
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## MORE EFFICIENT STEEL DISTRIBUTION UNLOCKED BY VERSATILE REACH STACKERS

**W**ith automation, increased connectivity and evolving labour demographics reshaping industrial landscapes, change is constant, and the steel industry is no exception. Today, mills must serve demand for steel in a variety of shapes and sizes, and face expectations for greater speed and efficiency when moving steel from production to distribution and ultimately, to end users.

Mills face significant financial commitments, with demand for larger and wider coils driving major investments to widen coil production lines and produce steel in larger depth and diameter coils. The material handling equipment and labour necessary to move steel products also accounts for significant costs. But steel mills cannot afford to cut corners – doing so risks unsafe and ineffective coil and slab handling, which can cause extremely costly lost-time accidents and mill shutdowns.

To stay competitive in such a challenging market, steel producers must re-examine not only the equipment they use, but how they use it. Instead of using multi-step, multi-machine workflows, what if they could shift to a streamlined approach, unlocking greater performance and efficiency to thrive in today's market?

Thanks to material handling equipment innovations that provide unprecedented flexibility, this streamlined approach is a growing reality for steel-handling operations. A single reach stacker can now handle tasks traditionally divided between equipment like gantry systems and coil-ram lift trucks. This enables a consolidated workflow that avoids non-value-added steps like dropping loads at mid-points and changing equipment, while reducing overall equipment inventory and associated training time.

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*Steel applications lose money for every hour that the mill is not operational*

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## RE-EVALUATING THE WORKFLOW FOR LOADING RAIL CARS

The established process to move steel from production to rail cars is a lengthy one, involving multiple steps and pieces of equipment. Reach stackers have traditionally handled cargo containers and moved heavy loads around the yard. Often, other forklifts and slab carriers are dedicated to a single task, such as handling coils or slabs and bringing them to staging areas. Then, gantry systems use cranes to lift and load them into rail cars.

With steel mills facing competitive pressure to become more efficient, this workflow falls short when it comes to speed and cost. Cranes travel slowly, yet they must traverse long rows of rail cars to pick and place each load, and waiting for rail cars to shuttle in and out of buildings extends the process further. From a financial standpoint, investing in so many different pieces of equipment means greater capital expenditure and maintenance of extra machinery, while labour efficiency suffers with operators requiring adequate training and shuffling between



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*What could your steel handling operation do with a reduction in labour costs?*

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equipment dedicated only to a single task.

By using a reach stacker, steel handling operations can engage in a more efficient, simple loading process, using a single piece of equipment to pick up finished pieces of steel and move them to staging and storage areas or load them directly into rail cars. Reach stackers can optimise the process by:

- Reaching far enough to load two rail cars deep without having to drive to a new loading position
- Side-load rail cars and be equipped with gondola car lid lifters
- Driving and lifting up to four times faster than overhead cranes
- Enabling more precise load placement and thus avoiding time-consuming adjustments, due to an elevated cab that offers better visibility to get it right the first time
- Operating without the need for an outside spotter, freeing scarce labour for more valuable tasks
- Eliminating the need for extra rail spurs, opening up more yard space





## RE-EVALUATING THE WORKFLOW FOR LOADING RAIL CARS

// A TRADITIONAL COIL HANDLING APPLICATION REQUIRES MULTIPLE, VERY COSTLY, DEDICATED-TASK MACHINES AND TRAINED OPERATORS.



### OVERHEAD / GANTRY CRANE:

Located at end of production line; pick up finished coils, place on rail cars or transfer carts



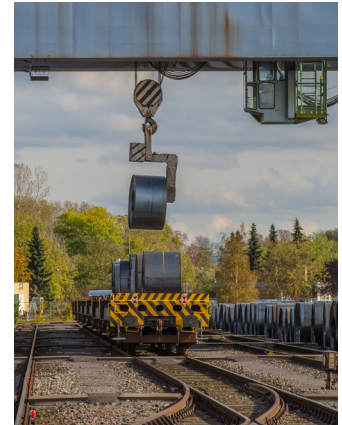
### TERMINAL TRACTORS:

Pull coils on transfer carts to storage and staging areas



### COIL-HANDLING LIFT TRUCK:

Picks coil from storage yard and transfer to loading area



### OVERHEAD / GANTRY CRANE:

Pick and load coils for shipment



However a reach stacker appropriately equipped for coil handling can safely and effectively execute all of the coil picking, transportation, and loading functions handled by fixed or moving cranes, conventional counterbalance lift trucks and ram tractors in a traditional application.

- Reduced product touches
- Reduced labour and training requirements
- Fewer pieces of equipment to purchase and maintain
- Tool changing technology enables equipment to switch attachments to handle different tasks in simple, plug-and-play workflow [\[See video\]](#)





## COIL HANDLING GETS HUGE

To keep production lines running longer and reduce coil change-out time, customers that manufacture products from steel are asking producers to provide larger coils. These new coils are as large as 43.5kg and more than 2 metres wide – up to 7kg heavier and 400mm wider than the previous standard.

But for steel producers, creating – much less distributing – these larger coils is no small task. Mills are making significant investments to widen production lines, but they must also modify material handling and transportation infrastructure. This means higher capacity lift trucks and a transition to rail and barge travel instead of over-the-road heavy goods vehicles.

### // MAKE LIGHT WORK OF HEAVIER LOADS

To handle heavier, wider coils, a reach stacker offers the right combination of size, heavy duty features, and, most importantly, greater payload. In addition to heavier booms, larger tyres and axles, and right-sized coil handling attachments, reach stackers can lift up to 45kg and offer an extended load centre of up to 6315mm, not only accommodating wider coils, but providing the extended reach necessary to place them on a double deep rail car, or the widely staged flatbed of a heavy goods vehicle or lorry.

Operations can also utilise attachments designed specifically for coil handling, like coil hooks and grabs.

- **Coil hooks**, similar to those used by overhead cranes, allow operators great flexibility when positioning coils on flat rail cars with coil cores placed perpendicular to the railroad tracks. They can even include an integrated rail lid lifter for quick, integrated access to loading targets.
- **Coil grabs** are an effective choice to load walled gondola cars. The grab arms need a minimal distance to release the coil, fitting inside the walls of the rail car for maximum precision.







# GETTING A HANDLE ON STEEL SLABS

**W**ith end users demanding steel coils and slabs alike, mills must be prepared to produce, handle and load both types. Flat slabs possess key differences from coils and lift trucks require different attachments to effectively handle them.

## // SLAB HANDLING ATTACHMENTS

- **Slab magnets** are used for stacking ambient temperature slabs in a storage yard and dropping them into place. Unlike clamps, magnets are well-suited for loading rail cars with side walls, and they avoid the extra step of placing spacers between loads, expediting processes and enabling real productivity gains.
- **Slab tongs**, on the other hand, are typically used to grab and transport hot slabs around the yard and to load flat rail cars without walls. They enable more precise handling than forks.



## *QUICK AND EASY ATTACHMENT CHANGES*

If a mill uses some lift trucks to handle coils and other equipment to handle slabs, they are most likely paying for a bloated fleet. The coil handling trucks will sit idle and take up yard space when slabs are handled and vice versa, simply due to an inability to easily switch between the most suitable tooling.

A new tool changing technology eliminates the cumbersome, arduous process of manually changing attachments and the need for excess lift trucks. For non-powered attachments such as coil hooks or mechanical slab tongs, operators can change them without even leaving their seat. For items that require power, such as electricity for slab magnets or hydraulic power for clamping or rotating attachments, operators will need to briefly leave the cab, but the process is simple. A plug-and-play workflow means operators just need to use quick-connecting fittings to connect the power supply for the attachment. Ultimately, this ability to more easily and quickly switch between different attachments can enable a leaner, more productive fleet.