



Tata Steel's Kalinganagar plant has devised a new mechanism for dispatching steel coils and sheets that is swifter and safer than before.

## THE CONTEXT

Tata Steel Kalinganagar's existing system for dispatching its high-demand steel coils and sheets was inadequate, resulting in delays in delivery and unhappy customers. The conventional method of using steel wire ropes to load coils and sheets was not fast enough to meet the demand. The need of the hour was a new process for swift and safe dispatch.

## THE INNOVATION

Customer discontent compelled the Tata Steel team to think of a new mechanism for safe, swift and error-free dispatch. The issue was that storing and dispatching heavy steel products like sheets and coils require cranes with suitable attachments. Since overhead cranes with attachments were unavailable, the team designed attachments for mobile cranes to suit the purpose. The new design solution has several advantages. It is a mechanised operation with no manual intervention, which makes it safer than the earlier system. Since the steel yard no longer uses steel wire ropes to load the goods, it ensures damage-free handling. The design also facilitates faster operations by maximising throughput. Besides, the cranes and attachments are inter-changeable, making the process flexible.

## KEY CHALLENGE

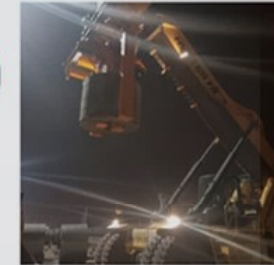
### OPERATIONS

The Tata Steel team had to ensure the sheet packet lifter did not hit the operator cabin, which could happen if the packet lifter rotated more than 20 degrees. The team also had to synchronise the arms of the sheet packet lifter in order to hold and lift the material in a stable manner.



- Coil tilter along with vertical tong developed for open yard coil handling
- Use of Fork lift and Reach stacker to place coil for tilting
- Truck mounted coil tilter with hydraulic jack and Hydraulic system operation.

## BREAK CONVENTIONS



- Vertical hydraulic tong developed for fast, safe and damage free dispatch
- Used for handling of topple sensitive coils safely in open yard
- Interchangeability between all reach stackers



- Load distributed on teeth and arm of the tackle
- Swift hydraulic movements.
- No use of sling
- Friendly with all types of wagons
- No man machine interface
- Safe and Swift operations
- Regular feed back and visit to manufacturing site for inputs

## THE IMPACT

Dispatch volumes have increased by 50% for coils and 30% for sheets, resulting in a total increase in revenue of **₹48 CR** resulting from a 31% increase in production of sheet packets. Besides, the mobile tilter and vertical coil tongs have helped in debottlenecking the loading operations as the eye of the coils face upwards in both yards, making them easier to load.