

INDIA : REPLACEMENT OF BLAST FURNACE

PROJECT	EQUIPMENT	WEIGHT
H. INDU. / /SHIPBUI.	STRAND JACKS / TOWER LIFT SYSTEM SKIDDING SYSTEM	1795 TON (AGGREGATE)

Fagioli were awarded a project in Karnataka, India by one of the biggest steel private company in India to replace an old blast furnace! with new furnace of bigger capacity.

This project was particularly interesting and challenging for Fagioli because the client wanted to replace its entire blast furnace in less than three weeks with a shutdown period of 3 months. The operation, the first of its kind, included the complete substitution of the Furnace in 5 rings for Old furnace and 5 rings for New Furnace. In order to do this, Fagioli used a skidding system, and a specially made elevator system with SPT's and Bustle main pipe were also skidded and placed in position using skidding system for the new furnace.

The furnaces old and new were divided in:

- 5 rings for old furnace
- 5 rings for new furnace

The old furnace 5 rings had a total weight of 1560 MT for 5 rings was replaced with a new one weighing 1795 MT for 5 rings using a skidding system and SPT's to transport all the old and new rings.

The old furnace rings were skidded from its original position onto the Fagioli elevator system using specially designed skid frame. It was then lowered down and skidded onto 2x14 SPT axle lines. After this operation the SPT's moved the rings into the storage area and were placed onto temporary stools.



In this project we used our 4xL450 capacity Strand jacks for Lowering the Old Rings on to the skidding trolley and Lifting the New Rings from the skidding trolley located on top of Blast Furnace tower at 40m elevation. Maximum weight handled was 1310T. Also 4xL100 capacity Strand jacks were installed on to the Blast Furnace tower at an elevation of 20m to handle New Ring D weighing 250T. 16 x L100 capacity Strand jacks were used for the Elevator system to unload the Old Rings and to receive the New Rings from SPT's. 2 x 14 lines SPT's were used to transport the Old Rings from the Elevator system to the storage yard and to transport New Rings from Storage yard to Elevator system.

The Old Blast Furnace was taken out in 4 pieces i.e. Rings D, C, B & A having a total weight of 1310T ring E was dismantled in position. The Rings were unloaded on the skid trolley and skidded for a distance of 70m from Blast Furnace foundation to Elevator system one by one. Further the Rings were lowered using Elevator system and loaded on to the SPT's and transported to storage Yard. The maximum weight of the Old Ring was 460T - Ring C.

The New Blast Furnace was brought in 5 pieces i.e. Ring E, A, B, C & D having a total weight of 1795T. Each Ring was transported from the storage yard to the Elevator system using 2x14 line SPT's.

Then the Rings was loaded on to the Elevator beams and lifted to match the skidding system. The maximum weight of the New Ring was 540T - Ring E and this was the maximum weight handled by Elevator system.

Once the Elevator system was at its position the skidding of the New Ring was started and skidded towards the Blast Furnace foundation by a distance of 70m.

Once the Ring was at its foundation it was connected to the 4 nos. L450 Strand jacks and lifted to clear the skid trolley and the trolley was released. Then the bridge beams were shifted and the Ring was lowered on its foundation.

This project highlights the innovative solutions that Fagioli can provide for the lifting, transport and installation of heavy items anywhere in the world.

The elevator system was the key to this particular operation, the same system was successfully utilized in Spain for the installation of the large modules for the Adriatic LNG project and in Palermo for the final positioning of a huge drilling Rig tower for the offshore industry and for Blast Furnace replacement in China.

