



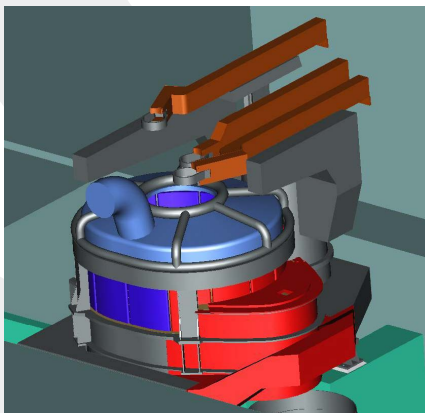
## Increase of Tapping Weight hand-in-hand with Improvement of Safety, Operation and Process

### EAF Modernisation with Automatic EBT Filling at Gerdau DIACO (Colombia)

In the course of a modernisation programme at its meltshop in Tuta (Colombia), Gerdau DIACO decided to modernise also the EAF. The main targets of the modernisation were to increase the tapping weight while improving also the safety conditions, operation and process. BSE was entrusted with this comprehensive EAF project based on the good experience of Gerdau with the BSE Virtual Lance Burner System and Lance Manipulator. The project consisted of engineering services and the supply of key components from BSE.

#### Project Approach

The concept, mutually developed by Gerdau and BSE, came to the conclusion to convert the existing EAF with OBT tapping system into an EAF with EBT system. With this concept, the existing roof design could be reused and the EAF volume slightly enlarged – at reasonable investment cost. The following sketch shows the areas of modification (in red colour).



#### Scope of Supply

The scope of supply comprised the key components upper and lower furnace shell, modification of tilting platform, furnace roof, TempSamp Manipulator and new Virtual Lance Burners including automation.

The modernised EAF was also equipped with a device for **automatic filling of the tapping hole** – a new development by BSE (more information on the right side).



#### Results / Benefits

The installation took place in late 2016. Gerdau was very satisfied with the project and impressed especially by the high manufacturing quality and the excellent cooperation during erection and start-up.

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#### Automatic EBT Filling

Also for the tap-hole filling, BSE developed a safe, simple and reliable method by using a conventional storage and dispensing system for the filling material combined with a mechanism for automatic opening / closing of the access hole in the EBT panel.

The mechanism consists of a water-cooled flap with copper cover for closing the access hole in the panel. By actuation of the water-cooled hydraulic cylinder, the flap opens and the sand from the bunker can be discharged for filling the tap-hole.



*Flap mechanism device installed on the EBT panel for automatic opening / closing of the tapping access hole*

For a visual check of the EBT tap-hole before and after the filling procedure, a camera system can be installed additionally. In order to protect the camera, the camera is placed in a water-cooled protection box. During activation of the camera, the lens is also protected by pressurised air or nitrogen blowing.

The complete system provides the customer with the benefits of:

- ⊙ Increased operational safety
- ⊙ Reduction of take-around time
- ⊙ Fully automated process control

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