

Steel Industry

Steel Production

CUSTOMER CHALLENGE

A steel mill with a two vessel BOF (basic oxygen furnace) had an extremely labor-intensive production process. This included loading alloy batch materials into hand trolleys that were manually weighed, and then the materials were hand dumped into the BOF vessel.

The Basic Oxygen Furnace process brings the initial alloy batch materials to a desired concentration and removes impurities to fit product specifications. Due to the manual operation, the production of the alloy batch materials was limited in size, and output capacity was hampered.

SOLUTION

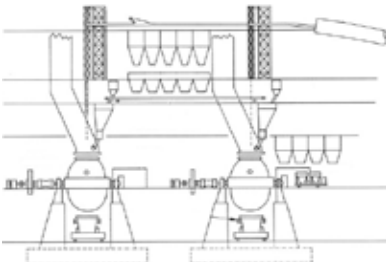
To increase speed and efficiency, our customer adapted an automated Larry Car containing an onboard weighing system and a hopper to capture alloy materials from eight overhead alloy material storage bins. In this configuration, the Larry Car travels between the two BOFs on rails. It unloads the alloy materials directly into the BOF by opening and closing the hopper dump gate. Duff-Norton's SuperCylinder RO530-B47-015 powers the dump gate motion.

DUFF-NORTON ADVANTAGE

- Key advantages in this project include the heavy-duty capacity of the SuperCylinder and increased production speed combined in a self-contained actuator package.



Alloy materials being poured into a BOF (shown for illustration purposes only)



Two vessel Basic Oxygen Furnace (BOF) Schematic.

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Duff-Norton Products:
Duff-Norton SCW05 Series model
#R0530-B47-105 is a 9,200 lb capacity
at .5 in/sec travel speed super cylinder.



Larry Car equipped with
Duff-Norton's SuperCylinder
R0530-B47-015

