



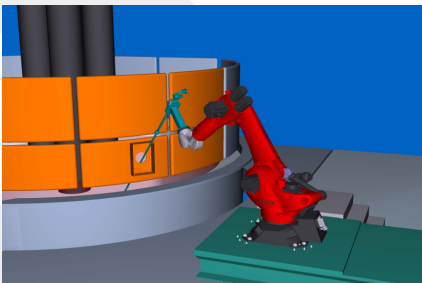
Multiple Functions – Multiple Applications – Multiple Locations

Current BSE MultiROB Installations at Customers in Europe and America – Introducing New Application of Billet Sample Cutting

The following overview of BSE's latest projects shows the diversity of applications and functions of the MultiROB – the robotic solution by BSE. Beside the single functions of temperature measuring and sample taking at the EAF or ladle station and billet sample cutting at the casting machine, the automatic tool exchanger, gives the customer the flexibility to use multiple functions with solely one robot today and in the future.

ArcelorMittal Lazaro Cardenas (Mexico)

In order to increase the safety for the EAF operators, ArcelorMittal decided to invest in an automated solution to perform the temperature measuring and sample taking through the EAF sidewall. Since the existing sidewall opening is very small (200x200 mm) and is not always at the same place (because different shells are used) and due to further space limitations, the MultiROB turned out as the most appropriate solution for this task. The start-up took place in November 2017.



MultiROB with TempSamp function going through an opening in the EAF sidewall
(Click picture to download simulation)

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Böhler Edelstahl (Austria)

Due to safety reasons, the operators at the Böhler meltshop in Kapfenberg are not allowed to enter the ladle station area. Therefore, Böhler was looking for a robotic solution for the temperature measuring and sample taking. Furthermore, Böhler is planning a new meltshop, where advanced robot technology will be applied. The concept of the MultiROB – conversion of a state-of-the-art industrial robot from the supplier Kuka for operation under the hot and rough conditions in a meltshop – the related BSE know-how and the good experience with the BSE TempSamp Manipulator at the EAF convinced Böhler to start another cooperation with BSE.

Beside the robot itself the project comprised also:

- ⊙ Automatic cartridge exchange rack
- ⊙ Tool exchanger (including integrated media connection)
- ⊙ Standard training at BSE
- ⊙ Extended training for robot technology department (after start-up)
- ⊙ 24/7 Kuka-BSE service for one year

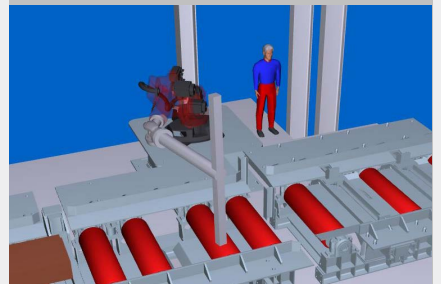
The start-up and training were successfully executed in March/April 2017, having provided Böhler with a reliable tool for today's needs and basic know-how for implementation of future robot applications.



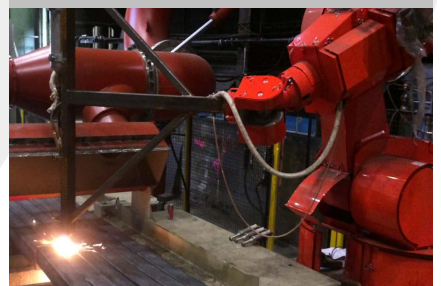
Automatic sample taking at ladle station with cartridge rack and tool exchanger
(Click picture to download movie)

Billet Sample Cutting

A customer in Europe was looking for a safe, flexible and reliable tool to optimise the billet sample cutting. Together with the customer, BSE developed a system to use the MultiROB for this task. The new flexible system with the robot, supplied by BSE, and the torch cutter, supplied by the customer, will be able to cut sample slices even with different shape from different billet size.



Movement of the MultiROB into position for billet sample cutting ...
(Click picture to download simulation)



... realised by different flame modes for preheating and actual cutting process

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