

Part 2 of the "Global Control" report:
"Global Control" in action

Precision cutting through heavy plate



→ The heavy plate production output of Ilsenburger Grobblech GmbH, a subsidiary of Salzgitter AG, was around 800,000 tons in 2007. High quality steel sheets are cut around the clock with modern flame cutting technologies from Messer Cutting & Welding GmbH. The flame cutting installations are equipped with the new "Global Control" PC Control concept based on Beckhoff technology.



Warehouse for the raw materials from Salzgitter (continuous casting slabs)



Ilsenburger Grobblech GmbH produces steel sheets with a thickness ranging from 5 to 120 mm. The raw material in the form of continuous casting slabs is delivered by Salzgitter and is fabricated into steel sheets in a modern rolling mill. "The know-how of Ilsenburger Grobblech GmbH is reflected on the surface of the heavy plates produced," says Dipl.-Ing. Björn Lecon, Senior Project Engineer at Ilsenburger Grobblech GmbH, "it can be seen in the steel itself, both with respect to the steel types as well as the manufacturing process technology."

All heavy plate related markets, such as shipbuilding, steel construction, crane construction, pipe factories and also the wind turbine construction market are served.

Just in time production capacities

Particularly wind turbine construction has grown in the past few years. Ilsenburger Grobblech GmbH has aligned their investment both technically and technologically for this development. The customers from the wind turbine systems market require precision sheet metal with tight dimensional tolerances for foundations, towers and components.

The cycle time is an important factor during order processing. "The customer wants his steel sheet delivered just in time," says Lecon. This requirement has to be fulfilled by Ilsenburger Grobblech GmbH by means of the corresponding JIT processing capacity, of which the flame cutting technology is also a part.

Flame cutting installations at Messer Cutting & Welding GmbH

The demand for the cut heavy plate sections prompted Ilsenburger Grobblech GmbH to build the cutting hall. The new production line has three Messer Cutting

Machine operator at the operating panel of the flame cutting machine for the contour cut (l or vertical cut)



New cutting hall with three flame cutting machines from Messer Cutting & Welding GmbH

Full acceptance for a new operating concept: changeover of the control technology was completely straightforward for the machine operators. The employees found all the previous button functions once again in the user menus and were thus able to easily manage the touch screens.



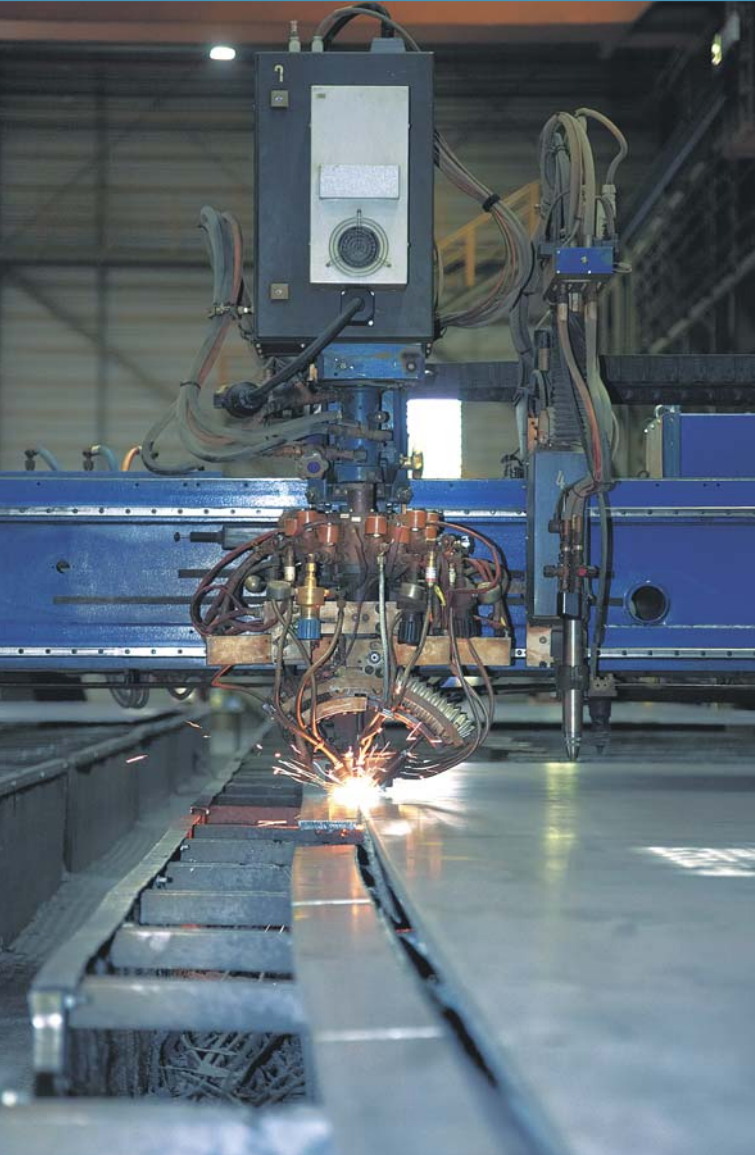
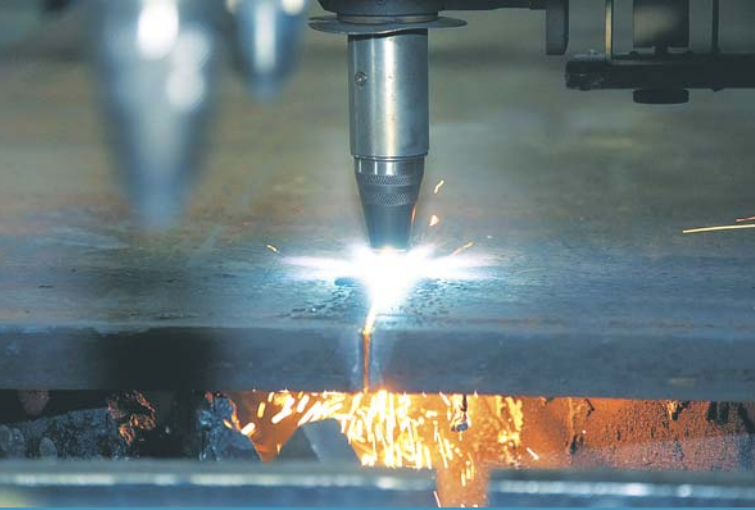
The heavy plates undergo two important processing steps in the shipping area: The geometrical dimensions are realized with profiled sheet cuts (l or vertical cuts). The edge processing also required by the customer (Y or K cuts) allows further heavy plate processing to be carried out directly later on, e.g. by welding. Of course the flame cut edge is a more important quality factor for the customer.



Flame cutting machine for the contour cut (I or vertical cut)



Ingo Göller, Project Manager, Messer Cutting & Welding GmbH; Frank Saueressig, Manager office Balingen, Germany, and CNC expert at Beckhoff; Günther Raulf, North-east Regional Sales Manager at Messer Cutting & Welding GmbH, and Dipl.-Ing. Björn Lecon, Senior Project Engineer at Ilsenburger Grobblech GmbH (from left to right)



& Welding flame cutting installations. "The output demand meant that we wanted to develop new flame cutting technology, namely using two flame cutting machines with three burners for I, Y and K cuts and one machine exclusively for I cuts," explains Lecon. In this respect Ilsenburger is focused on the flame cutting installations market. "The concept of the new "Global Control" technology with its touch screen user interface and break away from classical operation philosophies using 'fragile' controls has been brought completely into the computer age," says Lecon.

Increased functionality through new control concept

The "Global Control" concept is based on Beckhoff technology, from Industrial PC to the drives. Ingo Göller, "Global Technology Team" Project Manager at Messer Cutting Systems, says that the development of the control platform is carried out from top to bottom: "First of all we implemented the technology in the more complex machines where the functionality sets certain requirements." This concerned the OmniMat® flame cutting installations, which are fitted with a DAFL triple burner unit that is used for I, V, Y, X and K cuts and that has correspondingly controllable degrees of freedom (e.g. infinite rotation). "We have completely re-built this unit due to the range of control options which were made available by the Beckhoff technology," states Göller.

Control concept covers future requirements

The order situation at Ilsenburger Grobblech GmbH led them to comparing the previous flame cutting control technology concept with the multiple possibilities of Global Control in which the most important future perspectives regarding order situation, market trend and resulting flexibility requirements were included. "The potential of Global Control is just amazing, and since we are linking our cut area into our internal network, future aspects have also been accounted for," says Lecon. The two flame cutting machines purchased by Ilsenburger Grobblech in 2005 use Global Control. In addition to this, the existing Messer flame cutting installations were retrofitted with Beckhoff technology, "so that the machine operator on every flame cutting machine has the same operating concept," states Lecon.

→ Ilsenburger Grobblech www.ilsenburger-grobblech.de/en

→ Messer Cutting & Welding GmbH www.messer-cw.com