

## JOOP VAN ZANTENS DIGITAL JOURNEY

An exciting journey  
towards Industry 4.0



### The Dutch steelworker breaks with standards and embarks on an exciting journey with Messer Cutting Systems towards Industry 4.0

The family-owned company Joop van Zantens has been a full-service provider for plasma and oxyfuel cutting of steel since 1966. The steel service centre works in the segment from 2 to 350 mm including almost all finishing operations such as press braking, straightening, blasting, machining, and welding. With over 40 employees, a turnover of more than twelve million euros and a modern designed floor space of 10,000 m<sup>2</sup>, the company is now one of the most modern in the Netherlands.

#### The dawn of a new age

Managing Director Bart Kroesbergen is a visionary. In ten years at the latest, the entire production should be automated. For years, Messer Cutting Systems had been a set supplier of cutting machines with complete solutions from a single source, including maintenance, service, and software. Due to the good relations with Messer's local staff, initial exploratory talks were held.

"We wanted a supplier capable of delivering the full range of specialised machine equipment. This includes state-of-the-art technologies for laser and plasma processes as well as software and material handling experience," says Kroesbergen.

"It was clear to all of us from the start that we were in for a long journey that would require staying power, a lot of energy and a high level of concentration," says Bas Sanders von Well, Business Unit Manager Benelux at Messer Cutting Systems, describing the initial discussions

The goal was a process that maps and automates cutting and further processing in a workflow. The core of the solution is the software and 4.0 intelligence that connects everything together.

## SOLUTION

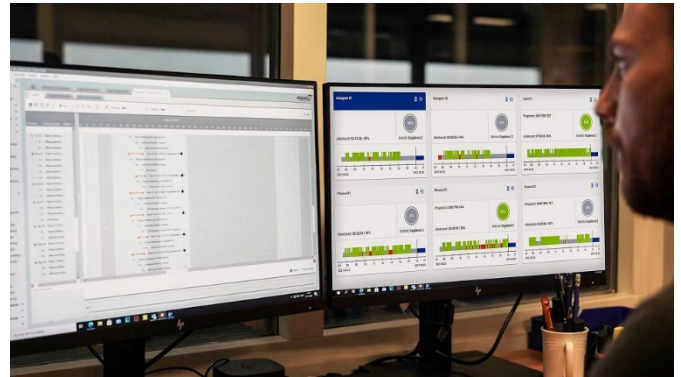
# Digital Transformation with Integration as Key Component

The core of the solution is the software and 4.0 intelligence that links everything together. "Integration was one of the most elementary steps towards digitalisation and complete automation," Kroesbergen says. The suite connects the various software systems, the cutting machines, and the material handling system via various interfaces.

The CAD/CAM software OmniWin calculates the processing time with cutting times, drilling times and material consumption and sends the results to the ERP system. When an order is placed, the data is sent back via OmniFab to OmniWin, where the nesting plan is created. OmniFab generates the job from this, takes over order control, process data selection and the automated production as well as loading and unloading processes.

Today, production is automated to the greatest possible extent and is controlled exclusively from a control room. "This way we always have an up-to-date overview of which jobs need to be cut, what is currently happening on the machines and

which jobs have been cut and can be cleared," explains Johnathan Jacobus, head of purchasing and project manager for automation.



Caption: OmniFab Machine Insight provides real-time and retrospective insights into machine performance.

## IMPLEMENTATION

# Everything under control



Caption: OmniMat® cutting machine equipped with the Skew Delta plasma bevel unit for weld preparation

## Investment in the latest cutting technology

An important part in the digitisation process are two new machines with the latest cutting technology: a PowerBlade® 6500 with laser, 6 KW bevel head, drilling unit with 24 tool changers and LNC nozzle changer, and an OmniMat 6500 with 2\* HiFocus 360I, Skew Delta plasma bevel head, OmniScript and drilling unit with 24 tool changers.

"Both machines meet all our expectations for easy handling, low costs and high reliability," Kroesbergen explains the renewed decision for Messer Cutting Systems cutting machines.

The PowerBlade is characterised by extreme dynamic performance and accuracy. With working widths of over 4 m and track lengths up to 50 m and more, the laser cutting machine is predestined for large format plates. The fibre laser is characterised by a high degree of efficiency as well as a robust and durable design. Guided by the Global Control, the PowerBlade® is thus extremely user friendly and economical.

## RESULTS

### Excellent teamwork enables far-reaching developments

The overall solution is characterised by a particularly high level of complexity. Not only was the integration of the software systems, the machines, and the material handling system from Remmert complex. The solution was completed by the large gas tanks from Messer, the gas supply technology from Spectron and the cutting tables from Beuting.

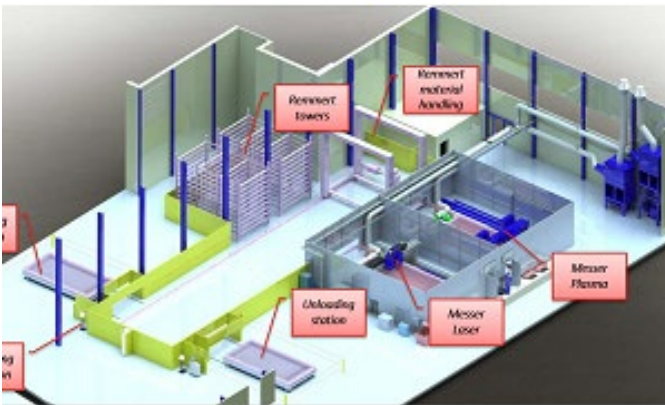


Figure 1: Overview of the automation system in the production hall with Messer machines and Remmert material handling system

“It was an exciting journey with a few surprises. We knew that not everything would be perfect immediately. Setbacks have not affected us; they have advanced us. Things are developing and will work in the future,” explains Kroesbergen. Realistic planning and timely countermeasures in the event of developments in the wrong direction are important.

Today, everyone in the company benefits from the automation. Routine tasks are completed automatically in a noticeably short time without media disruption and without errors. A production planner monitors two machines simultaneously and becomes the automation controller responsible for the entire system.

The reduction of logistical steps speeds up the completion of orders. Digitalisation has led to a considerable reduction in the overall production throughput times, to greater utilisation of the machines and to lower costs for personnel, logistics and consumables.

„It seems that we are perceived as a modern supplier and are now recommended by customers. This has already enabled us to win some new customers and bring back old customers we had lost due to our old-fashioned image,” Kroesbergen is pleased to say.

## OUTLOOK

### Breaking the rules and define new standards

“We know where we want to be in ten years. To achieve that, we will continue to break existing industry rules and redefine standards if required for our strategical vision,” Kroesbergen answers when asked about future developments at Joop van Zanten.

“We have proven that cutting speed is not the main issue but avoiding ways and achieving speed through process integration and optimisation as well as the use of smaller plates. In one shift we process a larger amount of “raw material” (plates) with extremely high flexibility during changeover and minimal

time loss. This significantly shortens the total time compared to long large machines. The logistical goal for 2022 is to deliver at least eighty per cent of the orders within forty-eight hours after ordering.”

In the future, he plans a completely integrated shop with all technologies for cutting, machining and material handling of larger parts. This includes system expansion with automated unloading including transport to the next production step, the deburring. Talks with Messer Cutting Systems are already underway.