

# Reference



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are our  
Primary Objective.  
JACQUET Osiro

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# Swiss Precision in Steel



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## Interview-Partner:

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**A member of the JACQUET Metals Group – [www.jacquetmetals.com](http://www.jacquetmetals.com)**

## Company profile

JACQUET Metals is Europe's leading stockist of stainless steel and nickel-based alloys, and the world's leading consumer of stainless steel quarto plates (8-200 mm thick, 1.5-3 m wide, 6 m long). With its 36 subsidiary companies, the Group serves 7,000 customers in 60 countries. In 2007, sales for the JACQUET Group were 302 million euro. Throughout the world the Group maintains 20 Service Centres with a directly connected trading organisation. From the German-speaking region of Europe, these include:

### **JACQUET Deutschland**

- 45127 Essen, Germany

### **JACQUET Berlin**

- 10961 Berlin, Germany

### **JACQUET Steinau**

- 36396 Steinau, Germany

### **Erdbrügger Metallservice**

- 74380 Neckarwestheim, Germany

### **JACQUET Metallservice**

- 4694 Ohlsdorf, Austria

The branch in Aesch near Basel employs ten people and serves the Swiss market exclusively.

## INTERVIEW

### **What provided the basis for deciding in favour of OERLIKON's plasma cutting machines?**

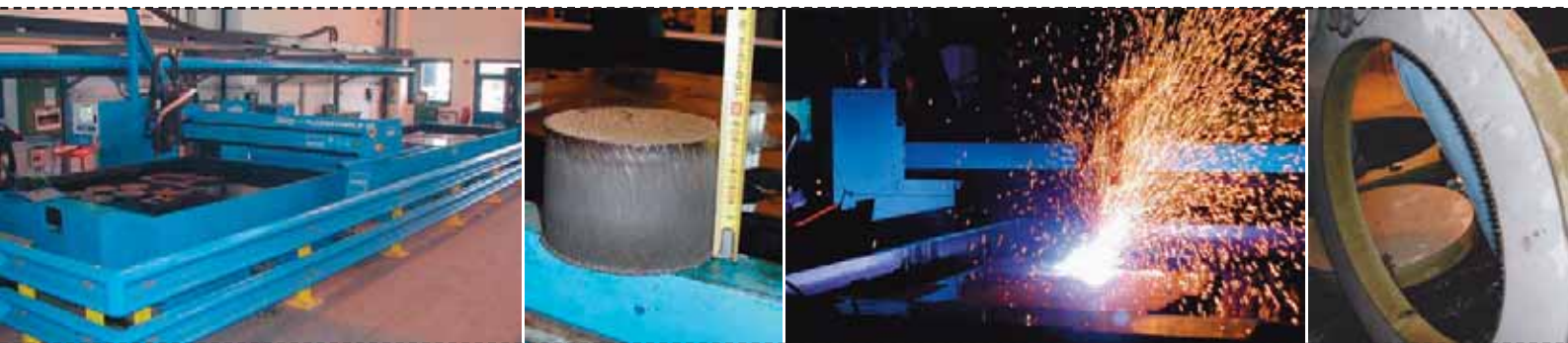
The Stainless Steels Cutting Department of Flanschenfabrik Agenstein GmbH was taken over by the JACQUET Group in 1999. The entire workforce and production facilities came into the ownership of the JACQUET Group. At the time, old underwater plasma systems from another well-known manufacturer were in use. It was soon recognised that investment in new plant was necessary. The investment project was launched in 2004, within the context of relocation to another hall. This called for an underwater plasma system able to cut material thicknesses of 8-70 mm in stainless steel.

There are close business links between Air Liquide Welding (ALW) and JACQUET Metals. This collaboration dates back to the seventies and represents the source of very wide-ranging and valuable experience in terms of service and product quality. As the cutting machine offered by OERLIKON also met the requirements set in terms of price and performance as well, selecting an ALW product was an obvious choice.

### **Surprise on initial use of the cutting machine**

In practice, it turned out that it was not possible to achieve perfect cutting of material thicknesses of 70 mm in stainless steel. There were particular problems with hole piercing and with the life time of consumables. It turned out that the pilot trials were not comparable with the real conditions on site. OERLIKON committed itself fully to overcoming these problems as a priority. Various technology teams from several divisions of the company directed intensive efforts in addressing the tasks of diagnosing and eliminating the problem.

While the problem with the 70 mm material thickness was being jointly analysed, JACQUET Osiro won an attractive major order – now involving work pieces in 80 mm thick material. The large contract for the 80 mm cuts was accepted and engendered a certain degree of competitive ambition, as no such thickness had been dealt with in the past. JACQUET Osiro was therefore



committed to deliver and this motivated everyone involved to even greater efforts to develop rapid, practically viable solutions.

### Too little gas for maximum performance

When the fault was subjected to further analysis it was discovered that valves with special filters had been installed in the gas supply system when the building was set up. Nobody was really aware of the existence of these filters, however they represented a bottleneck for the flow of gas. When the hole piercing was being made – which is when by far the greatest amount of energy is required – the supply of gas was insufficient. If not enough power is available, it is not possible to cut into the material, and the slag produced cannot be cleanly channelled off. If any such situation is not recognised immediately, the slag is spread over the entire surface and the material is damaged irreversibly. When the problem was identified and the filters removed, the whole process took a major step forward.

Additional system parameters were gradually optimised until all involved were satisfied with the result. A wide range of experience was gathered

in the course of the process and this has been reflected in the current further developments of the products.

### Laboratory results in practice

The original plan provided for a complex extraction hood to remove the fumes generated by cutting. Unfortunately, in our case this was not a practical solution, as the hood severely restricted the view of the operator. OERLIKON developed the solution by using an optimised movable extraction unit which can be rapidly swivelled up to allow a clear view of the component.

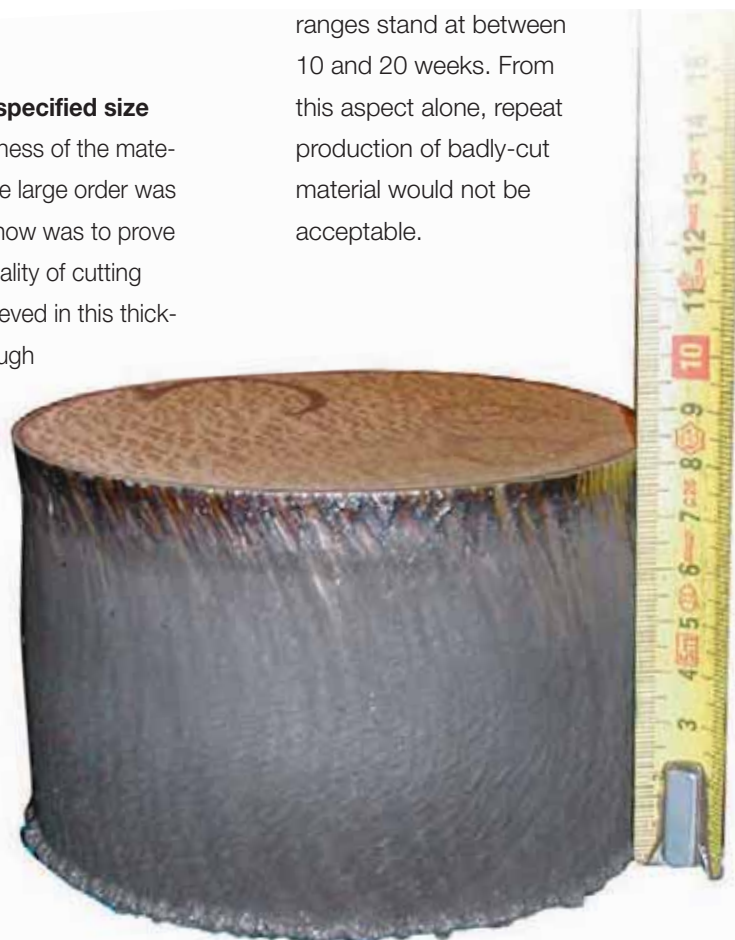
### 12 mm over the specified size

The effective thickness of the material delivered for the large order was 82 mm. The task now was to prove that the normal quality of cutting could also be achieved in this thickness as well. Through intensive collaboration and by combining the considerable know-how present on each side we ensured that we continued to make progress in terms of cutting

options. Today we cut 84 mm to the highest quality and are already considering 90 mm.

### Man, machine and material

With this delicate cutting process, it is not possible to operate automatically, as the process calls for constant human supervision. The cost of the material already runs into tens of thousands of euro. However, it is not solely about the value of the material, as material delivery times are also problematic. In some cases, material delivery times for the thicker ranges stand at between 10 and 20 weeks. From this aspect alone, repeat production of badly-cut material would not be acceptable.





### Why do you insist on underwater plasma cutting?

One significant advantage is that the work piece is cooled during the cutting process. This enhances the quality of the cut and the work piece can also be subjected to further processing immediately, without any cooling period. This increases productivity. The process also involves advantages in terms of working and environmental conditions, as less noise and less smoke are generated under water.

### How do you assess your collaboration with OERLIKON?

We have been cutting with OERLIKON machines exclusively for almost four years now and are extremely satisfied with both the machines and the collaboration. We expect flexibility, creativity and optimum service, and we get all of these from OERLIKON. When we need support, the required personnel arrive on site in no time. The close relationships and contacts established between staff in both companies are of enormous importance and in this case are extremely good.

### Has the change of supplier been worthwhile?

A change of supplier always entails a certain degree of uncertainty: new machines, new contact personnel, how capable are the people involved, what about service availability, how will installation and commissioning go? There are a lot of unknown factors. We ventured to take this step and are completely satisfied and pleased that we decided in favour of OERLIKON.

### What are the plasma systems in use equipped with?

- One **PLASMATOME 30** system for cutting 3 x 8 m stainless steel work pieces under water, for sheets up to a max. of 70 mm in thickness. Usable width of 3.5 m, allowing for a cutting width of 3 m in a water cutting table
- D 610 digital control unit
- Total travel length 10.5 m, usable length 9 m, allowing for cutting up to 8 m
- Argon / hydrogen gas mixer, up to 600 A
- Vortex mixer, nitrogen / hydrogen, up to 600 A
- NERTAJET HP600, comprised of two 300 A power sources, CPM 720 torch
- FRIOSAF 60 cooling appliance
  
- One **PLASMATOME 25** system, usable width 2.5 m, corresponding to a cutting width of 2 m in two water cutting tables
- D 610 digital control unit
- Total travel length 13.5 m, usable length 11 m, allowing for cutting up to 6 m in the first water cutting table and 2 m in the second water cutting table
- Argon / hydrogen gas mixer, up to 600 A
- Vortex mixer, nitrogen / hydrogen, up to 600 A
- NERTAJET HP600, comprised of two 300 A power source, CPM 720 torch



[www.airliquide.com](http://www.airliquide.com)



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