

Customer Case Study

Steel Fabrication for the 2018 World Cup: In Search of Design and Pipe Cutting Freedom



CUSTOMER

Kurganstalmost JSC, Russia



SOLUTION

SPC 1200 Pipe Cutting Machine

Tekla Structures BIM Software

INTERVIEWEES



Kurganstalmost (RU) using HGG pipe cutting machinery and Tekla software for fabricating World Cup'18 stadiums

Project Overview

From fabricating bridges to major sport stadiums

Kurganstalmost JSC (Russia), a market leader in metal superstructures, has some time ago shifted its focus **from fabricating bridges to major sport stadiums**. Becoming a key player in providing tubular steel structures for **the World Cup sport stadiums in 2018** was an opportunity not to be missed. Not long ago the company was granted the order of the 1st of a series of stadiums they will fabricate for the world cup in 2018 - **the Samara stadium**. Its rooftop structure, a unique construction made of **13,500 tubular structures**, has one of a kind dome-shaped roof design covering both the calotte and the seats.

Up to that moment Kurganstalmost was relying on dated traditional fabrication processes. Not being able to face any longer these huge volumes and complex design with technology imposing limitations, Kurganstalmost started exploring process automation solutions:

“When we got the order for the Samara stadium we realized that

we cannot manage with the tools we’ve used so far. This was a new task which required dealing with much more complex objects than before.” says chief project engineer Konstantin Raznoglyadov.

“We cannot create modern objects using Soviet-era equipment and using old standards.” adds Stanislav Ryabchenko – Head of Marketing and Sales

We Need an Automated Solution!

For taking this extra step towards process automation Kurganstalmost opted for the **advanced technology solutions of two market leaders** – Tekla and HGG.

“That is why we are interested in a kind of alliance of strong market players. We look at Tekla and HGG as the main ingredients for the successful implementation of the project.”, Stanislav Ryabchenko – Head of Marketing and Sales.

The integration of BIM software - **Tekla Structures**, with the HGG pipe cutting machinery - **SPC 1200 pipe cutter**, resulted in numerous productivity gains for Kurganstalmost.

SPC 500 - 1200 PT Pipe Cutting Machine (Chuck Type)

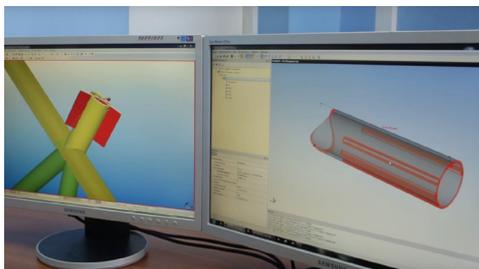
“This machine enabled us to make complex cuts and tube to tube connections, which is usually problematic to do.”

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Fabrication Glory

Large volumes and complex design no longer a problem

All data from the information-rich Tekla models, including much more than just geometry, were seamlessly transferred to the HGG pipe cutting machine via HGG's postprocessor ProCAM software. **The connection b/n Tekla Structures and HGG pipe cutting machine** results in ready-to-weld parts of complex tubular structures as predefined in the model. "As a result we have now parts exactly according to the geometry in the 3D model. It is also very easy and simple to use: all actions in 1 click only." confirms Sergey Medvedev, responsible for work preparation.



From Tekla Structures to HGG ProCAM



Fast & easy welding of parts



Accurate cuts for small weld volume



Perfect fit for strong connections

By using BIM quick changes can be made at the design stage which further eliminates defects during fabrication. Once the cutting file is transferred from Tekla to HGG's ProCAM, fine tuning of the cuts is also easily achieved, e.g. changes in the cutting angle:

"By using Tekla and HGG software, we've made a quantum leap forward in our business. Prior to BIM with our pipe cutting machinery, we simply did not take on such complex objects.", chief project engineer Konstantin Raznoglyadov.

Kurganstalmost expanding their production capacity

Soon after starting to use the HGG pipe cutting technology (SPC 1200), Kurganstalmost witnessed significant productivity gains:

"The main advantage of this machine is that it enables us to make complex cuts and tube to tube connections, which is usually very problematic to do."

Having less seam repairs and fewer defects as well as producing more in a shorter time period due to the advanced logistical system of the HGG machine, resulted in **quick economical gains** for Kurganstalmost: "We decided to purchase one pipe cutter with advanced logistics (pipe infeed and outfeed system). This allowed us to replace two pipe cutting machines, so to speak."

Vyacheslav Kurlov, welder and assembler at Kurganstalmost highlights the **benefits for assembly:**

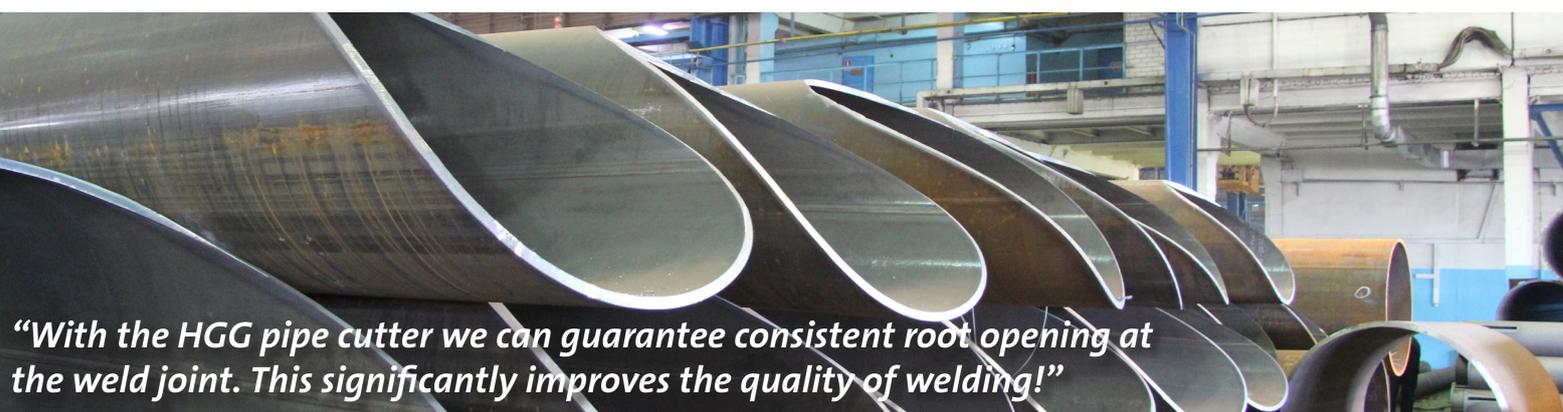
"The assembly process is much faster. It's easier, the sizes are much more accurately cut."

For Kurganstalmost the highly accurate cut results produced with the HGG pipe cutting machine results in **welding benefits** too:

"We can guarantee consistent root opening at the weld joint, which in turn has a positive effect on the quality of welding and reduces the workload because we do not need any improvements or adjustments. "

HGG and Tekla: A strategic partnership of industry leaders

"We see a union of strong players, such as Tekla and HGG, among the key elements of our success.", concludes Stanislav Ryabchenko, head of Marketing and Sales at Kurganstalmost



"With the HGG pipe cutter we can guarantee consistent root opening at the weld joint. This significantly improves the quality of welding!"