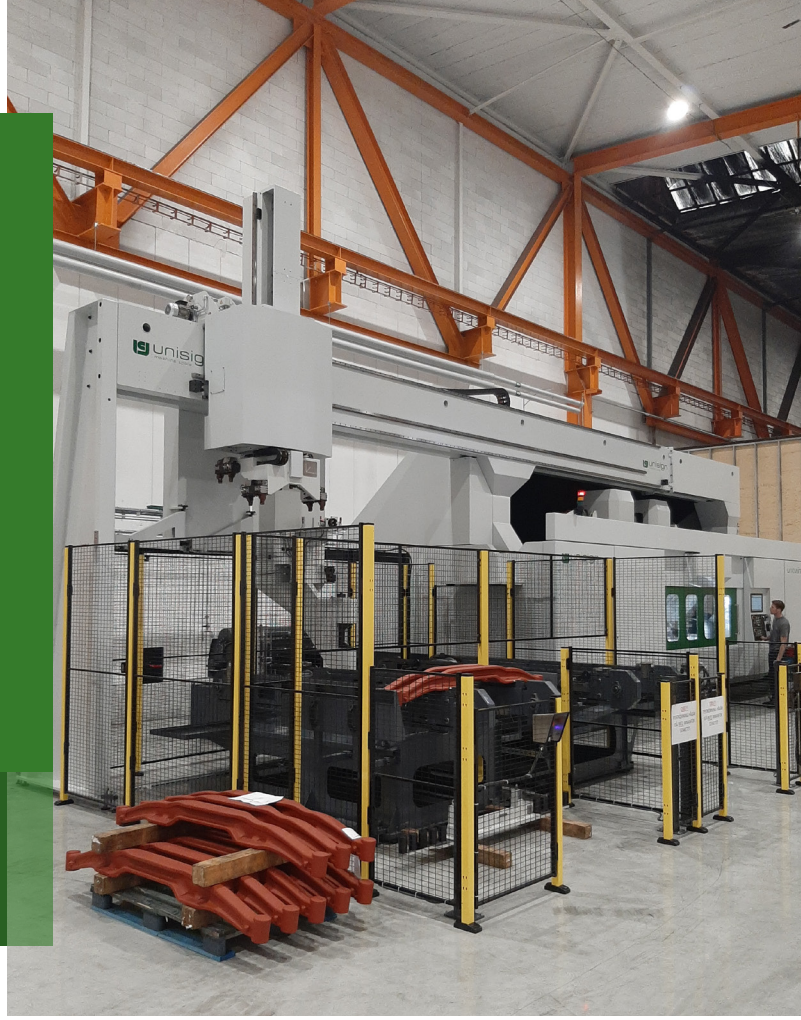
UNISIGN **EXPERIENCE**

@WORK



Logistics
Case study

Application
Machining front axles for trucks and buses

Material
Steel

Customer
Bharat Forge Kilsta, Sweden

Machine type
UNITWIN6000

Benefits
- More than double the manufacturing speed
- Exceptionally tight tolerances
- Reliable and sustainable technology
- Continuous innovation and enhancements through upgrades

UNITWIN6000: innovative front axle machining

About our customer

Bharat Forge Kilsta is one of the world's largest forging companies. It specialises in heavy crankshafts, front axle beams, steering arms and other chassis components. The company is part of the Bharat Forge Group, the world's largest full-service supplier of forged engine and chassis components, with manufacturing operations across nine locations in six countries.

Bharat Forge Kilsta is based in Karlskoga, a Swedish city renowned for its centuries-old forging tradition. The company has operated in the steel forging industry for over 300 years. Today it manufactures key components for the automotive sector, including for long-standing clients among leading heavy vehicle manufacturers in Europe. "We've been supplying some of them since their first vehicles were produced, more than 100 years ago" says Thomas Forsling, Production Development Engineer. "We are a major player in the European forging market and a lot of vehicles in Europa have forged parts from Karlskoga."

Reducing dependency

The Swedish company predominantly manufactures front axles for trucks and buses. It first forges beams from steel and then machines these to make full front axles. To do this, the company previously used CNC machines of the older UNIVERS model. Three new UNITWIN6000 machines were added to these in 2022/2023.

Prior to expanding with the new models, Bharat Forge Kilsta needed to outsource part of its manufacturing process. "We

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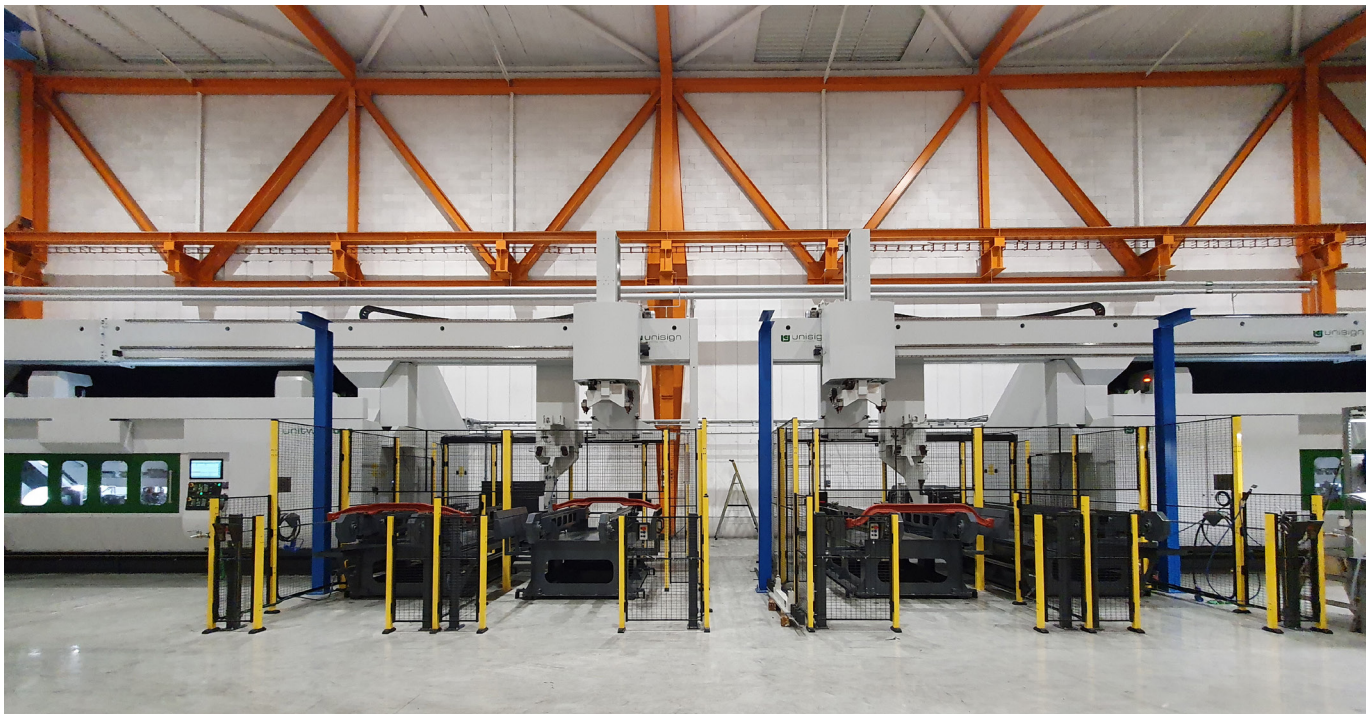
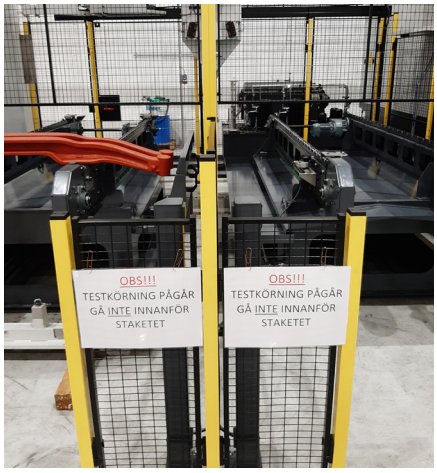
Panningen, Netherlands
Tel: +31 (0)77 307 37 77
sales@unisign.com
www.unisign.com



didn't have the capacity to machine all the front axles that our customers requested," explains Forsling. "So, we had been doing that through subcontractors. But, to be less reliant on them, we wanted to do more of our machining in-house. That's why we started to explore options for extra machines."

The reliable choice

Unisign offered what they needed. According to Forsling, the UNITWIN6000 provides even greater speed, reliability and precision, although two of the older machines are also still in use. "They have been very reliable, considering their age," says Forsling. "We bought them more than 20 years ago and they still do a great job. When we were looking for new machines, it was only natural for us to contact Unisign."



Tight tolerances and time frames

The UNITWIN6000 enables Bharat Forge Kilsta to manufacture almost all of its front axles in-house. Another major benefit is the speed at which they can do this. As Forsling explains: "The old machines have one spindle that does the machining, which means we can do one side of the beam at a time. The UNITWIN6000 machines both sides simultaneously. The handling is also quicker, because we don't have to manually change the beams in the machine. As a result, our production speed is now a little over double."

The UNITWIN6000 is not only fast, it's also exceptionally accurate. "The tolerances are very tight", explains Forsling. "Without any extra effort, we can create parts that are even more consistent in terms of shape, size and other important factors."

Constantly improving

The UNITWIN6000 machines being used have a number of components that were customised for the company and its manufacturing process. Forsling: "Unisign makes sure the machines are tailored to our wants and needs. Whenever they spot an opportunity to modify something for us, they'll do it. They're always listening to what their customers want and adapting to that accordingly. Things move very quickly at Unisign. So, over time they'll create packages to upgrade existing machines."

Extremely eager to help

Occasionally the CNC machines will develop an issue, for example as a result of an error on the part of an operator. In those cases, Forsling can always rely on Unisign. "They're always very accommodating, serious and responsible. Unisign will never say: 'That's your problem.' They're extremely eager to ensure the machines work. Whenever there's any kind of problem, they get back to us quickly. They'll either help us fix the issue ourselves or send a technician. Their technicians are highly skilled and that makes them easy to talk to. For me as an engineer and also for our maintenance crew. They really know these machines inside and out."

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