

Three times longer tool life

# Prodec machining day for the third time in Europe

Outokumpu Prodec showed its superior capabilities in a recent tool-life test in Germany, which was also demonstrated to customers on a video at a Machining Day event in October.

*Prodec bar 316L/4404 in machining test with 280 m/minute, 2mm feed. The insert did not wear out and the test was ended after 11 minutes as the bar could not be machined thinner. Corresponding bar with standard material lasted only 2 minutes in the test. Testing was done with coolant*

To demonstrate the capabilities of Prodec 316L/4404, a tool life-time test was done at a machine shop CNC Ayden in South Germany. Tests started with a standard stainless steel bar which was compared against Prodec 316L/4404. The stainless steel bar is machined in the test with high speed 280 m/minute until the insert is worn out. The results showed evidence of Prodec giving 350% longer tool life-time to the inserts.

Three selected customers were invited to attend the testing on-site. The test was also recorded on video and shown on the following day at the joint Outokumpu Long Products and IMS Machining Day event.

The event gathered together about 45 machine shop owners, technical directors and machine users interested in machining from areas near Trossingen, where the event took place. Outokumpu presented the Prodec offering and its benefits from a technical point of view as well as showcasing the Prodec machining test to the audience.

### **Prodec in brief**

The Prodec range comprises stainless steel

grades that are optimized for consistently superior machinability, enabling faster machining speeds, longer tool life, and enhanced quality. Unlike typical grades optimized for machina-

- Superior quality and tolerances: Prodec expands the machining window, leading to superior chip formation while avoiding built up edge and tool wear.

and gas industries and nuclear power plants, Astava Instrumentation Solutions in the Netherlands produces instrument valves and manifolds for uncommonly demanding applications.

*Machining of standard stainless steel bar at high speeds can create very long chips that create nesting around the bar. These bars need to be machined with significantly lower speed to avoid nesting*



bility, Prodec products have similar corrosion resistance to conventionally produced stainless steel grades.

Their key benefits include:

- Faster machining: based on V15 testing results you can optimize machining speeds for Prodec 304L/4307 up to 300 m/min. Using higher speeds can lead to significant cost savings per component.
- Prodec can double tool lifetime.

Typical applications for Prodec include:

- Automotive applications
- Flanges
- Valves
- Fittings
- Couplings
- Seals
- Shafts
- Bolts and nuts
- Parts in pumps

### **A couple of real life examples**

A leading manufacturer of flow control equipment for the petrochemical, oil

Component quality must be superior in every way, including type of base material. And in a very competitive industry, high levels of productivity and efficiency are critically important.

### **Faster machining, longer tool life**

To meet those demands, Astava turned to Outokumpu high machinability Prodec bars. Provided by IMS, exclusive distributor of Prodec in the Benelux and Europe, Prodec has already made an im-

pressive impact at Astava in a six-month trial.

“I read about Prodec’s faster machining speeds

faster, everything is faster.”

Additional efficiency is

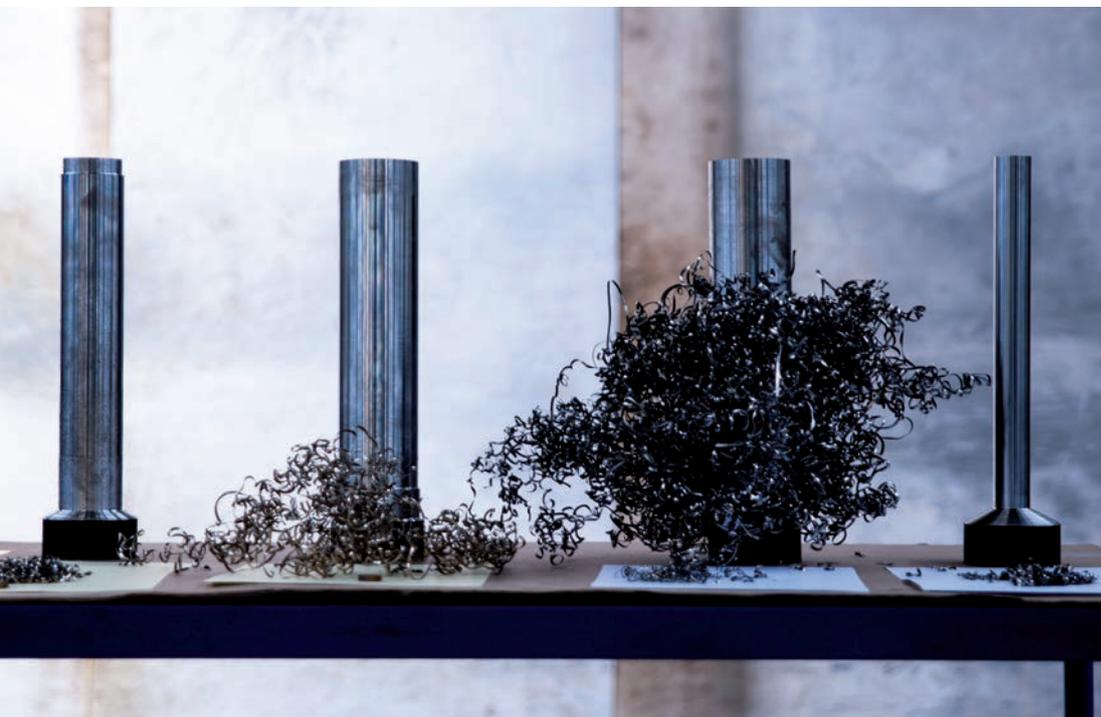
That experience is supported by outcomes from V15 machining tests conducted in 2016. In those

chining at higher speeds helps to avoid built-up edges on inserts, and leads to a better surface quality and tolerances. In that way, Prodec delivers cost savings and quality. And that’s why Astava is considering a big change. “As it stands now, we’re going to begin using Prodec exclusively”, Gasthuis says. “Between the cost savings and the improved tool life, it’s really making a difference in our operations.”

#### **Where high machinability and superior quality meet**

Based in the Netherlands, Rotoko Machining has long experience working with stainless steel. The company is a highly respected producer of precision-machined parts for the oil and gas industry as well as aviation.

Committed to continuous improvement, Rotoko routinely invests in its operations and its people. But in staking its reputation on exceptional quality, Rotoko also insists on superior materials. Uniquely consistent stainless steel helps this progressive organization achieve unprecedented levels of quality and efficiency.



**Two bars from left are machined without coolant and two bars on right are machined with coolant. In both cases machining was done with high speed until the insert wore out. Test results without coolant gave 350% longer tool life for Prodec and with coolant even longer. Prodec bars are shown in the image first on left and first on right. The chips are short with Prodec material whereas regular stainless bar behaves differently and chips are much longer.**

in a magazine article”, says Rob Gasthuis, Astava Operations Manager, “and we decided to give it a try. Our production efficiency has improved by 10 to 15%.” One component the company makes contains more than 25 small parts. “It would normally take 2 minutes, 38 seconds to produce”, Gasthuis says. “With Prodec, it’s down to 2 minutes, 10 seconds. We’ve seen real time savings. Turning is faster, feeding is

anticipated as the Astava trial advances. In an upcoming visit from an Outokumpu Prodec expert, Astava equipment will be fine-tuned to maximize efficiency. With an infusion of technical expertise from Outokumpu, parameters and tooling will be adjusted to achieve optimal results.

Prodec also delivered cost savings in tool life. “We’re producing more product with the same tooling”, Gasthuis said.

tests, Prodec achieved machining speeds of up to 300 m/minute, resulting in a doubled tool life compared to competing materials.

It’s not just about speed. Protecting the environment is a key concern in the oil and gas and nuclear power industries. Customers like those rely on Astava for high quality products formed from high quality materials. Prodec is an essential part of that formula. Ma-

**High speed  
delivers high quality**

In the course of an extended production run - say, 10,000 pieces - consistent quality is essential. "Through 3,000 kilos of material, for example, the first bar should be the same quality as the final bar", says Rotoko ceo Leo Koetsenruijter.

If bar quality fluctuates, equipment speeds must be reduced in order to achieve the tool life needed. But with bars of consistent high quality, speeds can be increased



with no fear of production failure.

Using Outokumpu's high machinability Prodec bar

(provided by IMS, exclusive distributor of Prodec

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in the Benelux and Europe), Rotoko increased cutting speeds in pre-machining and finishing by more than 10% on a production run of 5,000 pieces.

Prodec also boosted tool

life at Rotoko by 40%. Better tool life and faster production represent important efficiencies. Machining at higher speeds helps to avoid built-up edges on inserts, and leads to better surface quality and tolerances. In

that way, Prodec delivers cost savings and quality.

### ***Doubled tool life creates savings***

Rotoko's experience with Prodec defied conventional wisdom. "Nor-

mally, you increase tool life by decreasing cutting speed", Koetsenruijter notes. "But with Prodec, when you increase cutting speed, you increase tool life.

Indeed, in V15 machining tests conducted in 2016, Prodec achieved machining speeds of up to 300 m/minute, resulting in a doubled tool life compared to competing materials.

Learning of Prodec from an IMS sales representative, Koetsenruijter says he was eager to put the new product to the test. On the basis of the trial, a run of more than 20,000 pieces was planned. "IMS provided us with literature and technical expertise, as well as test material", he says. "They were very helpful, and the service, delivery time and price were very good. Outokumpu and IMS have been very good companies to work with."

## ***Pia Aaltonen-Forsell new CFO at Outokumpu***

Pia Aaltonen-Forsell has been appointed Outokumpu's chief financial officer and member of the Leadership Team as of March 1, 2019 reporting to CEO Roeland Baan. Outokumpu's CFO Christoph de la Camp has decided to leave the company as of March 2019 for personal reasons.



Aaltonen-Forsell joins Outokumpu from the role of CFO in Ahlström-Munksjö. Prior to her latest position, she has held CFO positions in Munksjö Oy and Vacon. Between 2010 and 2013, she worked at Stora Enso in various finance and leadership positions, latest as senior vice president Finance, IT and M&A, Building and Living Business Area.

Baan commented: "I am extremely happy to welcome Pia to join our Outokumpu team. Her broad experience in leading finance, IT and M&A will be invaluable for us in reaching our 2020 targets and developing the company beyond this milestone. At

the same time, I want to warmly thank Chris for his relentless work and commitment in leading and developing Outokumpu's finance and controlling function and driving Outokumpu's transformation as part of our leadership team. I wish him all the best for the future."

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