



Powerful performance for heavy-duty machining: In demanding pipeline construction, AFS Fittings Service Achim GmbH & Co. KG uses a 3-axis machining centre from HEDELIUS.

“We needed the power of the machine”

When it comes to special solutions in the pipeline construction, AFS Fittings Service Achim GmbH & Co. KG from Achim bei Bremen is a true specialist. The company, in existence since 1984, spins and mills special parts from bar steel among other things for pipes in power plant construction in the oil and gas industry as well as for chemical plants. The steel it uses is particularly hard material such as stainless steel or duplex steel.

The north German company with twelve employees is supported by the two managing partners Maik Rosenowski and Uwe Schulze. The competencies of AFS lie quite clearly in the processing of sophisticated bar steel for pipeline construction. Produced among other things are fittings, flanges, pipe sleeves and turned parts for example from heat-resistant steels, stainless steels or duplex steels, all as a special solution according to customer drawings in small batch sizes of one to ten workpieces. The processing times are typically one to two weeks and almost never more than three weeks. This is also due to the requirements of the market. Tight delivery deadlines must be met. The customers of pipeline specialists come from different areas of power plant technology,

such as coal, oil and gas industries, but from the chemical industry and many other sectors. Special solutions from AFS can be applied to nearly all systems: “Our products can be used almost everywhere, where systems are built,” said Technical Director Maik Rosenowski describing the areas of use of the products. In addition to pure production, AFS in Achim also conducts material testing according to standard or customer requirements.

Extreme pressures and temperatures

For the products of the northern German specialist hard steels are used in particular, because in the systems in which the finished workpieces can be fitted there can be extremely high pressures of over 450 bar or extreme temperatures of up to plus 500 degrees Celsius. Due to the high demands on the material, special regulations and certifications apply. “Each material must have a TÜV stamp”, explained Rosenowski, outlining the procedure until production: “Customers plan a pipeline and set requirements such as, e.g., pressure. Then we make calculations, TÜV checks the information and only then can production begin.” The workpieces to be machined weigh up to two tonnes and

have a diameter of up to 750 mm. This is also one of the reasons why AFS recently moved to a new production facility. The old building was no longer suited for the high loads of the workpieces to be processed as well as the length of the raw material. At the new location, the company now has very different possibilities.

Highest demands on machining

However, the challenge for AFS is not the size and weight of the workpieces. “We know our material,” said the technical director. “Our challenge lies in the quality. It all looks simple. But because of the material, each component is a Herculean task.” It is not so much about extreme accuracy, but rather that the produced parts need to withstand the high stress in the systems of the end users. In order to provide the required high quality, processing is decisive next to the material used. For milling, AFS chose a BC85 2300 machining centre from HEDELIUS Maschinenfabrik GmbH in Meppen. On the powerful 3-axis machine, smaller discs with a diameter of 40 mm up to large workpieces made of cast steel of 600 mm in diameter are processed. “We needed the force of the machine,” said Rosenowski, explaining the choice of HEDELIUS. He recalls the first workpiece which was

AFS Fittings Service Achim GmbH & Co. KG

**Special solutions in the
pipeline construction**

Established: 1984

Company headquarters: Achim

Employees: 12

manufactured on the HEDELIUS: “The first part on the BC85 was a Y-piece 600 mm in diameter for pipeline construction. We milled it from almost one and a half tons of solid material.”

Milling with maximum feed

The machine is equipped with a 55 kW spindle, speed 4500 rpm-1. “I was critically asked if a speed of 4500 min-1 is sufficient. However, we do not process aluminium, so the speed suits us well”, explained Rosenowski. “We use the maximum feed rate of the tools that can be found on other machines do not do. The big problem is the wear of tools, not the machine.” The reason for this is certainly the type of processing in addition to the material. High-feed milling work is often done on the HEDELIUS. Also, a lot of deep hole drilling of up to 300 mm is practised. The standard 25-bar coolant pump of the 900 I Inclined Bed Coolant System is fully sufficient for this processing.

Special version for full flexibility

HEDELIUS BC85 2300 with travel distance of 2340 x 800 x 700 mm (x/y/z) was ordered as a special version with some accessories. As a P version, the stable processing centre has a lowered machine table so that clamping is possible up to 120 mm higher

or longer tools can be used. “The deep table is important for deep-hole drilling and clamping of large parts”, said Rosenowski, explaining the reasons for the acquisition of the machine as a P version. In combination with the NC rotary table as the fourth axis and a tailstock, there is even a greater flexibility in processing, especially of workpieces with a large diameter. “I did not want to miss the option” said Rosenowski, explaining the purchase of a work area partition wall and thus hints at the possibility of pendulum machining. Angle milling head, infrared probe, tool setter and handheld unit complement the accessories and provide for full flexibility in the production process.

Convincing HEDELIUS concept

For a good three years, AFS Fittings Service Achim GmbH & Co. KG worked only with BC85 2300 from HEDELIUS. Through the acquisition of the powerful machining centre the production could once again be improved and the quality of the individual products be increased. “With the BC85, parts can be processed differently than before. We could thus improve the life of the material in the end product,” explained Managing Director Rosenowski. The machining centre is equipped with a Sinumerik control system from Siemens. There is a very simple, but

not insignificant reason for this: As other machines in the machine park are also equipped with Siemens controls, the user can operate two machines. This saves time and personnel.

All in all, AFS in Achim is very satisfied with the BC85. The concept of HEDELIUS was persuasive. The stable machine in connection with the powerful spindle, the lower machine table and the Sinumerik control were decisive from a technical point of view in choosing HEDELIUS. Important in the decision for the machining centre was also the clear line pursued by HEDELIUS in relation to its own products, as well as the fact that “Made in Germany” is a priority in Meppen. Maik Rosenowski is also satisfied with the service of the northern German machine manufacturer: “In the beginning there were software problems that were solved very quickly. HEDELIUS is immediately there. I am very satisfied with the service.”