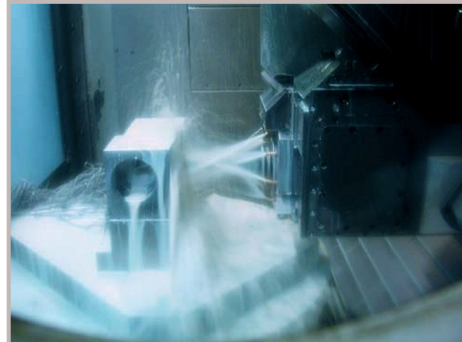


A head of its time

Hennecke - for all your mixhead needs

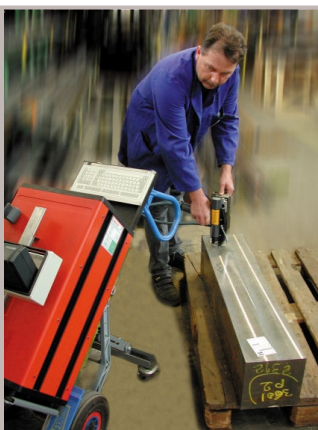
Wherever polyurethane is processed – be it in the automotive, furniture or refrigerated appliance industry – the hour of the mixhead has come. For they have a decisive influence on quality and economic efficiency in the production of PU parts. The development and manufacture of mixheads demand a high level of expertise and many years of experience. And it is in this field that Hennecke GmbH in Sankt Augustin has made a name for itself. Thomas Kirsten, the company's Marketing-Communication Manager, provides the evidence.



At the machining centre, the blank for the mixhead housing undergoes the various manufacturing levels

Photo: Hennecke

Apart from a few standard parts, each mixhead bearing the Hennecke brand is a 100 % proprietary product with a unique identification or machine number. By referring to this number and a dedicated manufacturing record, all key production, application and maintenance data can be retraced at any time.



Tool steels are examined by spectral analysis

Photo: Hennecke

Accuracy and precision work at Hennecke starts right at the beginning with the incoming inspection. High-grade tool steels for the mixhead housing are initially examined by spectral analysis for their chemical composition before being released for production (figure left). Having successfully passed this inspection, the blank is transferred to a so-called machining centre. This is where a state-of-the-art automatic lathe and milling machine carries out all machining operations on the housing according to programmed specifications. Depending on the mixhead type, this may involve up to 100 different tools, all of which will be changed automatically. Since the housing blank will be machined from five

sides, it only needs to be clamped once (top figure next to the title).

The next step is superfinishing. A variety of machining methods, including honing, cylindrical grinding and eroding, are used to give the housing bore-holes their high-precision profile. To achieve high dimensional accuracy, it takes not only the most advanced technology, but also the expertise and fingertip precision of the machine operator. Subsequent surface treatment gives the housing the required resistance to wear for tough everyday production conditions.

Precision work

This is followed by the moment of truth:

The mixhead housing is subjected to a dimensional scanning procedure at a new, fully air-conditioned measuring centre that has been specifically equipped for quality assurance (figure far right). A computer-aided 3-coordinate measuring machine verifies all major housing dimensions as well as the shape, position and dimension of the bore holes. A special touch probe scans the housing's geometry with each internal bore hole being displayed on a monitor. The results are documented in a measurement record. Only housings that satisfy all quality criteria are released for assembly.



Whatever the component – bush, cylinder, throttle or transverse piston – state-of-the-art precision machines are of course also used for making the parts to be attached to the mixhead. And the same strict quality standards apply as in housing production. Based on the test record, the control pistons of the MX, MN and MT5 mixheads are produced exclusively and precisely to fit a specific mixhead housing. This will prevent the two liquid polyurethane components, polyol and isocyanate, from being released and reacting too early, i.e. before they have been mixed in the mixhead chamber. The housing will then be assembled with all its components. Piece by piece, the mixhead assumes its ultimate form.

Before the mixhead goes to the warehouse or to the customer, it has to pass a tough individual check test under authentic conditions. All functions and sealings are checked on a special test bench, the results of which will be logged in a record.

Service offer

Even if Hennecke mixheads often perform several million shots without malfunctions in certain applications, they are still subject to normal wear and therefore have to be regularly maintained

and, if necessary, repaired. Hennecke therefore offers its customers comprehensive after-sales service, including:

- quick support from the assembly department in the event of technical problems,
- special training for maintenance and operating staff,
- regular inspections of the mixheads in operation, and
- lending of mixheads to cover periods of maintenance and repair.

Hennecke's specialists inspect and repair sent-in mixheads with the utmost care and competence. The mixheads are cleaned, fully dismantled and completely remeasured. Professional inspection and maintenance pays off in many cases as this may considerably extend the mixhead's life expectancy and prevent its premature replacement.

In addition, the company continually invests considerable funds in the further development of its mixhead technology and in the machine and testing technology for mixhead production. Tried and tested mixheads are available for all fields of application, covering everything from standard to customized applications. With a variety of sizes and injector designs plus extensive accessories, Hennecke mixheads can be adapted to virtually any application (figure left).



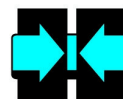
The broad range of high-pressure mixheads in Hennecke GmbH's delivery programme covers nearly all application ranges

Photo: Hennecke GmbH

More information:

Thomas Kirsten
Manager Marketing-Communication
Tel. + 49 2241 339-297
Fax. + 49 2241 339-974
e-mail: thomas.kirsten.tk@hennecke.com

Hennecke
Polyurethane Technology



Hennecke GmbH
Polyurethane Technology
Birlinghovener Str. 30
D – 53754 Sankt Augustin

A  Bayer Polymers Company