

Tube processing in hydraulics systems

SPECIAL solutions are always in demand when special requirements must be met, such as in tubing systems for hydraulics. Bends are allowed to be only slightly ovalised and tubes are usually manufactured in small batches. Accurate fit ensures safe, leak-free sealing systems and optimal cleanliness ensures a functioning system. Manufacturer's instructions for connecting systems have to be followed accurately. New, cost-effective solutions for these challenges are developed by transfluid Maschinenbau GmbH.

The specially developed software T-control provides transfluid's best conditions for efficient tube processing. The customised software allows the user to import co-ordinates and process data directly from the respective CAD program online and start the process.

In the teamwork with the quick-changing system for tooling transfluid bending machines (T-bend) allow short tool changing times in the lower one-digit minute area. Besides, the excessive lengths which are needed – for example to be able to attach an end forming at the pipe – are

The transfluid Maschinenbau benders (above and below)

automatically considered. From the outset gross contamination is avoided in the system and cuttings are made up to a pipe diameter of 30mm exactly and chipless.

The further procedure depends on the choice of the particular connection system. If cutting rings are used they can be mounted easily while the CNC bending machine bends the following tube. The transfluid cutting ring pre-assembly machines are constructed so compactly that all bending geometries can be processed.

"If as a connection system tube end formings are used, it makes sense to start with forming on both sides of the straight tubes before the bending process. That means first forming and then bending," explained transfluid managing director Gerd Nöker.

Here transfluid sees significant benefits, because these end forming machines are less compact and require longer clamping area. "When forming first for the forming machines clamping jaws without saw teeth can be used. The coating of the tubes will not be damaged in this way," said Mr Nöker.

The difference of the bending machines is in the drives. In general, servo-electric or hydraulic drives are used. transfluid also offers a special feature: power-controlled variable-speed hydraulic drives. Here constant pumps are used in conjunction with variable speed motors. The volume flow can be adjusted for each cylinder. This reduces the energy consumption, the hydraulic dissipated power, which is introduced into the oil, and the noise level dramatically. This type of drive is highly efficient and reduces life-cycle costs significantly.

To be able to bend already formed tubes as well as straight tubes, the bending tools for transfluid bending machines are equipped with a double clamping system, for the collets as well as for the bending tools. With this they are able to take up either formed tubes, or the straight parts as required.

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