

Economical tube isometry

Object tubing is an everyday application in the shipbuilding industry and especially so, when it comes to hydraulics tubing. However, it is a fact, that economic efficiency falls by the wayside where tubes are made-up at the object, are manually drawn or bent on manual bending machines, and built in situ.

This is because after the bending process, it is necessary to cut excess lengths, which in turn, means a high loss of material. Moreover, precise documentation is also lost, wasted working time is high and the processed tube does not always fit. Here an advanced, economic solution for bending and processing of non-isometrized tubes has just been pioneered by transfluid Maschinenbau GmbH.

“To guarantee a constant quality of the tubing, and to achieve a minimal waste of material with shortest possible

clamp lengths and small radii it is important to bend the tubes in a bending center”, explains Gerd Nöker, transfluid CEO. “This not only provides for the ideal quality of the tubing but also makes possible a detailed documentation of the tube data.”

But how do these bending respectively tube data come to the CNC bending machine? transfluid GmbH, has created two different ways to directly compile a tube isometry that, for example, can be made available online (via network or e-mail) or manually (via usb flash drive) to the bending centre and the bending machine.

Digital drawing with t control

The easiest method is the use of a digital drawing tablet. transfluid GmbH makes available the appropriate programs for creating isometry drawings with its high-performance software “t control”, as Gerd Nöker explains: “A regular tablet PC can be used, and our



transfluid software enables 3-D drawings of the tubes by using a pen on digital isometry paper. The operator can measure the desired geometry directly at the object with the drawing tablet, draw and send it via e-mail to the bending centre.” Additionally, there is the possibility

to equip the drawn geometry with flanges, welded connections or endforming. By this means, not only a simple bending geometry can be sent to the bending centre, but a complete, ready-to-install component can be pre-finished. For an easy inspection if the drawn

geometry matches the desired component, a 3-D view of the tube is available. With its help the operator can identify elementary mistakes at first glance.

Flexibility and freedom with a precise measuring arm is an optional procedure provided for the safe measurement of a tube. For example, for duplication there is a special measuring arm equipped with the appropriate software. These arms are equipped with absolute rotary encoders. They are deployed at the object, or are attached with magnetic feet and provide the advantage that they do not have to be referenced. With these measuring systems the tubes can be acquired by simple scanning of the cylinders between the bends or by scanning the geometry. The data can be transferred into coordinates and can be sent, by e-mail directly to the bending centre.

For the increase of the mobility of these devices the systems can be equipped with accumulators. The measuring data is then sent directly to a notebook computer via a wireless connection - thus providing maximum mobility without annoying cables.

For efficient bending technology, transfluid offers a complete range for tube diameters of 4 to 275 mm for the processing of isometries to tube geometry. The CNC controlled and also the semi-automatic tube bending machines are able to process the measured or drawn tube data, to perform a bending collision test and to appropriately collimate and bend components that are already equipped with flanges or alterations. By this, the provider of solutions transfluid has designed highly efficient options that enable a long term economic tube bending in the ship building industry.



More information on transfluid maschinenbau

tel: +44 2972 97150

fax: +44 2972 971511

info@transfluid.de