

TezetCAD takes the guesswork out of tube measurement

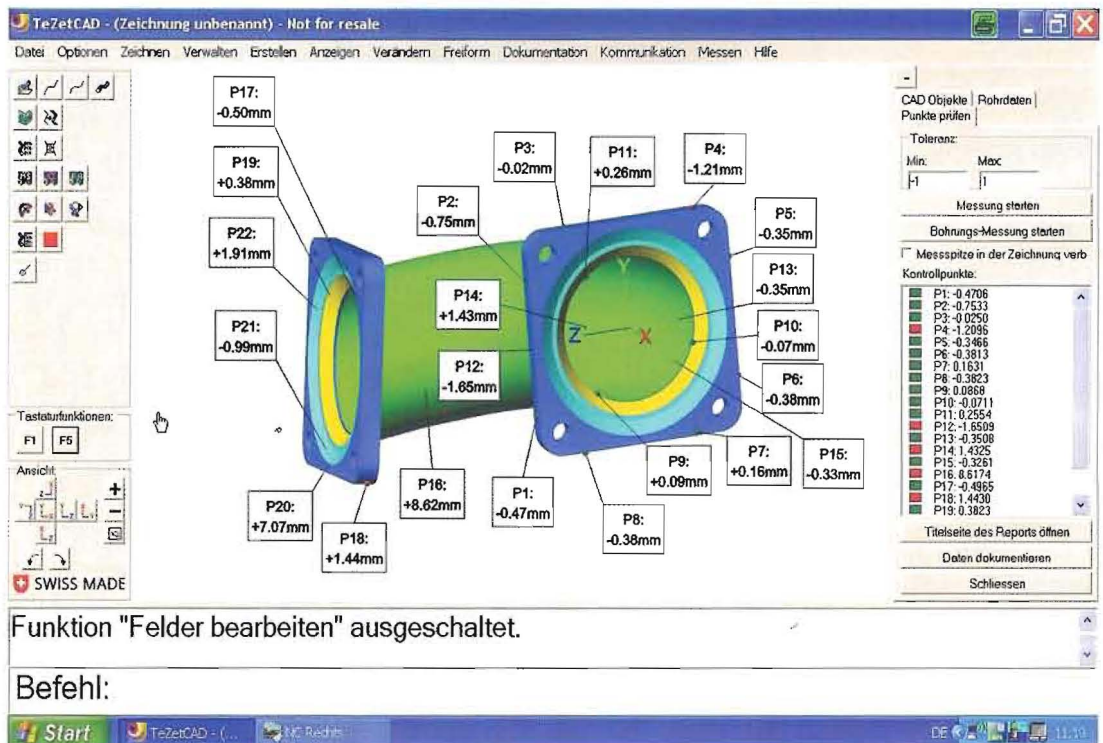
Tube and pipe professionals are well aware of the importance of repeatable measurement. Co-ordinate Measurement Machines offer higher accuracy because they can be programmed to measure the same point, but this process is complex and time consuming.

Optical measurements using fixed cameras to measure a fixed tube can be very accurate, but only when the tube has no re-entrant angles or add-ons. Both methods can achieve deviation results within hundredths of a millimeter.

Co-ordinate measuring arms are more flexible, but the manual measuring procedure tends to detract from repeatable measurements so the average deviation is measured in tenths of a millimeter – a deviation of 0.3mm is taken as a good result for a quality control department, primarily for auditing or ISO certification.

A tube is a 'living part' in that its shape changes all the time. During production it will be treated by cutting or end conditioning and, of course, bent in a tube bender. Following production it will be stored, transported and subjected to a range of temperatures. The critical concept for tube bending specialists is 'springback': the momentum impact to the tube material following a pulstrusion bend affects the bend angle. If a bend is set up to 90° the actual bend might range from 88° to 92°, depending on its springback and the bender settings.

An experienced operator can allow for this deviation and correct it, but this takes time and usually needs several attempts,



leading to material wastage.

The answer to this is specialist software, and Swiss specialist Tezet has 20 years' experience in this field. Its Testacy software automatically controls the bender to ensure optimum accuracy.

Testacy is modularly

structured to offer more than 100 useful functions. It is user friendly because it is menu guided, and TezetCAD is continually updated to suit new production requirements.

In 2007, for example, the algorithm for freeform bent tube handling was programmed by

Tezet and integrated into TezetCAD – and Tezet is still the world's only supplier of this technology. Similarly, its self-programmed Iges converter generates tube data from industrial tube designs of half-shells, rather than using a centerline or xyz coordinates which gives geometric data but does not provide tube data.

These state-of-the-art capabilities are rooted in Tezet's understanding that less-than-perfect measuring is not caused by the measuring device, the software or the user – it is caused by the complexity of the tube itself. That understanding has kept Tezet at the forefront of measuring technology.

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