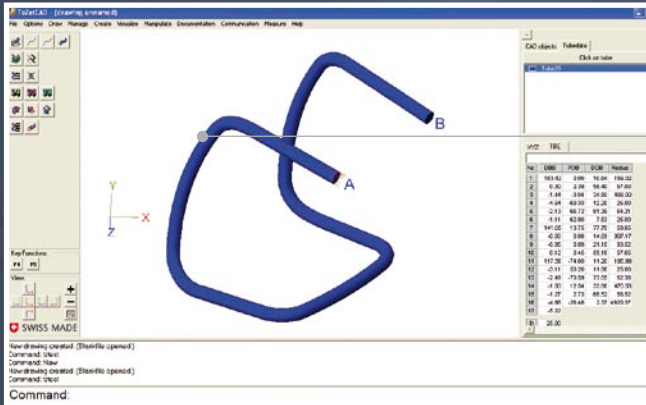
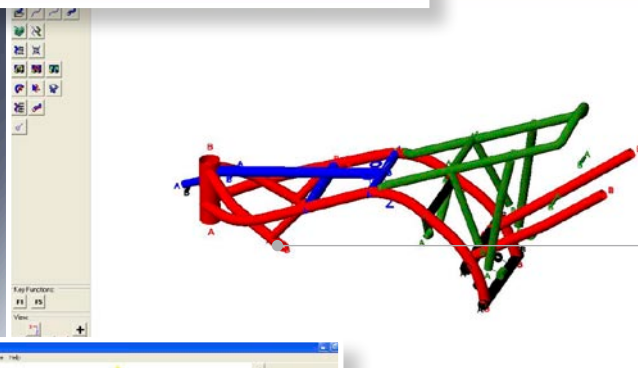


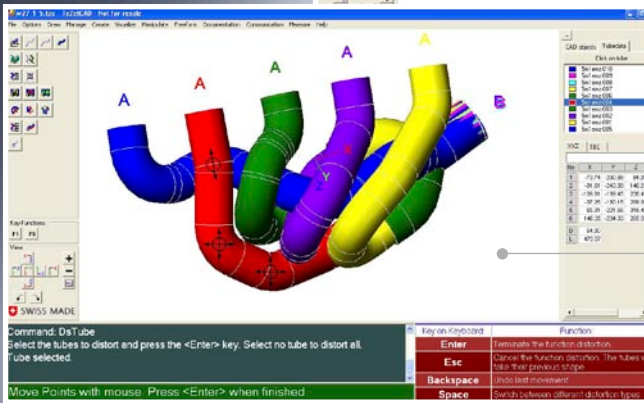
TeZetCAD - Tube Software for FaroArm and ScanArm



Freeform bent tubes measured by laser, automatic output of 3D and bending data, including data correction according to the bender model



Measuring a motorbike frame



Formula One performance header that can be changed in the programme with real-time data transfer

Measurements of tubes, wires and hoses

FaroArm and Laser ScanArm can be used in combination with the new TeZetCAD software solution to enable user-friendly, menu-guided measurement of tubes, profiles, hoses and geometry parts. Depending on requirements either contact or non-contact measuring can be used. For the first time, TeZetCAD and FARO measuring systems make it possible to measure freeform bent tubes and enable tube bending to be carried out on the basis of CAD drawings.

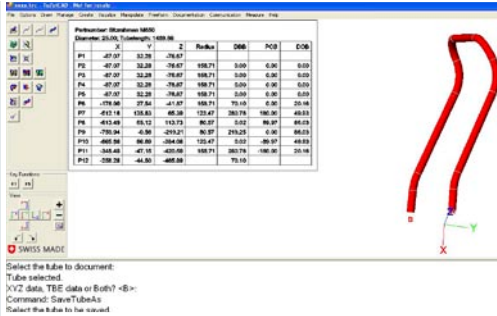
This joint solution is aimed at customers who deal with the measurement and correction of tubes of all sizes and shapes as well as with the complex geometry of freeform bent tubes. At present TeZetCAD is the only software worldwide that can measure and correct freeform bent tubes.

Features

- ▶ More than 100 functions which are useful for tubes
- ▶ High efficiency
- ▶ Process safety
- ▶ Cost savings
- ▶ Ease of operation
- ▶ Fast measuring

TeZetCAD - FARO ScanArm

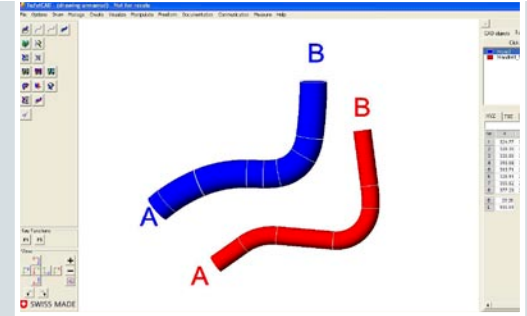
Applications



Freeform bent tube measurement and documentation



Hose-mandrel comparison – graphic generation of scan data and simultaneous data output in 3D and bending format including data correction according to bender model



Functions

Freeform tube bending with TeZetCAD

Although freeform bent tube parts can be generated graphically with the aid of polygons, they cannot be extracted from these CAD drawings in such a way that a bending machine can bend them in accordance with the extracted data. The capture of freeform tube data (for tubes bent using non-traditional methods) requires a new measuring technology. Overlapping tube radii differing in size and dimension, without cylinders in between, can be read in using the FARO ScanArm and calculated in real time in TeZetCAD, in parallel to the measurement procedure and processed in a method adapted for tubes.

In order to communicate with CAD systems, TeZetCAD has developed a special module which can extract the coordinates and bending data required for tube production and inspection from a 3D IGES file.

Design tool

The design tool comprises a special function so that tubes can be modified on screen with data running in parallel in real time. This function is used frequently for matching tube lengths to each other or when defined distances must be precise. It is in this area where the speed of the fast graphic kernel becomes especially noticeable,

because it is only when the 3D view appears that the correction can be visually assessed. The simultaneous delivery of the new data enables prompt transfer to prototype production.

Integrated mandrel-hose measurement

Hoses are increasingly being heat-formed over bent mandrels, a current technique in automobile construction, which involves measuring the hose and correcting the mandrels. As most of the hoses have undefined radii, the 'mandrel hose' calculation was integrated into the freeform laser measurement and correction, also making it unique as a quick and user-friendly solution.

FARO Laser ScanArm® V2 - Performance Specifications (Non-Contact)

FaroArm	1.2m (4ft.)	1.8m (6ft.)	2.4m (8ft.)	3.0m (10ft.)	3.7m (12ft.)
Fusion		±.096mm (±.0038in.)	±.101mm (±.0040in.)	±.139mm (±.0055in.)	±.174mm (±.0069in.)
Platinum	±.068mm (±.0027in.)	±.076mm (±.0030in.)	±.080mm (±.0032in.)	±.102mm (±.0040in.)	±.123mm (±.0048in.)
Quantum		±.069mm (±.0027in.)	±.071mm (±.0028in.)	±.098mm (±.0035in.)	±.101mm (±.0040in.)

FARO Laser ScanArm® V3 - Performance Specifications (Non-Contact)

FaroArm	1.2m (4 ft.)	1.8m (6ft.)	2.4m (8ft.)	3.0m (10ft.)	3.7m (12ft.)
Fusion		±.081mm (±.0032in.)	±.086mm (±.0034in.)	±.124mm (±.0049in.)	±.159mm (±.0063in.)
Platinum	±.053mm (±.0021in.)	±.061mm (±.0024in.)	±.065mm (±.0026in.)	±.087mm (±.0034in.)	±.108mm (±.0043in.)
Quantum		±.054mm (±.0021in.)	±.056mm (±.0022in.)	±.074mm (±.0029in.)	±.086mm (±.0034in.)

