

**cimcore**

**Tube Inspection**

Utilising a Cimcore portable measuring arm and a unique non-contact laser probe EuroPac 3D has the ability to offer the tools to inspect everything from hydraulic tubing to exhaust pipes.

The unique fork probe allows the user to sweep over a tube and measure it's critical dimensions without the need to physically touch the object. The arm can be used to measure all critical tube dimensions, including absolute and incremental length, rotation and angle measurements.

The system uses a Cimcore measuring arm which means the measurement is truly portable so that pipes can be measured in situ, on an assembly or connected as a final component.



**MEASUREMENT APPLICATIONS**

- Measure XYZ intersection points of a tube route and compare to original drawing
- Measure Length, Rotation, and Angle (LRAs) of a tube route and compare to original drawing
- Measure and compare tube to CAD design data
- Reverse engineer tubes and export critical dimensions either as a drawing or full 3D CAD model
- 'Ghost' a tube route on a physical assembly to map where a tube should fit



**cimcore**

## DOCS - Tube Inspection Software

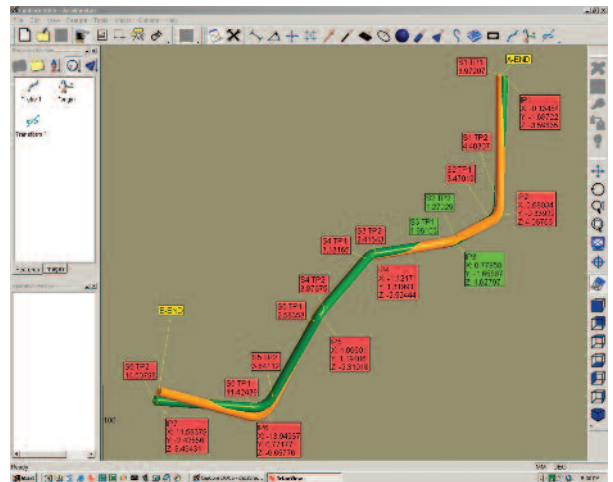
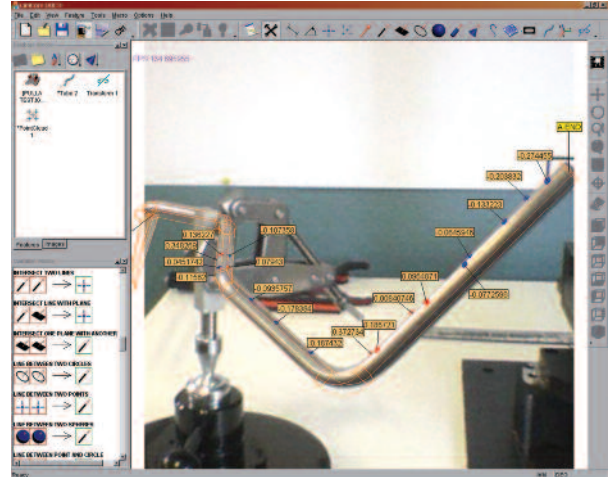
EuroPac 3D is pleased to introduce DOCS 2.3, an upgrade of our state-of-the-art tube inspection software.

Designed to revolutionize quality control in the tubing industry, DOCS stands for Data Overlay Camera System and is compatible with all the portable arms currently manufactured by Cimcore.

A premier tube inspection solution, DOCS can inspect and measure round metallic and non-metallic wire, tubing and piping used in almost any industry - automotive, aerospace, shipbuilding, medical, machinery, appliance, and more. DOCS can also produce corrected bend data for CNC tube benders.

### DOCS 2.3 and Cimcore portable CMMs provide these productivity-enhancing benefits:

- **NEW** - Auto Single Measure Mode further automates the already easy tube inspection process by significantly minimizing operator input requirements.
- **NEW** - Multiple language support: English, Chinese (simplified), Czech, German, Spanish, Italian, Japanese, Polish and Turkish.
- DOCS overlays inspection geometry onto digital photos of the part for unprecedented ease in visualizing the part set-up and context. This Transprojection™ function is enabled by the digital camera built into Cimcore's INFINITE series portable CMMs.
- Tube measurement and geometry measurement in ONE software – eliminating the need to run multiple applications.
- Ability to group multiple tubes in one part file – this keeps all parts of a tube assembly in one file.
- Surface inspection with contact or non-contact tube probes – inspect all parts of the tube including bends, brackets and flanges.
- Non-contact tube probes (6mm to 150mm) and contact probes can be used interchangeably during the measurement cycle, thanks to Cimcore's standard switch-on-the-fly automatic probe recognition feature.
- Extraction of tube data from CAD – a unique process to capture tube data from CAD.
- Extraction of geometry from tubes – users can break a tube file down into individual geometric entities for easy manipulation.
- Real-time surface inspection – provides the ability to locate brackets and flanges on a tube. Easily modified HTML reporting capability for clear, informative reporting.



### DOCS HELPS ELIMINATE WASTE IN TUBE BENDING

As tube inspection goes hand in hand with bending, DOCS can send corrected bend data directly to the CNC bender. This process eliminates costly transcription errors and enables correction of bend data based on inspection results of the first tube bent. The second tube is usually in spec and ready to ship without wasting hours adjusting the bender trying to make a good tube. The elimination of waste and scrap, as well as increased shop productivity, is a key benefit of a Cimcore arm system with DOCS.

Tube Shop Manager is a module designed to communicate with CNC tube benders. One connection interface to a CNC tube bender is included with DOCS 2.3. Additional bender interfaces are also available for purchase as an option.